



THE BLUE-HEADED MACAW

BEAUTY, SCIENCE, &
CONSERVATION IN ACTION

BY DONALD J. BRIGHTSMITH

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A senior Brazilian colleague of mine had traveled to visit me at Tambopata Research Center in southeastern Peru. We awoke at dawn to go out to the clay lick where we were expecting to see hundreds of parrots, but my colleague had only one question. "Will we see couloni?" The birds arrived in force. Hundreds of parrots streaming in from all sides heading towards the center of the clay lick. Then I heard a distant call off the left side of the lick and I quietly announced "couloni." I spotted a pair as they banked and headed down to the clay. He saw them too, the blue head, the long, tricolor tail, the light bill and the pink feet. It was *Primolious couloni* aka the Blue-headed Macaw. He remained speechless for minutes before turning to me with a huge grin and said "thank you." His trip was complete.

Why should this bird cause such a stir among even the most seasoned tropical ornithologists? Its beauty? Its rarity? Its restricted range? How about yes, yes, and yes. The Blue-headed Macaw is a striking mini

macaw found only in southeastern Peru and adjacent areas of Brazil and Bolivia. Unfortunately, this little gem is not really common anywhere. In fact, most have commented on its apparent rarity even in the most pristine protected areas. In my first three months in southeastern Peru in 1993 I saw the species only once.

This general rarity seems to be an inherent feature of the species. It is not thought that it was ever very common and humans are not apparently to blame. However, this rarity makes it very difficult to study. In addition, the species has been almost completely absent from aviculture, suggesting that the species has not been traditionally trapped. As a result, the species was not considered under any sort of threat. In fact, it was not even listed in the Parrot Conservation Action Plan back in 2000. The bottom line on the bird in the wild was that nobody really knew anything about the species and nobody was really worried about it.

But, in 2002, all this began to change as the species began to appear in aviculture in Eastern Europe. People began to worry. It is well known that species that are rare in the wild cannot survive intense trapping. As a result, in 2003, the species was uplisted to Appendix I of CITES (the Convention on International Trade in Endangered Species) in an effort to help reduce the trade. This proposal was accepted by CITES based on the species rarity in the wild and the obvious increase in the trade. However, there was almost no information on its status in the wild. Then, in 2004, the species was moved from its old classification of "Least concern" to "Near threatened" by Birdlife International and the IUCN (International Union for Conservation of Nature). Then in 2006, it jumped up two ranks from "Near threatened" to "Endangered." Once again, the jumps were based on the species' continued presence in the illegal wildlife trade along with a few opinions on abundance from scientists who had worked in Peru. But once again, quantitative information on wild birds was completely lacking.

Needless to say, all of this pole vaulting of conservation status began to attract the attention of scientists. A friend and colleague of mine, Alan Lee, decided to focus on Blue-headed Macaw as a key species in his parrot and macaw monitoring project on the lower Tambopata River. Biologist Aimy Caceres began an undergraduate thesis on the species in captivity. George Powell from WWF (World Wildlife Fund) and his crew began to look more intensely at the species along the Madre de Dios River. A field biologist friend of mine even used the genus name as his new e-mail account name.

Then Joe Tobias from Oxford University contacted me. He told me he was compiling data to write a review of the conservation status of the Blue-headed Macaw and he asked me if I had any information to contribute. When he said Blue-headed Macaw, I thought he was crazy. All I could think was "we don't know anything about that bird, what will we be able to produce?" I was afraid it would be like the changes in conservation status, another opinion based on very little information. But he explained that he had been going through trip reports, reading biological surveys, visiting museums, interviewing bird watchers, contacting ornithologists and looking for the bird in Peru, Bolivia and Brazil. And he said he was building a good database of occurrence of the species. I was convinced to join the effort. In my gut I never felt that the jump to endangered was really warranted, but since I had no real data, I had never made an issue of it.

