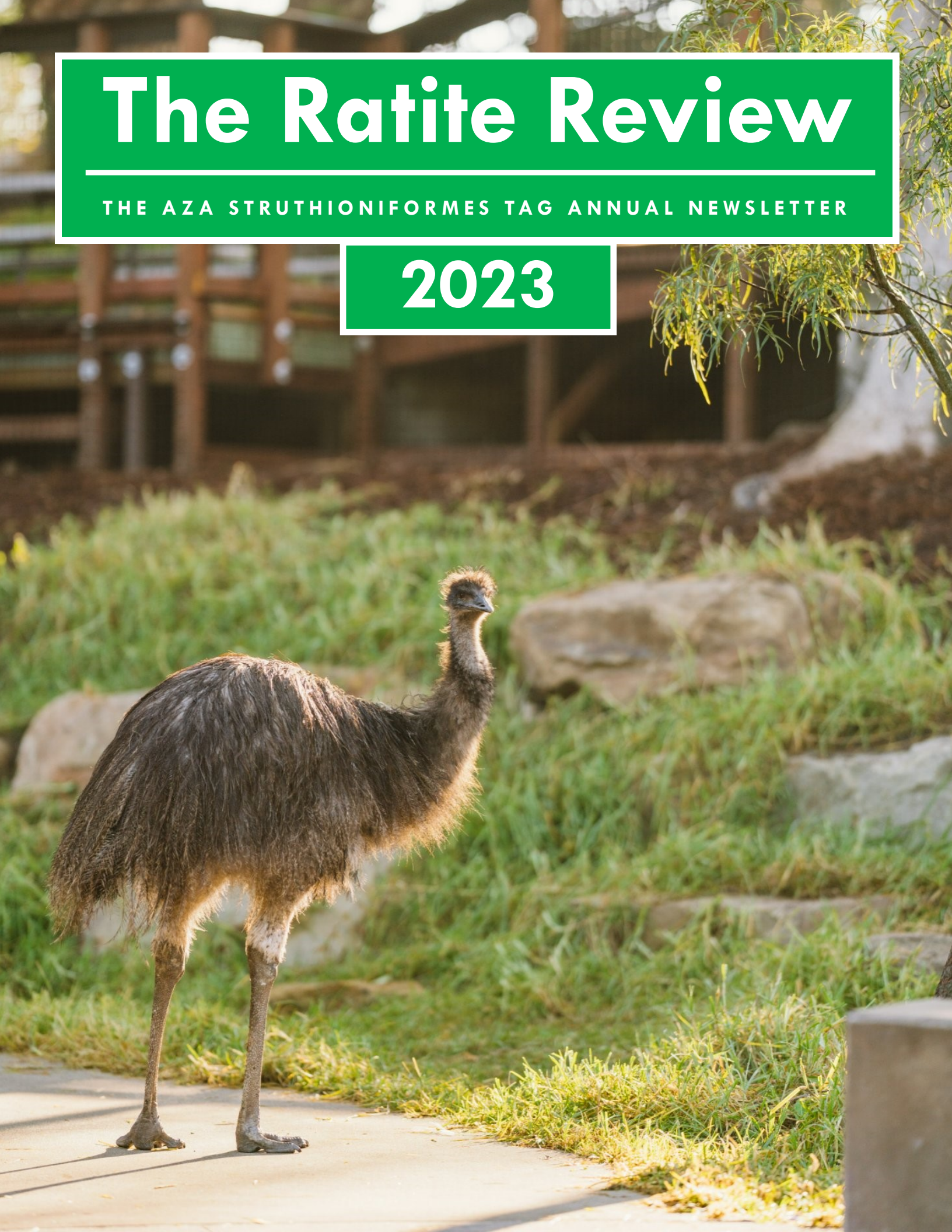
The Ratite Review

THE AZA STRUTHIONIFORMES TAG ANNUAL NEWSLETTER

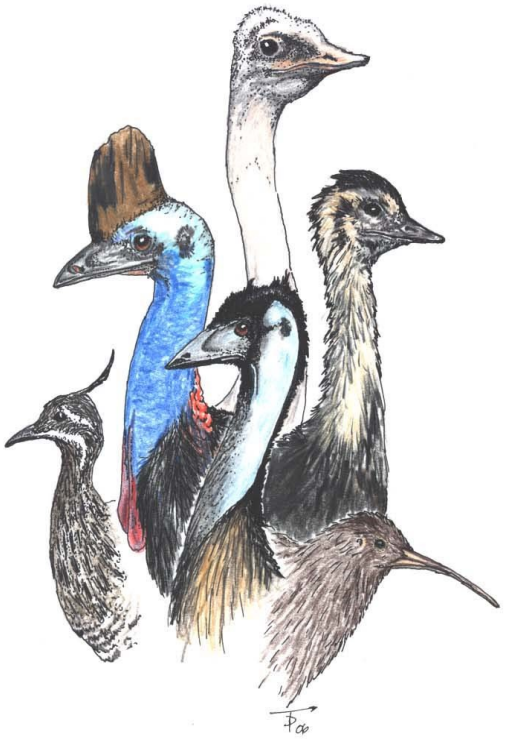
2023



The Ratite Review 2023

Welcome to *The Ratite Review!*

The vision of the Struthioniformes Taxon Advisory Group is to engender appreciation of ratites and tinamous by raising awareness of conservation threats and helping zoo visitors and the zoo community better understand actions they can take to help conserve these species in the wild.



