



# WATTLED CRANE RECOVERY PROGRAMME

Member of the IUCN Re-introduction Specialist Group



[www.wattledcrane.co.za](http://www.wattledcrane.co.za)

## Annual Report 2009

### Highlights

#### First successful artificial insemination of a Wattled Crane in Africa!

We have lots of exciting news from the past 12 months, Firstly, I am proud to announce that after three years of diligent effort, the Crane Team of the Johannesburg Zoo managed to collect semen and produce a fertile Wattled Crane egg from artificial insemination. To date only four institutions in the world have managed this feat! Congratulations Crane Team!

World-wide efforts to breed Wattled Cranes in captivity have been seriously challenging and infertility remains the single greatest limitation to successful breeding. It is vital to the success of the Wattled Crane Recovery Programme that our breeding flock produces a significant number of fertile eggs and resultant chicks for release into the wild to bolster the Critically Endangered wild population. Johannesburg Zoo's successful attempt at artificial insemination marks a major milestone in the success of the captive breeding programme.

Other exciting news includes an update on the development of the isolation-rearing site at the Bill Barnes Crane & Oribi Nature Reserve and the completion of Phase I of the Wattled Crane Breeding Centre in Parys. We have collected nearly all the Wattled Cranes we need for the captive breeding programme (13 males and 21 females). Soon many of the birds in the breeding flock will be transferred to a new breeding facility where they can be intensively managed to increase production of chicks for release into the wild. We have now turned our attention to developing the isolation-rearing site where young Wattled Cranes collected as abandoned eggs or produced by the breeding flock, will be raised in a natural habitat and subsequently released into the wild. We are hoping to procure enough funding to develop the isolation-rearing site in the next 12 months and begin rearing Wattled Crane chicks for release into the wild in May 2011. For these and other exciting stories, read on.



# Reintroduction Project

The Wattled Crane Recovery Programme aims to prevent the local extinction of the Wattled Crane in South Africa by breeding Wattled Cranes in captivity and releasing their offspring into existing wild flocks. A captive breeding population of Wattled Cranes was created by collecting abandoned eggs from the wild and costume rearing the resultant chicks to prevent human imprinting.

The first aim of the Wattled Crane Recovery Programme, the creation and maintenance of an *ex situ* breeding flock to produce chicks for release into the wild is nearly complete and the programme is now moving into the next phase, the supplementation of the wild population through the release of captive-reared fledglings into existing wild Wattled Crane flocks in an effort to bolster the wild population.

## Wattled Crane Isolation-rearing site

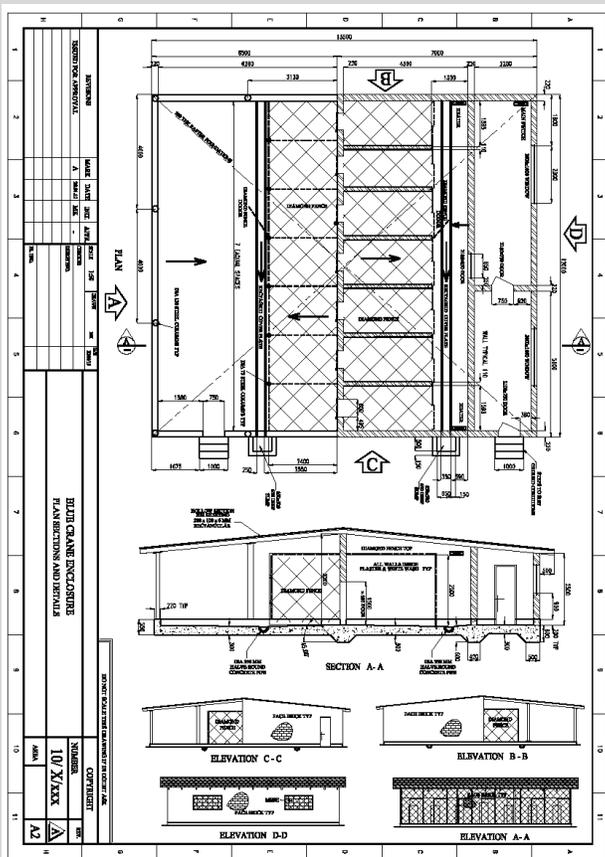
**Reintroduction Project Headquarters:** Development of the Wattled Crane isolation-rearing site at the *Bill Barnes Crane and Oribi Nature Reserve* (BBCNR) in the KwaZulu-Natal midlands is currently in progress. The KwaZulu Natal Crane Foundation (KZNCF) has generously offered the use of the Usher Conservation Centre building to serve as a headquarters for the Reintroduction Project. The Usher



Usher Conservation Centre

Conservation Centre building will be used to create a small clinic, an incubation room, an interpretation centre, office space and accommodation for staff and volunteers working on the project. The use of the building is an enormous boost for the development of the Reintroduction Project. The committee and their supporters have been diligently working on modifying the Usher Conservation Centre to accommodate the future activities of the Reintroduction Project.

