

The Ratite Review



THE RATITE TAG'S ANNUAL NEWSLETTER 2012



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Fundraising

Nashville AAZK Raises Funds for Cassowary Conservation by Shelly Norris

The Nashville Chapter of American Association of Zookeepers made 2011 the year of the Cassowary. In August it held the 8th Annual Animal Impressions Art Auction. All creatures great & small from the Nashville Zoo contributed paintings to be auctioned off for Australian Rainforest & Cassowary Conservation efforts. Local framers donated their services to professionally frame each painting, while other businesses donated food & drink.

Over 150 guests attended the auction, bidding on 50 unique pieces of art. Country Music artists Chris Young & Darryl Worley signed a few pieces, including some great Cassowary footprints. A total of \$3,250 was raised. Nashville AAZK donated \$2,250 to Rainforest Rescue and \$1,000 to Community for Coastal & Cassowary Conservation (C4). To learn more about these organizations or to



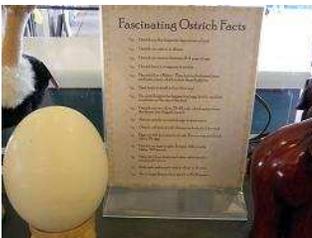
make a donation follow these links:
Rainforest Rescue:

<http://www.globalgiving.org/projects/protect-rainforest-save-the-cassowary-australia/>, C4: <http://cassowaryconservation.asn.au/>.



AAZK also placed a donation box at the Zoo's Lorikeet Landing exhibit. Guests donated \$271 which was generously matched 2:1 by the Nashville Zoo. A total of \$814 was donated to Dr. Hamish Campbell to purchase GPS units. Dr. Campbell is working with Queensland Parks and Wildlife to track juvenile Southern Cassowaries. It is hoped that further studies across a range of landscape types will improve our understanding of habitat requirements and dispersal capabilities of juvenile cassowaries. Such information could aid in the decision process in regards to optimal release sites for rehabilitated cassowaries, as well as informing about forest patch colonization.

Zoos Raise Money with Ostrich Eggs



North Carolina Zoo Display



North Carolina Zoo Display



North Carolina Zoo Display

Over the past year Zoo Atlanta and the North Carolina Zoo have been raising money for the Sahara Conservation Fund with eggs laid by their ostrich.

In North Carolina they have two main gift shops on opposite ends of the park with a small ostrich egg display in each. There is a sign that says the eggs come from the birds in the park and describes the project the money will fund. There is also an ostrich fun facts sign at the display as well.

At Zoo Atlanta, there is a mammal keeper, Sarah Byrd, who is also an artist and will paint some of the eggs with zoo themes to be sold as well!



Photo Courtesy of Sarah Byrd, Zoo Atlanta



Photo Courtesy of Sarah Byrd, Zoo Atlanta

From the Education Committee

Your AZA Ratite TAG Education Committee:

Carrie Brooks, Birmingham Zoo

Kevin Hils, Chehaw Wild Animal Park

Melody Hendricks, Brandywine Zoo

Chris Schmitz, Utah's Hogle Zoo

Eve Cooney, Saint Louis Zoo



Currently our Education Committee is focusing our efforts on cassowary education with financial support from a \$1000 grant secured by Chad Comer at the Blank Park Zoo.

Our goal is to create an educational booklet about the cassowary, which will include general information, natural history, and conservation, as well as activities and ideas for use in education programs, both at zoos and by school teachers. Thus far we have surveyed institutions about their cassowary and ratite related programming to assess current and potential future needs. Based upon programming needs, we are pursuing the purchase of various cassowary biofacts, which may be checked out by institutions as part of a "cassowary kit". Recently we have received a footprint mold from Ric Urban at Newport Aquarium to use for our project. Cassowary skull and egg molds are also being considered.

We are looking forward to sharing the Ratite TAG's knowledge and enthusiasm for cassowaries and all ratites with zoo educators, volunteers, classroom teachers and students.

If you would like to share cassowary or ratite related information, suggestions or activities, please contact Carrie Brooks at cbrooks@birminghamzoo.com or 205-397-3864.

Out and About With Ostrich

Adopt an Ostrich Update

The AZA Ratite TAG rolled out its "Adopt an Ostrich Program" in January 2011. Distribution included aig and ratite listserves, 2011 TAG ratite newsletter, flyers at AZA conference, emails to curators and directors at all AZA holding zoos and a presentation at Chattanooga AZA meeting. **The 2011 yearly contribution was \$13,375. Your support is now needed for 2012 so that we may continue to:**

1. Improve the capacity of the people of Kellé, Niger to produce ostrich that can be used for future reintroduction
2. Acquire 9-10 additional ostrich and transport to the breeding center
3. Train local staff in ostrich husbandry techniques
4. Train local staff to be ambassadors for the ostrich recovery program within their community

Project Future

Efforts continue to focus on substantially improving the diet, relocating additional birds to the Kellé site, and promoting natural incubation until such time as we can develop the capacity in Niger to manage artificial incubation and chick-rearing operations. The AZA Ratite TAG continues to lobby for new institutions to participate in the recovery efforts and to that end, has launched the Adopt-an-Ostrich Program. Our goal has been 100% participation from all US zoos holding ostrich, at whatever level they can afford. At this time we estimate that program costs in Niger total \$500 per bird per year. Funds raised through the Adopt-an-Ostrich Program are used to support the acquisition, care and

feeding of pure-bred Saharan ostrich in Niger; to help maintain the ostrich facilities; and to improve capacity for ostrich management. The early response has been good, but additional funds are sought to grow the project and provide care to all the birds in the program. Your investment will provide committed local Nigerians with the capacity to see a project concept of their own making carried through to completion. The return of ostrich to the wild as the result of grassroots efforts like this project will galvanize local people across Niger to look for new and innovative ways to restore the unique fauna and flora of the Sahara.