ASSOCIATION OF ZOOS & AQUARIUMS

www.facebook.com/RatiteTAG

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Cover Photo: Emu at Santa Barbara Zoo, courtesy of Zoo Staff

Newsletter Editor: Kirby Pitchford, *kirbypitchford@gmail.com*

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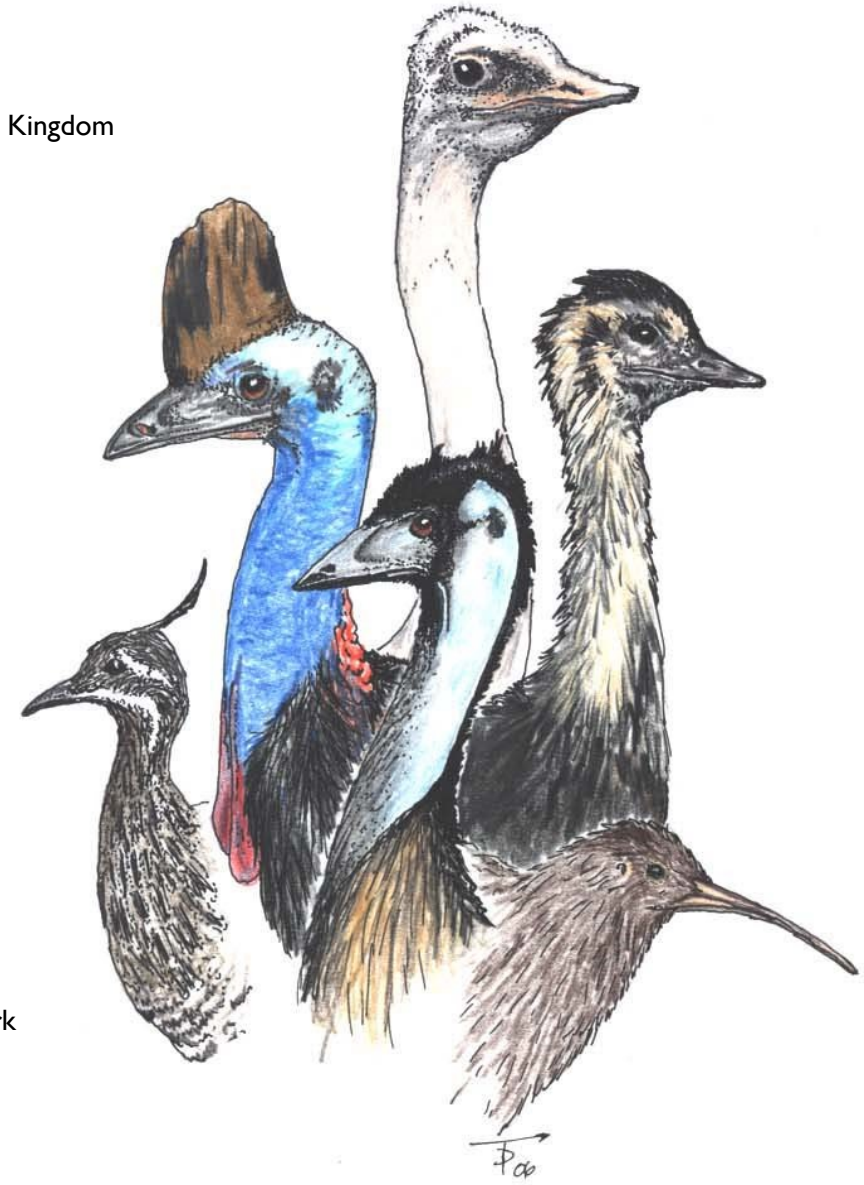


Program Leaders

Brown Kiwi, Studbook: Kathy Brader, National Zoo

Elegant-crested Tinamou, Monitored: Kristen Clark, National Zoo

Southern Cassowary, Provisional SSP: Nicole LaGreco, San Diego Zoo

Emu, Monitored: Kirby Pitchford, Nashville Zoo

Ostrich, Monitored: Scott Tidmus, Disney's Animal Kingdom

Greater Rhea, Monitored: Heather Anderson, National Zoo

An Update from the TAG Chair

Sara Hallager, Curator of Birds
Smithsonian's National Zoo and
Conservation Biology Institute

After 18 years, I have stepped down as the Struthioniformes TAG Chair. I love ratites and tinamous and it was not an easy decision, but it is time to hand the TAG over to someone who will take it in new and exciting directions. I'm deeply proud of the 18 years of accomplishments the TAG has made to advance ratite and tinamou husbandry and conservation. I hope to stay involved in the TAG, complete several projects and support the incoming Chair. And I hope that everyone will continue to champion and save these wonderful species – they deserve and need our full support and dedication.

I hope you'll join me in a trip down memory lane of some of the work the TAG has done over the past 2 decades.

Husbandry
Regular enrichment postings since 2011. These can be found at https://www.avianscientific.org/struthionformes)

- Working draft of the Ostrich, Rhea, Emu (ORE) Animal Care Manual (looking to complete in 2025)
- Cassowary Husbandry workshop in 2009 at White Oak Conservation Center

Thorough reference list (available at https://www.avianscientific.org/struthionformes)

- Survey of diets fed to cassowary conducted (2005-2008) and shared with IRs
- Cassowary ACM submitted to AZA (in review)
- DNA analysis (2009-2016) of captive cassowary in AZA zoos

Development of statement by Veterinary Advisors on vaccination for WNV/EEE/WEE

Conservation
Active support and leadership for North African ostrich in Niger, working closely with the Sahara Conservation Fund (SCF)https://saharaconservation.org/north-african-ostrich/

- Several grants secured
- Peer reviewed ostrich DNA paper
- Active fund-raising campaign
- Advised SCF on many aspects of their successful reintroduction project
- Support for Care for Karamoja and ostrich in Uganda

Worked with several Australian conservation partners on cassowary awareness outside of Australia

Awareness
Annual Newsletter since 2011 (available at https://www.avianscientific.org/struthionformes)

- Promotion of World Cassowary Day
- Promote ostrich conservation in Tunisia and lesser rhea research in Chile in annual TAG newsletters