Since 1999 my research has focused on the macaws and parrots of southeastern Peru, right in the heart of the range of the Blue-headed Macaw, so I knew I was in a good position to contribute. I rallied my research teams and had them focus more on the Blue-headed Macaw. I started by digging through my seven years of clay lick observations and four years of censuses to find all the times we saw the bird. I made it obligatory for all my crews to record the species every time it was seen. I then contacted all the guides, bird watchers and scientists I knew and asked them for their sightings. Combining my data with the information from Joe's work and the literature, we began to build a much more comprehensive picture of the bird than I ever thought imaginable. In mid 2007, the scientific publication from our work was published in the journal *Biological Conservation*. The following summary comes from the data published in that paper.

We found that the species is nearly always considered uncommon or rare. The observations, museum locations and other reports show that the species occurs in an area of about 460,000 hectares in southeastern Peru and adjacent areas of western Brazil and northern Bolivia. The area we documented is 60% larger than previously published range estimates for the species. The majority of the species range (>90%) lies in the lowlands of the western Amazon Basin (<500m elevation). The western edge of the range is defined by the Andes Mountains, with the birds extending up in to the foothills, topping out at about 1500 m elevation. The species occurs in both floodplain and upland forests, so is apparently not tied to river habitats as some authors have suggested. The species also uses both intact forest and degraded areas. In fact, our information suggests that the species is just as common in areas with a mix of small farms, pastures and forest fragments as they are in the pristine forests of the area's national parks. The birds were usually seen in small flocks of 2 to 4 birds, but the species regularly formed flocks of 10 individuals, and on two occasions, groups of over 50 have been seen.

We found almost no information on breeding in the wild. On two occasions scientists have seen cavities that may have contained nest, but in neither could the presence of eggs or chicks be confirmed. At a number of sites, adults have been seen feeding a single fledgling. Like many species of parrots in this region, the Blue-headed Macaws eat soil at a number of different clay licks. The soils provide a good source of sodium and probably bind to some of the alkaloid toxins in the seeds and fruits that the birds eat. Data from my site in Tambopata show that the birds were seen near the clay lick on 25% of the mornings and ate soil on 9% of the mornings (N = 1468 mornings of observations from 2000 to 2005). The most interesting and unexpected thing from these data is that the number of registrations of the species at the clay lick has been steadily increasing: it was seen on 2% of the mornings in 2000 and nearly 60% of the mornings in 2005.

Adding up the maximum number of individuals seen at each site produces a total of about 550 individuals. This represents only a tiny fraction of the total wild population as researchers have only visited a small portion of the range and the populations of birds at each site undoubtedly exceed the numbers of birds seen simultaneously. In reality, our ability to provide a good estimate of the wild population size is handicapped by the fact that no one has ever estimated the density of the species anywhere in its range. As a result, we cannot just multiply the size of the area by the density of the species and get a rough idea of the number in the wild.

However, through a mixture of comparisons and expert opinions, we estimated that the species may



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occur at a density of about one individual every 4 to 20 square miles. This gives us a total of anywhere from about 10,000 to 45,000 individuals currently in the wild.

Of great interest to me was that we found records of only three ornithological surveys within the range of the Blue-headed Macaw that did not record the species. Two of these were near the edge of the range where you would expect the species to be particularly rare, its distribution patchy and its occurrence irregular. That leaves only one site in the core of the range that was intensively surveyed and the species was not found. We even have seen the species in the middle of native communities and on the outskirts of the region's largest city, Puerto Maldonado. This suggests that the species still occurs throughout nearly all its range.

Habitat loss, hunting and the pet trade have resulted in the decline or extinction of many wild parrot populations worldwide. Our data showed no evidence that Blue-headed Macaws are declining or have disappeared from any part of their range, but trade data suggest that capture of the species is increasing; the species was nearly unknown in the trade before 1995 but at least 50 were traded in 2000 alone. Of even greater concern is that individuals may sell for over \$10,000, an amount sufficiently high to encourage the expansion of illegal capture and trade. As a result, we suspect that the species is declining in at least some parts of its range.

