

words on  
**waterfowl**

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



## Avian Alumni

Former Sylvan Heights and IWWA interns share their contributions to conservation

**BREEDING SUCCESS: BROAD-BILLED HUMMINGBIRDS**

2022 • Issue No. 17

**Snowy Egret**  
(*Egretta thula*)

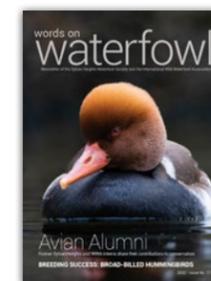


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Madagascar Teal with ducklings (see page 19)



## ON THE COVER

A male Red-crested Pochard (*Netta rufina*) shows off his namesake crest in the Multinational Aviary at Sylvan Heights Bird Park.

## CONNECT ONLINE!



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# the director's report

I am pleased to report that 2022 has been a good year for us, with visitation numbers nearly back to where they were before the pandemic. Visitors are still very enthusiastic at what they see, and the Landing Zone is still the number one attraction. However, the visitors are also really enjoying the new Birds of Paradise exhibit. Recently, we have added Green Pygmy Geese, Harlequin Ducks, and Pink-eared Ducks into the aviaries. Our new off exhibit propagation center is progressing; the right side of it is completely finished inside and out and housing many different birds. Some have already started to reproduce, such as Bleeding Heart Doves, Crowned Pigeon, and Toco Toucans. The left side will be finished this winter.

Our 2022 Annual Fundraiser was a tremendous success, raising nearly \$64,000 for our programs. Thanks are owed to Karen Parker, the Events Coordinator, and Katie Lubbock, the Media and Communications Coordinator, who both made sure that everything ran smoothly. Also thanks to all the donors, staff and members of Friends of Sylvan Heights for all their hard work. This year, we celebrated the Year of the Cassowary, and our pair

of Southern Cassowaries were safely installed in their new aviary below the deck of Toad Hall a week before the event. Thanks to Dustin Foote, Nick Nees and the grounds staff for getting this exhibit finished on time.

On a recent trip to Brazil, a small group of us visited Itatiba Zoo, where Robert Kooy is Director. Robert has been breeding and raising the critically endangered Brazilian Mergansers for the last 10 years. In that time, Robert has set up magnificent off exhibit breeding pens and to date has hatched and raised over 60 birds. While there, Sylvan Heights representatives presented him with a check to help with the purchase of radio transmitters. This enables them to monitor the birds when released back into the wild and see where they fly, especially in the rainy season. I have been assisting with the Brazilian Merganser project for 20 years, so it was very rewarding to see all of Robert's achievements.

**MIKE LUBBOCK**  
Executive Director  
Sylvan Heights Bird Park





## Flamingo hatches in Landing Zone

Park visitors enjoyed up-close encounters with an American Flamingo chick this year. The chick hatched in July 2022, and was raised by its parents in the Landing Zone exhibit. Flamingo chicks typically leave their nest mound at around 5-10 days old and start exploring the surrounding areas. Both parents participate in raising the chick, and feeding it a nutritious red liquid called crop milk. The parents care for their chick for about 2 to 3 months until it is independent and can eat on its own.

Now nearly six months old, this chick is growing quickly and beginning to resemble an adult flamingo. At this age, flamingo chicks have a well-developed bill, and are feeding on their own. Body feathers (also called contour feathers) have replaced the soft, natal down that protects very young chicks. Their feathers will remain grey for several more months, before gradually turning pink from carotenoid-derived pigments in their diet. It takes up to two years before a young flamingo gains its full pink plumage.

## Brazilian Merganser Project Support

During a visit to Brazil in August 2022, representatives from Sylvan Heights Bird Park awarded Zooparque Itatiba a grant of \$2,000 in support of the zoo's Brazilian Merganser breeding program.

In 2015, Zooparque Itatiba established the world's first captive breeding program for the critically endangered Brazilian Merganser (*Mergus octosetaceus*). With fewer than 250 individuals remaining in the wild, and most of those facing increased habitat loss, the mergansers are considered to be at extremely high risk of extinction without intervening efforts from conservation organizations.

Zooparque Itatiba has hatched and raised more than 60 Brazilian Mergansers since the project began. The grant from Sylvan Heights Bird Park will facilitate the purchase of radio transmitters to monitor the birds once they are released in the wild.

## The Year of the Cassowary

On October 15th, 2022, Sylvan Heights Bird Park celebrated "The Year of the Cassowary" during our annual fundraiser and auction. Guests enjoyed a variety of delicious foods while watching two Southern Cassowaries explore their new aviary below the deck at Toad Hall.

Live and online auctions featured more than 60 items, including travel packages, dining experiences, hand-made art, and gifts from generous donors. In the final week before the auction, an anonymous donor pledged to match all donations raised during the fundraiser, up to a total of \$10,000.

Thanks to the generosity of event attendees and online donors, the matching donation goal was exceeded during our 2022 Annual Fundraiser. Sylvan Heights Bird Park would like to express our sincerest thanks to all of our donors, sponsors, event attendees, volunteers, and staff who made The Year of the Cassowary our most successful fundraising event to date. In total, their contributions raised nearly \$64,000 for our conservation and education programs.

## ZAG Grant Recipient Tasha Tillery

My name is Tasha Tillery, and I am the Retail & Admissions Manager for Sylvan Heights Bird Park. I get asked a lot about the merchandise that we have here in our gift shop. Well to answer that question, Sylvan Heights Bird Park is part of ZAG, a collection of nonprofit AZA-accredited buyers for zoos, aquariums and other wildlife-related institutions and attractions. The goals of ZAG are to increase and improve communication between buyers, and to raise awareness and professionalism of the field within the zoo and aquarium industry. Being a part of ZAG helps us keep the gift shop stocked with new and amazing items. ZAG continues to provide travel scholarships, where ZAG pays for the transportation, hotel and food costs of two ZAG members who have never been to a major gift show and work for facilities that are too small to afford to send their buyers to these shows. I was one of the lucky winners for 2022, so I will be attending the Trade Show in November 2022 in Gatlinburg, TN where I will be meeting new vendors and getting great ideas on merchandise to incorporate into our gift shop for you to all enjoy and love.

## A New Home for Whooping Cranes

Thanks to a generous donor, the Whooping Cranes at Sylvan Heights Bird Park will soon have a spacious new aviary below Toad Hall pavilion. Site clearing is underway, and construction will continue through late 2022 and early 2023.

