

words on
waterfowl

Newsletter of the Sylvan Heights Waterfowl Society and the International Wild Waterfowl Association



waterfowl
conservation
workshop

& IWWA Conference

FLYING STEAMER DUCKS
Sylvan Heights & ECU
waterfowl vision

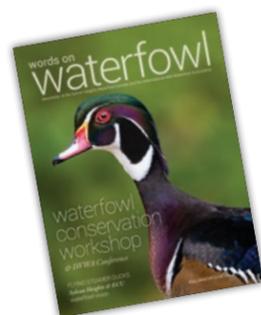
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ON THE COVER

A North American Wood Duck in fresh breeding plumage at Sylvan Heights Bird Park. Read about the Waterfowl Conservation Workshop and IWWA Conference on page 20.

CONNECT ONLINE!



Get park updates, event information and more. Connect with Sylvan Heights and the IWWA on Facebook, Instagram, Twitter, or YouTube.

the director's report

Mike Lubbock
Executive Director
Sylvan Heights Bird Park

Ali and I never dreamt (but certainly hoped) that the bird park would be such a success. We have steadily watched it grow and our visitation numbers increase. This September, we were threatened by two hurricanes, but we were fortunate that they both brushed by us fairly gently as they went through Eastern North Carolina. Our thoughts have been with the communities to our south who were not as fortunate.

We were all very excited with the opening of the new Pavilion, appropriately named Toad Hall in memory of Bill "Toad" Herring, our co-founder of Sylvan Heights. We celebrated the final completion of construction at our Annual Fundraiser in October, and it was a wonderful success. Our generous attendees, donors, and sponsors raised over \$50,000 - a record to date for all our fundraisers. We also announced our next big project: a penguin and whitewater waterfowl exhibit to be built in the next few years. We feel that the Pavilion is going to be very popular for many events including weddings, reunions, and an increasing number of educational programs. We now have the capacity for

over 200 people, with plans to accommodate more in the future with the addition of a deck. See page 27 of this newsletter to find out how you can help us with this project. I would like to thank Southern Bank Foundation, Cannon Foundation, Golden Leaf Foundation, and many individuals and friends of Sylvan Heights for believing in our mission and contributing towards this wonderful new Pavilion.

Our Avian Husbandry Program has been fully booked all year and Ali and I were very excited when a local resident, Mrs. Jenny Sewell Delagrange, donated her 5-bedroom house in Scotland Neck to Sylvan Heights. This will ease up the numbers of students and guests staying at our house, and allow us to teach more aviculture interns, as we now have lodging for them.

Thank you again to you, our members, for your support. Special thanks to our wonderful hard working staff, board members, Friends of Sylvan Heights, and the many volunteers who all help make Sylvan Heights Bird Park what it is today.

the curator's report

RUFF SANDPIPERS

“What is your favorite bird?” has to be one of the most difficult questions we get at Sylvan Heights. For us, it is an impossible question and often our answers change by the minute. Usually my first thought is “well the ones with feathers...”. Joking aside, one of my personal favorites at Sylvan Heights is the Ruff Sandpiper. This shorebird breeds across the top of Europe and Asia, with annual migrations up to twenty thousand miles to tropical wintering grounds in Africa and Australia. A truly unique species, male Ruffs come in three different forms and compete for females at communal sites, a behavior known as lekking. The life history of Ruffs is simply amazing, as is any species where you have genetically maintained physical variation within one population. Add in the fact that this physical variation is tied to specific behaviors, and you have one of the coolest birds in the world.

Sylvan Heights began working with this species in 2012 thanks to the efforts of Dr. Susan McRae from

