

Hand Rearing Brolga at Auckland Zoo

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Introduction

Brolga, *Grus rubicundus*, a large grey crane with a red head, is fairly common in its natural habitat, the wetlands of northern Australia, but are less prevalent in southern Australia and New Guinea. The Brolga population has been estimated at about between 20,000 – 100,000 in Northern Australia, approximately 1,000 in Southern Australia and the number in New Guinea is unknown. A lack of systematic surveys, especially in northern Australia, makes population estimates for the Brolga highly uncertain.

At Auckland Zoo we have one breeding pair of Brolga. In 2002 the Exotic Bird Section was asked to breed two Brolga chicks with the intention of producing at least one female. To increase the likelihood of success, it was decided to hand rear the first clutch and to parent raise the second clutch. The pair has been regular and reliable breeders since 1997, laying fertile eggs every year.

Breeding

In late July 2002 the Brolga were observed making a nest in the middle of the enclosure between two large flax bushes. The birds collected sticks, grass and leaves, particularly those of the cabbage tree and made a large flat slightly messy "nest."

On 2nd August 2002 the first large white and brown speckled egg was laid. Two days later a second egg was laid. Both weighed around 170 grams. While the female was off the nest feeding, we were able to check the eggs. It was discovered that one of the eggs had a small chip out of the outer shell. Both eggs were weighed and an attempt was made to seal the chip with

clear nail polish. The eggs were returned to the nest and after adjusting the eggs to the correct position by moving them with her beak, the female sat back down on the eggs within five minutes. It became apparent that the egg with the small hole was rotten. At that stage the decision was made to remove both eggs rather than waiting for the fertile egg to pip.

Artificial Incubation and Hatching

The fertile egg was placed in our incubator at a temperature of 37.6 degrees C. and a humidity of 58%.

On 1st September at 29 days, the chick could be heard moving and calling from inside the egg. While candling the egg, the chick also could be seen moving. The humidity was increased to around 75%. At 11.30 A.M. the next morning (2nd September), the chick had externally pipped and was very vocal throughout the day. At 8.00 A.M. the following day (3rd September) the larger end of the egg had been broken off and the chick was halfway out. An hour and a half later we had a 121 gram Brolga chick. Using a cotton bud, a biocil solution was applied to the umbilicus. The chick was then moved to the brooder at a temperature of 37 degrees C. and with a lower humidity to allow the chick to dry out.

Hand Rearing

The chick then slept until 3:00 P.M. and when it awoke began looking around. Unsure if the chick was ready to take food, a small amount of food was prepared using a chick starter crumble, wombaroo insectivore mix (high in protein), and boiled egg, both the egg yolk and white, blended together with a small amount of water. The

food was offered to the chick using a specially built "Brolga-head puppet."

This very realistic looking puppet was designed and made by Michael Batty, Team Leader of the Exotic Bird Section. The objective of using the puppet was to ensure that the chick did not become imprinted on a human being. Along with the puppet, sheets were also put up around the brooder so the chick could be fed without it seeing any people. As a further insurance, a "Brolga outfit" was made to mask the shape of the keepers, who appeared as just a sheet with eyeholes with a Brolga puppet on their hand.

Using the tweezers built into the head of the puppet and protruding

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approximately 1 cm from the “beak,” the chick was offered a mealworm and a small amount of the food mix. Both food offerings were readily accepted. An hour later the chick was observed trying to pick up more food but was still too uncoordinated to be successful.

Day 2 (4th September) the temperature was turned down to 36.8 degrees C. The chick’s weight had dropped by 8 grams to 113g (7%). Using the Brolga puppet, the chick was fed with the food mixture, mealworms, and wax-moth larvae (*Galleria*) six times during the day.

Day 4 (6th September) the chicks weight had increased and continued to increase everyday from this day forth. Calcium and silverbeet were added to the food and small crushed locusts were also provided, which were eaten straight away.

Day 5 (7th September) The tweezers in the puppet proved to be very difficult to manipulate. This was further compounded by the chick’s lack of co-ordination as it attempted to aim for the small area at the end of the tweezers. The solution was to attach a teaspoon to the lower beak of the puppet. This way it was much easier on our hands and the chick usually found food because of the larger area to aim for. Grated cheese (one tablespoon) was added to the food mixture along with earthworms, which the chick seemed to enjoy. Cheese is high in protein and fat, so it’s a fine line between putting weight on the chick and putting on too much weight, which can cause leg problems.

Day 7 (9th September). As it is well documented that cranes can develop leg problems if not well exercised, the chick was taken outside for exercise. This problem has been attributed to the rapid weight gain of the chicks, if not exercised. It is important for the chicks to get natural sunlight for Vitamin D and Ca absorption.

Despite the keeper wearing the sheet to disguise the body shape and using the puppet, the chick showed no recognition, became frightened and ran off. To avoid a repeat of this reaction, the following day the keeper began the session from a crouching position and each day moving a little more till we were standing. This was continued until the chick felt comfortable with its “parent.”

