

# OAK LEAF

A NEWSLETTER FOR MEMBERS AND FRIENDS OF THE NORTHERN SHENANDOAH VALLEY AUDUBON SOCIETY

VOLUME 42

WINTER 2018

NO. 4

## From the President's Pen



Happy 2019 NSVAS members and friends! It is with great excitement that I share with you some of this year's planned activities, programs, projects, and agendas. Your dedicated Board of Directors has been working hard on some of these plans since last year. The success that our chapter has experienced is certainly the result of all member and supporter involvement and participation. Thank you. Please take pride in the many accomplishments of your local Audubon Chapter. Together, let's do more to show we care for our Mother Earth.

We ended the year 2018 with the 119th Christmas Bird Count. It rained most of the day but spirits were not dampened and about 92 bird species were identified by approximately 60 intrepid volunteer binocular people. Join us this coming December for the 120th CBC.

Please take time to review the excellent Bluebird Trail Project 2018 Summary and Data Comparison Table in this newsletter. It is a testimony of the difficult and very important work that our volunteers complete each year. Hours spent in the summer heat monitoring our 132 nesting boxes at Blandy Farm and the 65 boxes at Shenandoah River Andy Guest State Park; and then additional hours collecting, organizing, and tabulating data utilized for scientific research. Can you assist in any way? Your participation is encouraged; please contact Kaycee Lichliter, Trail Manager for the Blandy Trail at [kayceelichliter@hotmail.com](mailto:kayceelichliter@hotmail.com) or Roxie Leonard, Trail Manager for the Shenandoah River State Park Trail at 540-683-1941.

The Purple Martin (PUMA) Project will have additional nesting boxes for our birds at Lake Arnold at Blandy Farm this year. It is definitely a struggle to put up and take down each of those poles supporting the PUMA colony boxes. But maintenance is necessary to ensure the well being of the residents. Also, plans are being made for interpretive signage nearby that will help to explain the PUMA Project and natural history information on the PUMA species.

The Audubon Arboretum in Jim Barnett Park in Winchester continues to grow and mulching, pruning, trimming, and weed-

ing starts in March. Purchasing new trees for the Winchester Host Lions Club's Sensory Trail within the Arboretum has already started. Tree descriptions and highlights will be written to be included in the Braille signage that will be utilized by some of the trail users. And a section of the Arboretum will be set aside for a Pollinator's Garden with native wild flowers and shrubs for all to enjoy. Can you purchase a tree to plant in honor or memory of a loved one? Are you a tree hugger like me?

Activities and programs for spring are scheduled. The Abrams Creek Wetlands Preserve (ACWP) nature walks start on Saturday, March 16 and the other Saturdays are March 30, April 13 and April 27. We meet in the parking lot of Children of America on Jubal Early Drive at 8:30am. (Note: the Winchester Bald Eagles are nesting again in the area. This is the 4th year in the same nest in the city limits.) Let's go birding....

Our 1st program of the year will be a bird walk to see the Great Blue Heron Rookery and a Bald Eagle nest at 9 am on March 23rd at Shenandoah University's Cool Spring River Campus in Clarke County.

All of the activities, programs, and projects described above are managed and lead by our many wonderful volunteers. If we had an official NSVAS Unabridged Dictionary, under the word volunteer would be a photo of Mr. Chris Lewis. Chris has constructed hundreds of Bluebird Nesting Boxes (to specification) for us. These boxes took hundreds and likely thousands of hours to make. Without fanfare or notoriety Chris has demonstrated his continuing commitment to the survival of our birds and to the success of the NSVAS Bluebird Project. Thank you Chris Lewis for your many contributions and for sharing your energy, expertise, and time.

The NSVAS website is being redesigned and our webmaster, website committee and volunteers are hopeful it will be up and running soon. And, we are now on Face Book. So please stay in touch. Share your ideas, expertise, time and energy and have fun with the other wonderful volunteer nature conservationists that work with the Northern Shenandoah Valley Audubon Society. I hope to see you soon.

Thank You!

Jim L. Smith, President,

Northern Shenandoah Valley Audubon Society

# Christmas Bird Count

By Kaycee Lichliter

On Saturday, December 15, 2018, despite being a very rainy and cloudy day, a strange phenomenon occurred in the Shenandoah Valley for the 43rd year in a row. Dedicated birders, both novice and professional, took to the roadsides by car, perused lakes and rivers by kayak or canoe, searched fields and woods on foot, or observed bird feeders from the comfort of their own homes, to count and document species, and numbers of those species of birds, observed. These birders were participating in the 119th National Audubon Christmas Bird Count, the nation's longest-running community science bird project. As dark fell on the day and birds could no longer be observed, birders flocked to the library at Blandy Experimental Farm to enjoy meeting new and old friends, discussing count stories and putting away some food.