Fundraising partnership with Wendy Barnes Design featuring four different patterns featuring our species with 10% of proceeds go towards the TAG. https://www.wendybarnesdesign.com/collections/ratite-tag-partner-collection

- Strong education advisors

Facebook page https://www.facebook.com/RatiteTAG with 2400 followers

Merchandise sold at many AZA TAG marts helped promote ratites and raised money for the TAG

AZA

- Four Regional Collection Plans
- Strong program leaders for Southern cassowary, brown kiwi, greater rhea and elegant-crested tinamou. Active species champions for ostrich and emu
- Active, supportive Steering Committee with some members having served since the onset of the TAG
- Regular TAG meetings at AZA midyear conferences
- International collaboration with EAZA and ZAA TAGs over the years

Active AZA Struthioniformes TAG network with over 280 members

Fact sheets for ratites and tinamous at https://www.avianscientific.org/struthionformes

Update from EAZA

Joost Lammers, Curator

EAZA Ratite TAG Chair

Vogelpark Avifauna

Peter Smallbones (Paignton) already stepped down as coordinator for the Lesser rhea programme in 2021 and the programme was managed by the Ratite TAG chair (Joost Lammers) for the time being till a replacement was found. The EAZA Ratite TAG is proud to announce that Stephan Rijnen (Dierenrijk – EUROPA in ZIMS), s.rijnen@dierenrijk.nl, took on this task in 2022.

Furthermore, the EAZA RCP workshop that was scheduled for 2023 is postponed until 2024.

A note on Ostriches and Sexual Dimorphism

"The Cincinnati Zoo is home to two ostriches, Pam and Myrtle. Many bird species, including ostriches, are dimorphic, which means that males and females may be different in size, shape, color, or other ornamentation. Female ostrich feathers are primarily gray, and males have dark feathers with white trim. Pam has looked like a typical female all the years that she has lived here, but that has recently changed. Over the last year Pam has molted and replaced her feathers with darker ones that resemble a male ostrich! We don't have a perfect explanation for what happened, but we attribute the change to a hormonal shift. Pam's color change doesn't seem to have affected her personality. She and Myrtle still behave the same way with each other, and both are in good health."

"Temperature of the egg does not influence gonadal sex differentiation in birds, while estrogen but not testosterone has a central role in avian gonadal development. Hence, natural loss of oestrogen through left ovarian disease, or experimental loss through unilateral left gonadectomy, allows the right gonad to become a testis and birds acquire male sexual characteristics".

For more on this topic, check out the following paper:

Sex Reversal in Birds - FullText - Sexual Development 2016, Vol. 10, No. 5-6 - Karger Publishers

Photo courtesy of Lisa Hubbard

Monitored

Ostrich, *Struthio camelus sp.*

Monitored Species

74.194.107 at 92 U.S. institutions

Species Champion: Scott Tidmus, *Scott.A.Tidmus@disney.com*

Monitored

Emu, *Dromaius novaehollandiae*

Monitored Species

112.97.114 at 98 U.S. institutions

Species Champion: Kirby Pitchford, *kppitchford@nashvillezoo.org*

Provisional SSP

Southern Cassowary, *Casuarius casuarius*

Provisional SSP and International Studbook

24.23.6 at 28 global institutions

SSP Coordinator: Nicole LaGreco, *NLaGreco@sdzwa.org*

Monitored

Greater Rhea, *Rhea americana*

Monitored Species

24.56.2 at 17 U.S. institutions

Species Champion: Heather Anderson, *andersonH@si.edu*

Monitored

Elegant-crested Tinamou, *Eudromia elegans*

Monitored Species

25.10 at 12 U.S. institutions

SSP Coordinator: Kristen Clark, *clarkK@si.edu*

Studbook

North Island Brown Kiwi, *Apteryx mantelli*

International Studbook

37.24 at 17 global institutions

Studbook Keeper: Kathy Brader, *braderK@si.edu*

Photos credits: brown kiwi, Columbus Zoo; elegant-crested tinamou, Carolina Aruda; southern cassowary, ostrich & emu, Scott Kayser; greater rhea, Santa Ana Zoo

Long-time resident ostrich 'Red' dies at Zoo Miami

Courtesy of Zoo Miami Staff

It is with great sadness that Zoo Miami announces the passing of "Red," a 27 year old male ostrich. Red was found deceased by his keepers in December 2021. Though there was no initial obvious cause of death determined, there were several tissue samples submitted for more in-depth testing that will hopefully provide a better answer.

Red was a long-time resident of Zoo Miami having arrived here in August of 1996. Over the years, he had become a personal favorite of the zookeepers who cared for him. Often seen sharing the habitat with the giraffe and zebras, he got his name from the red color that his skin would turn during the breeding season. He could also be heard making a characteristic "booming" sound and then seen "dancing" in front of his keepers as a form of courting them! Red stole the hearts of his keepers with his antics. He was the last remaining ostrich at Zoo Miami and his loss has left a large hole in the hearts of his keepers and those who had the privilege of knowing him.

Virginia Zoo Welcomes Cassowary Chick

Alexandria Rowland,

Assistant Curator, Birds

Virginia Zoo

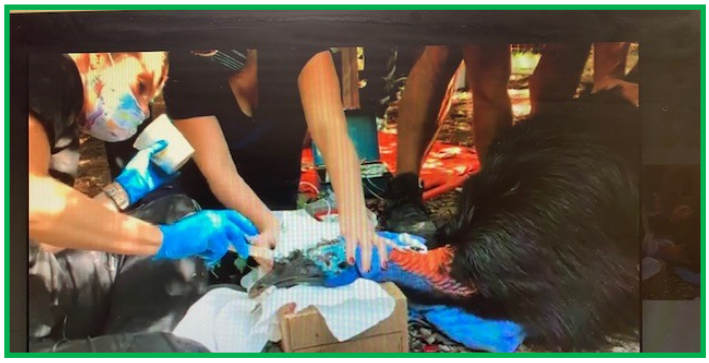
The Virginia Zoo is thrilled to announce the hatching of a cassowary chick on July 23, 2022.