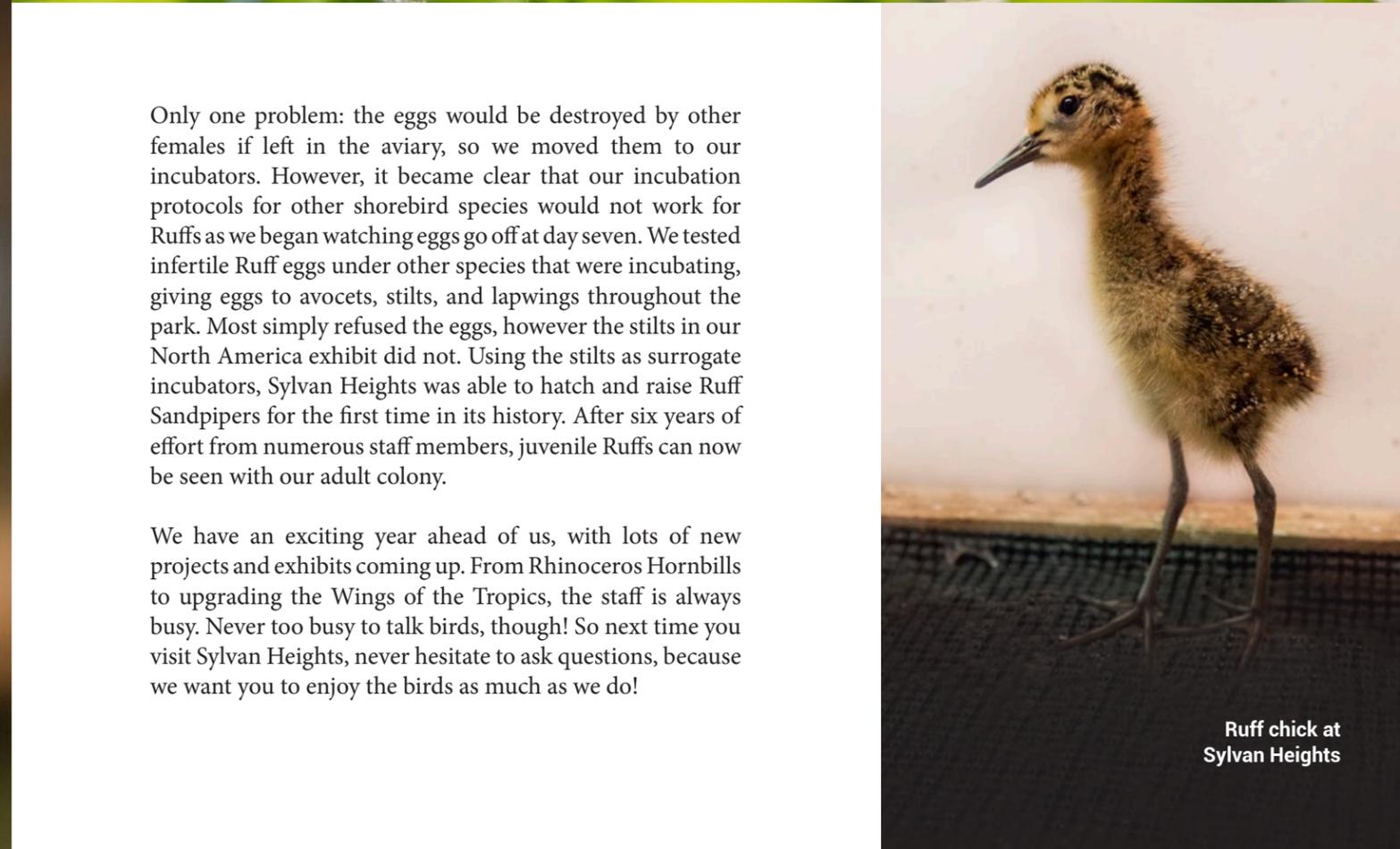
East Carolina University. Dr. McRae’s work with Ruffs allowed Sylvan Heights the possibility of establishing a captive population of this species in the United States. A special aviary was designed just for these birds, with lights to mimic their high latitude breeding grounds and partitioned areas for males to set up territories. In 2016, we separated the males and females during the winter in an effort to mimic the natural separation of the sexes during migration. Males often arrive earlier to the breeding grounds to set up territories. In spring of 2017, we had the first Ruff eggs at Sylvan Heights, however none of the eggs were fertile. We again separated the sexes for the winter, however decided to move the males to a new aviary attached to the park’s Wings of the Tropics. Planted with grasses, this area of the park had fewer overhead trees and the birds seemed calmer than in their previous aviary. Once the females went in, the males were in full form, and we began seeing breeding behavior. After six years, we finally had fertile eggs!

by **DUSTIN FOOTE**
General Curator
Sylvan Heights Bird Park

Photos by Katie G. Lubbock



Male Ruff in non-breeding plumage



Ruff chick at Sylvan Heights

Only one problem: the eggs would be destroyed by other females if left in the aviary, so we moved them to our incubators. However, it became clear that our incubation protocols for other shorebird species would not work for Ruffs as we began watching eggs go off at day seven. We tested infertile Ruff eggs under other species that were incubating, giving eggs to avocets, stilts, and lapwings throughout the park. Most simply refused the eggs, however the stilts in our North America exhibit did not. Using the stilts as surrogate incubators, Sylvan Heights was able to hatch and raise Ruff Sandpipers for the first time in its history. After six years of effort from numerous staff members, juvenile Ruffs can now be seen with our adult colony.

We have an exciting year ahead of us, with lots of new projects and exhibits coming up. From Rhinoceros Hornbills to upgrading the Wings of the Tropics, the staff is always busy. Never too busy to talk birds, though! So next time you visit Sylvan Heights, never hesitate to ask questions, because we want you to enjoy the birds as much as we do!



Sylvan Heights on WITN

If you live in Eastern North Carolina, you may have seen us on TV recently! Keep an eye out for our 30-second advertisements on WITN, as well as 60-second educational spots that air on one day each month.

In addition, Sylvan Heights Aviculturist Kat Lewandowski regularly appears on WITN News at Sunrise. Accompanied by a different bird each time, Lewandowski shares facts and conservation stories about the many species that live at Sylvan Heights Bird Park and Avian Breeding Center.

These ads and appearances aim to boost awareness of the park as a day trip and field trip destination in Eastern North Carolina, and inspire an interest in birds and conservation amongst viewers.

The park has already seen an increase in visitation immediately after the spots began airing, and we hope that more people from the region will visit during the coming winter and spring.



Girl Scout Gold Award Project Helps Sylvan Heights Bird Keepers

Savannah Blalock's Girl Scout Gold Award ultimately will allow new staff members a more organized system when learning the many complicated diets and husbandry routines for the birds at Sylvan Heights.

My name is Savannah Blalock, I am a senior in high school and a Girl Scout of 13 years. Almost a year ago, Sylvan Heights Bird Park presented me with an incredible opportunity to earn my Girl Scout Gold Award by working with their staff to digitize the feeding system. Working with Sylvan Heights was a great way to couple my love of biology and conservation with my hopes of a hands-on and interactive project. At the start of this project, I spent many days at the park learning about the feeding system and shadowing the different keepers. Using this knowledge, I created a website that presents an interactive map of the park; by clicking on any area of the park, the appropriate feeding information for each dish or bird in that particular aviary

will be displayed. All of the data for this system is derived from a database that contains all of the information, allowing for easy revisions. The Park will now be able to generate hundreds of easy to understand pages of feeding information for every bird in just a few short minutes. Each page includes the name of the species, number of that species, location, picture, and feeding information.

Recently, I spent a day at the park presenting my project to visitors and sharing some of the fun facts I had learned about the birds. I was lucky enough to speak to over fifty people throughout the day, and over twenty people who gathered at that day's Keeper Talk. The project turned into so much more than I ever thought it would be and it was an incredible learning experience. I am very thankful to Sylvan Heights for being so supportive along the way. Many staff members shared their passion for aviculture with me and I could not have been successful without everyone's help.



