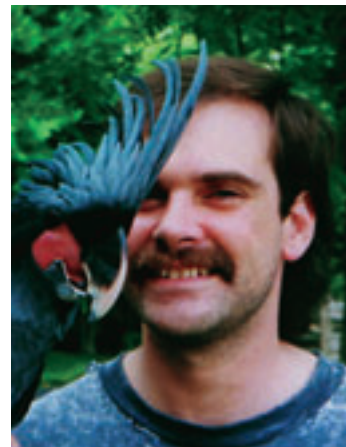


Golden Conure research will aid its survival

By GLENN REYNOLDS

We have long been concerned about this Brazilian species, which has suffered from tremendous loss of its rainforest habitat and being highly sought after for the illicit bird-trade; therefore, in May of 1999 we launched the WPT-USA 'Golden Conure Survival Fund'. We contacted Carlos Yamashita, Brazil's leading parrot biologist, who had previously conducted research into the Golden Conure and its needs. He indicated he was anxious to do more to help its preservation. We published a detailed proposal from Dr. Charles Munn III in the August 1999 *PsittaScene*.



Glenn Reynolds.

History

The Golden Conure (*Guaruba guarouba*) is also known as the Queen of Bavaria's Conure. Although it has been considered endangered since the mid 1940s it has never been formally studied as its range was considered to be so remote that it was out of harm's way. In the early 1970s construction began on the Tucuruí dam, which on completion flooded 888 square miles of rainforest. The dam evoked the construction of two major highways and a proliferation of human colonization around its borders. Along the TransAmazon highway the resettlement process consumed 100,675 hectares. Bordering another road that parallels the right side of the reservoir another 311,025 hectares were deforested for relocation of displaced forest colonists. Seventy one percent of the total deforestation occurring in Brazil since 1977 has taken place in the northeastern regions where the Golden Conures reside, all but 13% has occurred since 1988. It has resulted in a total loss of more than 37 million acres of rainforest.

The most obvious threat is dramatic deforestation. Prior to the construction of the Tucuruí dam, the wildlife in the lower Tocantins basin was considered to be among the richest and most diversified in the world. It was estimated that 294 species of indigenous birds were also displaced.

The resulting reservoir flooded 2,875 square kilometers of rainforest. Sixteen hundred islands were formed by existing hilltops once the area was flooded, which have all been heavily deforested.

Local people readily lease or sell their property to logging companies, who selectively log the land, and often completely clear it to the ground after logging by burning the remaining trees and brush. Selective logging destroys nesting trees or leaves them unprotected increasing the chances for trappers; furthermore, unprotected nesting trees are easily blown over during high winds. The areas are burned to 'clean' the land for planting. The



The Golden Conure: famed among aviculturists for its beauty and personality. Photos By Rosemary Low

land that is naturally nutrient-deficient for planting is temporarily made nutrient-rich by the burning process, but it will only yield crops for a few years before again becoming deficient. The farmers are then forced back into the same destructive cycle of relocation and deforestation.

Only 5% of the land was properly cleared prior to the completion of the Tucuruí dam and the flooding of the reservoir. The decomposing of the rainforest below the water's surface has resulted in the release of methane gasses and carbon dioxide, which has spoiled the areas surrounding the reservoir. The quality of the water is almost unusable and has seeped into the ground water tainting wells for miles around. The water in the reservoir has an average turnaround of 51 days, while the Caraipe branch has a turnaround of seven years. The decomposition also resulted in the surface of the water being covered with aquatic macrophytes immediately after the initial flooding. Aquatic macrophytes are known as a primary medium for mosquitoes. The area has been so infested with mosquitoes for more than a decade that it has become mostly uninhabitable for humans or animals.

The town of Paragominas, at the heart of the region, is now surrounded by a devastated landscape. Over the past several years, two thirds of the town's lumber mills have ceased to operate, indicating an exhaustion of local wood sources. This means the forests that provide food for the local fauna are likely to be razed in the very near future. The rural social conditions spawned this boom-bust cycle of timber, presenting a further obstacle in the Golden Conure's struggle to survive.

Description

The Golden Conure is a rich yellow with dark green primary, secondary and outer coverts. The plumage of the adolescent is similar but with random streaks of dark green that are most often on the back of the head, the nape, and the chest but can be found most anywhere on a given individual.