Rebecca Cohen-Pardo has sponsored this aviary in memory of pilot Deke Clark, who was among the first to fly with Whooping Cranes as a volunteer for Operation Migration. Operation Migration was a conservation initiative that aimed to restore wild Whooping Cranes to areas of their historic range by teaching them a migration route using ultralight aircraft. Deke was instrumental in developing the ultralight program, first with non-endangered Sandhill Cranes, and later with the endangered Whooping Cranes.

Prior to volunteering with Operation Migration, Deke flew in the US Air Force and as a pilot with United Airlines for 33 years. Sylvan Heights Bird Park looks forward to honoring his legacy in flight and crane conservation with this new aviary.

## Pollinator Garden Maintenance Grant

Sylvan Heights Bird Park has been awarded a grant of \$500 from the North Carolina Native Plant Society's B.W. Wells Stewardship Fund for ongoing maintenance of the native pollinator garden. First established in 2020 by an initial grant from the B.W. Wells Stewardship Fund, the garden has since matured to support many species of native bees, birds, moths, and butterflies, including monarch butterflies and their caterpillars.

Located next to the park's overflow parking lot, the garden features native plants that benefit pollinators, including three species of milkweed, coneflower, rudbeckia, primrose, bee balm, and many others. Educational signage explains the value of native plants and pollinators in home gardens. The 2022 grant will support the purchase of additional plants for the garden, as well as pollinator-friendly weed control methods.

Sylvan Heights Bird Park thanks the North Carolina Native Plant Society for their continued support of the pollinator garden project.



North American Ruddy Duck (*Oxyura jamaicensis*)  
photo by Katie Lubbock

# from the **IWWA** president

I am honoured to again be preparing this report on behalf of the Board of Directors of the IWWA. As we enter our 65th year in 2023, we have many opportunities for waterfowl enthusiasts to look forward to. The first is a members-only opportunity to join a waterfowl safari that Ian Gereg has planned for the US northeast this winter; then later next year, we look forward to welcoming everyone to the next iteration of the Waterfowl Conservation Workshop in Seattle, beginning on October 25, 2023. By the time you are reading this, more details should be available at [wildwaterfowl.org](http://wildwaterfowl.org), and also circulated by e-mail. We are hoping to see strong support for our events, the first that have happened since the onset of the pandemic in 2020.

We are anticipating the 2023 Waterfowl Conservation Workshop, with a wonderful host venue at Woodland Park Zoo, and excellent post-tour options at a couple of the finest waterfowl collections in the Pacific Northwest. In addition, we look forward to the return of our annual awards banquet, and also our fundraising auction. We have missed the auction since the last one in 2019, with proceeds going directly to fund waterfowl research projects through our Conservation and Grants program. It will also be a wonderful chance to recognize the many people who have received awards from the Association since our last in-person awards banquet in 2019.

The Board recently approved exploring a number of new initiatives. These include development of a Regional Chapters Pilot Program, which will provide microgrants to small projects that offer social benefit and education or professional development for waterfowl holders, and a Youth Advisory Committee, which we hope will be able to provide guidance to our organization on how to appeal to and engage our younger audience, ensuring a sustained and bright future. These two initiatives are among a number of other things on the go, such as our annual yearbook which is again planned for spring, 2023.

If your membership has expired, please consider logging in through JoinIt and renewing so you are up to date about these and our many other offerings. As well, if you are a member and the auto-renew feature is enabled, please note that you will receive notices at fourteen days and one day prior to your renewal, but the system will auto-renew for you on the official renewal date. If your payment details need to be updated, the system will alert you as well. You can also cancel your auto-renew through your JoinIt account if you wish to. If anyone needs any help with this, please drop me an e-mail at [claytonbotkin@hotmail.com](mailto:claytonbotkin@hotmail.com) and I am happy to help sort out any issues.

To close, I wanted to reflect on a couple of events which have challenged us all. We have faced a global pandemic which created a new way of being, significant civil unrest around equality across many cultures and societies, drastic rises in interest rates and costs of living, the scourge of avian influenza, and now an armed conflict at a scale that most of us have never seen. This period of change has been dramatic and happened at a greatly accelerated pace than anyone could have expected prior to 2020. It has impacted much of how each of us experiences day-to-day life. We need to acknowledge these challenges regularly and collectively and consider how we can continue to overcome them for a greater good. At the same time, we need to think about how we can do things better, reducing our impact on the world around us, considering fellow humans, the animals we cherish and the environments in which we live. This will be at the forefront of IWWA over the coming years, as we look to create a better place for each of us, our waterfowl, and where they live, managed or wild. Now is the time to ponder the human connection to one another and the spaces we occupy, and I encourage you to take some time every day to consider how we can work together better to improve our hobby, make it more open, transparent, and welcoming, as well as encouraging and developing our young people who might be thinking about getting their first ducks or expanding a collection.

If you know someone with a collection impacted by avian influenza, reach out to them. Offer an ear, or a consoling voice. The impact of losing a flock is incredibly devastating and knowing that someone is out there who tried to say hello may be just the connection that person needs on that day. You don't need the impact of avian influenza to send an email or reach out to someone, consider reaching out to an old friend, connecting with someone new, writing down your knowledge, and sharing more of what you know and what you have so that others can find comfort, or be encouraged and share in our unique challenges, successes, and achievements.

Please take care everyone, be kind to each other, and reach out if you would like to connect, offer constructive feedback on how our association is doing, or discuss your ideas or recommendations.

**CLAYTON L. BOTKIN**

President  
International Wild Waterfowl Association



**Broad-billed Hummingbird (adult male)**  
photo by Katie Lubbock

## 2022 BREEDING SUCCESS:

# BROAD-BILLED HUMMINGBIRDS

### DUSTIN FOOTE

General Curator  
Sylvan Heights Bird Park

Breeding birds in captivity comes with a variety of challenges that vary depending on the species and the location of the facility. In North Carolina, we often have better success with semi-tropical species who are used to our hot and humid summers, while many northern species can be difficult. Hummingbirds are considered by many aviculturists to be a universally difficult species to maintain in captivity, and success with breeding them is even more rare. For the first time in our history, Sylvan Heights Bird Park (SHBP) successfully reared Broad-billed hummingbird (*Cynanthus latirostris*) chicks this year. We have worked with this species for over seven years in an effort to contribute to the limited husbandry protocols of North American hummingbird species. While initially our hummingbirds were on display, they were moved off exhibit several years ago in order to increase our chances of success breeding them.