**Wattled Crane Isolation chick-rearing facility:** Plans are underway to build an isolation chick-rearing facility which will include an incubation and hatcher room, and a specially designed brooder facility with seven individual indoor units equipped with hatches and one-way glass that prevents chicks from seeing their human caretakers. Seven adjoining naturalized outdoor units will allow visual contact between chicks. A large predator-proof exercise pen containing several small pools and natural wetland plants will be constructed next to the rearing facility and will be used to teach small chicks to forage. As the chicks mature, costumed caretakers will walk them throughout the nature reserve to acclimate them to their natural habitat.



Blueprint for chick-rearing facility

**Roosting pens and damlet:** The KwaZulu Natal Crane Foundation acquired the necessary funding and constructed a small damlet in the wetlands adjoining the main dam on the nature reserve. Two roosting pens will be constructed in the damlet to teach young Wattled Cranes to roost (sleep) in water to avoid predators. The roosting pens will be constructed of weld mesh, covered with flight netting and surrounded by a predator-proof electric fence. When the Wattled Crane chicks reared for release are old enough to withstand the cold midlands winter evenings, they will be placed in the roosting pens in the evenings to teach them appropriate roosting behavior. Many thanks to the KZNCF for their generous support!



Damlet where Wattled Crane roosting pens will be constructed

## **DHVA Review & Supplementation Workshop:**

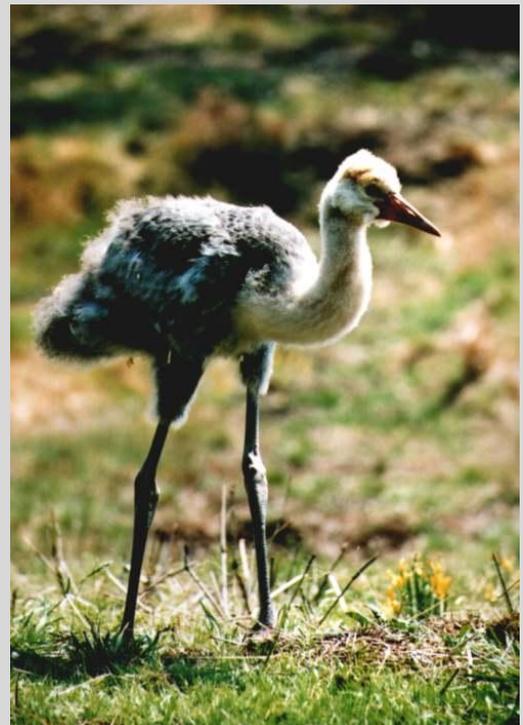
On March 18<sup>th</sup> 2009, a review of the Wattled Crane Population Viability and Habitat Assessment was conducted in KwaZulu-Natal, followed by a second Supplementation Workshop. Twenty-five local and international delegates attended the meetings. The DHVA

review focused on strategies for the long-term survival of the wild Wattled Crane population in South Africa, while the Supplementation Workshop addressed the development of the Reintroduction Project and the implementation of the ICUN Reintroduction Specialist Group's recommendations for reintroduction of Wildlife. Development of the Reintroduction Project will require an enormous amount of effort and significant funding, but will make a crucial difference to the long-term survival of Wattled Cranes in South Africa.

## **Pre-release disease survey:**

Prior to releasing captive-reared Wattled Crane chicks into existing wild flocks, it is important to determine what diseases exist in wild bird populations in the area so we can ensure that our released birds have sufficient immunity to withstand any existing diseases. Dr. Michelle Barrows, the senior veterinarian for the Johannesburg Zoo and veterinary advisor for the Wattled Crane Recovery Programme is in the process of conducting a pre-release disease study to determine what avian diseases might be present in the wild environment where our chicks will be released.