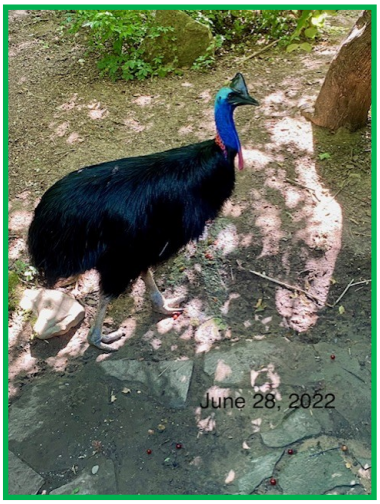
Cassowary Casque Recovery

Lauren Covington, Bird Keeper II

Nashville Zoo

Sy, an 11 year old male Southern Cassowary, suffered a casque injury on October 3, 2020 while aggressively kicking a boomer ball around his outside yard. He was in a kicking position along the chain link fence line and caught his casque on the wire, leaving it shredded. The primary keeper was in the area while the incident occurred and was able to react immediately. Veterinary and Avian staff quickly assembled to anesthetize and perform surgery, as well as add padding to his indoor stall where the bird recovered. Our veterinary team did an incredible job saving enough of the outer keratin layer of the bird's casque to cover the soft tissue remaining. An epoxy covering was then added over the casque as it healed. The epoxy 'cast' was checked regularly and stayed on for about 1.5 months; after which, it fell off naturally. This revealed major improvement from the initial application. Sy remained inside his padded, indoor, stall for three months to allow the casque to heal before giving access to his outside yard to reduce any risk of him reinjuring himself. Since this incident, the casque has healed exceptionally well. All due to the great care and quick response of our amazing team. As a precaution, items of that size and nature have been removed from the array of approved enrichment for this bird.





Osteoarthritis treatment for Southern Cassowary

Pictures courtesy of St. Augustine Alligator Farm and University of Florida Zoological Medicine

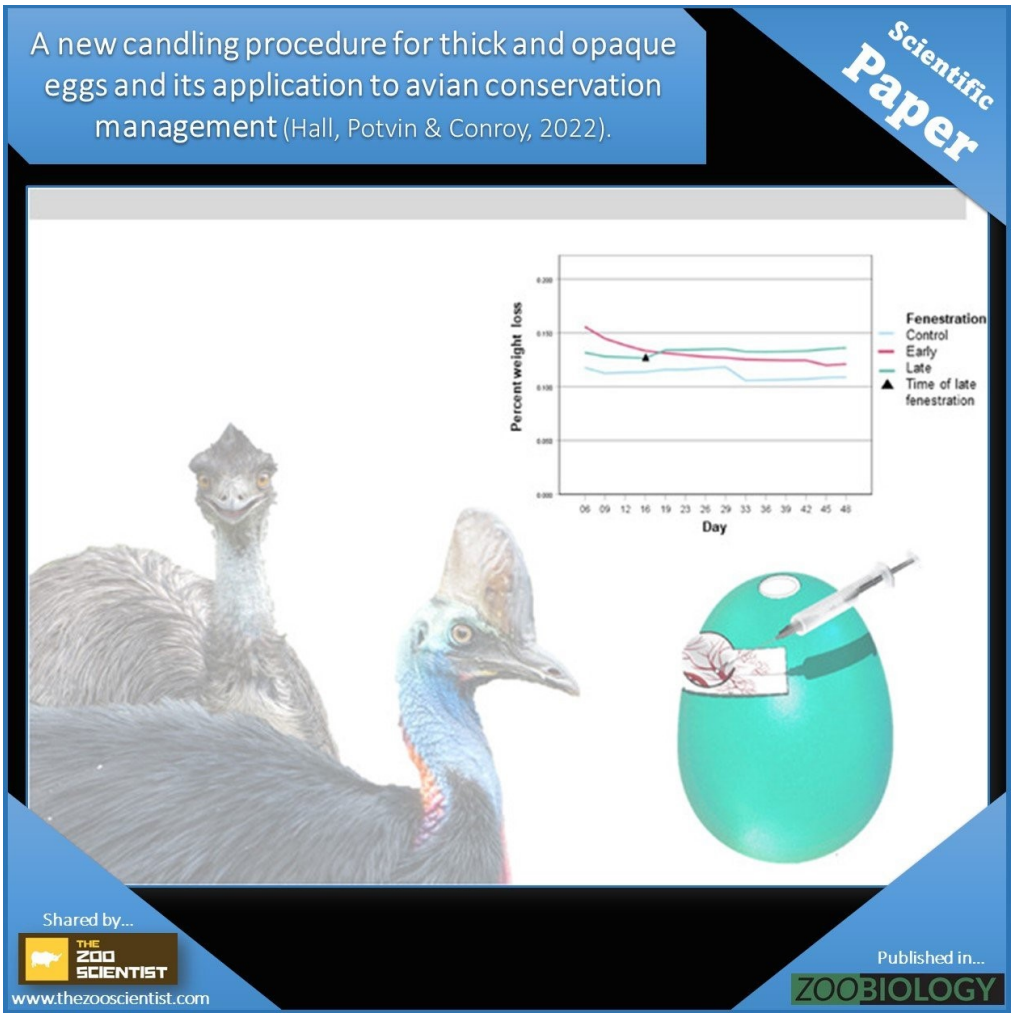
St. Augustine Alligator Farm Zoological Park
St. Augustine, Florida
The Zoo for You!