PLEDGE FORM

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

- (insert institution name here) 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 \$_____

Please make check payable to Sahara Conservation Fund and mail to:	Sahara Conservation Fund c/o Karen Sausman, Treasurer 60-450 Hop Patch Springs Mountain Center, CA 92561 USA
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Or wire funds to: Wells Fargo Bank 27630 Ynez Rd Temecula, CA 92591 USA	
SCF Bank Account No.:	2681061277
SWIFT Code:	WFB1US6S
US Interior Transfer Prefix:	121000248

Thank you again for your support.

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.

Running with Rheas

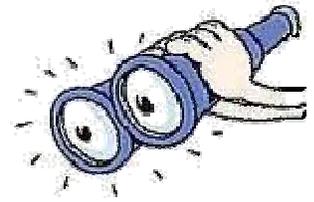
Rhea Watch Begins at Sequoia Park Zoo by: Kelsey Kuhn

When I first arrived at Sequoia Park Zoo in Eureka California, my knowledge of working with ratites was limited to daunting stories told to me by keepers and zoo vets. So when I began working with our I.I rheas I was very nervous! Happily our rheas are both very accepting of keepers in their space and their calm demeanors and quirky personalities made me quickly fall in love with them.

So when I read that the National Zoo was looking for other facilities to participate in their greater rhea study, I jumped at the opportunity to not only provide us with extra eyes on our animals but to also further our knowledge of the species in general. There are few behavioral studies of the greater rhea in the wild and even less in captivity. This study aims to produce a complete ethogram for the species and determine social interactions between flock members. One interesting facet of

this study is determining the function of the body twitch which consists of the rheas twitching their wings in close proximity to each other. It's still not understood what exactly this social behavior communicates.

As a small zoo our volunteer base is not very large, so to recruit for the study we posted flyers at Humboldt State University in nearby Arcata hoping to tap into the large wildlife and zoology program students. We also posted on our website and email newsletters to bring in community members as well. Our first training session had four people, three of which stuck around and allowed us to start recording data on January 1 of this year. Now that Humboldt State is back in session our next training already has seven people signed up and I am continually getting emails from interested volunteers. Since the response from HSU students is so enthusiastic, I am also planning to implement a general behavior watch program so that we can get more eyes on other animals in the



zoo and hopefully further our relationship with students from the university by providing valuable observational study experiences.

I encourage other zoos with this species to participate in this study. The more institutions bringing in data, the more we can further our understanding of this wonderful but often overlooked ratite species. Sara Hallager at the National Zoo has been great to work with and we've already added several new behaviors to the ethogram. One example is the leaf toss behavior seen at both the National Zoo and here at Sequoia Park Zoo. The rheas were choosing leaves over dirt for their "dust bathing" behavior. Another new behavior is the high alert posture.

What are your rheas doing? It's not too late to join in!

Greater Studbook Update by Kristen Clark, Smithsonian National Zoological Park



The greater rhea studbook has a living North American population of 170 birds. This is a very large studbook with a database of over 6,000 records dating back to the late 1800s.

Currently, nearly 100% of the genetics are unknown. Zoos are asked to please record sire and dams [please list all possible dams] for any offspring born so that the studbook will be able to accurately trace genetics going forward.

Greater Rhea Eye Picking

Bonnie Van Dam, Detroit Zoological Society

The Detroit Zoological Society has had greater rheas in their living resident population for years. For several years we had one male and three older females. Once the aging birds started to pass we decided to bring in two young females and just exhibit them with two older females. In November of 2009 we received two 6-month old females from the National Zoo.

Introduction to the older females was uneventful and instantly the two young birds attached themselves to one of the older females. The older female was very tolerable of the youngsters but unfortunately this older female died in February 2011. By March 2011 we started to notice one of the eyes on the remaining older female would appear red, swollen and sometimes bleeding. We assumed this female was pacing and possibly injuring her eye along the fence line. Soon we noticed one of the young females

with a similar injury. One day I was walking by the habitat and noticed the old girl sitting down and one of the younger rheas was standing face to face with her. This is we began to suspect that maybe the young bird was pecking at the other birds' eyes.

We began separating the young birds from the older bird and the eye injury healed nicely. We were able to place all the birds back together until November of 2011 when we started to see the injury again. The young birds also take turns causing eye injuries to each other but it is far less severe. For now our best practice is to separate the birds when the eye pecking is occurring and offer more enrichment, but it has been impossible so far to break the habit.

We have key chains!

The Ratite TAG has many unique items for sale that can't be found anywhere else! Key chains made in Zimbabwe include red necked ostrich, emu and cassowary. Each keychain is \$10 and funds go directly to the Ratite TAG to help support TAG projects.



Ostrich



Cassowary



Emu



Rhea

Volunteers Needed to Help write Ratite TAG Animal Care Manuals (ACMs)!

Volunteers are needed to help work on the ostrich, rhea and emu AZA animal care manual. This joint ACM will encompass all three species with breakout sections that are pertinent for each species. If you have expertise to share on any of these species, please contact

Sara Hallager at hallagers@si.edu

You can see what ACMs entail at <http://www.aza.org/animal-care-manuals/> as well as view a template to see what kind of information is needed.

We need YOU!!

Catching Up With Cassowary

3-Year Global Cassowary Action Plan

ASSOCIATION
OF ZOOS &
AQUARIUMS



ZOO
AQUARIUM
ASSOCIATION



- Complete DNA studies
 - Complete breeding recommendations based on new information
- Nicole LaGreco [San Diego Zoo] to apply for International Studbook Status
- Increase participation in Ethotrak
- Complete AZA Animal Care Manual

- Space survey
- Pursue and support in-situ conservation program
- Continue sub species research - followed by breeding recommendations
- Move forward with ethotrak
- International studbook
- Form a central base for post mortem/necropsy/vet reports.