The Endangered Wildlife Trust routinely catch and ring wild Wattled Crane chicks in order to monitor the wild population. Biological samples will be opportunistically collected from the chicks at ringing and thorough disease testing will be conducted to determine what communicable disease may be present at the release site. Disease testing will likely include; complete blood counts, biochemistry, *Mycobacterium avium* complex, serology, paramyxovirus serology, avian influenza serology and Chlamydomphila serology and polymerase chain



Wild Wattled Crane fledgling

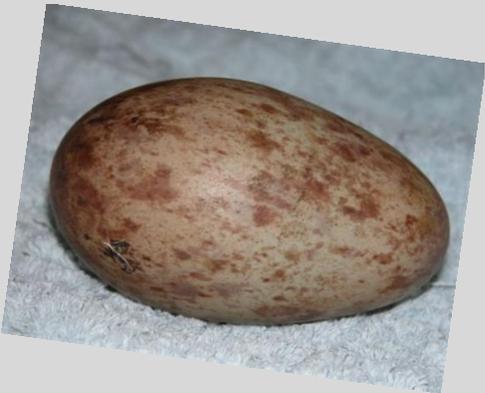
reaction (PCR). Blood smears will be examined for haemoparasites including avian malaria, babesia, haemoproteus and leucocytozoon and fecal samples will be collected for parasitology. Additionally wild crane and other waterfowl carcasses (if casualties exist) will be sourced from a local wildlife rehabilitation centre and a similar complement of tests conducted.

## Wattled Crane Breeding Programme

### Johannesburg Zoo Crane Team produces first fertile egg through artificial insemination!

World-wide efforts to breed Wattled Cranes in captivity have been seriously challenging and infertility remains the single greatest limitation to successful breeding. It is vital to the success of the Wattled Crane Recovery Programme that our breeding flock produce a significant number of fertile eggs and resultant chicks for release into the wild to bolster the Critically Endangered wild population. We have been successful in getting our pairs to bond, build nests and lay eggs, but sadly the vast majority of the eggs have been infertile. This past breeding season, our flock produced a total of 31 eggs of which only one egg was fertile!

Many institutions that breed cranes have had good success by employing assisted reproduction techniques such as artificial insemination. Studies have shown however, that Wattled Cranes are far less amenable to these techniques than other crane species. Only four institutions in the world have managed to produce Wattled Crane chicks through



artificial insemination. On October 7th the Johannesburg Zoo Crane Team managed to produce a fertile egg by collecting semen from a 22 year old male crane, Mitch and transferring the semen to his 21 year old partner Ginger. Since May 2007, the Crane Team at the Johannesburg Zoo has been diligently trying to extract semen from male Wattled Cranes to inseminate laying females. Successful artificial insemination can be very challenging as the female must be inseminated soon after she ovulates. Once the Crane Team has determined when the female is due to ovulate, they have a small window of time in which they must successfully collect a semen sample from the male and transfer it to the female. The team managed to collect a total of 10 samples from Mitch this season, but during the times they were successful in collecting semen, Ginger the female, was not ready to ovulate. Finally, on October 7th the both events came together and the team successfully collected a semen sample and produced a fertile egg. This is the first time a fertile Wattled Crane egg has been produced on the African continent. We would like to extend a big round of applause to the JHB Zoo



Thapelo Maserumule, Pleasure Khosa, Khathutshelo Bulanga and Jeanne Marie Pittman extract semen from a Wattled Crane

Crane Team for their time, effort and persistence! We would also like to extend a sincere thanks to the International Crane Foundation in Baraboo Wisconsin for providing a 10-day training course for WCRP coordinator Jeanne Marie Pittman in 2008. The training course was designed to help increase the WCRP's ability to successfully apply assisted reproduction techniques to the Wattled Crane breeding flock. After the training course, Jeanne Marie returned to South Africa and worked closely with the Crane Team at JHB Zoo and also provided training for several WCRP participating facilities throughout South Africa. The training has really paid off at the JHB Zoo and the Crane Team is much more confident in their ability to collect semen, determine ovulation dates and inseminate female Wattled Cranes. Hopefully this huge success will be repeated many times over in the coming breeding season.



**Minah Moloto, Pleasure Khoza & Khathutshelo Bulannga prepare a Wattled Crane semen sample for insemination**



**Sarah Zimorski gives Jeanne Marie pointers on successful semen collection at ICF**

## Target number of females has been reached!

The Wattled Crane Recovery Programme's current breeding flock consists of 34 birds of South African origin (13 males and 21 females) and 6 birds of non-South African origin (4 males and 2 females). A target population of 20 males and 20 females is needed to create a breeding flock large enough to produce a significant number of chicks for release into wild. It is time for celebration as we have finally collected enough females and will soon start releasing female Wattled Cranes back into the wild. We still need to collect an additional 6 males. The WCRP currently manages 16.9% of the world population of *ex situ* Wattled Cranes and the only captive population of Wattled Cranes of South African origin in the world.