UF University of Florida
College of Veterinary Medicine

A new candling procedure for thick and opaque eggs and its applications to avian conservation

Hall, Potvin & Conroy, 2022

Read more: [A new candling procedure for thick and opaque eggs and its application to avian conservation management - Hall - 2023 - Zoo Biology - Wiley Online Library]



Voluntary Scale Training with 1.0 Ostrich

Jessica Egerer, Bird Department Keeper

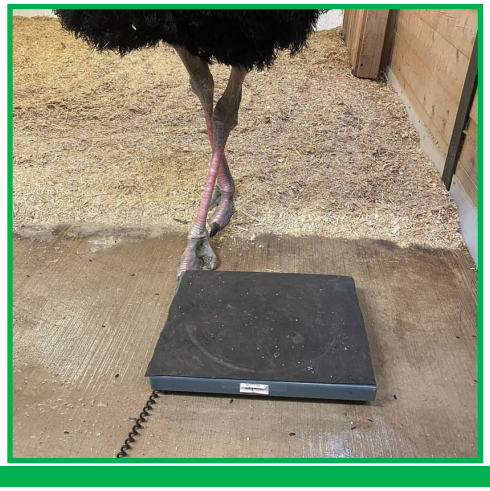
Detroit Zoo

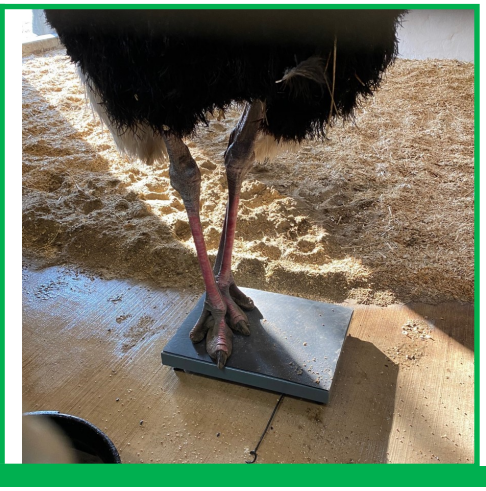
The Detroit Zoo is home to one male ostrich named Hannibul. To go along with his size, Hanni (as he is sometimes referred to by his keepers) has a large personality and is loved greatly by animal care staff and many zoo visitors. Hannibul has quite the story, having lived his first two years inside a garage in Illinois. He was confiscated and taken to a small animal rescue in central Illinois where he spent 8 years. He then moved to Sasha Farm in Manchester, Michigan for 1 year before finally finding his forever home at the Detroit Zoo in 2015.

Hannibul is managed protected contact, including all of our training endeavors with him. For a while, keepers anticipated training with Hanni but had a very difficult time finding things that were reinforcing to him. A couple of happenings coincided at this point. The first was desensitizing him to keeper presence, ultimately to find that we ourselves can be reinforcing to him (he would show us this by staying around and/or displaying his courtship dance in our presence). Secondly, keepers began experimenting with various food items, and through many trial and error scenarios, we found that Hannibul loves wild birdseed.

Onward to training! Hannibul learned a recall behavior first, and then we began working towards a voluntary scale behavior. Initially we approached things using a large-scale set-up, with the thought that there was more opportunity for him to stand upon it. Hannibul showed us that he was much more comfortable with the presence of a small-scale set-up by becoming desensitized to it much quicker and approaching it within no time.

Sessions now involve the small scale being set-up at the front of his indoor stall door, with the scale reader on a cord stretched out into the hallway from under the doorframe. There is a hanging feeder on the inside of his stall door, so that once recalling him to that area he can be reinforced by both our presence and the offering of seed through a homemade chute system (funnel and piece of PVC). We use the verbal cue "scale" while pointing to the scale as Hannibul approaches it, although the visual presence of the scale works nicely as a cue on its own. Initially, Hanni was reinforced for just bumping the scale with any part of his body, then for touching the scale with either foot. The behavior was shaped by selectively reinforcing him for having one foot on top of the scale, and finally jackpot reinforcing him for two feet up on the scale! Hannibul's first voluntary weight was obtained on March 16th, 2022 and since then his behavior has been established and consistent with multiple trainers. We are very proud of our big bird and are thankful to have a way of keeping closer tabs on his health by obtaining voluntary weights!





Immersive Emus: Introducing free contact ratites into a walkthrough habitat

Kelly V. Summers – Keeper
Santa Barbara Zoo

In January 2021, what formerly was an Asian Elephant habitat evolved into a slice of the Australian outback – teeming with native plants for the animals to munch on and a song line pathway for guests to explore. While our facility would not be the first to allow visitors to immerse themselves in an animal's environment; incorporating free roaming western grey kangaroos (three castrated males), bennet's wallabies (one intact male, one neutered male, and two breeding females), and the common emu (two males) without any barriers was a unique learning experience. From the acquisition of the first inhabitants – two emu chicks on April 27th 2021 – to opening the walkabout to the public – January 8th 2022 – the Santa Barbara Zoo's animal care team worked tirelessly to develop husbandry skills that would elicit good welfare while also maintaining an environment that would be immersive and inspire curiosity among guests as they explore.