Preliminary numbers for this year's count as reported by Mr. Larry Frey, compiler, are as follows: Number of participants: 52. Number of species on count day: 89. Number of species seen for count week: 90. Individual birds observed: 17,275.

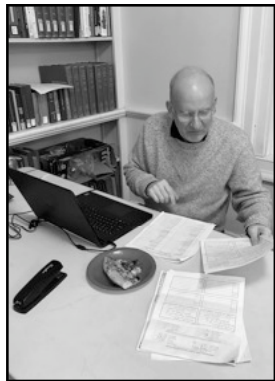


Photo credit Kaycee Lichliter

**Mr. Larry Frey,  
Data Compiler**

At the time of this writing, numbers were still in the review process, however after submission, you may access the data on the National Audubon Society's website by following these directions: Go to: [netapp.audubon.org/cbcobservation](http://netapp.audubon.org/cbcobservation). Under "Current Year" tab, select "Results by Count." In "Select another year" box, choose "119;2018." In "Country" box, select "United States." In "State/Province" box, select "Virginia." In "Count Code" box, enter "VANS" and then hit 'enter.' On the next screen, select the radio button to choose "Northern Shenandoah Valley." The report will generate to include count date, species reported, weather, sponsor and participants. To select data from previous years, in the "Select another year" box, select the count number and year you wish to view (for the current year we are selecting 119; 2018, which means, it was the 119th count and it was held in year 2018).

If you are interested in participating with future Shenandoah Audubon Christmas Bird Counts or would like more information, please send e-mail to: [shenandoahaudubon@yahoo.com](mailto:shenandoahaudubon@yahoo.com). We would love to have you join us!



Photo credit Kaycee Lichliter

**Shenandoah Audubon President  
Mr. Jim Smith compiling count  
data from day of birding with Mr.  
Gabriel Ricketts**



By Kaycee Lichliter

During the 2018 season the Shenandoah Audubon/Blandy Bluebird Trail participated in Sparrow Swap, a citizen science project conducted by the North Carolina Museum of Natural Sciences located in Raleigh, North Carolina. House sparrows (*Passer domesticus*) are an invasive bird species to North America and are not protected by the Migratory Bird Treaty Act. They are known to wreak havoc for our cavity-nesting birds by taking nesting habitat, breaking eggs, killing chicks and even adult birds.

One lone female house sparrow was first detected in a single nestbox on the trail in 2009. The monitoring team immediately implemented an egg removal protocol to prevent the sparrow from reproducing and 8 viable eggs were removed and discarded. As the viable eggs were removed, we replaced them with unmarked wooden eggs purchased from a craft house. No house sparrows or nests were reported again on the trail until 2014; that year, they occupied 3 boxes and laid 17 eggs, all of which were discarded. To demonstrate how quickly house sparrows can multiply even when efforts are made to keep them in check, this past season they occupied 9 boxes and laid 45 eggs!

Before the 2018 season started I had read about Sparrow Swap. It would be a lot of work but I decided that instead of discarding the eggs, we would put them to good use and joined Sparrow Swap. As our team detected viable house sparrow eggs throughout the season, we carefully removed and placed them in plastic containers of bird seed to prevent breakage and stored them in the refrigerator until time of shipping. This time we replaced the viable eggs with fake wooden eggs provided by the researchers which were painted with speckling to look just like real house sparrow eggs!

Monitoring, collecting, replacing, labeling, storing, preparing for shipping and reporting took many hours. However, our team is contributing to the Sparrow Swap project objectives by making it possible to study the following: photographing and analyzing the variation in color and speckling of the eggs to look at the geographic patterns in eggs, studying best methods for controlling avian pests, and eventually the eggs will be analyzed for contaminants as part of research to determine whether house sparrow eggs are a useful indicator of human exposure to environmental contaminants.