- Send Specimen Records or ARKS and MedARKS records of all Cassowaries historically held at your institution to James: wildlife@cairnstropicalzoo.com to build clinical database of treated illnesses/injuries for inclusion in HM
- James to fill in addressed sections of cassowary questionnaire and circulate for completion by workshop participants. Definitions and selected images to be included in HM
- Collect any gross pathology, histopathology, haematology and blood biochemistry data if not included in ARKS/MedARKS files and send to James
- Hatch data/Egg data form – Template from ArkSAG Suzy Barlow
- Reproductive data collection – including AZA and EAZA – Chris to compile and circulate reproductive data sheet template
- Workshop participants to film any reproductive events (courtship, mating) and send to James. Please list your name and institution so that you can be credited on the dvd
- Prepare and circulate institutional costing for EthoTrak.
- Institutions to notify James of interest in EthoTrak
- Compile and circulate workshop documentation
- Open discussion with DERM re: possibility of zoo staff assisting with, or obtaining training videos with planned wild cassowary capture, restraint and transport procedures
- Develop visual back-score rating
- Acquire DERM crate dimensions/design (sedated birds)
- Open communication with Margaret Thorsborne about wild Cassowary data
- Conduct trial egg candling on emu eggs
- Acquire cassowary post mortem schedule
- Acquire egg post mortem schedule
- Collect developmental weights for cassowary and send to James
- Acquire contact details for cassowary fruit farmer
- Acquire draft quarantine protocol from VetSAG
- Discuss and develop with Cassowary Recovery Team (CRT) a uniform Cassowary conservation campaign that is aligned and coordinated with the CRT efforts. Zoos to implement. Will likely include a fundraising element to supply funds to DERM to continue tracking/monitoring research. Tie in with training of zoo staff.
- Discuss Cassowary exports/imports with AZA
- Create Cassowary Husbandry listserve with agreed participants as contacts
- Finalize and circulate husbandry manual and DVD

Cyclone Yasi

Update by James Biggs, Cairns Tropical Zoo, Queensland



Photo courtesy of the Herald Sun

For more information please visit:

http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/threatened_plants_and_animals/angered/cassowary-tc-yasi.html

Since Cyclone Yasi hit on Feb 2, 2011, 10 cassowary mortalities have occurred. It is impossible to attribute these deaths directly to Yasi, as many of them were hit by cars, or attacked by dogs. One might speculate that the lack of suitable feeding habitat immediately after the cyclone forced birds into residential areas to look for food, bringing them closer to dogs and cars.

Fewer birds have entered the Garner's Beach Cassowary Rehabilitation Facility when compared with Cyclone Larry. Does this show that the supplementary feeding program developed by DERM in response to Cyclone Larry (and implemented immediately after Cyclone Yasi) is having a positive effect on reducing the number of birds coming in to care? I'm not sure.

One rehab specimen has been recruited into the ZAA (QLD Branch) captive population. A sub-adult male. Now resides at Cairns Tropical Zoo.

Satellite trackers were attached to 7 birds prior to being released, post-Yasi. Preliminary data is showing some interesting results.

New Cassowary Exhibit Opens at Blank Park Zoo by Chad Comer



In the summer of 2011 the Blank Park Zoo opened a renovated Australia exhibit. The exhibit included holding space as well as exhibit space for the zoo's first Southern Cassowary. The goal of the design was to add needed management space for cassowaries along with keeping the overall free roam theme of the new exhibit. When going through the design phase the main goal of the exhibit was to have the potential of having room to manage 2 cassowaries in 2 different yards.

The two exhibits designed both were large in size but because of the location of one display we included part of a pond which already existed. This exhibit is roughly 2000 square feet of dry space and 1200 square feet of water. The opposite exhibit is over 3000 square feet of dry space with no pond. The yards are separated by 1 X 1 inch mesh and supported by lumber for added reinforcement. Since our ultimate goal is to have a male and female here someday we used eucalyptus poles standing vertically to separate the exhibits visually. We also surrounded the exhibit with eucalyptus to add to the theming as well as dictating where the public could view the cassowaries for their comfort. A door is separating the two exhibits to give us the option to have two cassowaries together or apart depending on the birds and the season. Luckily the site has mature trees around it as well as in the exhibits but 1-2 more trees



needs to be added in the dry exhibit in the future. The cassowary holding has four 10 foot x5 foot pens with doors separating each pen for shifting and animal management. They were made from horse stalls that give us the option to train in the future with 1 foot wide x 2 foot tall access doors starting at 5 feet. Because it's Iowa and we deal with winter the floor is heated on half of each stall to keep the bird comfortable. We have two covered secondary holding pens which connect to each other with shift doors to allow more access to the outdoors when the weather is on the border of being too cold. These pens are also surrounded by the eucalyptus poles to cut down on the wind, and they will also allow for introductions to take place as well out of view of the public. As a whole, the holding and exhibit was designed and built keeping in mind its Iowa and how could we put as many cassowary friendly management tools to work in their favor. We can always want more space but I think with the constraints we had long term our hope is this is going to lead to breeding and happy cassowaries. The public really enjoys seeing our male on display and he seems very comfortable here as well.

Cecil's Corner



Last year we saw Cecil finding his own enrichment in the form of a deceased furry rodent!

2011 was just as exciting for Zoo Atlanta's resident cassowary! He moved up to a new exhibit and formed a surprising romance with one of his new neighbors....

Meet his new lady love!



Garbonzo and his "mate" G.G. (Garbonzo's Girl) moved in next door and it was love at first sight! Sorry Bean, your girl has found a new love, and the proof is in the pictures!

Next time you're in Atlanta come down to Outback Station and visit the new pair. You're bound to find them together, in love on opposite sides of the fence!



Cassowary Husbandry Workshop, Australia by Nicole LaGreco, San Diego Zoo

In August, 2011 I was able to attend a cassowary husbandry workshop hosted by Dreamworld, Gold Coast, Australia. The workshop was facilitated by Chris Hibbard and Carolyn Hoag from the Zoo and Aquarium Association (ZAA). There were approximately 30 people from more than 10 facilities, primarily zoo staff but also government agency staff, rangers and veterinarians involved with wildlife management and rehabilitation. The primary focus of the meeting was to work on updating the husbandry manual with information and data that we've learned since the first one was created more than 30 years ago. Although much has changed about the way we manage cassowary, many of the recommendations are still the same.