One thing that remained abundantly clear from our research on the species is how much we still don't know. As Joe and I were in the midst of writing this paper, I was contacted by the chair of the AFA conservation committee, Janice Boyd, who asked me if I was interested in studying the conservation of the Blue-headed Macaw. I told her of the work underway and told her how much we still didn't know and the need

for additional financial support. My work at Tambopata Research Center was continuing, and I was working closely with two talented young biologists who were studying the species but were chronically short of funds: Claudia Torres was studying the species at a clay lick near the Manu Learning Center and Alan Lee was conducting parrot censuses at Posada Amazonas Lodge and Refugio Amazonas Lodge. Fortunately, the AFA was able to provide a grant to help ensure that the species remained an important research focus for all these projects. Over the past year, Claudia has found that the species is more common than previously thought along the upper Madre de Dios River, and she has found new clay lick areas that are regularly used by the birds. Alan's census work has continued, and by walking hundreds of miles of transects during thousands of hours of censuses, he and his crew have collected data that will allow him to calculate, for the first time ever, the density of Blue-headed Macaws in a lowland rainforest.

Based on the lack of hard evidence of decline in the wild and range reduction, Joe Tobias and I have recommended that the species should not be classified as endangered. Instead it should be considered as vulnerable. We suggest vulnerable status, because the populations are apparently still fairly small and the threat of the pet trade still looms large and could lead to a rapid reduction in the species. This recommendation is currently being debated by the experts at Birdlife International, the keepers of the international lists of endangered species. I continue to work with Alan, Claudia, Joe and my own research teams to generate and write up more scientific information on the species. New work is also underway by the conservation organization Armonia to quantify the magnitude of the illegal parrot trade in Peru, with the hopes of using this information to encourage authorities to crack down on this illegal activity. In this way I hope we can increase our knowledge of the Blue-headed Macaw and help ensure its long-term survival. 📍

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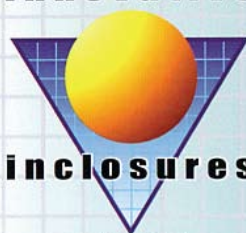
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GOVERNOR SCHWARZENEGGER SIGNS BILL TO PROTECT ENDANGERED CALIFORNIA CONDORS

California Governor Arnold Schwarzenegger signed legislation today intended to protect the endangered California Condor. There have been 276 documented cases of lead poisoning of California Condors since 2000, and a dozen deaths possibly linked to lead. Only 127 of the birds currently fly free in the wild, 70 of them in California.

"We very much appreciate that Gov. Schwarzenegger chose to do what's right for the California Condor by signing this bill into law," said Dr. Michael Fry, American Bird Conservancy's Director of Conservation Advocacy. "Gov. Schwarzenegger is very pro-hunting and pro-gun rights. His signing this bill is a confirmation that this law is not anti-gun – it is an anti-lead measure. Non-toxic, lead-free ammunition is widely available, and hunters are able to obtain ammunition that will not poison condors if they eat bullet fragments left in carcasses in the field."

The California Senate and Assembly recently passed and now Gov. Schwarzenegger has signed into law the Ridley-Tree Condor Preservation Act (Assembly Bill 821, proposed by Pedro Nava, D-Santa Barbara), an historic protection measure for the condors. The act mandates non-toxic bullets for big-game hunting in condor habitat, and will significantly reduced the risk of lead poisoning of condors in California. 

American Bird Conservancy is the only 501(c)(3) organization that works solely to conserve native wild birds and their habitats throughout the Americas. ABC acts to safeguard the rarest bird species, restore habitats, and reduce threats, while building capacity in the conservation movement. ABC is the voice for birds, ensuring that they are adequately protected; that sufficient funding is available for bird conservation; and that land is protected and properly managed to maintain viable habitat. ABC is a membership organization that is consistently awarded a top, four-star rating by the independent group, Charity Navigator.

The California Condor



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The Kagu (*Rhynochetos jubatus*) is a quite unique flightless bird from New Caledonia, it is in fact one of the last relict large flightless island species that have still survived today. Its fellow peers such as the Solitaire and the Dodo have gone missing since the arrival of man to their respective islands.