Curator Nick Hill Receives IWWA Award for Outstanding Avicultural Achievement

This year, Nick Hill, Sylvan Heights Curator of Aviculture, was recognized by the International Wild Waterfowl Association for the first breeding of Flying Steamer Ducks in North America (read more on page 8). Hill has been working at Sylvan Heights since 1987, but as he writes below, his career in aviculture began much earlier.

"My interest in birds began at an early age. My grandfather owned the first all-bird park in England, and Birdland was my playground when I was young. They used to say I was "born with a parrot on the pram". My favorite birds that I can remember back then were two European bee-eaters that lived in the tropical house. I would go out with my grandfather, carrying an old biscuit tin full of mealworms. We would call the bee-eaters and they would fly down to perch on the tin so we could feed them. I was always two steps behind my grandfather's lead keeper, John

Midwinter. John had served in the second World War working the "big guns", and was deaf as a result – which was probably to his benefit, as he didn't have to listen to my constant stream of questions about the birds! I would help him on his daily feeding rounds, during which I was always chased by my grandfather's Hyacinth Macaw "Mac". Mac had the freedom of the entire park, but could not fly, and seemed to delight in biting my ankles.

"As a mischievous five-year-old, I think I must have caused a lot of havoc at Birdland. I went through a spell of locking the bird keepers in the aviaries, and one day my cousin Steve and I were summoned into my grandfather's study. It was a hot holiday weekend, and we had decided to take a swim with Cedric the pelican in his pool. We were a big hit with Cedric and the many visitors that looked on, but my grandfather was not pleased!"



Wetland Safari Challenge

Starting this winter, we are excited to offer a brand new interactive educational activity featuring our wetlands!

Park visitors can purchase a Wetland Safari Challenge kit in the gift shop upon arrival at the park. The kit includes an activity book, pencil, crayon, and a sticker for completing the challenge.

The Wetland Safari Challenge takes visitors on an adventure along the park's wetland trails, where they will search for clues to questions about native wildlife and wetlands. The activities are geared towards students in the 3rd grade and older, including adults.

The activity booklet also highlights another fun new activity at the park: a brass rubbing trail! Eight brass plaques featuring images of wetland wildlife have been placed along the trail. Participants can collect the images in their booklet as they complete the other challenge tasks.

"We have been trying to breed this species for some time without much luck...we knew this season may be one of our last chances."

by **NICK HILL**

Curator of Aviculture
Sylvan Heights Avian Breeding Center

Photos by Katie G. Lubbock



Tachyeres patachonicus

FLYING STEAMER DUCKS

Sylvan Heights Avian Breeding Center achieves first breeding in North America

This year at Sylvan Heights, we are all proud to announce the first breeding of Flying Steamer Ducks in North America. We have been trying to breed this species for some time (about ten years) without much luck, even though our pair was healthy, in good feather condition, and well bonded with one another. We knew this season may be one of our last chances before this pair is too old to reproduce.

In conversations with Mike Lubbock, he told me of where he found the nests of Flying Steamer Ducks in the Falkland Islands: high up on the cliffs. So, we got to work renovating their aviary. We doubled the size of the aviary to give them an upper and lower pond with a steep rocky hill in between, and gave them a view out over a lower aviary, creating the feeling of being high up on a cliff face.

We installed a variety of different nest box styles around their new aviary, including a large style of box that we had used successfully with Magellanic Steamer Ducks in the past, as well as the nest boxes we use for White-winged Ducks, and another type intended for small geese.

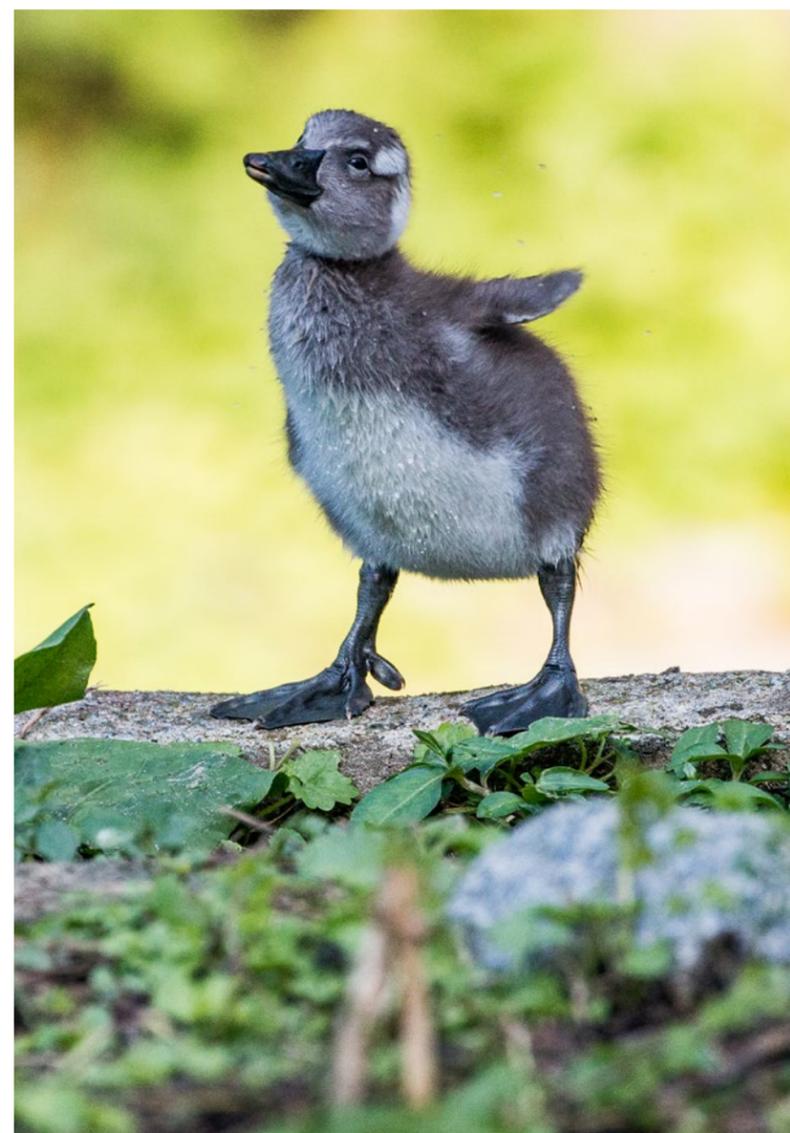
We placed one of the White-winged Duck boxes at the highest point in the aviary, and that is where our pair of Flying Steamer Ducks chose to lay. In the past, we had been treating them more like Magellanic Steamer