Photo credit Kaycee Lichliter

# Shenandoah Audubon/ Blandy Bluebird Trail

## Season 2018 Summary

*By Kaycee Lichliter, Trail Manager*

The Shenandoah Audubon/Blandy Bluebird Trail celebrated completion of 15 years of consecutive data collection and reporting this past season. Thirty-six trained trail technicians monitored nesting and reproductive activity for 132 nestboxes over a period of 24 weeks, March 23 through September 1. Trail data was submitted to the Virginia Bluebird Society and Cornell Lab of Ornithology's NestWatch, a citizen science program. This was our first season to participate with and submit data to Sparrow Swap, a research project of the North Carolina Museum of Natural Sciences, Raleigh, North Carolina.

To the 2018 team of trail technicians who continually brought their time and energy, along with their attention-to-detail and willingness-to-do attitudes to the project, I offer my sincere heartfelt appreciation; Judy Aaron, Roger Aaron, David Borger, Jill Butler, Brenda Chapin, Luciana Codella, Glenney Comer, Dana Crone, Leah DeLong, B.J. Ferguson, Cheryl Ferguson, Ed Ferguson, Susan Galbraith, Tanya Godfrey, Richard Hampton, John Hickerson, Mary Ann Kirkpatrick, Chris Lewis, Pam Luttrell, Marie Majorov, Milan Majorov, Dennis McLoughlin, Mary Carolynn McLoughlin, Andy Miller, Margie Miller, Jessica Oplak, Joanne Ridings, Janet Rigoni, Mary Keith Ruffner, Angela Schwarzkopf, Diane Sheehey, Deb Teates, Tim Teates, Jim Windmiller and Zita Zduoba.

Please see the newsletter insert, "Data Comparison Table - Time Period 2004 - 2018" for trail data results. If you are interested in participating with the Shenandoah Audubon/Blandy Bluebird Trail for the upcoming 2019 Season, please contact Ms. Kaycee Lichliter, trail manager, at [kayceelichliter@hotmail.com](mailto:kayceelichliter@hotmail.com) for details. Trail technician workshops are scheduled to be held in early March and pre-registration is required.



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## Membership News

*To all members of the Northern Shenandoah Valley Audubon Society:*

My name is Dave Borger. I am a new board member with the Northern Shenandoah Valley Audubon Society. I grew up in Loudoun County and have lived in Clarke County with my wife and family for the past 30 years. I taught science in Clarke County schools for 31 years and have recently started volunteering again with the Blandy Bluebird Trail after a several year hiatus. I assisted with the banding of birds for multiple consecutive summers at the Burwell-van Lennep Foundation property with several NSVAS members. Upon retirement from teaching, I felt it necessary to spend time focusing on local conservation efforts. I became a member of the NSVAS chapter and was recently selected to be a member of their board as membership chairperson. It is in that capacity that I reach out to you.

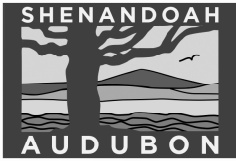
### *Firstly, we would like to welcome these new members:*

Andrea and Tom Aldstadt  
Judi Boker  
Gina Cohen  
Dr. John and Elizabeth Cotrell  
Grover and Christine Czech  
Jeannine Gordon  
Rob and Rebecca Harriett  
Joyce McKay  
Dev and Betsy Morrison  
Gabriel Ricketts  
Donna Sheets  
Ursula Sherrill  
Lowell Smith  
Samantha Zeimet

Additionally, it has been determined that, beginning January 1, 2019, all memberships (new and renewed memberships) will be valid for one year beginning on the date that membership payments are received. Individual membership timeframes will be specified in thank you letters sent to new and renewed members upon receipt of membership payments. The membership form is included in this and all newsletters. The membership form is also available on our website at <http://www.audubon-nsvas.org/>.

We welcome all new and renewed members to our chapter. It is our hope and desire to continue the efforts of our chapter and further our goal to conserve and restore natural ecosystems, focusing on birds, other wildlife, and their habitats, for the benefit of humanity and the Earth's biological diversity.

Thank you for your contributions and efforts toward achieving our goal.



P.O. Box 2693  
Winchester, VA 22604

## 2019 SPRING PROGRAMS

### **February 16 to 19**

Audubon Great Backyard Bird Count. Count birds for as little as 15 minutes (or as long as they wish) on one or more days of the four-day event and report your sightings online at [birdcount.org](http://birdcount.org).

### **March 6 (6:30 pm to 9:00pm) and 9 (9 am to noon)**

Bluebird monitor training at Blandy Library. Please RSVP to [kayceelichter@hotmail.com](mailto:kayceelichter@hotmail.com) on or before January 26 to reserve your workshop space.