An Adult Kagu skulking in its aviary.
Courtesy of Walsrode Birdpark Photo-archive

That the Kagu have made it until now is actually quite surprising and it is still not safe. Especially introduced dogs are a major problem as well as the loss of their rainforest habitats. They present little fear of humans or other predators in the wild as they have no natural enemies; they are in the real sense of the word naïve to these threats. This behaviour is also recognized in captivity and at the Walsrode Birdpark, where the species has kept since 1997 and since year 2000 more than 30 young of this endangered species have been reared at the park.

The real effort for saving the Kagu is made in New Caledonia where the projects headed by the Parc Forestier are financially supported by the Walsrode Birdpark Foundation. The birds maintained in Germany or distributed from there to various different zoos are merely ambassadors to this effort. The origin from overrepresented bloodlines are therefore not of immediate use for the recovery effort; only in the case of a disaster they could serve as an emergency backup. It's always good to have a plan B.

In 2007, an exchange with the Yokohama Zoo in Japan was achieved. A male from Walsrode travelled to Japan and a female arrived in Germany. Such exchanges are vital in order to maintain the genetic diversity in the global population. After release from the quarantine in Germany, the female was set up for pairing with a male from Walsrode. This was observed

and video filmed for the course of a week by biology students from the Potsdam University. This "breach of the bird's private-sphere" is rather important, as there are still many things we do not know about these birds. Even their ancestry remains a mystery and their appearance does not leave anything but clues: They have the feet of a crane, the head and crest of a heron, their large eyes indicate that they may well be active mostly at night or at dusk and they have feather dust like a cockatoo. Their nearest living relative may be the also enigmatic Sunbittern from South America.

In 2007, five young Kagus hatched and were reared in the nursery. The reason that the birds are hand-reared is a safety precaution as quite a few eggs have been destroyed by the parents in the past. The young birds are cared for by an experienced team and data on their growth development is collected. These experiences have been the basis for the husbandry manuals and rearing protocols now used by other facilities as well. Their rearing food is a mixture of live insects and meat and is offered on a dish from an early stage; the earlier the young is weaned from eating from a forceps the more independent they become. It is also important for their well being that they have a good place to hide. A simple cardboard box placed upside down will do just fine, the chance to retreat seem essential for their development because they need the quiet space to conserve energy and to digest.



Young Kagu at 5 days of age is fed with a cricket.
Courtesy of Walsrode Birdpark Photo-archive

The Roseate Spoonbill (*Platalea ajaja*) colony took a rest in 2006 but did get back to business as usual in 2007 and in total 30 chicks was reared. The colony coexists with Scarlet Ibises (*Eudocimus ruber*) that reared more than 50 chicks within the season from June to September. Both species are housed in the 3000 square-meter free flight aviary together

with another 25 species. The real challenge in such an aviary is to provide enough suitable rearing food with the high competition. Therefore, some of the nestlings are pulled in order to assure that enough food is available for the remaining.

The young are reared on a mixture of ground day-old chickens, beef heart and pellets. Vitamins and minerals are added from day three. An interesting observation that has been made during hand-rearing, is that the young chicks are not able to produce a pellet for regurgitation as long as they are nestlings.



Roseate Spoon-bill two weeks old
Courtesy of Walsrode Birdpark Photo-archive

Adults usually regurgitate indigestible parts of the diet and since the young do not have this ability, the quality of the rearing food is of high importance in order to avoid impaction problems.

The Banded Pitta (*Pitta guajana*) is one species where the parent rearing often fails as a result of competition with other species. The Pittas tend to become rather aggressive during breeding, which often cause conflicts with other species. We aim to let the birds rear the chicks themselves as this is good enrichment for the parents and do provide the offspring with a good start. However, once a problem has been identified, the offspring's often pulled for hand-rearing, typically between the ages of 3-10 days. The young Pittas are fed mainly live insects but also a significant portion of pieces from day-old rats. Using these methods, the survival rate of Banded Pittas has increased considerably and since year 2000,

seventy Banded Pittas have been successfully reared and sent to other institutions and private breeders. A recent survey conducted by Walsrode staff unfortunately indicated that the majority of these birds are no longer available or are at least not breeding. We are now breeding this species in the third generation and in the future will be more careful about how to place surplus offspring.