We accomplished this in four distinct stages; chick rearing, introductions, incorporating the public, and adapting to change after officially opening. During the construction of the habitat, the emu chicks were quarantined and raised in an area adjacent to a public facing area, the barnyard, due to delays in the renovation of the walkabout habitat. In the barnyard, the emus shared a mesh fence with the goats, sheep, and a guinea hog. As they developed, the chicks learned to navigate new social interactions with a protective barrier present. As their confidence grew, we also tested the emu's interspecies socialization skills by introducing them to our guinea hog. The docile temperament of our hog made him an ideal candidate, and he tolerated the curiosity of the chicks without issue. Housing the birds next to the barnyard also placed them close to guests for habituation. The chicks grew up surrounded by curious human visitors and adapted skills to navigate a variety of stimuli. We believe that this worked to our advantage as we began human socialization of the birds without barriers. Since our team had varying levels of experience with emu husbandry and none of us previously managed animals in a comparable habitat, we sought advice from other facilities and conducted research. We virtually connected to keepers who worked directly with the kangaroos we received but obtained little information about introducing emus into a free contact and mixed species habitat. To prepare the emus for the transition into the walkabout habitat, we shaped a voluntary shifting and scale behavior. We utilized a targeting behavior to attract the attention of the emus and guide them into a desired area. Once the emus were more confident in their ability to safely navigate novel situations, we also gave the chicks access to the main yard while the hoof stock were shifted into an auxiliary yard. In doing so, the emus had the opportunity to interact with guests more closely. Additionally, the animal care staff brought small groups of staff members from other departments to mingle one-on-one with the emus. To prevent inquisitive pecking, keepers would intercept by blocking or attempting to target the birds – providing food rewards when the emus explored calmly from a distance.

Photos courtesy of Santa Barbara Zoo Staff. ***Left:*** *the chicks' first few days in the barnyard habitat.* ***Above:*** *Banjo's first day in the walkabout*

Differentiating the emu's relationship with animal caretakers and guests was vital. Therefore, we worked to establish clear cues to indicate when physical interaction was acceptable. This included presentation of enrichment or diet, promotion of direct contact through tactile stimulation, and initiation of a training session. We hoped that targeting and shifting the emus would lay the foundation for a smooth transition into their new habitat. Rather than crate or restrain them for transportation, we chose to walk the birds from the barnyard area to the Australian walkabout. We formed a chute along the public pathways using a combination of preexisting barriers, fence lines, and plastic barricades and guided the birds through the chute using three keepers. The various environmental stimuli and stress imposed by an unfamiliar space caused the training to breakdown, however, the birds were confident enough to lead themselves with only brief bouts of handling and body blocking when necessary. Despite some challenging surface conditions (wet paths) and some stress behaviors (exhibited through open-mouth breathing and kicking) to navigate along the way, the emus began calmly exploring their new surroundings. Little did they know that wallabies were already occupying the space and observing them as they entered the Walkabout. At first, the birds did not appear to notice that they were being quietly watched by their new enclosure mates - the wallabies had the advantage of camouflaging in the shadows of the plants. However, once the emus gained some familiarity with the area, they became drawn to the movement of the macropods and chasing was observed. Abandoning the comfort of the underbrush, the wallabies quickly fled the pursuit of the inquisitive birds, and others showed signs of stress. Under direct observation of the animal care staff, in these instances, the emus were corralled into an adjacent holding where animals could choose visual access. The introduction of three male western grey kangaroos helped to change the group dynamics.

While the emus were temporarily housed behind the scenes with visual access to the habitat, the kangaroos and wallabies got to know each other. Once the emus were reintroduced to the habitat with the macropods, the boomers (male kangaroos) immediately stood up to the adolescent emus, and the wallabies quickly integrated themselves into the kangaroo mob as if seeking protection. We attempted to provide physical barriers in the habitat to prevent the emus from chasing, but the emus were easily able to duck underneath the railing. Fortunately, the chasing ultimately decreased - seemingly due to the presence of the kangaroos. After nine days of daily introductions with overnight separation, all animals had complete access to the indoor holdings and outdoor habitat. Now the focus could shift to desensitizing the animals to the presence of guests inside of the habitat. Leading up to the grand opening, we conducted private guided tours including both staff and donors. We increased the capacity of the walkabout overtime, and saw no impact on behavior, even when the animals did not have indoor access. Gradually, animal care staff observations and intervention were phased out, and we relied on the guest services staff to maintain pathways, ensure animal and guest safety, and recognize animal behavior indicative of stress. The education of staff outside of the animal care department became vital to the daily operation. The walkabout attendants became key players in managing the curiosity of the emus such as physically guiding the emus away from both people and items that caught their attention, while also addressing other challenges during public hours. The occasional bite still occurred, particularly when guests had fingers through the mesh fences, or when the emus acted quickly to procure an object that caught their attention. The bites were not aggressive in nature, and most people were understanding, but we routinely reported the occurrences, provided first aide if necessary, and problem-solved to prevent future accidents. For example, providing enrichment more sporadically helped to decrease the emu's interest in and interaction with guests. Very quickly, we settled into an easy routine, and continue to tackle obstacles as they emerge. As we look back over the first year of operation and the preparation that went into introducing emus into an free contact habitat, we stand by our process and are proud of the outcome. We overcame delayed construction by raising the chicks near the barnyard, which we believe benefited the emu's resiliency and human socialization. We successfully integrated two species of macropods with the ratites. We regularly welcome over one thousand guests into the walkabout daily.

Currently, we face the challenge of age-related behavioral diversity, emu sexual maturity, in addition to preparing to start the process all over with a new companion due to the sudden and unexpected loss of one of our original male emus. Adapting to change is how the idea of the Australia walkabout habitat first came about. The Santa Barbara Zoo staff successfully adapted to the needs of two common emu and looks forward to whatever the future may hold. Thank you to all of the AZA institutions that provided insight into their experiences managing a walk-through habitat! The information you provided was invaluable and aided in our success.

Photos courtesy of Santa Barbara Zoo Staff. ***Left:*** *emu stationing for voluntary visual and West Nile vaccination*
Above Left: *both emus resting in the walkabout*

Growing hope for Tunisian ostriches: in 2022, a wealth of chicks in their natural habitat

Dr. Marie Petretto,
Marwell Wildlife

Mr. Ezzedine Taghouti, Mrs. Hela Guedara,
Direction Générale des Forêts, Tunisia

The North African ostriches *Struthio camelus camelus* were once abundant in the Saharan steppes and together with the scimitar-horned oryx *Oryx dammah* and the Addax *Addax nasomaculatus* they represent the extinct megafauna of southern Tunisia. For more than 30 years, the British charity Marwell Wildlife (www.marwell.org.uk/conservation) has worked with the Direction Générale des Forêts (DGF, Ministry of Agriculture, Fisheries and Freshwater Resources) for the restoration of the Sahelo-saharan ecosystems: the reintroduction of the large-bodied species from captive stocks is instrumental in the ecosystem restoration process.