### **March 16, March 30, April 13, April 27**

Abrams Creek Wetlands Preserve Bird Walks.  
Meet at 8:30 am at Children of America parking lot on Jubal Early Drive

### **March 23 at 9 AM**

Cool Springs (Shen University) Hike  
Hike to see heron rookery, eagles nest & early spring migrants. Meet at CS/SU parking lot at 1400 Parker Lane, Bluemont VA (May be cancelled for heavy rain. Call Mark Bruns at (540) 723-8641.

### **May 11, and 12**

Audubon booth with Bluebird nesting boxes at Blandy Experimental Farm's Mothers Day Plant Sale. Volunteers needed to help with Board of Directors to staff our booth to answer general questions about environmental issues and birds. Contact Lee Bowen ([bowen@ramseytruevalue.com](mailto:bowen@ramseytruevalue.com) or 540.671.1906)



# ***How Humans Have Adversely Impacted the Shenandoah River***

*By Dave Borger*

*This is part two in a series of articles examining the impact of human activity on the Shenandoah River. In this issue, some background information regarding the river and two major polluting episodes will be presented.*

The Shenandoah River is the major conduit of water flowing northward from our local part of a larger watershed. This conduit, consisting of the North Fork of the Shenandoah, just west of the Massanutten Mountain, the South Branch of the Shenandoah, between the Massanutten Mountain and the Blue Ridge Mountain, and the Main Stem of the Shenandoah, flowing northward from the confluence of the two aforementioned branches at Front Royal toward Harpers Ferry, is a major tributary of the Potomac River. The Shenandoah River, with its tributaries, carries what flows from our land, water and air deposits toward the Potomac River and, eventually, to the Chesapeake Bay. The median measured discharge at the USGS Front Royal gage station for the three year period from January 1, 2015, up to January 1, 2018, was 6,628 cubic feet per second . As such, it is the largest tributary in the Potomac River watershed. The aquatic environment within the three parts of this conduit provide habitat for a multitude of organisms. Their waters are the source for a number of municipalities and receives the outfall from a number of municipal and industrial wastewater treatment plants.

In 1928, E.I. du Pont de Nemours and Company (DuPont) acquired 153 acres near the South River in Waynesboro, Virginia. A facility was constructed on that site for the production of acetate rayon fibers . Between 1929 and 1950, mercury was used in the manufacturing process at that Waynesboro plant. Some of this mercury released from the plant made its way into the South River and, eventually, into the South Branch of the Shenandoah River. Natural resources in and around the river, including sediments, invertebrates, fish, amphibians, reptiles, birds, and mammals, have been adversely affected by exposure to this mercury. Efforts, under the direction of the Virginia Department of Environmental Quality and the U.S. Environmental Protection Agency, are underway to remediate this problem . Since 2005, Dan Cristol, biology professor at William & Mary, has been studying the effects of mercury on birds in the affected areas surrounding the South River. The results of his and his colleagues' work indicate that the level of mercury in this environment has, for the most part, remained unchanged over the last 20 years. That mercury, in a more easily transferred form, can pass from one part in the natural community to another, but it always seems to remain in the affected environment. This research, funded in part by DuPont, provided evidence supporting a \$50 million settlement with the company in 2016 .

Over the course of nearly 50 years, another fiber production plant operated along the banks of the South Branch of the Shenandoah River near Front Royal, Virginia. Ownership of the operations changed several times during that time period with Avtex Fibers, Inc., being the most recent owners. They took over operations in 1976 and closed the plant in 1989 . That fiber production facility had a long history of pollution violations. In 1989, State Water Control Board scientists discovered highly toxic polychlorinated biphenyls (PCBs) in the tissue of fish downstream from the Avtex plant. The source of those PCBs was traced back to the fiber plant. In time, the site of the Avtex fiber plant would become an EPA Superfund site . In 2014, after 25 years of remediation at the site, much of the site had improved to become a business park and recreation site . As a result of these two significant polluting episodes, the remnants of which may be with us for decades, fish consumption advisories have been issued for the South Branch (for mercury) and Main Stem (for PCBs) of the Shenandoah River .

Since the early part of this millennium, citizens and scientists have made observations regarding the fish within these rivers that were concerning. Among these observations were lesions discovered on smallmouth and redbreast sunfish, documented fish kills, dating back to at least 2003 , and the discovery of fish with both male and female characteristics (intersex fish), dating back to at least 2004 . Scientific investigations into each of these phenomena began soon after their initial discoveries. The next issue of ***Oak Leaf*** will present a time line of some of the findings surrounding the episodic fish kills.