Ducks that nest near the shore, but the Flying Steamer Duck actually prefers to nest more inland.

After two weeks of incubation by the female, I candled the eggs one day after waiting for her to leave the nest to feed. We candled them a second time at 26 days, just before they were ready to hatch. It was interesting to see that the male would wait outside the nest box at this point like an expecting father! As Steamer Ducks are generally very good parents, and the conditions in their aviary were safe, we felt that we could allow the pair to hatch and rear their own young rather than hand-rearing them in our duckeries.

We were concerned about the heat and humidity that NC gives us in the summer, so the vegetation in the aviary was cut regularly while the ducklings were growing, and the ponds were routinely emptied and refilled with fresh, cold water.

In the end, the pair did an excellent job rearing their ducklings, and everyone enjoyed watching them grow up – especially when they would dive down to the bottom of the pond to search for treats. Although the Flying Steamer Ducks are currently living “behind the scenes” at the Avian Breeding Center, I hope that one day we will be able to exhibit this amazing species at the park for everyone to see.





**SYLVAN HEIGHTS
BIRD PARK**



ECU



Sylvan Heights, ECU Announce Formal Collaboration

Sylvan Heights Bird Park and East Carolina University officials have approved a formal collaboration to boost interdisciplinary research alliances and preserve endangered waterfowl.

The collaboration allows both parties to support their organizational missions through developing, promoting and implementing mutually beneficial projects and activities.

Sylvan Heights and ECU will use their alliance to combat global challenges and encourage interdisciplinary research. The collaboration will focus on preserving endangered species and conserving their habitats in addition to projects focused on STEM (science, technology, engineering and math) education and related work.

The deal allows ECU to create a research facility, ECU at Sylvan Heights, at the bird park in Scotland Neck. The facility catalyzes joint endeavors between the park and the academic community by: advancing community-based conservation of waterfowl and wetlands, both domestically and abroad; providing practical, hands-on learning opportunities for ECU students across majors and disciplines; advancing the development of aviculturists, biologists, educators, researchers and scientists; and furthering scientific research and discovery at a world-class facility that houses more than 2,000 waterfowl, toucans, flamingos and other exotic birds from around the world.

“The announcement of this collaborative working relationship between ECU and Sylvan Heights is a very important and exciting development,” said Don Butler, chairman of the board of directors at Sylvan Heights Bird Park. “This agreement will be mutually beneficial to ECU and Sylvan Heights and will provide unique opportunities to engage and prepare the next generation of avian conservationists to help save the waterfowl of the world.”

In the past, ECU and Sylvan Heights teamed up to advance scientific discovery through a number of research projects, including National Science Foundation-funded research conducted at the park. The pair have also collaborated to provide student internships, offer a lecture series by ECU graduate students, host Earth Day events and introduce Pitt County students to the bird park through ECU’s Biodiversity Initiative.

“This is an exciting opportunity to catapult ECU into a space rarely occupied by academic institutions,” said Jay Golden, vice chancellor for research, economic development and engagement at ECU. “No other program across the country has a formal collaboration such as this. We see opportunities for student projects and faculty research that extend into all facets of our university, including science, engineering, computing, business, social science and the humanities. Sylvan Heights provides the university with a rich set of opportunities to explore.”

On September 4, 2018 Sylvan Heights and East Carolina University (ECU) formally announced an epic and unique collaborative working relationship. This is one of the most important developments in the history of Sylvan Heights. We envision great opportunities ahead and benefits for both organizations, ECU students and researchers, educational internships, collaborative international waterfowl projects, and the establishment of a permanent “ECU at Sylvan Heights” education facility.

This formal collaboration is enthusiastically supported by the Sylvan Heights Board of Directors and staff. The agreement was championed by Dr. Jay Golden, ECU Vice Chancellor for Research, Economic Development and Engagement, and is strongly supported by his research faculty and students. Our joint press release about the agreement follows on the next page.

Don Butler, Chair
Sylvan Heights Board of Directors



Sylvan Heights Bird Park Board of Directors Chairman Don Butler (from left), Sylvan Heights Executive Director and founder Mike Lubbock, and East Carolina University Vice Chancellor for Research, Economic Development and Engagement Jay Golden. (Photo and press release by ECU News Services).

community connections

by **ASHLEY HAMLET**
Education Coordinator
Sylvan Heights Bird Park



Each year, staff and volunteers spend countless hours crisscrossing North Carolina and Virginia to spread the word about Sylvan Heights through outreach. Outreach events and programs offer a chance to connect with the public and promote the park as a tourism and education destination. Outreach engages a wide demographic of potential visitors and plays a vital role in reaching populations that may otherwise be unable to visit the park. Aside from the promotional benefits, outreach also serves as an opportunity to network, provide STEM (Science, Technology, Engineering, and Math) education, and establish a community presence.