The interior of our off-exhibit greenhouse aviary is modeled after other territorial species where males contribute little to overall reproduction. A central aviary for the male is tied into three separate aviaries, each able to house a single female. Outside the breeding season all of the birds are kept separate. However, when the moment is right during the breeding season, the male is given access to a female's aviary for several days. The females build nests from a variety of materials, including spider web, hair, plant fibers, moss, coconut fiber, kapok, and cotton. Increasing the

fiber materials has played an important role in keeping the nest cups tall and strong. In the past, our hummingbirds favored spider web and kapok, and nests were often shallow, leaving eggs and chicks in jeopardy. Usually by the time the nest is complete, it is too late to add the male. Our aviculturists must pay attention to when the female begins her search for materials and monitor the nest construction so the male can copulate with the female before she completes the nest. Often during the breeding season, it is only possible to find the nest while observing the female from afar. Staff must be careful when watering and walking within the greenhouse as the nests are often suspended from single vines.

In the past, we have kept several finches and other seed and fruit eating birds in our hummingbird greenhouse. However, mouse control is essential when it comes to breeding hummingbirds. We no longer keep anything in the greenhouse that could be considered food for rodents. Even so, we still monitor and trap mice when their presence is noted.

Many visitors often think our hummingbird feeders are filled with dirty water since people are used to clear sugar water in feeders. However, our hummingbirds are given a complete diet made in Germany, called Nektar-plus. It is formulated with the correct amount of protein, fat, and vitamins for hummingbirds and other nectarivorous species. While raising chicks, many

hummingbirds increase the number of insects in their diet in order to sustain the growth requirements of the young. We have active fruit fly cultures in our greenhouse during the breeding season. How we produce fruit flies has greatly changed over the years and in the past a lot of time and energy went into their production. Ultimately, a 5-gallon bucket with a few cut apples next to a weak heat source has been the easiest way to produce flies. A simple tap of the bucket during service produces a plume of flies. However, it is critical to have the flies producing weeks before chicks are expected, otherwise we resort to producing fruit

flies in small containers at staged intervals in order to have a steady supply. Additionally, when chicks are present, our aviculturists take dip nets to local fields up to 5 times a day to add a variety of insects to the greenhouse.

Breeding hummingbirds is an accomplishment many of our staff are extremely proud of. A lot of time and effort from numerous people and facilities has gone into this success and we are hopeful to continue to contribute to the knowledge of captive hummingbird management.



Broad-billed Hummingbird chicks on hatching day, 7 days old, 11 days old, and 22 days old (fledging day). | Photos by Dustin Foote

## ambassador spotlight: Snakes

**JULIE CONNOLLY**

Education Coordinator, Sylvan Heights Bird Park

One of my favorite animals at Sylvan Heights Bird Park has a body covered in layers of keratin, just like our feathery friends, only this animal has no feathers.....or legs! What animal, you may ask, can I possibly be referring to that is NOT a bird at a bird park? If you guessed a snake, you would be correct!

Whether venomous or not, many snakes found in yards and on roads all across America are met with the working end of a shovel or car tires. Many people across the country, and the world, have an ingrained and almost primal fear of snakes, which has led to the belief that "the only good snake is a dead snake". As a result, snakes are habitually killed for no good reason, but paradoxically, there are many good reasons for keeping these slithery serpents around:

### *Snakes keep populations of pests in check*

Most snakes prey on rodents, which cause a variety of issues. Rodents cause property damage, and in the U.S. alone, rats cause roughly \$20 billion in damage to homes, businesses, and agriculture every year. In addition, at least 20 percent of the world's food is eaten or contaminated by rats and mice each year.

### *Snakes prevent the spread of disease*

Rodents are reservoirs for disease, whether from direct or indirect contact. Considering that 1 medium sized snake can eat 9lbs of rodents each year, snakes do a great job at preventing the spread of diseases like bubonic plague, rat bite fever, leptospirosis, hantavirus, trichinosis, infectious jaundice, and Lyme's disease.

### *Snake venom saves lives*

Medical science is creating new pharmaceuticals from the proteins found in snake venom to help treat cancer, diabetes, and other diseases. In addition, rattlesnake venom is used to control blood flow during sur-

**Eastern Kingsnake**  
(*Lampropeltis getula*)

geries, and has possible applications to the treatment of strokes and certain cardiac diseases.

### *Snakes are a gardener's best friend*

Problems with slugs and beetles eating your plants and mice eating your bulbs? There's a snake for that. Garter snakes and brown snakes feast on garden pests like snails, slugs, beetles and grubs. Worried about having venomous snakes in your yard? There's a snake for that, too. Kingsnakes are large-bodied snakes with adults ranging from 36 to 60 inches in length. They are powerful constrictors that basically "hug" their prey to death. The "kingsnake" name refers to the fact that other snakes, including venomous species, are a principle food source for the kingsnake. They also eat rodents, lizards, birds and eggs, and turtle eggs.

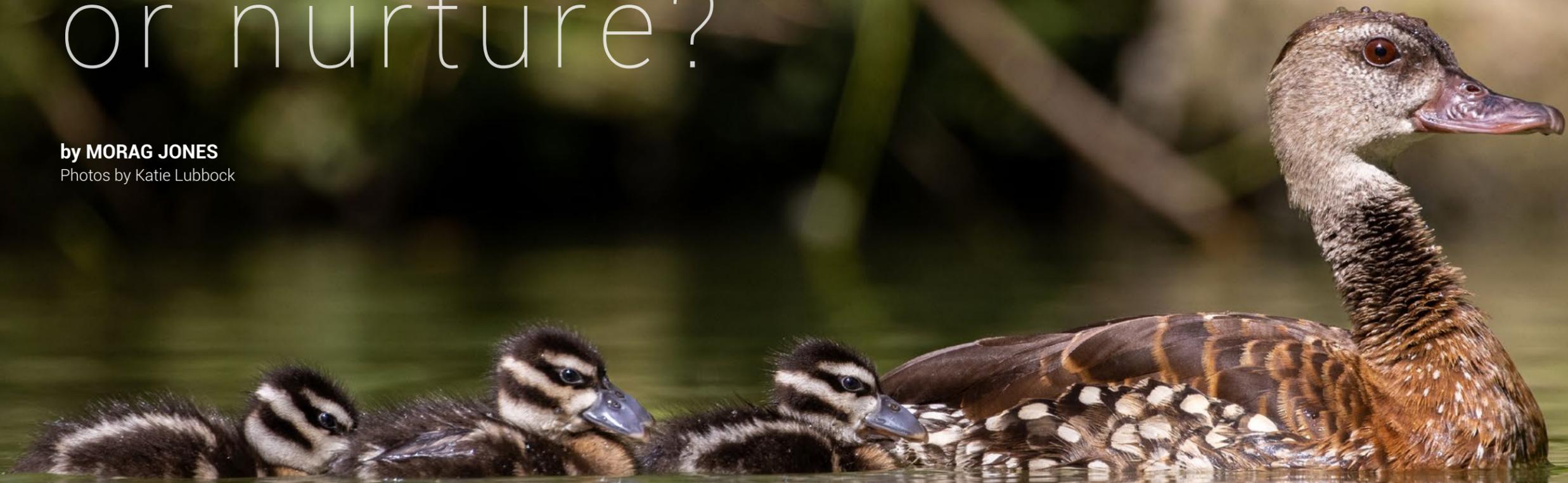
For these reasons, they are, in my opinion, the most under appreciated, misunderstood heroes of the animal kingdom.