## **BOARD OF DIRECTORS OFFICERS**

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Vice President . . . . . Jeannie Senter  
Secretary . . . . . OPEN  
Treasurer . . . . . Kaycee Lichliter  
Kayceelichliter@hotmail.com

## **COMMITTEE CHAIRS**

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Membership . . . . . David Borger  
Newsletter . . . . . Lee Bowen  
lbowen@ramseytruevalue.com  
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At-Large . . . . . Glenn Comer

# Northern Shenandoah Valley Audubon Society



DATE: \_\_\_\_\_

*www.audubon-nsvas.org*

<b>FULL NAME</b>	
<b>APT / SUITE / UNIT</b>	
<b>PO BOX or STREET ADDRESS</b>	
<b>CITY, STATE, ZIP</b>	
<b>PHONE #</b>	
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<b>AMOUNT ENCLOSED:</b>	<p><b>CHECK ONE:</b>      _____ <b>NEW MEMBER</b>      _____ <b>RENEWAL</b></p> <p><b>Local Membership (\$15 for 1 Year per household or nonprofit):</b> \$ _____  <i>(Membership begins April 1 and ends March 31 of the following year.)</i></p> <p><b>Additional Donation (optional):</b> \$ _____</p> <p><b>TOTAL ENCLOSED:</b> \$ _____</p> <p><b>Check Number:</b> _____</p>
<b>WANT TO GET INVOLVED?</b>	<p>_____ <b>NO, NOT AT THIS TIME.</b>      _____ <b>MAYBE, PLEASE CONTACT ME.</b></p>

**Please print, complete and mail this form with your check made out to NSVAS to:**

**SHENANDOAH AUDUBON**  
**c/o Kaycee Lichliter, Treasurer**  
**1346 Sulphur Springs Rd**  
**Middletown, VA 22645**

**LOCAL MEMBERSHIP** Local Membership annual dues of \$15 per household/non-profit organization cover basic chapter operating expenses including printing/ mailing of the *Oak Leaf* newsletters, web site fees, and liability insurance. We can only guarantee that our member data base list is accurate for local members who have paid the \$15 annual dues and keep us informed of any change of address. Our lists are not sold or distributed to other organizations. You do not have to belong to the National Audubon Society to be a Local Member of the Northern Shenandoah Valley Audubon Society chapter.

**DONATIONS** Additional donations are greatly appreciated.

**Northern Shenandoah Valley Audubon Society**  
**PO Box 2693**  
**Winchester, VA 22604**

Email: shenandoahaudubon@yahoo.com

*A Chapter of the National Audubon Society*

A copy of our financial statement is available through:

Commonwealth of Virginia  
 Department of Agriculture and Consumer Services  
 Division of Consumer Protection  
 P.O. Box 1163, Richmond, VA 23218  
 (804) 786-1343

# **Shenandoah Audubon Bluebird Trail at Blandy Experimental Farm** **Data Comparison Table – Time Period 2004 – 2018**

## **Eastern Bluebird – *Sialia sialis***

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	15-Year Totals
First Egg Date	3 Apr	11 Apr	6 Apr	16 Apr	11 Apr	7 Apr	7 Apr	22 Mar	26 Mar	16 Apr	16 Apr	14 Apr	30 Mar	3 Apr	18 Apr	
Nesting Attempts	43	52	69	89	80	72	31	49	78	68	75	81	85	72	68	1012
Eggs Laid	191	235	298	346	344	286	134	210	324	282	315	334	375	305	284	4263
Eggs Lost	50	86	57	147	72	48	26	39	93	24	45	39	48	44	60	878
Unhatched Eggs								5	22	17	7	13	9	16	18	112
Nestlings	141	149	241	199	272	231	103	166	209	241	263	283	318	245	206	3267
Nestlings Lost	12	33	20	28	47	26	6	12	13	5	8	21	65	19	19	334
Fledged	129	116	221	171	225	205	97	154	196	236	255	262	253	226	187	2933
Fecundity	67.5%	49.4%	74.2%	49.4%	65.4%	71.6%	72.4%	73.3%	60.5%	83.7%	80.9%	78.4%	67.6%	87.2%	65.8%	