Tunisia established a founder population of North African ostriches imported from breeding centres in Morocco and Saudi Arabia (respectively from Chadian and Sudanese lineages) with a goal of maximizing the genetic diversity of the Tunisian meta-population. Enacting a North African Ostrich conservation strategy, Tunisia's repopulation program started 7 years ago and birds are being released to progressively re-establish the species at seven national protected areas located within their former range. In the 2020 AZA Struthioniformes TAG newsletter, we described the most recent reintroduction of young ostriches in Bou Hedma National Park (NP). We are very pleased to report that the reintroduced birds not only reached sexual maturity in their natural environment but also successfully bred in 2022. Indeed, nine chicks born in July 2022 are free ranging with their parents within the national park. The other populations in Sidi Toui NP and Orbata National Reserve have also grown with 9 chicks hatched in 2022. With a total of 80 adult ostriches in Tunisia, this season represents more than 35% population growth.

In the Tunisian arid lands, the young ostriches are exposed to high threats of predation (from African golden wolves, foxes, feral dogs, or eagles) and climatic events (dehydration, flooding...): this naturally regulates the growth of this prolific breeder but on the other hand threatens the re-establishment success in the initial phase of a reintroduction. Therefore, when there is no resident population to be enhanced with young birds, it is necessary to release birds big enough to range widely and protect themselves. After a first attempt of releasing adult ostriches kept for several years in an acclimation pen in Dghoumes (NP), we identified some behaviours likely resulting from captivity and human impregnation that compromised the birds' ability to efficiently breed in the wild. The second attempt in 2016 released four 18 month-old birds in Sidi Toui NP: despite the small size of the reintroduced flock, we observed successful breeding during the first year post release, supporting the hypothesis of better fitness. In 2019 we replicated the same reintroduction process in another protected area, Bou Hedma NP, and from a different source group. The results are so far positive and provide another insight on good practices that could benefit other ratite reintroductions.

Rewilding a natural habitat requires patience and flexibility. In this context, the shared experience is a real asset for potentiating efforts, in particular for the conservation of species of moderate global interest such as ratites. Here would like to acknowledge the role of the AZA Struthioniformes TAG that brings together people who are working toward similar goals. For instance, progresses and results published in the Ratite Review 2022 about the Darwin's Rhea reintroduction in Chile (Saucedo *et al*) or the ostrich captive breeding in Niger (Sahara Conservation) provided key information that help and plan future actions in Tunisia. We are looking forward to reading the next articles, and we wish a long life to the newsletter!

If you would like to support conservation work for North African ostrich in Tunisia, please contact Marie Petretto (*MarieP@marwell.org.uk*) for further details.

Marwell Wildlife

Eight North African ostriches hatched in Niger

Courtesy of Sahara Conservation

For the first time since 2019, eight ostrich chicks hatched in April 2023 in the Iferouane site in Niger. This site is joint managed by the Réserve Nationale Naturelle de l'Aïr et du Ténéré (RNNAT) and the NGO Gage. Sahara Conservation provides technical and financial support to Iferouane teams. Congratulations to all involved in this major success!

Photo courtesy of The Living Desert Zoo and Gardens; from left to right: ostrich, emu, and domestic chicken eggs for size comparison.

SAHARA CONSERVATION FUND

PLEDGE FORM

FROM:	
TO:	Sahara Conservation Fund
DATE:	
PURPOSE:	Support for AZA Struthioniformes TAG/SCF Adopt-an-Ostrich program in Niger

☐ _____ wishes to adopt an ostrich for one year for the sum of $500
OR (insert institution name here)
☐ _____ would like to pledge the amount of $_____
(insert institution name here)

Thank you again for your support.

Please make checks payable to **Sahara Conservation Fund** and mail to:	**Sahara Conservation Fund** c/o Karen Sausman, Treasurer 13220 N Red Hill Rd Marana, AZ 85653

Or wire funds to: **Wells Fargo Bank,** 27630 Ynez Rd., Temecula, CA 92591, USA	
SCF Bank Account No.:	2879230544
SWIFT Code:	WFBIUS6S
US Interior Transfer Prefix:	121000248

Sincerely,

Karen Sausman, Treasurer
Sahara Conservation Fund

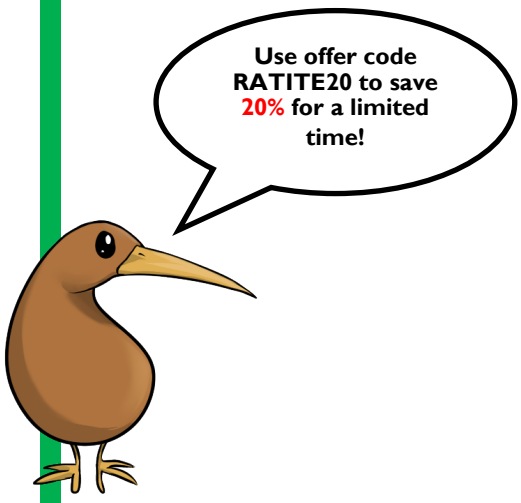
Thank you for your support. The Sahara Conservation Fund is a not-for-profit organization exempt from federal income tax under the provisions of Section 501(c)(3) of the Internal Revenue Code. Contributions to the Sahara Conservation Fund are tax-deductible in accordance with the law.

Ratite Stickers!

Our custom vinyl stickers are available while supplies last by contacting Nicole at *nlagreco@sandiegozoo.org*.