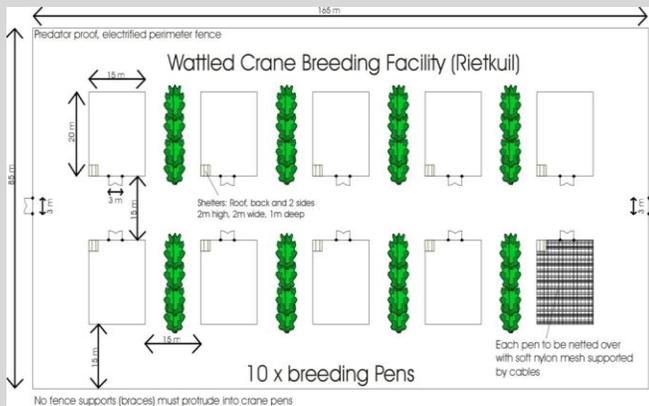
## Second Egg Collection & Chick-rearing:

One Wattled Crane egg was collected in KZN on Sept 4<sup>th</sup> 2009. The chick had difficulty breaking out of the shell and had to be assisted to hatch. She was named Andrea, after Andre Rossouw from the Endangered Wildlife Trust who collected the egg. Andrea was puppet reared by the staff of JHB Zoo and is now 5 months old and doing fine. We would once again like to extend a big thank you to SA Airlink for graciously providing free air transport for the Wattled Crane second-egg collection chicks to fly from Pietermaritzburg airport to Johannesburg. This invaluable service greatly reduces transport time or chicks at a critical age (2-3 days of age) and contributes significantly to chick survival.



**Andrea at 5 months**

# Wattled Crane Breeding Centre:



The construction of Phase I of the dedicated Wattled Crane Breeding Centre at the Johannesburg Zoo's Conservation Breeding Centre is complete thanks to a generous donation from the Hans Hoheisen Charitable Trust. Phase I includes the construction of ten flight-netted breeding pens surrounded by a predator-proof electric fence.

Much remains unknown about the captive reproduction of Wattled Cranes, as world-wide efforts to breed this species in captivity have only proved marginally successful. Poor fertility remains a major obstacle to captive reproduction. Standard semen collection and artificial insemination techniques for cranes have proved less successful in Wattled Cranes than other crane species. The WCRP is currently attempting to modify standard crane assisted reproduction techniques to



increase the reproductive capacity of the breeding flock and production of chick for release into the wild. The creation of a dedicated Wattled Crane Breeding Centre will help to concentrate breeding birds and staff expertise and allow for a more scientific approach to reproductive management. Phase II of the Wattled Crane Breeding Centre will include the creation of a support compound with a small clinic, recovery ward, incubation room, darkroom, office and intern accommodation. Phase III will include the construction of a chick-rearing facility. We hope to secure the necessary funding to complete Phase II by the end of the year.





Wattled Crane enclosures at Breeding Centre



Alkatraz and Jozi in their new enclosure

**Health Care:**

**Annual Health Checks:** Annual health checks were conducted on all the Wattle Cranes in the breeding flock prior to the 2009 breeding season and all birds appeared to be in good health and body condition.



Dr. Barrows & Dr. Smith conduct health exams at Hlatikulu

**Gauteng:** Health checks were conducted at the Johannesburg Zoo, Montecasino Bird Gardens and Treehaven Waterfowl Trust by Dr. Michelle Barrows. Health checks were conducted at the National Zoological Gardens by Dr. Adrian Tordliffe.

**KwaZulu-Natal:** Dr. Michelle Barrows and Dr. Alan Smith, a retired South African veterinarian who is volunteering for the WCRP conducted health exams on all the birds in the Natal province including Hlatikulu Crane & Wetland Sanctuary, Zabdiy-EL Farm, Mitchell's Park, Amazona Endangered Parrot Breeding Centre and Umgeni Bird Park.

**wBRC biobanking:** Samples for biobanking are collected during annual health exams and submitted to the wBRC for use in future research projects. Distribution of samples to potential researchers is at the discretion of the WCRP advisory board. Members of participating facilities as well as independent researchers are invited to submit proposals for use of these samples. Currently samples include serum, whole blood and various tissues in formalin.