*For each viable egg laid at Sylvan Heights,  
aviculturists must make a critical decision:*

# nature or nurture?

by **MORAG JONES**  
Photos by Katie Lubbock



Spotted Whistling Ducks (*Dendrocygna gutatta*) reared ducklings  
at the Avian Breeding Center in autumn of 2022.

### *Does mother know best?*

Birds evolved during the Jurassic period, 165 to 150 million years ago. Some survived the mass extinction 66 million years ago and the waterfowl are some of the oldest species. So you could say she definitely does, having had a bit of practice. Bearing this in mind, why do we sometimes take waterfowl eggs away and rear them artificially?

You'll see here at the Park that we have carefully designed habitats to give the birds an environment where they will feel safe and thrive. Mostly, we try to mimic the habitat where they would be found in the wild, including the key features for their best welfare. This is combined with enclosure layouts allowing you to see and appreciate them. Although our birds are accustomed to people in the park, they don't always cope well with disturbance from other birds when it comes to rearing a family.

### *Best kept secret*

Most nesting birds are driven to be secretive. They don't want predators taking those precious eggs, or to be eaten themselves. Each species has its own preference for a nest site; most teal like to hide in dense vegetation, burrows are favored by shelduck, or a raised nest box mimicking a tree hole suits Goldeneye or Wood Duck. Species from places like the Arctic Tundra, such as the Emperor Goose, prefer to nest in a colony and will lay in an open area. Their safety comes from being together in large numbers. The birds at Sylvan Heights are relatively protected from predators, but aviculturists may determine that a nest is too vulnerable to stay in the aviary. In these cases, the eggs and hatchlings will be removed and reared in the protection of our incubator room and duckeries.

As parents, ducks, geese and swans vary in their approach to parental control. What is common to most is the imprinting of the youngsters. Their survival is usually best if they stick close to the rearing parent, which is usually but not always, Mom. Sometimes this is a problem if the parents don't settle; the babies get exhausted and don't do well. Wild waterfowl will nest in the right habitat, at the right time of year with the right food source, but we provide everything they

need in our aviaries, year round. Food for young and growing birds is not always appropriate for adults, but they know a good thing and may out-compete the babies for food.

### *Bad behaviour*

The drive to protect offspring is one of the most powerful influences on behaviour. A usually mild-mannered bird can become extraordinarily aggressive at breeding time, and this is often seen when a drake, gander or cob has a mate preparing to nest. Enter their space at your peril, they home in on any exposed flesh, grab a bit and twist. Ouch. We can laugh it off but the birds might not be so lucky.

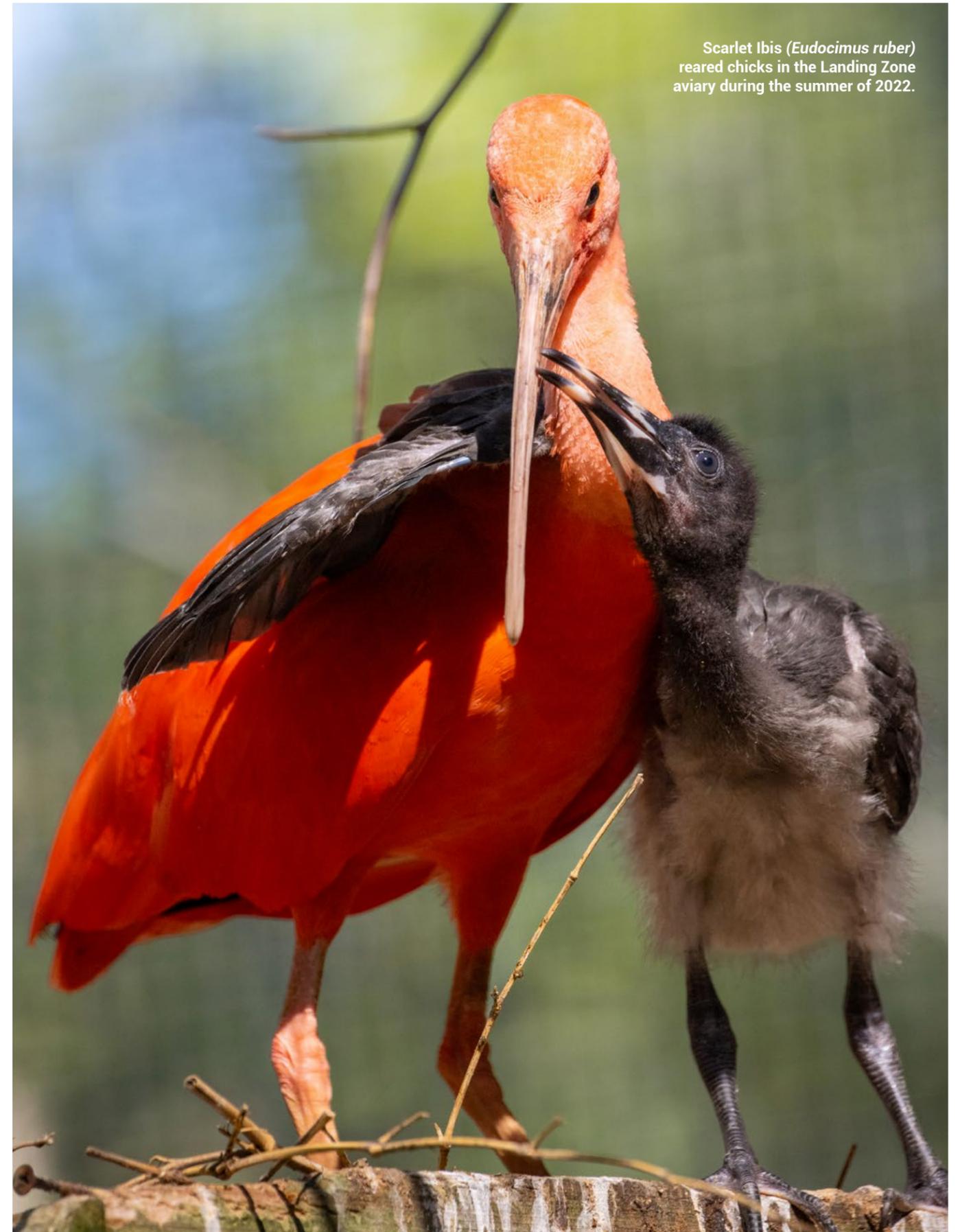
This protective instinct continues as the downies grow. In the wild, the duration of parental protection is very variable between species. Swans particularly and some of the geese will stay together in a family group until the following breeding season, their protective aggression calming down as their brood becomes more able.