When listening to everyone talk, it became very clear that we are all facing similar challenges. Why can some institutions so easily breed, while others struggle to even get their birds together in the same pen long enough to breed? What signs do you look for to know it's the "right time" to put the birds together? Does everyone experience a seasonal decrease in appetite? Genetics.....only a few pairs in each region have reliably produced, flooding the market with little genetic variation. Another topic of discussion which is of great interest to me, as the studbook keeper, was exporting birds to the US. Currently they do not have enough breeding to sustain their population without acquiring new birds. Which, fortu-

nately for them, they have been able to do recently by taking several non-releasable rehabilitated birds into the zoo community. Once they have consistent breeding they are very willing to help us, by providing birds to bolster our population.

The meeting provided an excellent opportunity to forge relationships with many dedicated cassowary keepers, veterinarians, and rangers. While we all play different roles in cassowary conservation, we all have the same goal and that is to see cassowary thriving in the wild for many generations to come. If you are interested in learning more about how you can help, please contact me at nlagreco@sandiegozoo.org.



Houston Zoo Celebrates Cassowary Day!

By Megan Neal, Houston Zoo

In July of 2011, the Houston Zoo hosted their first annual Cassowary Spotlight on the Species, otherwise known as 'Cassowary Day'.

Our resident cassowary, Darwin, has been at the zoo since 2009, and has always been popular amongst guests and zoo staff. His popularity has served as a launching point for yearly hatch day celebrations, but in 2011, bird staff wanted to make the cassowary celebration an educational event

for guests while raising some funds to support wild cassowary conservation projects.

To promote the event, keeper staff wrote blogs about the wild population of cassowaries in Australia, and constructed and placed cassowary crossing signs all around the zoo with maps directing guests to the cassowary exhibit, helping to highlight our message about the dangers cassowaries face from motor vehicle traffic resulting from

habitat loss and fragmentation.

Darwin enjoying his peach during the eating contest



Bird staff created several games highlighting cassowary biology. For young children, we created "Pin the Wattle on the Cassowary", and each child that participated was given an 'I Heart Cassowary' sticker. For both young and old, a large jump board was created, challenging guests to try to "Jump like a Cassowary". No one could, but everyone had a great time trying. Our most popular game consisted of an eating contest between cassowary keepers and Darwin, resulting in a large audience and hilarious video now on YouTube.

Keeper chats around the zoo highlighted Australian animals, focusing on habitat loss tied back to our **Cassowary Day**. Bird staff did several cassowary training sessions for the public, as well as a very popular 45 minute cassowary shower, as Darwin appreciates a spray down during the Texas summer. During the course of the day, keepers spoke to approximately 2500 guests about cassowary and habitat conservation. This number does not account for who may have heard the same message from other keeper chats throughout the rest of the zoo.

In 2012, the bird department plans to expand **Cassowary Day** by highlighting the rainforest ecosystem over a weekend, and Darwin will continue to be a primary concentration of the event, and the proceeds will go to Rainforest Rescue's efforts to save the cassowary in 2012!

Due to their size and reputation of being the most dangerous bird in the world, cassowaries are among the most popular exhibit animals among zoo visitors. It is not difficult to get visitors to admire our cassowaries, and a Cassowary Day is a fun and gratifying way to teach the public about the plight of wild cassowaries, and the devastation of habitat loss. Seven hundred dollars was sent to the Australian Rainforest Foundation's "Operation Big Bird", which works to restore natural cassowary habitat.

For more information about our Cassowary Day, or ideas to help you start such an event at your own institution, feel free to contact Sara Hallager at HallagerS@si.edu or Megan Neal at mneal@houstonzoo.org.

Cassowary Research Opportunity

GPS-based tracking of rehabilitated southern cassowary chicks

Dr Hamish Campbell & Dr Ross Dwyer - School of Biological Sciences, University of Queensland

Collaborating partners: Dan Mead- Queensland Parks and Wildlife, DERM, Scott Sullivan, DERM, Dr Graham Lauridsen, Tully Vet surgery, Tully

Adrian Hogg, Daniel Figueiredo, Rod Lamb- Ellabay Ltd,

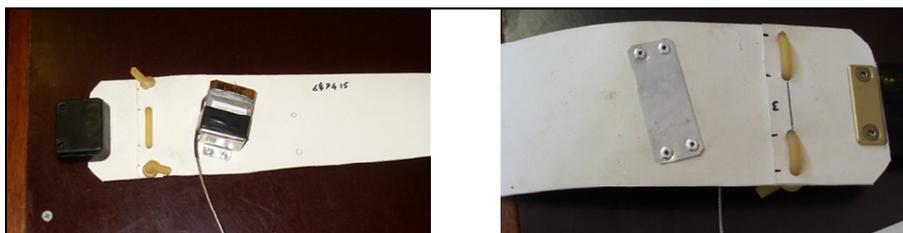
Every year in Queensland a number of cassowary chicks are brought into care after the premature death of the parent bird — usually through traffic strike or dog attack. The orphaned chicks are hand-reared until they are considered of an age for release back into the wild. The fate of hand-reared chicks as well as that of wild chicks once they leave the natal area is presently unknown. This study aims to address that information gap by attaching Global Positioning System-based telemetry devices to juveniles once they are released back into the wild. The information gained will also be relevant to cassowary ecology in general, providing information on how far juvenile cassowaries disperse, and when and where they establish a permanent home-range. This will be valuable information for management as well as better understanding of the biological and needs of captive cassowaries.

METHODS

Remote sensing equipment

The attached device consisted of seven elements: 1/ A purpose designed canvas cuff with neoprene lining; 2/ A GPS-based location recorder constructed by Telonics Inc. (Arizona, U.S.A), weighing 185 g and dimensions 5 x 3.5 x 2.5 cm, containing a SIRF-4 chip, programmed to take a positional fix of its location on the earth's surface every 30 min for 180 days, on duty cycle between 3 am and 9 pm; 3/ A two stage VHF radio transmitter, on duty cycle 7 am – 5 pm two days per week, and upon tag release the on duty cycle changed to 7 am and 5 pm daily; 4/ A tri-axial accelerometer which recorded movement activity; 5/ A mortality switch which was triggered if no movement was detected within a 24 h period, this altered the pulse rate of the VHF transmissions; 6/ A mechanical time release mechanism (48 g Telonics); 7/ A surgical latex link within the cuff to increase flexibility, allow for stretch, to act as a weak point if the bird became entangled and to ensure tag detachment in the event of failure by the mechanical timed-release mechanism (Fig. 1).