From public events to preschools, outreach events come in many forms. Public events like festivals and information expos often attract diverse populations and thousands of people. Working in collaboration with science centers in eastern North Carolina, we participate in regional events promoting STEM education for learners of all ages. Participating in STEM events, including the NC Fossil Festival, highlights the park's role in science education and draws high attendance from families with children. On a local level, providing support for tourism and community events reaches our neighbors and reiterates Sylvan Heights as a community partner. Outreach programs also serve as an alternative for groups unable to visit the park due to restrictions such as finances, travel access, or health concerns. Groups can choose from our list of existing programs or contact us about other potential topics

that align with particular curriculums or interests. We are also exploring distance education programs as another option for groups outside of the outreach travel radius.

This summer, Sylvan Heights partnered with nine libraries in eastern North Carolina to provide outreach programs through the statewide Summer Reading Program (SRP). Summer Reading Programs target elementary-aged audiences and feature presentations by educational facilities, storytellers, and local professionals with an emphasis on developing reading habits. Associated with the libraries, SRPs are free to the public and can be a source of summer enrichment for students. The SRP has been proven to reduce "summer reading loss" and build literacy skills in struggling readers. Community programming like the SRP provides constructive, supervised, free activities and is a lifeline for many students in Tier 1 rural communities. Sylvan Heights reached a total of 513 children and adults through SRPs in Halifax, Edgecombe, Hertford, Martin, Bertie, and Chowan County.

Schools, childcare facilities, senior living centers, and civic groups are just a few of the organizations that benefit from our outreach programs. Outreach programs are available June-February and may be subject to availability. To find out more information about outreach or to fill out an online program request form, please visit our website at www.shwpark.com.



SUN DAYS

For the second year, Sylvan Heights planted a four-acre sunflower field adjacent to the park. The late summer blooms provided food for many wildlife species, including goldfinches, indigo buntings, hummingbirds, and butterflies.



vision

A look inside the eyes of waterfowl

by MORAG JONES

Photos by Katie G. Lubbock



The eye of a bird has some specialised features and different species have adaptations according to their needs, particularly waterbirds. The eye is relatively large and in waterfowl it tends to be flattened slightly. Their eyes cope with a wide variety of conditions. Cold and low pressure is encountered by Bar-headed Geese who travel over the Himalayas on a regular basis. At the other end of the scale, Eider Ducks have to deal with much higher pressures when diving under the water. To help the eye retain its shape, all birds, lizards, turtles and fishes have a ring of tiny flat bony plates, or ossicles, surrounding the outer portion of the eye. Humans have only one region of really sharp vision and relatively poor reception elsewhere. Birds have better all-round visual acuity and good binocular vision too. However, where the nerves exit the eye through the optic tract or optic nerve, there is a small blind spot. Waterfowl eyes do not reflect light back in the dark, so if you're out with a torch at night it won't be ducks that you are seeing as little twin pinpoints of light.

Our retinas, the back inside surfaces of the eye, have a complex blood supply. Next time you go for an eye test you can probably see a picture of how it looks. Although there is a retina in birds, it is not like our own and does not have this blood supply. All the nutrients and temperature regulation are achieved by a unique organ called the pecten, within the

gel, or aqueous chamber of the eyeball. Thousands of cells shaped like tiny cones on the retina provide acuity and colour vision in the daytime. By night the receptors are rods; we have these too. Each rod is very sensitive to low light levels, but we have fewer of these. Many waterfowl feed at night and if you think about those species, you can spot them. Their eyes tend to be relatively large, such as the Wood Duck or the Ringed Teal. Although night vision is good, many waterfowl can be alarmed if there are rapid changes of light. It seems they can sometimes be stressed by bright moonlight shining in and out between broken clouds.

In order to focus on objects near and far, the shape of the lens is altered by ciliary muscles surrounding the eye. A flat lens is good for distant vision and as it becomes more rounded, the focus point comes closer. The amount of light entering the eye is controlled by the size of the opening of the iris, which is most commonly brown or dark red.

Most waterfowl eyelids come up from bottom, with the smallest lid at the top. Look closely at them, more often than not they are paler than the body colour. As well as these two vertical lids, there is a third one inside which blinks from front to back. This is the nictitating membrane, which protects and moistens the eye. In many of the diving birds,

it has a transparent central patch. Swimming goggles for ducks! Interestingly, for you birders, the American Dipper, which relies on finding its prey in fast moving water, has an opaque nictitating membrane, so we must assume they rely on their other senses for hunting. Two tear ducts are small and so waterfowl need to be able to get their entire heads under water to avoid infection and keep the eyes healthy.

If waterfowl lose one eye, they can function pretty well, but a totally blind duck or goose is severely inhibited from finding food and water. Sometimes an eye can be lost to infection, particularly if the bird has sustained physical damage as a result of injury from something sharp.

Always on somebody's menu, ducks and geese have evolved to spot potential threats such as overhead predators. It is quite remarkable how a hawk or eagle high up and way beyond a speck to us, will send a group of ducks skittering onto the water. They have no need for complex muscles to move the eye in the socket. They have flexible necks and move the whole head for the best view. At times of low threat, a nap can be taken. However there is always someone on duty, for along with dolphins, waterfowl are remarkable. They can sleep with one half of the brain and with one eye closed. How cool is that!



A Hooded Merganser closes his third eyelid, or nictitating membrane. These membranes protect the eye and act as "goggles" when diving underwater.

from the **iwwa** president

Dear IWWA and SHBP members,

In late October, nearly 160 waterfowl enthusiasts from six countries converged on Greenville, North Carolina, USA for the second Waterfowl Conservation Workshop, held in conjunction with the IWWA's 60th anniversary conference. With a response nearly double that of the first Workshop, we were delighted to offer a new lecture site at East Carolina University's Heart Institute. At the Institute we were able to not only offer a one-of-a-kind learning opportunity but also a beautiful and functional facility for group meals and the IWWA's annual auction night. Equally fantastic was the third day of the workshop, hosted at Sylvan Heights Bird Park and the Sylvan Heights Breeding Center. This opportunity for hands-on training was new at the Workshop based on attendee feedback from the first Workshop. The full day of training opportunities featured stations on waterfowl first aid, aviary design, waterfowl enrichment and avian photography, among many others. The day at Sylvan Heights was capped off with a delicious meal and celebration at the Park's new pavilion, a space that will surely be a popular destination for many future events. Post-workshop attendees were treated to day trips to the North Carolina Zoo and several private avian breeding facilities.