### *Our birds aren't pets*

Behaviour and success as an adult is a combination of nature and nurture. Good welfare includes the ability to express normal behaviour and be among their own kind. The social cues to what is acceptable behaviour is partly learned by young waterfowl from their social group. More than ever we are becoming more aware of mental state. We are giving ever greater opportunities to our birds, allowing them to engage in natural activities which provide positive experiences. The rewards of producing the next generation is just one of those.

Beyond the public display, we have some specialist aviaries where the vegetation and cover is far denser than in the main park. Individual pens for breeding groups allows us to monitor what is going on and step in, but only if we have to. Curator Nick Hill is increasingly focusing on parent rearing at our Avian Breeding Center.

Scarlet Ibis (*Eudocimus ruber*) reared chicks in the Landing Zone aviary during the summer of 2022.





# The Madagascar Teal

**Text by CHARLES VAN DE KERKHOFF**

**Photos by JAN HARTEMAN**

Scientific: *Anas bernieri*. Dutch: Madagaskartaling. French: Sarcelle de Bernier. German: Bernierente. Spanish: Cerceta Malgache

## *Taxonomy*

The Madagascar teal is the westernmost representative of the 'grey' teals. It is related to the grey teal (*Anas gracilis*), the chestnut teal (*Anas castanea*), Andaman teal (*Anas albogularis*) and Sunda or Indonesian teal (*Anas gibberifrons*). The New Zealand 'brown' teals (Campbell Islands teal *Anas nesiotis*, brown teal *Anas chlorotis* and the Auckland Island teal *Anas aucklandica*) were formerly considered close relatives.

## *Distribution*

This mangrove specialist is endemic to Madagascar and can be found on the west coast. The population is estimated between 1500 and 2500 birds, the majority of which are located in the mangrove areas between the Mangoky Delta and Antsiranana on the west coast and a small part of the population is found in the extreme northeast of the island. The Madagascar teal has a seasonal migration. They prefer shallow waters and it depends on the dry or wet season where the ideal habitat is located. They breed in the mangrove areas and as soon as the young are independent, only the parent birds leave the breeding areas which are drying up to go to various inland lakes, such as Lake Antsamaka, where they can moult safely. The absence of flight feathers prevents them from flying for about two to four weeks. After the moult, adult birds gather with juvenile birds of that year on the coast at shallow brackish water lakes, the mudflats and river estuaries. It is not clear whether the families come together at



that time. The distance that these teals travel between these three locations varies from a few kilometres to as much as 400 kilometres.

### *Description*

The Madagascar teal is a small duck that weighs on average around 400 grams. Its plumage is a warm reddish brown in colour with a dark core on each body feather, giving it a speckled appearance up close. This teal has a clear black speculum with white tips and a white band on the secondary coverts. These black and white colours on the wings are very noticeable when this teal is flying. The non-feathered parts are pinkish grey and the eye is chestnut brown. The weight between males and females is fairly equal, the lengths of the tarsus, bill and skull are greater in drakes. In the wild, Madagascar teal are known to live for at least 10 years.

### *Habitat*

Madagascar teal are found only in shallow fresh and brackish water, including swamps, estuaries, mudflats, small lakes and mangrove. The grey mangrove (*Avicennia marina*) in particular is an important breeding habitat for this teal and the current distribution of this mangrove species corresponds to the distribution of the Madagascar teal. During the western dry season, the Madagascar teal can be found on the coast, on the sandbanks, on the mudflats and in salt pans. During the rainy season, it resides in the shallow open lakes on the landward side of the mangroves. These teals avoid water plants, floating vegetation and swamp banks for most of the year. Only during the moulting period,

when the birds cannot fly, do they use the vegetation in the water to hide. They prefer open shallow water, less than 20cm deep on average. Madagascar teal are often found in bird-rich saline wetlands together with greater and lesser flamingos (*Phoenicopterus roseus* and *Phoeniconaias minor*) and waders such as black-winged stilts (*Himantopus himantopus*). They are almost never seen together with other ducks, the exceptions are roosts shared with white-faced whistling ducks (*Dendrocygna viduata*) on sandbanks or in mangrove trees. Madagascar teal can be found together with conspecifics during some times of the year, but they do not form close groups. These teal are always restless in the presence of several conspecifics, whereby it is remarkable that they never chase other birds away, but only their own kind.

### *Food*

Knowledge about the diet in the wild is scarce, but it is clear that these teals eat the seeds of aquatic plants and invertebrates during the moult. Madagascar teal are often seen foraging with flamingos and waders. Chicks and juveniles dive for food, something adult birds never do.

### *Breeding*

Little information is available about breeding and rearing the young in the wild. The first nest in the wild was only described in 1997 and the first chick was described in 2004. Most of the knowledge about the breeding behaviour of Madagascar teal was gained at the Jersey Zoo. The courtship resembles that of the grey teal (*Anas gracilis*) and like the grey teal, both

Madagascar teal parents care for the young. Nests in the wild have been found mainly in grey mangrove forests and were located 2-5 meters above the ground or 1-3 meters above the water. Six to seven eggs are laid during the rainy season (Dec-Mar) and the eggs measure on average 46mm long and 34.6mm wide. Only the females breed, but the drakes stay close to the nest for the entire breeding period. The incubation period is 26 to 27 days. After 45-49 days the young are independent after which the parents leave the drying up breeding areas to the moulting area.