Figure 1



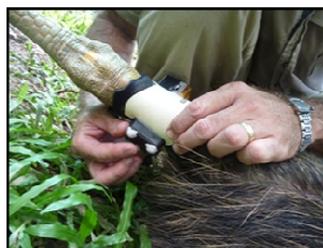
Tagging Methodology

Four out five of the tagged juvenile cassowaries were under rehabilitation at the QPWS Garners Beach Rehabilitation Facility, and the fifth was under the supervision of the veterinary surgeon Annabelle Olson. For attachment of the remote sensing equipment, the cassowaries at Garners Beach were sedated by a mixture of tiletamine and zolazepam (Zoletil 100, Virbac, Milperra, NSW), administered at a dose of ~7.5mg/kg by injector pole (Wildlife and Animal Capture, Warwick, Qld). Once sedated, the cassowary was moved to a shaded area, and given an intra-muscular injection of 10 mg of diazepam (Parnell Laboratories, Mascot, NSW). Heart rate, body temperature and ventilation rate were monitored throughout the procedure. The cassowary under the supervision of Annabelle Olson was sedated using medetomidine (1mg/kg) and reversed with atipamezole (50 mg/kg). The device was attached around the tarsus, and the length and width of the tag cut to fit each bird. Once the cuff was attached it was ensured that the leg could flex unhindered, and the cuff was cut in specific locations along the outer edges to prevent any abrasion with the leg (Fig.2). The GPS and VHF unit was positioned on the outside of the leg, and the timed mechanical release device positioned on the inside (Fig.3). Once the device was attached, the birds were transferred into wooden boxes purposely constructed for the transport of cassowaries and allowed to recover from the anesthetic. During this period they were transported to the chosen release site where the boxes were opened and the birds released into the forest.

Figure 2



Figure 3



A juvenile female cassowary of approximately 15 months of age, which had been in care for 8 months was released on the 20th April 2011 at the roadside in the valley between the Donovan and Cowley ranges, Cape Tribulation. Two male sibling cassowaries of approximately similar age, which had been in care for 12 months, were released on the 15th May 2011 at the roadside on the southern boundary of the Donavon Range. This habitat was considered to consist of relatively intact closed canopy rainforest and did not show recent cyclone damage. A second female of approximately 20 months of age was tagged and released on the 16th May 2011 on the Army training base at Jarra Creek, Tully. This forest area had been subjected to damage from Cyclone Yasi, and a cassowary fruit feeding station had been installed within the vicinity of the release site. A third male of approximately 24 months was found in poor condition at Coquette Point. This bird was kept at Garners Beach for 3-months before attachment of a remote sensing device and released onto provide property adjacent to Ella Bay National Park.

During the release period, all birds were located opportunistically via the VHF component of the remote sensing device. Four of the five devices were programmed to detach from the birds on the 18th October 2011. A few days after programmed detachment date, a vehicle was driven along the roads adjacent to the release areas and the location of each tag identified using a VHF receiver and directional YAGI aerial. Once the tag was located, triangulation of the location was made from various points along the road, and then the tag was recovered from within the forest. Dense understory and debris on the forest floor made the exact location of the tag difficult to identify, and it took between 1 to 2 hours to locate the tag after the initial detection from the road.

Results

Of the five cassowaries initially fitted with remote sensing devices, three devices have so far been recovered. One device is remains attached to a cassowary currently inhabiting the forested hills around Flying Fish point (detachment scheduled for the 18th February 2012) The fifth unit attached to a second male cassowary released at Cape Tribulation on the 15th May 2011 has yet to be recovered despite searches of the area. Search efforts, however, have not been made as far north as the Bloomfield River. This tag will stop transmitting on the 11th December.

So far all programmable timed release devices detonated on the programmed date. Data from the tri-axial accelerometer revealed that all of the remote sensing devices recovered had become detached from the cassowary before the programmed detachment date. The two remote sensing units recovered from Cape Tribulation were attached to the birds for 144 and 157 days. Examination of the latex links showed that the link had degraded and snapped prior to the detonation date. The cassowary released at Jarra Creek, Tully, only had the tag attached for 28 d after release. Examination of the cuff showed that the latex link had been severed. This area had sustained cyclone damage with a lot of debris and wait -a-while (*Caesalpinia decapetalia*) thorns, which likely contributed to damage to the latex link. The GPS-based unit and VHF transmitter were in reasonable condition, and there was no signs of excessive rubbing on the attachment cuffs. The VHF aerial on all units showed signs of preening by the cassowary (Fig 4).



The GPS-based units provided accurate location fixes of each cassowary every 30 min during the attachment period. The success rate for resolved fixes was between 63 and 78 %. The data revealed the cassowaries to have a high level of site-fidelity to the release sites

Figure 4

What you can do to help!

There is a chick at the rehab center right now that just came in and will be there for a few months. This is a great opportunity for you to raise money to tag the chick for release! For more information contact Nicole LaGreco nlagreco@sandiegozoo.org



Breakdown of Costs:
Each unit costs ~\$2500

TGW-4200 GPS/Store on Board \$1825.00

CR-2A collar release mechanisms \$ 300.00

plus freight add another \$400

Emu Encounters

Chehaw Animal Park Opens an Outback Exhibit with a Flock of Emu by Kevin Hills

In the spring of 2011, we entered into the world of the emu at our large Outback Exhibit. Chehaw animal care staff had been working with ostriches but it had been nearly 10 years since we had dealt with the emus in our collection. The emus came to the facility from Jim Fowler's (Mutual of Omaha's Wild Kingdom and Johnny Carson's "Tonight Show") private collection. The group of animals was transported during the cool of the southwest Georgia mornings. The hardest part was getting them into the trailer but amazingly once they entered the trailer, they all sat down and enjoyed the 45 minute road trip back to the zoo. When the trailer was backed up into position to deposit them into their exhibit, the door to the trailer was opened. It took a few minutes for them to get acclimated but once the first bird departed the trailer, the rest were out and into the exhibit like a shot!