The Workshop would not have been possible without the hard work of the Sylvan Heights staff, the generous provision of space by East Carolina University and the financial support of the Workshop's sponsors. Please review our full list of

sponsors at the Waterfowl Conservation Workshop's website (waterfowlconservation.org). Thank you to all who worked in so many ways to make this special event possible!

While we continue to celebrate the success of the second Workshop, there's no time to rest on our laurels. We have already started discussing the next Workshop, slated for 2020, and I am delighted to announce we're headed to Europe! In partnership with Aeres MBO Barneveld, an animal husbandry teaching college in the heart of the Netherlands, the Workshop will have a new opportunity to reach additional aviculturists and conservationists in Europe while still providing an easily accessible location for our North American members. In addition to an exciting workshop plan, we are discussing next year's IWWA conference, which is planned for Italy. We are working on details now but expect an exclusive and exciting lineup of facility tours, lectures and of course, the camaraderie of fellow waterfowl enthusiasts.

Please stay tuned to the Waterfowl Conservation Workshop and International Wild Waterfowl Association's websites for more details.

Ian Gereq

President, International Wild Waterfowl Association

Cape Teal (*Anas capensis*)

K.G. Lubbock



IWWA Grant Update: Migration, Movement, and Winter Ecology of Midcontinent Greater White-fronted Geese

by Jay A. VonBank, Ph.D. Candidate | Texas A&M University-Kingsville

In November 2017, the International Wild Waterfowl Association was gracious enough to award my research project a \$1,000 award. With this award, we were able to purchase captive-raised Greater White-fronted Geese to aid in acceleration (ACC) data collection and monitoring of goose behaviors. We used tri-axial accelerometers attached to plastic neck-bands to measure G-forces along three axes relative to the goose. When combined with innovative statistical procedures by machine-learning algorithms, acceleration data can identify specific behaviors of geese (i.e., feeding, walking, preening) remotely in the wild, without having to disturb them. To account for potential variation in acceleration measurements among unit versions, we deployed all three versions of transmitters deployed in the wild, in turn, on domestic greater white-fronted geese at the Texas A&M University-Kingsville University Farm, and collected video footage of goose behavior to link known behaviors with their corresponding ACC measurements. We attached tracking devices to captive geese one week prior to video collection to allow geese to adjust to wearing the devices. We collected ACC measurements at one minute intervals at similar burst length and frequency transmitters on wild geese. We constructed a 1600 sq. ft. enclosure made of livestock fencing in an agricultural field to imitate a semi-natural environment in which wild geese may encounter, and returning them to the Duane Leach Aviary when video recording concluded for the day. We created two enclosure treatments; the "grazing" treatment allowed us to classify grazing behavior ACC traces, and the "gleaning" treatment for gleaning (eating grain seeds) behavior. The grazing treatment consisted of sprouted winter wheat 1-8" in length throughout the duration of trials. Following the grazing treatment, we disked the remaining wheat to remove vegetative biomass, and randomly spread a mixture of differently sized grain seeds (corn, wheat, sorghum) across the enclosures for the gleaning treatment, which was repeated on each filming occasion. We allowed geese to adjust to being transported to

the enclosure for 15 minutes before filming commenced. We used Sony handheld video cameras, and matched internal camera clocks with a running Universal Coordinated Time clock (www.timeanddate.com), and verbally re-calibrated the current time every two minutes during video footage collection.

We converted video footage to match recorded ACC measurements for each transmitter using program JWatcher, where we paired known behaviors to known ACC bursts. To date, we have completed developing our training data set of known goose behaviors, and have been able to achieve >90% accuracy when predicting known behaviors through various machine learning algorithms. The next steps will be to predict the known behaviors from captive geese onto the wild goose data set, which will provide time activity budgets remotely, an extremely powerful tool set which will aid us in explaining habitat use and selection results for wild geese across their breeding, migration, and wintering grounds across North America. We are very grateful for the assistance of the IWWA for assistance in this effort. Since behavioral studies have concluded, we are in the process of donating and rehoming our greater white-fronted geese to an aviculturist.

As an added benefit of funds from the IWWA, throughout this process we were able to hire and train two additional undergraduate students at Texas A&M University - Kingsville majoring in Range and Wildlife Management, who served as technicians on the project. These students gained experience in the field by filming >100 hours of video footage, safely and carefully handling and caring for captive geese, and learning how to handle very large data sets and video footage. We additionally were able to purchase necessary husbandry equipment, food, and bedding materials so that the geese were housed comfortably in a relaxed setting.



by MORAG JONES
Photos by Katie G. Lubbock

2018 waterfowl conservation workshop & IWWA conference

It seems that once you join the IWWA you become part of a big family. Returning to Sylvan Heights was definitely a return to the family home for a great reunion. Board members gathered at Hanna Herring's for lunch and this set us up to clear the business of the Association. The key thrust of the meeting was our way ahead and adoption of the new strategic plan.

It is so good to see each other and do what we all enjoy; talking about waterfowl. The 2018 convention was a little bit out of the ordinary for us as an association, as we combined with the second Waterfowl Conservation Workshop at Greenville, North Carolina. How lovely it was to meet so many young and enthusiastic people, most of whom have chosen to make their careers in conservation and aviculture.