### *Status*

Due to the difficulty in accessing the area, this species was not seen and noted by Western birdwatchers for decades. The teal was 'rediscovered' again in 1969 and was re-spotted in small numbers in a handful of locations in 1970. It was not until 1992, however, that new expeditions were carried out in search of teal. The Madagascar teal is threatened by hunting, egg collectors and habitat loss. It is listed as Endangered by the IUCN Red List for Threatened Species. Since 2006, Madagascar teal has been protected in Madagascar and several protected areas have been established in the distribution area of this teal.

### *Acknowledgment*

Glyn Young, of Durrell Wildlife Conservation Trust, is the person we should thank for our current knowledge about the eggs, downy ducklings, mating behaviour, nest use and parental care of Madagascar teal. He participated in many expeditions to study this teal since 1992 and, in 1993, brought Madagascar

teal to the Jersey Zoo for a breeding program, wrote several articles about this duck species in the wild in Madagascar and in closed aviaries on Jersey and was awarded a PhD for studies on this species and another Madagascar duck, Meller's duck *Anas melleri*.

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# the future of **conservation**

From North Carolina to Portugal, Brazil, Namibia, Venezuela, and beyond, Sylvan Heights interns share a passion for advancing conservation science and protecting species globally.

A researcher in Namibia deploys a quadcopter drone for a night flight utilizing infrared FLIR technology for rhinoceros research. photo by Christina Burnham

## avian alumni: Christina Burnham

I began at Sylvan Heights as a volunteer during the summer of 2016, having learned about the bird park in a zoology course the semester prior. I'm forever grateful that I took the leap and applied, as that summer truly changed the trajectory of my life! I gained incredible practical experience with a huge variety of waterfowl and exotic birds and learned about conservation of endangered species firsthand. I joined the Avian Breeding Center the following summer as an intern to learn the ins and outs of waterfowl husbandry and propagation, and was later hired on as seasonal staff. Since then, I've embarked on a variety of adventures including a two and a half month long furlough in Namibia where I worked with the Wildlife Aerial Observatory program to research the efficacy of using drones to stop poachers. Myself and my colleagues, an

amalgamation of zoology, life science, and aerospace engineering students, flew quadcopter and fixed-wing drones to patrol wildlife reserves and count animal populations. Our skills were put to the test after the release of two bull rhinoceros onto a neighboring reserve attracted a pair of poachers looking to kill the animals for their horns. Rhino horn fetches an exorbitant price on the black market in Asia, where it is desired for traditional medicine; an erroneous practice, as the horn is made up of keratin (the same as your hair and nails) and has no special properties. The noise from the drones and threat of capture quickly deterred the intruders, who fled from the animals and back through the fence- a decisive success for the program!



Christina Burnham with a bull white rhinoceros anesthetized during routine herd health checks in South Africa.



Christina Burnam carries a Talon fixed-wing drone used for long-distance surveys of wildlife reserves in Namibia.

Conservation of threatened and endangered species has been the driving focus throughout my education. In late 2019, I learned of a researcher at NC State looking for a graduate student to study white rhinoceros blood biochemistry within wild populations in South Africa. With the encouragement of Mike and Ali Lubbock, I applied and got the position, leaving Sylvan Heights for the final time. However, the COVID-19 pandemic quickly put a wrench in our plans: international travel was out of the picture. We decided to shift focus and investigate the gut microbiome within the southern white rhinoceros at the NC Zoo. Study of the microbiome is a relatively new field, and recent research has shown the gut microbes in particular can affect the health, digestion, and even reproductive success of animals. Such information is of great importance in imperiled wildlife conservation, especially for a species that has had difficulty reproducing under human management. After two years of

attempts, I was fortunate enough to finally travel to the field in South Africa to sample wild rhinoceros for my research in June!

In early 2022, I was excited to learn of an open volunteer position with the Spix's macaw reintroduction project at a remote field site in Brazil. The program, spearheaded by the Association for Conservation of Threatened Parrots, has been a bastion of conservation success: they've successfully bred a sustainable captive population of the macaws, which have been extinct in the wild for 22 years. I had followed updates for many years in the hopes of one day seeing the birds reintroduced into the wild, and just this year several were released to fly free around the facility. To assist the project was one of my personal aspirations as a child, and the opportunity now was too good to pass up. As a native North Carolinian, I understand too well the loss of an endemic parrot; our coastal plains, once home to the Carolina parakeet, are now a sobering reminder about the costs of human encroachment and conservation negligence. I now currently reside at the facility within the Caatinga, where I feed the birds, monitor the released macaws, construct artificial nest boxes and parrot enrichment, and work on habitat restoration and invasive species removal. Just recently, ICMBio (the Brazilian biodiversity conservation institute) taught us how to climb trees using rope systems to monitor nest boxes for activity. I'm extremely grateful for the opportunity and for Sylvan Heights, which gave me the experience and confidence to join the project. More Spix's macaws will be released as time progresses, and the work done here will give them the best chance at survival so the population can thrive!



Christina Burnham checking nest boxes in caraiba trees within the Brazilian Caatinga.

## avian alumni: Pedro Seixas

*Pedro Seixas is a graduate of the Sylvan Heights Avian Husbandry Program, and now operates Centro de Reprodução de Anatídeos (CRA), a waterfowl conservation facility in Portugal.*

It was back in June 2006 when I was lucky enough to be awarded a grant by IWWA to go to Sylvan Heights Breeding Center and do an internship there, almost 16 years, yet the memories are still here, quite fresh. Part is due to the incredible time I spent there: from the amazing waterfowl species they had there, to the amazing hosts I had that spoiled all of us with lots of activities as kayaking, soccer, movies and trips to lots of places, not forgetting the incredible training we had in aviculture and education and the interesting people we met. I also was lucky enough to help with the final stage of the grand opening of the Eco-Center! Those were the days!!! Can't thank you all enough: Peter Kooy, who encouraged and helped me in first place, IWWA and of course Mike and Ali and all at Sylvan Heights!

### Aviculture: How do we do better?

Several countries are challenged with an uprising group of people that want by whim to stop any kind of animal keeping. Often, this is without any kind of scientific argument to back up their statements. The most curious part is that they are moving forward, with great strides I would say, towards actioning the proposals of new laws to do it. How do they manage

to do this? Well, thanks to the numerous following they have managed to gather along the years, their excellent skills in social media and marketing and finally thanks to a good management of influences.