2009 EDITION

**AFRICAN REGIONAL STUDBOOK  
FOR THE  
WATTLED CRANE  
(*Bucyranus carunculatus*)**



PRODUCED BY THE JOHANNESBURG ZOO FOR THE  
AFRICAN PRESERVATION PROGRAMME  
PAAZAB Publication number:



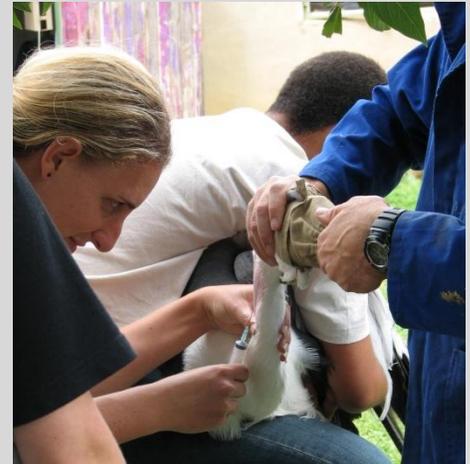
## Flock genetic analysis:

Genetics analysis of the Wattled Crane Recovery Programme's breeding flock has been completed. Samples from all flock members were submitted and a report detailing genetic similarity between individuals was produced. This information will be used when making decisions concerning mate pairing for the Wattled Crane Recovery Programme's breeding flock. A big thank you goes out to Professor Antoinette Kotze and Dr. Desire Dalton of the National Zoological Gardens for their excellent work. Ongoing genetic testing will be conducted for all new members of the breeding flock.

## Studbook:

The sixth edition of the African Regional Studbook for the Wattled Crane (*Bucyranus carunculatus*) was produced in December 2009. For an electronic copy please contact the WCRP coordinator (contact details at the end of this

publication). Studbook summary: During the period 31 December 2007 and 30 November 2009: Five males, six females and 2 juveniles of unknown sex 5.6.2 (13) were transferred between institutions. A total of 8 specimens were hatched, four males, two females and two unknown 4.2.2 (8). Three birds died, one adult female of non-SA origin, one adult female of SA origin and one SA origin juvenile of unknown sex.



EWT fieldworker Ursula Franke collects a blood sample from a Wattled Crane

## Fieldworker sample collection training:

Fieldworker sample collection training was conducted throughout the year on an opportunistic basis during health checks and other times when blood samples are routinely taken from the Wattled Crane breeding flock. Fieldworkers will use skills gained in these sessions to collect biological samples when wild birds are caught to ring them for field monitoring. Samples collected from the field will be used as part of the pre-release disease study for the Wattled Crane Recovery Programme's Reintroduction Project.



## Thank you Dr. Stephen van der Spuy:

And last but by no means least, we would like say a HUGE thank you to Dr. Stephen van der Spuy for his continued support of the Wattled Crane Recovery Programme within the Johannesburg Zoo. The Johannesburg Zoo became a full partner in the WCRP in 2005 and provides the overall management and the main financial support for the programme. Dr. van der Spuy has been enormously supportive and his advice, assistance and expertise have helped the WCRP grow from strength to strength. He has helped to instill a strong conservation ethic amongst the Johannesburg Zoo staff, encouraging them to become an integral and vital part of the WCRP and has made room in the zoo for over 20 Wattled Cranes from the breeding flock.

### Partners:

Johannesburg Zoo  
Ezemvelo KwaZulu Natal Wildlife  
Endangered Wildlife Trust  
African Association of Zoos and Aquaria



### Affiliates:

Member IUCN Re-introduction Specialist Group  
World Association of Zoos and Aquaria (WAZA branded)  
Kwa-Zulu Natal Crane Foundation  
International Crane Foundation  
African Cranes Wetlands & Communities Partnership



### Participating Facilities:

Amazona Endangered Parrot Breeding Facility  
Hlatikulu Crane and Wetland Sanctuary



Johannesburg Zoo  
Montecasino Bird Gardens  
Mitchell Park Zoo  
National Zoological Gardens of South Africa  
Treehaven Waterfowl Trust  
Tygerburg Zoo  
Umgeni River Bird Park  
Zab-diy-El Farm

### Sponsors:

Airlink  
Bateleurs  
Chester Zoo  
Hans Hoheisen Charitable Trust  
Omaha's Henry Doorly Zoo  
Iddex Laboratories  
Sedgwick Zoo  
Tierpark Berlin



### Contact details:

Jeanne Marie Pittman  
Wattled Crane Recovery Programme coordinator  
C/o Johannesburg Zoo  
Private Bag x13 Parkview  
Johannesburg, South Africa 2122  
Email: [hospital@jhbzoo.org.za](mailto:hospital@jhbzoo.org.za)  
Cell phone: +27 72 874 9711  
Work phone: + 27 011 646 2000 Ext 239

**Tax deductible contributions to develop the  
Wattled Crane isolation-rearing site in KwaZulu  
Natal can be made to :**

**KwaZulu Natal Crane Foundation  
Nedbank  
Branch: Cascades  
Account number: 1343031338**

**Website: [www.wattledcrane.co.za](http://www.wattledcrane.co.za)**