This schedule allowed us to select the activities that suited us best. Birdwatching is so often part of our group activity and some of us took the opportunity to enjoy the environment around, despite some rather unkind wet weather. Others stayed on at the East Carolina Heart Institute, in the dry, to enjoy two days of fascinating lectures. The lunches were all on site and passing an ear at any table you would pick up threads of propagation techniques, bird behaviour, who is doing what research and even a quiet negotiation for a job placement. Many of us know the movers and shakers in waterfowl and it was lovely to see these relationships blossom.

The evening banquet and fundraising auction was one of the best for many years, so many had been generous with the auction items. As always it was a mix of surprise and hilarity. A marvellous total of \$8400 was raised toward our conservation grant award program. A huge thank you to all who made this possible and of course, to Chris Marler and Maynard Axelson for their auctioneering.

The third and final day of the Conservation Workshop saw hands-on workstations throughout Sylvan Heights. Delegates could choose the subjects that interested them and combine them with exploring the Park and the Avian Breeding Center. Some of the topics covered were education here at the park, aviary and nest box design, incubation planning and eggs in various forms. The waterfowl first aid course was a sell-out, and enrichment for bird enclosures were covered by Dr Michelle Goodman and husband and IWWA president, Ian Gereg. Nothing goes to waste in this business; field necropsies were covered by Dr Kim Cook, and Dr. Susan McRae had an ongoing display of museum skin preparation. The occasional members of the public who came across this display, in the Golden Leaf Room, soon had their surprise turned to interest by the enthusiasm of the interns. Though lost as a living exhibit, museum skins are a valuable teaching tool for future generations. Technical tips from your editor, Katie Lubbock, inspired us to up our game when it comes to photographing waterfowl.



The evening dinner at the magnificent new pavilion, Toad Hall, reminded us again of the passing of one of our family. We were touched to remember Toad Herring and can think of no more fitting name for the venue. Some of us had to depart afterwards, but knowing that friendships had been made and waterfowl would bring us together again.

The IWWA conventions usually include a post-conference. This year, we were welcomed at the homes of several of our members, but first we visited the North Carolina Zoo. Unseasonal warmth was very pleasant as we walked between exhibits of the continents. I'm sure you won't be surprised that we all made a beeline for the avian exhibits. It was an honour to round off the day at the Clinton, NC home of Sylvan Heights Bird Park's Board President, Don Butler. He and Ann made us so welcome with cocktails and dinner on the terrace overlooking the tranquility of their lake and garden. Knowing that the light would be fading, the schedule had been adjusted and we returned the following morning to fully appreciate their beautifully planted collection. Many of the European visitors share Don and Ann's passion for pheasants, so getting the party moving again took some doing.

The second visit of the day was very different. Clyde Robinson's Avian Empire in Newton Grove was a wonderful opportunity to see species that could be lost to aviculture if it was not for

the likes of Clyde. Much thought goes into the facilities at 'the empire' and there were ideas that many of us could take away. But not before we enjoyed the hospitality of Clyde and Ewa.

Just catching the last of the daylight we descended upon Gay and Walt Sturgeon at Spring Hope. Here we had a fantastic opportunity to see many species of cranes. Youngsters of various ages are still on the go. Those of us who stick to ducks, geese and swans have completed much of the rearing for the year. Not so with the cranes, there are still many weeks ahead of crane walks to be done. Nevertheless, our final evening was one of good cheer and a very tasty hog roast. Final goodbyes were said and the occasional tear was shed.

With so many different travel options, a number of the British visitors had a morning in hand at Sylvan Heights before departing. As a real treat, Brent Lubbock took the gang down to the Mill Pond and we explored the cypress swamp in kayaks. This truly was the icing on the cake. The natural habitat of the Carolina Wood Duck is truly inspiring.

As a member of the IWWA family, I'm sure I can speak for all, expressing thanks to the Sylvan Heights team for pulling off not one, but two hugely successful events. We hope that many of the young WCW delegates will join our waterfowl family.

park events

view full event details and ticket info at www.shwpark.com



Holiday Egg Decorating

December 15, 2018 | 11 a.m. - 1 p.m.

The Ukrainian traditional art of pysanky is the decorating of hollowed eggs with colorful designs using dyes. Join us to learn the basics of pysanky and create two holiday-themed pysanky eggs to take home!



Oyster Roast

January 26, 2019 | 6 p.m. - 9 p.m.

It's an evening of oysters at Sylvan Heights Bird Park! Your ticket includes oysters, shrimp, beer and wine, and live entertainment. Proceeds support the park's education and conservation programs.



Birds, Brews, & BBQ

March 16th, 2019 | 5 p.m. - 8 p.m.

Join us to sample and vote for your favorite BBQ from local cooks, taste local craft beers, plus enjoy games, entertainment, and birds!



NC Science Festival

April 2019

Join us throughout the month of April for special events celebrating science! Visit shwpark.com for event dates and details.



Duckling Day

May 4, 2019 | 9 a.m. - 12 p.m.

Aviculturist-level members and higher are invited for breakfast and a tour of the Sylvan Heights Avian Breeding Center!



Annual Fundraiser

October 13, 2018 | 6 p.m. - 11 p.m.

Sylvan Heights' annual fundraiser for the birds! Proceeds support the conservation and education programs at Sylvan Heights Bird Park.

thank you to our donors

Sylvan Heights Bird Park gratefully acknowledges our donors of \$500 or more since April 1, 2018 through September 30, 2018.

American Pheasant & Waterfowl Society
Anne's Old Fashioned Food Products
Cynthia S. Barr
John Baum
Nelva A. Bledsoe
Mayo Boddie
Charles Brewer
Beth Browne
Ann & Don Butler
Center for the Study of Tropical Birds
Danny Hood Realty LLC

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Reser's Fine Foods
Sandra & Keith Rogers
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Wendy Wilkinson
Ann Lynch & Russ Williams
Aracy & Klaus Winter

Partridges, like this Crested Wood Partridge at Sylvan Heights Bird Park, prefer to spend most of their time on the ground rather than in pear trees.