And how do we as aviculturists manage to look after all these years? Well, simple - not enough public education of what we do! We must advertise ourselves better; social media skills are needed, marketing skills are needed, and we all must work together to keep our image positive and demonstrate our value to the preservation of species that need our help!

Following that train of thought, we decided to pay tribute to one of our White-Headed Duck (*Oxyura leucocephala*) males that recently died at 17 years of age, meaning old age. Seventeen years!! But what a beautiful 17 years they were! This is another positive aspect of conservation of species through captive breeding: the lifespan. A longer time alive can also mean a bigger number of offspring. In nature, there is currently no data regarding this species' lifespan, not even about the average life expectancy, but according to ZIMS (software used by most zoos globally) the record in lifespan was 11 years and the average life expectancy is somewhere between 7 and 9 years old (based on 260 individuals all around the world).



We had another White-headed Duck male here since he was only a few months old. We received him back in 2005, and he lived until July of 2019. This specific male, during his 14 years of life, provided several contributions in the most diverse fields and I would like to take this occasion to do something unexpected and be grateful for all he has done, not only in my name but also in the name of a lot of others, and I will immediately detail such accomplishments:

**1.** The first, and most obvious one, thanks for being the father of several offspring, thus having contributed for an increase of genetic variability of the captive population. Thanks!

**2.** He was in a small study of the centre regarding biometrics. The result of the study was sent to several entities, national and international, all involved with this species, and it is available to whomever might want it. Although it is indeed a very small amount of sampling, it is nonetheless an increase in the biometric statistics for this species. Thanks!

**3.** Environmental Education - His photos were used in several occasions: 4 birds shows in Portugal, in a Flag on an Aviornis Congress, in an article back in 2009 for Aviornis Ibérica, in an article for the Pássaros Magazine, in a conservation proposal delivered to the Portuguese Institute of Conservation of Nature and Forests (ICNF), in a breeding report of 2008 and 2009 delivered to ICNF, in a conference of Agrarian University to talk about the importance of the breeding centers, in online workshops about keeping and breeding Waterfowl, in a workshop in Spain, La Rioja organized by Iberavis, in an Aviornis Iberica Congress in Spain and finally in our own webpage, since it is the logo of CRA. Thanks!

**4.** In March 2011, he was in the conservation project called: "Project de Conservation de Oxyura leucocephala " organized by Aviornis France that received his feathers (and his avian roommates from CRA) for DNA analysis. Thanks!

**5.** The same thing happened years later in 2016, this time by CRA's own initiative. Some feathers from him and the rest of the group of *Oxyura leucocephala* from CRA were sent to a LIFE Project to assist on the genetic analysis of the species thanks to the known family tree of our individuals that represented a few generations, something not easy to guess in nature. Thanks!

**6.** In January 2013, a research banding expert, Dr. David Rodrigues, came to the centre CRA to take a few biometrics from several White-headed ducks. Amongst them, this male was also measured, so a nasal band prototype could be tested and used in the future to identify individuals from this species. Thanks!

**7.** This male and some other White-headed ducks were and are examined regularly regarding health issues. Everything is recorded, filed and sometimes distributed to whomever may need (veterinarians, breeders, and so on) thus contributing through reports, photos, autopsies, histopathology reports and also to treatment reactions (or lack of reaction) for a deeper understanding of the species at a pathologic level. As captive breeding conservation also has this purpose, many of the pathologies that birds have in nature may be diagnosed and treated first in captivity, becoming an important tool to eradicate diseases. Thanks!

**8.** His breeding data, molting data, courtship display data, behavior, feeding habits and so on, were recorded throughout the years in writing and in photos, and are available to the scientific community that wish to consult it. We can thankfully say that here we have a very healthy relationship between us and the scientific community (researchers, ringers, birdwatchers, biologists, and so on) with frequent information exchange. Thanks!

**9.** If there is a saying that claims that by every 10 wild-caught birds for illegal trade, 9 will die until they reach a home, then we can also say that for every single bird born in captivity we are saving 9 birds in nature from certain death (once again, I have to emphasize that breeding in captivity has strict laws for several years now) so I have to thank you for being born thanks to captive breeding conservation as did all your offspring!

**10.** Economy - We breeders, fully assume all the expenses that are part of the keeping and breeding birds. We do not have subventions, and generally no donations, and this male like every single bird that a breeder has, contributes in several ways to the economy. For instance: because it is a protected species it requires to have a CITES permit - nowadays it costs 33 euros. The original owner had to pay this amount, and when he came to our hands at a few months old we had to pay this amount also to change the owner name; this money went to the Portuguese Government. In order

to keep and breed protected species we had to become Legalized Breeders, so we had to pay 127 euros and every single year we have to do an update on the bird list and on how he is doing, we have to pay 53 euros more (let me remind you, he had 14 years of age, if you want to do the math). This all for the ICNF. This male also has a ring, like all our birds, that we must buy from an association that in turn buys from a ring factory. We must pay an annual fee to the association of course. He also eats food that we must buy from another company. He also gets sick, then we call the vet and give him treatment from a pharmaceutical company. During his 14 years of life, he saw his own aviary get some improvements and new material bought from a construction company. In name of all these companies, thanks!

**11.** Reduced Carbon Footprint - Due to living in environment designed to replicate nature, this male lived on land that once was fallow, but now has become one of the most productive habitats with high carbon retention: a wetland. Thanks!

**12.** Emotional stability - several times, our visitors have been made to smile when they saw our male and his beautiful bill, his incredible courtship display or simply when they saw him dive gracefully. Thanks!

**13.** New knowledge- thanks to this male and to the importance of his species, I met several people involved in captive breeding conservation and nature conservation. Some of them I would not have met in any other way, thus becoming more rich knowledge-wise and afterwards passing that same knowledge to other breeders that would ask me about your species. Thanks!

**14.** Reinforcement of the importance of species conservation through captive breeding - and finally, all these contributions you made, have given me more than enough reasons to easily persuade all those that are against conservation through captive breeding, because you were an example of how long lived a bird in captivity can be, how fertile it can be which shows and proves that it is in many cases the last but most successful resource of saving species. We have to remember that in nature, there is also a bigger number of predators, and food shortage may occur, hunting, and habitat loss, or diseases and so on. Thanks!

Fourteen reasons to thank you. One for each year you lived. Thanks!