Three weeks after we introduced our birds to the exhibit, a local presented Chehaw with two more young emu chicks, both about a foot tall. They asked us to place them into our large group of 10 adult birds. We were very concerned that the babies would be treated with a high level of aggression. We had a section in the back of the exhibit where the young chicks could get through, a small gated area. This was small enough to allow the small birds to escape the adults if they were treated too aggressively. It was pretty amazing how fast those youngsters could run because when they were introduced, the babies outran the adults every time. The youngsters found their way to the sheltered cage and used it as a base of operations. The babies eventually were able to work together to avoid the largest males in the exhibit. They would get moved off of the food bowls throughout the summer by the older more dominant birds but grew stronger and taller all year long.

The 4 acre exhibit has held up fairly well to their herbivorous appetites. There was a small wetland in the front of the exhibit and as the summer drought wore on, they loved laying down in the muddy water. Though the water soon dried up and they eventually ate all of the water lilies that were in the ever disappearing waters. It did not take long for the local Outback to want to be involved with the us and the exhibit. Outback Steakhouse now has a sponsorship sign now out in the front of the exhibit with the other zoo exhibit graphics.

Then in fall 3.0 Red Kangaroos were introduced to the flock. The roos were are young in age, around 1 -2 years old. We were not sure how they young birds would react. We had a peafowl that made its way in the exhibit in the beginning of summer and I am pretty sure was attacked and badly injured by the emus. The 3 male boomers held together initially but if an emu got too close it got a swipe of the paw to the head. The emus, fairly quick learners, soon tolerated the roos presence and we eventually added 2 more female roos to the exhibit.

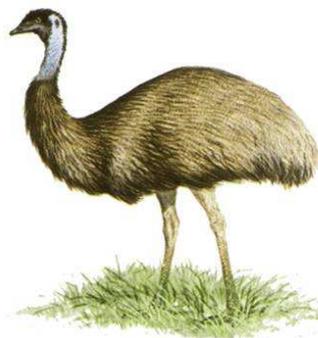
We are about 10 months into the exhibit and I have to say that it is one of the most active animal exhibits in the park. The kangaroos love to take dust baths out in the front of the exhibit for the zoo guests. And the emus call constantly to each other and are always reacting to each other and their exhibit "mates"! At times doing their goofy runs where the head goes one way and the body slices the other.



Emu Hatchings!



Capron Park Zoo hatched 3 chicks in May to a 22 year old pair that had been together for years but had never successfully reproduced. Here is one of the three chicks with dad!



Brevard Zoo also welcomed three chicks in April!
photo credit: Em Waitt



Keeping Up With Kiwi

Kiwi Breeding Program Grows in 2011 by Kathy Brader

The Kiwi breeding program grew this year with the addition of two new zoos. Memphis Zoo acquired a male from Columbus Zoo and the World Conservation Society [WCS] acquired two older males. WCS graciously helped the program by agreeing to send the two young Berlin males they originally were going to acquire to the San Diego Zoo to pair up their two females (who have not been satisfied with their previous mates). This will hopefully lead to the successful hatching of many kiwi from SDZ. Many thanks to the WCS team for seeing the big picture and supporting the program!

The Smithsonian Conservation Biology Institute (SCBI) just finished construction of a new kiwi facility. There are four kiwi breeding pens and a refurbished building, all dedicated to kiwi. The SCBI pair (one of the two pairs that came from New Zealand in 2010) has already produced a fertile egg. Unfortunately that embryo died early on in incubation, but we now know that pair is ready for success. This pair represents new founder genes for the program.

Columbus Zoo Hatches Three Kiwi Chicks! - by Kelly Vineyard

This year, a third kiwi hatched at the Columbus Zoo and Aquarium on July 17, 2011 marking the first time an overseas zoo has successfully hatched three kiwi in one year. The Columbus Zoo's first hatching of the North Island brown kiwi occurred in March and the second hatched in June.

The Columbus Zoo entered the Kiwi breeding program in 2003, and this is the adult female's third mate (females are very particular about mate choices). The breeding male, Koru, is a small but feisty male and the pair was immediately compatible.

Kathy Brader of the National Zoo came to Columbus and as-



Ariki, Ranui, and Toa of Columbus Zoo

sisted our primary keeper, Matt DeVoe, with our initial hatching and setting up the brooder areas. From this, the zoo formed the kiwi brooder keeper team.

The zoo had only prepared to raise one chick and became creative on how and where to raise 3 chicks. These chicks all required a different environment such as temperature, humidity and substrate. The first chick had required special medical treatments and had his own ophthalmologist due to early development of corneal ulcers. Our kiwi keeper team worked around the clock with feedings, medications and keeping up with environmental changes for the chicks to grow.

All three chicks are progressing as expected. The chick's names are Ariki, meaning first-born or chief, Toa meaning warrior, and Ranui meaning noon or mid-day.

National Zoo Hatches One, and Sends on Another

At National Zoo, a kiwi chick hatched on December 11 2012. The genetics Department sexed the chick as female by taking blood from the egg shell. They also sexed the three chicks hatched at Columbus Zoo. A 2010 NZP hatch female was sent to Vogel Park in Walsrode in spring 2011 for future pairing with their male.

And Across the Pond...

Frankfurt Zoo produced the only other chick in 2011: a male that hatched on April 3rd. The kiwi program is under the direction of Rudolf Wicker and has had continued success since 1986 — another notable achievement!

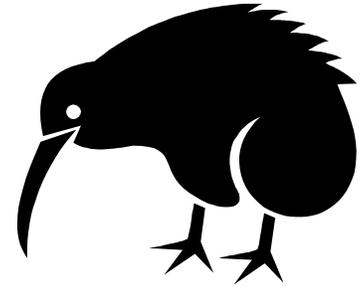
Meanwhile Back home in New Zealand...