Juvenile Banded Pitta after fledging 22 days old.
Courtesy of Walsrode Birdpark Photo-archive

Another Passerine, the Fairy Bluebird (*Irena puella*) suffered from a quite different problem in the past season. Ants disturbed the first clutch and the two chicks died before we could intervene. Subsequent clutches were removed for hand-rearing just after hatching. The chicks were fed a mixture of live insects, especially bee-larvae, and pieces of day-old rats as well as a certain portion fruit, especially papaya. In the process of developing methods for rearing this species, we contacted several experienced breeders and these contacts laid the foundation for cooperation between three breeders and two zoo facilities as well as ourselves. Together we managed to rear 20 Fairy Bluebirds. These offspring have been subsequently exchanged between the different holders in order to set up young unrelated pairs.



Golden Plover chicks 3 days old
Courtesy of Walsrode Birdpark Photo-archive

The Middle-European breeding population of the Golden Plover (*Pluvialis apricaria*) is reduced to just a few breeding pairs. This form is genetically distinct but not officially recognized as a subspecies. In Germany there are only four known breeding pairs and these are monitored throughout the breeding season by biologists from the state of Lower Saxony. In 2006, a Peregrine Falcon killed one of the breeding females and, in the hope of saving the eggs, the Walsrode Birdpark was contacted for help. The eggs were artificially incubated and the chicks reared with an insect mixture and plenty of live wild insects. At the age of 25 days, the birds were returned to the protected area from where the eggs had been collected and over a process of a few weeks they were gradually released into the wild.

In 2007, one of the birds, a female with a Walsrode legband, returned to the breeding area after migration and paired up with a wild male. Based on this success, another abandoned clutch was brought to Walsrode in 2007 and again the birds were successfully released.

Hand Rearing at Walsrode Birdpark:

It is the policy at Walsrode Birdpark not to consistently pull and hand-rear young birds and we do try to limit this rearing method to a minimum favouring parent-rearing. When hand-rearing is done, special care is taken to ensure that the birds are not wrongly imprinted and good results have been achieved in breeding from birds that have initially been hand-reared at the nurseries at Walsrode. Generally, rearing is only done in cases where the parents are not capable of coping themselves or in cases where a risk of injury is known to exist. In some cases with special breeding programs, hand-rearing aids in ensuring that all founders become equally represented. The nursery team is working throughout the year but are particular busy in the spring and summer months. The nursery includes separate facilities for egg incubation, intensive care and finally weaning.

Simon Bruslund Jensen
Zoological Director
Walsrode Birdpark



Two Fairy Bluebird nestlings 5 days old.
Courtesy of Walsrode Birdpark Photo-archive.

LORO PARQUE, TENERIFE

JULY 2007

The breeding of two young Aru Island Eclectus (*Eclectus roratus aruensis*) is a first for Loro Parque Fundación. The pair came to us in 2002 as chicks and now can be seen on exhibition in the park. Last year twice there was incubation but unfortunately the eggs weren't fertile. This has now changed, with both eggs of the first clutch being fertile, leading to two chicks which the parents are raising without any problems at present. Thus, we are able to include a further parrot sub-species in our list of successfully bred parrots.

The Vasa Parrots (*Coracopsis vasa*) are showing their best side, several pairs raising their offspring at present. Now Loro Parque Fundación has been able to establish a big and genetical healthy breeding line of this parrot species, which lives in Madagascar and where at present the serious deforestation is leading to a very critical situation for the parrots. This is the reason why responsible breeders should already begin to establish healthy populations of endangered parrot species. As well as the Vasa Parrot, the Black Parrot (*Coracopsis nigra*) is without any doubt also in the need of above-mentioned action. Regarding their behaviour, the Vasa Parrots are different from



Gang Gang Cockatoo chicks. Photo courtesy of Loro Parque.

other parrots because of a quite melodic voice which immediately reminds the listener of the sounds of the rain forest. Furthermore, these birds are very extraordinary in their copulation, not only because of the duration, which can

last more than half an hour, but also because of the fact that the male protrudes a kind of penis several centimetres long. Vasa Parrots are very interesting parrots, which deserve more attention from breeders.