## Patricia Fonseca

Venezuela | 2002 Intern

I am so grateful to have learned from you there, the experience gave me help to strengthen my love and respect for animals. Since I came back, I continued to work as a volunteer in a veterinary clinic. Then, I created a project with the spectacled bear, it was a complete success in achieving its release after captivity, as we reinserted a rescued spectacled bear into its habitat with a radio collar. It was without a doubt a wonderful experience.

After that, I was a veterinary assistant in the veterinary and nutrition department at the Chorros de Milla Zoo for 6 years in the city of Mérida. I documented all these experiences and made a children's television series called Animalia.

I am currently the coordinator of the Wildlife Rescue and Recovery Center in Venezuela. I help the animals that we can rescue from zoos that cannot keep them in good condition or those animals that are confiscated due to complaints or mistreatment, many others give them up voluntarily when they discover how complex it is to take care of them in homes. I am currently raising a male baboon named Hans who was rejected by the pack and a little female named Bella who lost her mom. Next to them, two beautiful and small caramerudo deer, two habibi and kabubi camels, both babies barely five months old. As a surrogate mother for all these little animals, I have many responsibilities that I take on with great love because they are amazing and loving animals that depend on me.



## Ginger Harper

Deep Run, NC | 2022 Intern

The grant I received from the IWWA made it possible for me to receive personalized ornithological education that was unavailable to me in the traditional setting. This award made it possible for me to stay at Sylvan Heights Bird Park even beyond the expected 6 weeks and throughout the whole summer to continue my learning and experience with waterfowl.

Before my time at Sylvan Heights, I had never studied birds in depth, much less waterfowl specifically. During my time at the Waterfowl Breeding Center, I participated in the rearing of a variety of ducks, geese, swans, and even a Crested Screamer (pictured). As I worked each day, I was able to investigate my interests and contribute my strengths to the research and rearing of these birds. It was thrilling to see their personalities, individualities, and commonalities. Learning how to safely catch and move birds was a favorite task, along with formulating a diet plan for the screamer chick.

As a special assignment from Ali Lubbock, I led the research and planning of the caretaking plan for the last clutch of screamer chicks for the season. Of the four eggs, only one survived to hatch. With attention to detail and careful record keeping, we've been able to track its growth for 30 days now. It exhibits good energy and appetite, with corresponding weight and height growth. I look forward to further researching and rearing waterfowl at this and other facilities!



## Jared Byrum

Garysburg, NC | 2022 Intern

Thank you for making me a recipient of the IWWA Lis Glassco Hudson grant. The grant helped relieve me of some of the cost it took to travel back and forth to Sylvan Heights for the Avian Husbandry Program.

While participating in the program I learned many helpful things. The one concept in particular that was the most interesting to me was learning about what types of nest boxes or nest sites should be used for the successful breeding of different waterfowl species. The type of boxes I have used to breed waterfowl are slat boxes, porch boxes, and ground boxes. I have also built goose frames for swan geese and white fronted geese breeding. Slat and ground boxes are mainly for diver and dabbling ducks while porch boxes cater to perching ducks.

What I have learned about the different styles of nest boxes through the Avian Husbandry Program has been helpful to me because I am currently in charge of breeding waterfowl in the North American aviary at the Sylvan Heights Bird Park. The North American aviary houses a variety of diver, dabbling, and perching ducks that are native to North America. As the breeding season approaches, I will be using the nesting strategies that I have learned and hopefully have a successful year of waterfowl breeding.

# Restoring a Wetland

In early 2022, Sylvan Heights Bird Park continued efforts to eradicate invasive plant species from the natural wetland that borders the lower edge of the park. An extensive invasive plant removal project was conducted by Jeremy Bryant of Bryants Lawn Care Services, LLC. Formerly an aviculture intern at Sylvan Heights, Bryant now assists with maintenance of the grounds and aviaries at both Sylvan Heights Bird Park and at the Sylvan Heights Avian Breeding Center.

The reduction of invasive plants in this wetland quickly showed positive benefits for native plants and the wildlife species that depend on them. By spring, native plants returned in areas without competition from Chinese privet, particularly orange jewelweed (*Impatiens capensis*), lizard's tail (*Saururus cernuus*), and broadleaf arrowhead (*Sagittaria latifolia*). Also present, but less common, are species such as cardinal flower (*Lobelia cardinalis*), heartleaf ginger (*Hexastylis* spp), and Swamp Rose Mallow (*Hibiscus moscheutos*).

**Crane-fly Orchids (*Tipularia discolor*)** bloomed in the native wetland at Sylvan Heights Bird Park.

photo by Katie Lubbock



# park events

view full event details and ticket info at [www.shwpark.com](http://www.shwpark.com)



## Birds, Brews & BBQ

March 18, 2023 | 5 p.m - 8 p.m.

Local cooks will compete to be BBQ cook-off champion - try them all and vote for your favorites while sampling beer from NC craft brewers.



## NC Science Festival

April 2023 | Saturdays

Join us for fun science events and activities every Saturday in April! The 2023 NC Science Festival theme is "Full STEAM Ahead".



## Annual Fundraiser

October 14, 2023 | 6 p.m. - 10 p.m.

Sylvan Heights' Annual Fundraiser is always for the birds! Enjoy a delicious dinner while bidding on incredible items in live and silent auctions.

# thank you to our donors

Sylvan Heights Bird Park gratefully acknowledges our donors of \$500 or more since October 1, 2021 through September 30, 2022.

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# careers start here

As I sit down and reflect on the time I have spent at Sylvan Heights Bird Park, I fondly fall back into my chair and think about how lucky I am. Starting out as a volunteer at the age of 17 on May 19, 2019 was a dream come true. Working with animals has always been a personal passion of mine. More specifically, working in a veterinary or biologist setting. So, starting out at Sylvan Heights and getting the opportunity to look after and recognize different bird species is a big step, especially since I was planning on going to college for that.

Becoming an actual employee there at the age of 18 was even better. The park has always been understanding of my high school schedule, so I knew the park would allow me to juggle both work and school effectively. Not only am I in a position I care deeply for, but I am also getting paid for it.

Being a junior now, dual majoring in both biology (BS) and environmental science at North Carolina Wesleyan University, I have also gained one step in the door with finding a career in my field of desired expertise. Having a background in ecological or animal care scenarios will be great for future employers, since most employers would like for college students to have at least one internship or employment situation in their career of choice.

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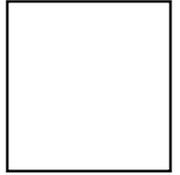
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