Story & photos by
Katie Lubbock

The Birds of Christmas



Mute Swan



European Blackbird
(in molt)



Swan Goose: wild ancestor of
the "geese-a-laying"

What exactly is a "calling bird", and would one really find a partridge in a pear tree?

No other holiday carol spotlights birds quite like "The Twelve Days of Christmas". Part song and part memory game, the piece was first published in England in the year 1780, although it likely originated in France long before. In 1909, composer Frederic Austin wrote the version we are familiar with today, set to the tune of an English folk melody. Six of the twelve verses in this modern version feature birds as gifts from a "true love", but exactly which birds are the subjects of this extravagant gesture?

A Partridge in a Pear Tree

Partridges are a group of small game birds in the pheasant family, and curiously, they tend to spend most of their time on the ground foraging for seeds and insects. They even build their nests on the ground, making it unlikely that one would ever be spotted in a pear tree. It's now thought that the line "in a pear tree" is probably a misinterpretation of the original French lyric "une perdrix", which means "a partridge". The song is most likely referring to the red-legged partridge, a common species in France that was introduced to England in the late 18th century for gamebird hunting.

Two Turtle Doves

Turtle Doves are a familiar sight throughout much of Europe during the spring and summer breeding seasons. When temperatures drop in the autumn, the softball-sized birds migrate thousands of miles to spend the winter in northern Africa. Virtually every version of "The Twelve Birds of Christmas" includes two Turtle Doves as a gift, perhaps referring to the symbolic meaning of love and fidelity represented by a pair of doves.

Three French Hens

Centuries of domestication worldwide have resulted in countless breeds of chickens, including several dozen types from France. Although they now exist in a variety of colors, shapes, and sizes, all domestic chicken breeds descend from a common wild ancestor: the Red Junglefowl of southeast Asia. As a result of domestication that began nearly 7,000 years ago, the Red Junglefowl is now one of the most widespread bird species in the world.

Four Calling Birds

Here's where things get a little more complicated. "Calling bird" doesn't refer to a particular species, and historically, this lyric has taken on several different forms. The original English interpretation lists "colly birds", with "colly" being an

old English term for a coal-black color. Logically, many have concluded that the line refers to the European Blackbird, which sings a melodious song. Later versions of the carol replaced "colly birds" with "canary birds", "colored birds" and "curley birds", before Austin's 1909 song popularized "calling birds".

Five Gold Rings

Although it may seem obvious that this verse refers to jewelry, some historians suggest that the original line is a reference to the Ring-necked Pheasant, a popular game bird. Others think that it's a misinterpretation of "five goldspinks", the old English term for goldfinches.

Six Geese-A-Laying

Like chickens, geese have been domesticated for many centuries. Some domestic geese are descended from the wild European Greylag Goose, and many breeds still bear a resemblance to their wild ancestor. However, domestic relatives of the Greylag typically only produce eggs during the spring, so these geese won't be "a-laying" at Christmas. Instead, the song could be referring to the Chinese Goose, a domestic descendent of the wild Swan Goose. Chinese geese may lay eggs in fall and even in winter, and have been kept in European gardens and farmyards for hundreds of years.

Seven Swans-A-Swimming

The final bird in "The Twelve Days of Christmas" is the regal swan, a symbol of elegance and grace. The song likely refers to the Mute Swan, a common species in waterways of Great Britain and Europe. Historically, all Mute Swans in England were considered property of the crown (and a few wealthy landowners). With heavy bodies and large, paddle-like feet, swans are certainly more graceful "a-swimming" than "a-walking". This characteristic is especially evident in the Black-necked Swan of South America. With legs set very far back on their bodies, they are fast swimmers, but clumsy on land. For this reason, Black-necked Swans spend almost all of their time in the water.



introducing
TOAD HALL

On October 13, 2018, Sylvan Heights Bird Park officially opened and dedicated its brand new outdoor classroom and event space, "Toad Hall" Pavilion. The grand opening coincided with the park's 2018 Annual Fundraiser. Attendees of several autumn events and education programs have already enjoyed the convenience and charm of this new building. The completion of this project was made possible by generous donations from sponsors, supporters, and you, our members, through this magazine. Thank you!

Toad Hall is now available for your next wedding, reunion, party, or other event! Featuring a stone fireplace and rustic decor, this 3,200 square foot event space can seat up to 200 guests, and is nestled among the aviaries at Sylvan Heights Bird Park. The open-air pavilion allows nature to set the backdrop, but clear, weather-proof panels can be lowered during cold or wet weather. The adjacent treehouse overlooks a lush natural wetland teeming with wildlife. To book this unique space for your event, please call Sylvan Heights Bird Park at 252-826-3186.

DECK
the
HALL

In an effort to continuously improve the experiences we offer here at Sylvan Heights Bird Park, plans are already underway to expand Toad Hall! Our next project is the addition of an 80' x 20' deck that will nearly double the usable space and create an even more memorable setting. The new deck will also overlook future bird exhibits to be constructed in the coming years.

Your contribution can help us complete this project in 2019!

HELP US "DECK THE HALL"!

Your donation will fund the construction of an 80' x 20' deck at Toad Hall Pavilion, creating an even more memorable setting for education programs and events.

Name: _____ Address: _____
 City, State, Zip: _____ Phone _____ E-mail _____
 I pledge \$ _____ for Sylvan Heights Bird Park. Bill me One time. Quarterly for one year, beginning _____
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 Signature _____ Date _____

(Please send to Sylvan Heights Bird Park • PO Box 368 • Scotland Neck, NC 27874) Thank you!



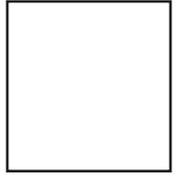
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Cotton Pygmy Goose
(*Nettapus coromandelianus*)