Vasa Parrot chick. Photo courtesy of Loro Parque.

As well this year, our Gang Gang Cockatoos (*Callocephalon fimbriatum*) are giving us great joy. While two chicks of this species are being raised in the Baby-Station, two further chicks are growing up with their foster parents, a pair of Major Mitchell's Cockatoos (*Cacatua leadbeateri*), and a pair of Gang Gangs is raising the offspring by themselves at present.

For the first time in its history, in the Hotel Botánico on the 29th of June 2007, Loro Parque Fundación has celebrated a Benefit Festivity in favour of its projects for nature and animals. Over 500 persons attended this great event and an important number of television channels and press institutions came from all over Spain to report about it. We want to thank the great generosity of our sponsors which provided us with food for the dinner and presents for the tombola, a car being the first prize. And all this for the endangered parrots of our planet! We are very happy with the result of our first Benefit Festivity and thus we have decided to repeat it next year, with the probable date of the 20th of June 2008. As we

would also be very pleased to welcome parrot enthusiasts internationally, we already invite you to this event to celebrate the helping of parrots. 🐦

AUGUST 2007

At the beginning of August heavy forest fires broke out in the high-elevation areas of Tenerife's pine forests, and these have been reported worldwide. As a result, many worried friends of Loro Parque contacted us by email or telephone showing their concern about people and animals. We appreciate the tremendous commiserations, but we can reassure everybody. Thanks to the great work of fire-fighting teams, the help of helicopters and the fact that the wind didn't blow in our direction, the well known Orotava valley and the area of Puerto de la Cruz have been spared. Thus, for visitors to Tenerife and Loro Parque there are no longer any obstacles and it can still be recommended to spend one's holidays on our island.

This month we can announce special news from our Lear's Macaws (*Anodorhynchus leari*). Now that the first young has been raised perfectly by its foster parents, a pair of Green-Winged Macaws (*Ara chloroptera*), it is preparing to fledge. It shows up again and again at the nest entrance protruding its head and observing the new environment into which it will soon fledge.

The pair of Lear's Macaws itself has proceeded to a further clutch with three eggs. The shell

of the first egg was damaged, but has been repaired with glue before being confided to another pair of Green-winged Macaws for incubation. The second egg was demolished so badly that it couldn't be saved, and was replaced by a chalk-egg in the nest, which provoked the female to lay a third egg, which we left to the proper parents. On July 16th the second Lear's Macaw under the Green-winged Macaws hatched and ever since has been reared perfectly. Then, on July 23rd a third little Lear's Macaw hatched, this time with the proper parents. Evidently, the hard chalk-egg had caused the parents not to demolish their own eggs any more, so that the chick in the egg was able to develop well. We are very happy that the chick is now being well-raised by its own parents, and we proud to say that this natural breeding success is the first one in the history of the Loro Parque Fundación and Europe, contributing to the establishment of a reserve population of this endangered species in captivity.

We can also report on the closely related Hyacinth Macaws (*Anodorhynchus hyacinthinus*) where two chicks hatched. These are at present being raised in the Baby-station of Loro Parque. In Tenerife, Hyacinth Macaws always start to breed in the second half of the year, so we hope that further pairs will proceed to breed.

In the majority of the cases, the business of breeding normally slows down in August and the high season is coming to its end. This is also the moment when the annual stock control begins. On this occasion every single bird of the 3,500 birds of the parrot collection is taken out of its cage and examined. Besides the assessment of the general physical condition, indications on the status of feathering and body mass are noted. A cloacal sample is taken from every bird as well as a blood sample, on which the virus tests are carried out. Thus, a good health control of the parrot population can be guaranteed. 🐦

Dr. biol. anim. Matthias Reinschmidt,
Curator, Loro Parque Tenerife



Loro Parque veterinarian team, Dr. Sara Capelli and Heiner Müller take blood from a Golden Conure (*Guarouba guarouba*) for the annual examinations.



Third hatched and raised Lear-Macaw by parents. Remarkable is the chick's plump filled crop. At 13 days, it already weighs 172g.