A significant hatching happened in New Zealand this past year; a white kiwi was hatched at Mt. Bruce (operated by DoC). Manukura (Maori=of chiefly status) was hatched from an Operation Nest Egg, the egg taken from kiwi that were transferred to Pukaha from Hauturu/Little Barrier Island last year. Manukura is not an albino and is the first white kiwi to hatch in captivity. Occasionally brown kiwi with white on them are seen but it is very rare to see an all white kiwi. The Maori consider white kiwi very special, a "tohu" or sign of new beginnings. She had a rough time a few months ago, ingesting several large stones requiring surgery to remove them, but she came through and is now back at Mt. Bruce. Check her out on her very own Facebook page!



More News from New Zealand....

Avi Holzapfel, the director of the Kiwi Recovery Program for the Department of Conservation (DoC) in New Zealand paid a visit to the Frankfurt Zoo and the Berlin Zoo in 2011. He came away impressed with their programs and the commitment of the zoos to the kiwi. It wasn't that long ago that New Zealand would not send kiwi out of the country because of complaints from kiwi (people) who did not like how they saw their national bird being kept. With all the hard work that all the zoos have put forward to the improvement of their habitats and the cooperation of all the overseas zoos, this opinion has since been reversed.



Kiwi Feather Donation Program

A new project began this past year: sending naturally molted kiwi feathers back to Maori weavers in New Zealand. I am really proud to announce that for the first time ever the kiwi zoo's (both Europe and the US) collected kiwi feathers over the past year and that the Brown Kiwi Species Survival Program officially handed over these feathers to the New Zealand Ambassador, the honorable Mr. Mike Moore, in an official ceremony this fall in Washington DC. The Maori have traditionally made feather cloaks, called kakahu and these cloaks are considered Taonga (treasures) by the Maori. They are only worn by elders or chieftains of the tribe. The cloaks are given names and are handed down through the families. Since all kiwi are protected, when these cloaks need repair it becomes difficult to obtain kiwi feathers. The donation of these feathers to the Maori is significant.



Maori feather cloak

This program came as a result of a visit of gentleman from New Zealand who was visiting his daughter and son-in-law (who worked at the embassy). They brought him over to the National Zoo to meet one of the Zoo's kiwi "Manaia". He was a soft spoken and quiet man and I thought he enjoyed his visit. Manaia had shed a couple of feathers during the visit and he had picked them up. He told me he was learning to weave feathers in the traditionally way, so I offered to let him have the feathers (fortunately Roger Smith, his son-in-law was the permit officer at the embassy and made it all nice and legal). Roger told me afterwards that although they took his father in-law all around and to different sporting events he said the best thing he did was meeting Manaia and the other kiwi chicks. He had never touched a kiwi before in his life. That really touched me, so I had this idea that maybe we could collect naturally molted feathers and donate them to the Maori weavers. Once we were assured that we could legally import them into the country, we then asked if there was even a need or want of these feathers and the response was overwhelming. Dr. Don Moore [Associate Director of Animal Care at NZP] and I drove the feathers over the New Zealand Embassy and presented them to the Ambassador and Mr. Roger Smith. The Smiths were returning to New Zealand in October and they hand carried the feathers back to New Zealand. The feathers were welcomed with a blessing and then spent the next few weeks being cleaned by the bio-security team there. They are now with a local Maori tribe and will be distributed appropriately. I have been told when the word got out a few days before the feathers arrived in New Zealand the elders from different Maori tribes got together and next year's gift (and future years) will spread throughout the country. I cannot tell you how honored I feel that our kiwi will be immortalized in cloaks back in New Zealand.

If you are interested in housing kiwi in your institution, please contact Kathy Brader.

Keeper Tracks— Dana Urbanski, North Carolina Zoo

I grew up in the Big Apple in the early 70's, and my first animal memories were going to the Central Park Zoo. My family moved to Northern Virginia in the late 70's and that is where I learned to play in the woods and catch tadpoles in the creeks. I always wanted to have pets – anything that my mom would let me have. I graduated from Old Dominion University with a Bachelor of Science Degree in Psychology and Counseling in 1992 and after taking an Animal Behavior class started volunteering at the Norfolk Zoo. There my life changed forever when a keeper told me she had just graduated from a “zoo school.” I had no idea there were “zoo schools” and immediately found out about Santa Fe Community College and Moorpark. I started at Santa Fe in 1996 and immediately after graduation I was fortunate enough to land an entry level bird keeper position at the Houston Zoo. After spending almost two years there, I wanted to return to the East Coast. I was fortunate again and was hired on as a bird keeper for the Aviary at the North Carolina Zoological Park. I have been at the North Carolina Zoo for almost thirteen years, and still a bird keeper at heart but now I also work with zebra, ostrich, giraffe, and red river hogs. I have had the opportunity to train our ostrich for voluntary blood draw among other behaviors. In 2011 I volunteered to be the Enrichment Coordinator for the Ratite TAG. Besides training I really enjoy enriching my animals' lives and learning what other keepers are doing for their animals.



Odds and Ends About the TAG and Our Feathered Friends

- An extensive ratite bibliography is available upon request from Sara Hallager hallagers@si.edu. An updated bibliography is also published annually on the ratite listserv. To subscribe to the listserv, please email Sara.
- A reminder that the Ratite and Tinamiformes TAG Regional Collection Plan is posted on the AZA website in the members only section <http://www.aza.org/>. If you don't have access to the members only site, please email Sara Hallager at hallagers@si.edu to request a PDF.



Check out these video links to ratites in the wild!