Day 14 (16th September). At 339 grams, the chick starter crumble was changed to a turkey pellet (high protein level of 25%). The chick showed a definite preference for the silverbeet and one teaspoon of cheese and of course live food, which was always eaten first.

At three weeks (23rd September), the chick was walked down to the wallaby paddock to a temporary enclosure made of a wire frame covered with hessian. On the first day the chick was left in for two hours, with a volunteer observing the chick for safety reasons. The chick had been pacing up and down the fence and a small patch on her neck had been rubbed into a small graze. Unfortunately the volunteer didn’t tell us the chick was pacing until the graze was already there. It took about a week for the chick to

gradually get used to the enclosure. The chick continued to be fed several times a day by the keepers wearing their disguise and using the puppet. Live food was also given to keep the chick occupied, which helped to stop the pacing.

Every morning the Brolga chick (now named Bimbimbie – aboriginal for “Place of many birds”) was walked down to the wallabies. In the late afternoon, she was walked back to an inside enclosure, much to the amusement of both visitors and staff.

Meanwhile in the main Brolga enclosure the female was sitting on another two eggs. The first egg externally pipped on 14th October 2002. The chick took two days to break out of the egg. The second egg pipped the morning of 16th October. The parents took the first chick away from the nest to feed, leaving the second egg unattended. The decision was made to place the egg in the incubator to hatch. By 1.30 P.M. the next day (17th October) the chick had not made any more progress and was becoming less vocal. At this stage the decision was made to assist the hatch of the chick. This involved carefully removing small amounts of shell using tweezers, being careful not to rupture any blood vessels. The chick weighing 122 grams was placed under a heat lamp at around 36 degrees C.

The next morning the chick was placed back in the nest along with the remaining eggshell, in the hope the parents would raise both chicks. Brolga can raise two chicks although normally one – and when food is scarce usually only one chick survives. The parents came over to investigate and ate the eggshell but ignored the chick. The chick moved into longer grass and stayed there for around 45 minutes. The female then came over to the chick and started to peck it on the head and neck. The first chick also came over and pecked at the chick, which is a natural behaviour. It was decided that the chance of the parents raising both chicks was extremely low so the second chick was returned to the brooder room for hand rearing.

Over the next nine days the chick was fed using the puppet as often as possible. It took this long for the chick to start and put on weight, which had decreased to 88 grams (losing 27%). The chick was very uncoordinated and would often peck at the spoon and fall over backwards. It may have been from the peck on the chick’s head from the adult female. To this day she has a bald patch on the top of her head.

On day 14 (30th October), chick #3 weighed 161 grams, compared with chick #1 which weighed 339 grams at the same age.

The chicks were housed beside each other in the brooder room. They could see and hear each other, which made it easier to introduce them to one another when chick #3 was three weeks old. Both chicks were walked down to the wallaby enclosure where they remained unless it was raining and they were then returned to their house at night.

Bimbimbie was put into an off-display outside enclo-

sure on day 72, where chick #3 joined her during the day until day 45 after which they both stayed outside together overnight.

During feeding, the younger chick would quite often take food from the older bird's beak. This behaviour (similar to what would be expected if the chick was with the parents) didn't seem to bother her too much, she simply got more food from the food dish.

On the 21st October, feathers were taken from all three chicks for DNA sexing. All chicks in 2002 were determined to be females. In previous years only males have been produced.

All chicks are doing well and one female has departed for the Singapore Zoo.

(Chick diet continues on next page.)

This gauky juvenile Brolga is still without his adult fine feathers.

*Below—
A baby Brolga is out for a stroll.
A long neck helps when you get
lost in the high weeds.*



Photos courtesy of author.



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CHICK DIET – FIRST TWO WEEKS

2 T. Turkey starter crumble
1/2 t. Womabaroo Insectivore mix
1/2 shelled boiled egg, white and yolk
1 t. grated cheese
Sliced finely silverbeet
Live food
Mealworms, galleria, small locust crushed
and small earthworms
First two days, small or white mealworms
Feed three times a day
Live food ab lib

CHICK DIET, AFTER 14 DAYS

1/4 Insect container Turkey 'grower' pellets
100 grams Womabaroo Insectivore mix
1 boiled egg chopped finely
2 – 3 t. grated cheese
Silverbeet, sliced finely
Feed three times a day
Live food five times a day

ADULT BROLGA DIET

Feed 1 insect container full per bird, twice daily.

Base mix:

60 grams wheat
60 g maize
60 g oats
40 g sunflower seeds
40 g peanuts (in shell)
60-g peanuts (husked)
60 g Peck n lay poultry pellets
60 g cat biscuits (science diet)
3-4 slices wholemeal bread cut into small squares
1 apple, diced
2 raw sprats, chopped into chunks
Raw meat, chopped into chunks
2 boiled eggs, whole or cut into quarters

Extras for variety

Boiled root vegetables (potato, kumera)
Freshly killed mice
Husked nuts
Silverbeet
Live invertebrates (mealworms, locusts)
Cheese, diced into small
Fruit squares ❖



Photos by courtesy of author

This youngster is learning to feed himself with the help of an adult-sized puppet.

*Below—
Baby is out for a walk with a parent.*