Stickers are $3 each or all five for $12.

A perfect gift for that special ratite keeper in your life!



Support the TAG, buy a bag!

Check out our partner Wendy Barnes Design! You can support the TAG by going to *www.wendybarnesdesign.com* and purchasing any ostrich, cassowary, or kiwi product. 10% of sales on these products will go towards the Struthioniformes Taxon Advisory Group.

Be on the lookout for a new design coming soon!

Check out Gladys Porter Zoo's Cassowary Tree!

GLADYS PORTER ZOO

We love cassowaries from head to toe!

Photo courtesy of Pinola Conservancy

In 1904 Theodore Roosevelt won a presidential election .. and a pair of ostriches

Article written by Jack Tamisiea, Communications Specialist
National Museum of Natural History

The two ostriches Roosevelt received from King Menelik were bound for the National Zoological Park, where they arrived on November 24, 1904. They were among the first of several wild presidential gifts to end up at the National Zoo. Read more here: [In 1904, Theodore Roosevelt Won a Presidential Election…And a Pair of Ostriches | Smithsonian Voices | National Museum of Natural History Smithsonian Magazine]

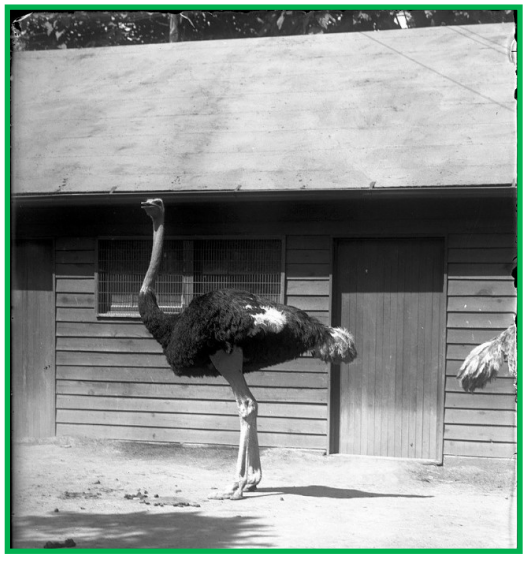
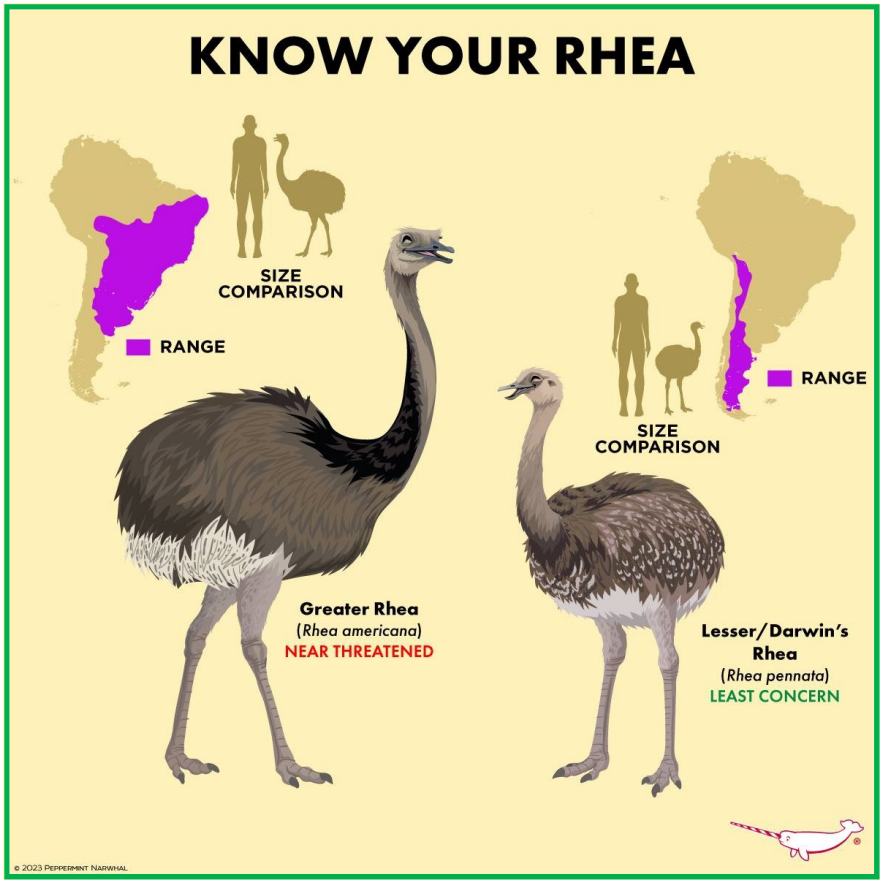


Photo Courtesy of Dickerson Park Zookeeper Christina



Please email me any articles and pictures relating to husbandry, training, new hatches, or program updates relating to ostriches, emus, rheas, cassowaries, kiwi, and tinamous by **February 15th**. Previous issues can be located here: https://www.avianscientific.org/struthionformes

- Articles should be emailed to me in a word document, pictures can be attached to the email. Formatting is not important
- Articles should be limited to about 500-750 words; not a hard rule but this helps me plan formatting. Longer is ok!
- Short announcements are welcome! New chick? New exhibit open? The more pictures the better!

Please email submissions to *kirbypitchford@gmail.com / kppitchford@nashvillezoo.org*

Protocyon (large canid from the late Pleistocene) hunting a rhea in the Brazillian Cerrado, art by Hundari Nundu

"The END"

Photo credits: ***Brown kiwi*** *- Jessie Cohen;* ***Greater rhea*** *- Meghan Murphy;* ***Emu*** *- Angela Blommer;* ***Southern cassowary*** *– Mike Taylor;* ***Ostrich*** *– Colleen Baird*