## **Tree Swallow – *Tachycineta bicolor***

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	15-Year Totals
First Egg Date	6 May	20 Apr	26 Apr	4 May	21 Apr	23 Apr	27 Apr	1 May	24 Apr	25 Apr	24 Apr	21 Apr	22 Apr	22 Apr	1 May	
Nesting Attempts	65	79	54	55	56	69	90	92	96	93	120	108	126	132	112	1347
Eggs Laid	346	429	256	276	262	349	433	481	503	487	593	536	633	655	572	6811
Eggs Lost	56	161	69	110	65	64	90	80	94	71	92	79	123	154	110	1418
Unhatched Eggs							6	13	10	25	31	18	23	35	16	177
Nestlings	290	268	187	166	197	279	337	388	399	391	470	438	487	466	446	5209
Nestlings Lost	5	94	7	17	8	24	28	4	29	21	55	27	47	56	55	477
Fledged	285	174	180	149	189	255	309	384	370	370	415	411	440	410	391	4732
Fecundity	82.3%	40.5%	70.3%	54.0%	72.1%	73.1%	71.4%	79.8%	73.5%	76.0%	70.0%	76.7%	70.0%	63.0%	68.3%	

## **House Wren - *Troglodytes aedon***

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	15-Year Totals
First Egg Date	2 May	9 May	5 May	7 May	3 May	8 May	6 May	2 May	23 March	5 May	14 May	8 May	15 May	31 May	21 May	
Nesting Attempts	51	67	78	72	78	53	56	52	28	30	20	17	12	6	20	640
Eggs Laid	269	362	440	371	410	267	283	296	151	173	113	84	47	33	101	3400
Eggs Lost	95	122	115	178	86	53	45	65	28	13	24	14	8	6	16	868
Unhatched Eggs							6	9	8	8	5	1	4	1	2	44
Nestlings	174	240	325	193	324	209	232	222	115	152	84	69	35	26	83	2483
Nestlings Lost	22	68	61	28	38	14	16	18	13	3	0	3	1	4	0	289
Fledged	152	172	264	165	286	196	216	204	102	149	84	66	34	22	83	2195
Fecundity	56.5%	47.5%	60.0%	44.5%	69.8%	73.4%	76.3%	68.9%	67.5%	86.1%	74.3%	78.6%	72.0%	67.0%	82.1%	

**Carolina Chickadee – *Poecile carolinensis***

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	15-Year Totals
First Egg Date	2 May	22 Apr	12 Apr	25 Apr	29 Apr	30 Apr	17 Apr	23 Apr	6 Apr	N/A	26 Apr	21 Apr	27 Apr	N/A	N/A	
Nesting Attempts	1	2	3	1	1	1	3	2	1	0	1	1	1	0	0	18
Eggs Laid	1	13	17	5	5	2	18	13	7	0	1	6	6	0	0	94
Eggs Lost	1	4	14	5	1	2	4	12	7	0	1	0	0	0	0	51
Unhatched Eggs																
Nestlings	0	9	3	0	4	0	14	0	0	0	0	6	6	0	0	1
Nestlings Lost	0	0	3	0	4	0	0	0	0	0	0	0	0	0	0	42
Fledged	0	9	0	0	0	0	14	0	0	0	0	6	6	0	0	7
Fecundity	0%	69.2%	0%	0%	0%	0%	77.8%	0%	0%	0%	0%	100%	100%	0%	0	35

**House Sparrow – *Passer domesticus***

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	15-Year Totals
First Egg Date						20 May					9 May	23 May	7 May	18 Apr	27 Apr	
Box Site Numbers	N/A	N/A	N/A	N/A	N/A	#16	N/A	N/A	N/A	N/A	#18,27,29	#28,112	#16,28,70	26,28,29,66	15,16,19,28,61,62,63,65,91	
Eggs Laid						8					17	14	5	43	45	132
Eggs Disposed: Wooden Egg Replacement						8					17	14	5	43	43	132
Nestlings						0					0	0	0	0	2	2
Nestlings Lost						0					0	0	0	0	2	2
Fledged						0					0	0	0	0	0	0
Fecundity						0%					0%	0%	0%	0%	0%	

**Notes:** Fecundity (survivorship) = birds fledged/eggs laid x100

Data based on the following: 2004 (100 box sites); 2005 – 2009 (110 box sites; 2014-2018 (132 box sites)

House Sparrows are invasive, non-native species and reproduction in trail nest boxes is controlled; Year 2018 participated in Sparrow Swap w/North Carolina Museum of Natural History