Ostrich

<http://siwild.si.edu/content/animal-groups/large-birds/ostrich.htm?species=198>
<http://ibc.lynxeds.com/species/ostrich-struthio-camelus>
<http://www.arkive.org/ostrich/struthio-camelus/>

Cassowary

<http://ibc.lynxeds.com/species/southern-cassowary-casuarius-casuarius>
<http://www.arkive.org/southern-cassowary/casuarius-casuarius/>

Rhea

<http://ibc.lynxeds.com/species/greater-rhea-rhea-americana>
<http://www.arkive.org/greater-rhea/rhea-americana/>

Emu

<http://ibc.lynxeds.com/species/emu-dromaius-novaehollandiae>
<http://www.arkive.org/emu/dromaius-novaehollandiae/>

Kiwi

<http://ibc.lynxeds.com/species/brown-kiwi-apteryx-australis>
<http://www.arkive.org/north-island-brown-kiwi/apteryx-mantelli/>

A Note From Rainforest Rescue



e-newsletter
rainforestrescue.org.au

Dear Ratite TAG members and fellow wildlife fans,

My name is Paul Medici and I am the *Project Development Consultant, US & UK*, for Rainforest Rescue (www.rainforestrescue.org.au) based out of Australia. Rainforest Rescue was established in 1998 by Kelvin Davies, CEO of Rainforest Rescue, and our mission is to protect rainforest and all its inhabitants forever. Since 1998, Rainforest Rescue has been engaged in conservation efforts in Queensland, New South Wales and Tasmania, Australia as well as in Sumatra, Sri Lanka and Ecuador. Buying-back and protecting vulnerable rainforest in the Daintree rainforest and placing it under Nature Refuge Status has been one of our top priorities since Day 1. In fact, since 1998, we have purchased and protected 16 vulnerable and high-conservation value properties in the World Heritage Listed (WHL) Daintree rainforest in Far North Queensland including the Cassowary Conservation Reserve-- <http://www.rainforestrescue.org.au/ourprojects/daintree-property-13.html>. We believe the best way to save Endangered Species, such as the Southern Cassowary, is to ensure that their habitat remains their own and to revegetate and manage areas that have been degraded, modified and fragmented. Unfortu-



nately, rainforest is looked upon as a valuable commodity by many in Australia, so it has been up to Rainforest Rescue and partner community organizations to save this precious natural resource.

For those of us that work with the cassowary and understand (and appreciate) its role as a major Keystone Species, it's probably no surprise to learn that Rainforest Rescue has spent more time, funds and effort supporting the Southern Cassowary than any other species. As the *Rainforest Gardener*, the Southern Cassowary carries a heavy and magnificent load. 135 million years of ecological and evolutionary history graces the Daintree rainforest and Wet Tropics Region. The highest concentration of ancient plant families on the planet (12 out of 19) is found here. What kind of place would the crown jewel

of rainforests be without the cassowary's one-of-a-kind and mighty seed dispersal and germination abilities? Many, including Rainforest Rescue, have asked this very question which is why Rainforest Rescue is also helping fund and support other people's important work such as DNA studies on cassowary scats in the wild. We were also on the front lines during disaster recovery operations last year in the aftermath of Cyclone Yasi—a Category 5 cyclone with the same strength as Hurricane Katrina and which hit the Cassowary Coast directly. Rainforest Rescue set up and funded feed stations for the Southern Cassowary where their main food sources were completely devastated by the cyclone's effects on the trees and brush. Many volunteers including James Biggs, Species Coordinator for the Southern Cassowary in Australasia, out of Cairns Tropical Zoo and other friends of the cassowary drove long distances and worked long hot days to help alleviate the cassowary's suffering.

There is so much we would like to share with all of you, more than can be squeezed into one article. Because many of you have never worked with Rainforest Rescue before, we would like to invite you to a "live" webinar, hosted by Rainforest Rescue, this coming March—date to be determined. CEO and Founding Member, Kelvin Davies, will give a brief history of Rainforest Rescue and then dive into our cassowary related work in Tropical North Queensland, as well as our work with zoological institutions such as the Taronga Zoo and Currumbin Wildlife Sanctuary. We hope many of you will be able to attend and it will most likely be held on a late afternoon (US Time) during the week. Thank you and on behalf of Rainforest Rescue, we look forward to talking with you very soon.

Sincerely, Paul Medici

"For \$5 you can buy one square meter of rainforest."

Project Development Consultant, US & UK
Rainforest Rescue

www.rainforestrescue.org.au



Corner

Veterinary

Dr. Peter Black, Tampa's Lowry Park Zoo

For ratites I like to place transponder microchips subcutaneously at the base of the neck on the left side. This allows the bird to be scanned from the front, permitting a keeper to identify an animal without even needing to be in the same pen or enclosure. Microchips can migrate after placement, however, so not being able to find the chip in the same place it was originally located does not necessarily imply chip failure.



EAZA Update

By Jo Gregson, Paignton Zoo



- Chair EAZA Ratite TAG: Joost Lammers, Vice Chair Jo Gregson.
- 23 taxa [includes 7 species of tinamou] held in EAZA Collections. 2,500 birds in over 180 institutions.
- Two European Studbook [ESBs] are kept:
 - Southern cassowary – Joost Lammers
 - Lesser rhea – JP Houston
- There will be a red necked ostrich egg collection from Morocco soon. Zoo Hanover will be carrying out the collection and rearing as was done previously. Birds reared in 2011 are growing well and there are now four institutions holding birds: Zoo Hanover, Paignton Zoo, Tierpark Hagenbeck and Zoom Erlebniswelt Gelsenkirchen. It is hoped to send a pair to Smithsonian institution in 2012. The European Endangered species Programme [EEP] is formed it will be run by Maren Frerking of Zoo Hanover.
- Monitor for all tinamous in EAZA is Michael Grauer is at Parc Merveilleux



Thanks for reading our newsletter! If you have an idea for next year or are interested in writing a piece please contact

Sara Hallager
hallagers@si.edu

or

Monica Halpin
mhalpin@zooatlanta.org.
It's never too early to turn in your submission!

AZA Ratite TAG

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Keeper Representative and Newsletter Editor, Monica Halpin, Zoo Atlanta

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Kathy Brader, Brown Kiwi, Smithsonian's National Zoological Park
Kristen Clark, Greater Rhea, Smithsonian's National Zoological Park
Kristen Clark, Elegant Crested Tinamou, Smithsonian's National Zoological Park
Nicole LaGreco, Southern Cassowary, San Diego Zoo

Species Champions

Monica Halpin, Emu, Zoo Atlanta
Scott Tidmus, Ostrich, Disney's Animal Kingdom