Their call can be best described as a lengthy repetitive *keek, keek, keek, keek*. I would describe their captive personalities as a cross between a Hyacinth Macaw (*Anodorhynchus hyacinthinus*) and that of a Sun Conure (*Aratinga solstitialis*). They are very playful and clownish.



Grey-green streaking on the head is characteristic of immature birds.

Initial study period

A group of Golden Conures was recently encountered near a community of "sem-terras", landless peasants, who receive plots to farm through a controversial government



At nine months old their beauty is apparent.

agrarian reform program. Completely isolated and neglected, the hygienic conditions were so dreadful that malaria had permeated the community. It was simply good fortune that none of Yamashita's team contracted any grave illnesses. During the initial period of study, Carlos located 13 active nesting sites within a 90-kilometer radius of Paragominas, all of them in cleared areas at a maximum of 3 kilometers from intact rainforest patches. This doesn't mean that cleared areas are not able to sustain populations of Golden Conures; merely that many of the forest patches nearby have been selectively logged and therefore lack snags large enough to support the birds. As previously stated these snags in open areas are much more vulnerable to winds and often will topple, causing the birds to seek other suitable nesting sites and exposing the flocks to further dangers. In addition, the fact that these snags are not within the protective labyrinth of the forest, further facilitates the work of the local trappers.

Trapping

The local people have never been compensated for their loss of land other than mentioned above. They have never recovered financially or socially and are willing to do most anything to afford survival. Some of them have become parrot trappers to support their families.

Because poverty is rampant in this region it is understandable that poaching for the illicit bird trade is rampant too. Golden Conures bring a high price in the market and remain in high demand. Their bright colours make them easy to spot from miles away and follow, while their clanging behaviours make trapping numerous birds in one attempt almost certain.

The Golden Conure's future in the wild is at best precarious; it will require courageous and innovative conservation efforts to ensure that at least some clans are able to continue to live and prosper in their natural habitat.

Protecting nesting trees

Carlos has suggested the use of artificial nest boxes and paid guards to protect the known nesting sites from further trapping. Both suggestions are viable options and could be easily and affordably implemented in a short amount of time as compared to an eco-tourism camp.

Eco-tourism and land acquisitions

Eco-tourism is a conservation tool with proven effectiveness, when properly applied. In the case of the Golden Conures, its rarity and aesthetic beauty is appreciated by a wide range of serious bird watchers and nature enthusiasts. Indeed, despite the extensive destruction of primary forests, the secondary forest re-growth still harbours impressive bio-diversity. A mere 40 kilometers from Paragominas, and over a period of two hours, BioBrasil researcher, Richard Hartley, saw four types of parrots, including a group of five Golden Conures, a pair of Hawk-headed Parrots (*Derophtus accipitrinus*), pairs of Green-winged (*Ara chloroptera*) and Scarlet Macaws (*Ara macao*) as well as three King Vultures, all in a degraded forest patch.

There are a series of indigenous reserves within the region. While wood extraction is taking place in some areas, other tribes leave their forests intact. Carlos believes the best conservation strategy, therefore, would be to buy forested land that hosts some birds and abuts the reserves where wood extraction is absent or minimal. In theory this project will be modeled after the very successful eco-tourism site that BioBrasil has established to protect a large flock of Hyacinth Macaws in Piaui. On June 15, 1999 BioBrasil purchased 2,000 hectares (5,000 acres) of dry tropical rainforest to protect the Hyacinths. They were then able to later purchase another 2,000 hectares from profits. From May 1, 1999 through August 15, 1999 the BioBrasil preserve hosted numerous scientific researchers, photographers, and a TV crew from the Fox-Family Channel. The gross receipts from this camp were about \$14,000 of which half were profit.

This same strategy should work with the Golden Conure in areas identified as feasible and purchased by WPT and BioBrasil Foundation. The most viable sites for tourism-financed protection of Golden Conure nests would be those that can be reached easily by conventional road or river transport from airports. In practice, Belem and Santarem are probably the two cities most likely to serve as jetports for visitors who wish to predictably see protected Golden Conures.

The initial objectives of this project were to search for and survey the species and locate



View inside an L-shaped nest-box.

roosting and nesting trees in the area of the Cupim River south of Belem. This search has pinpointed the best roost trees in accessible sites, which should allow BioBrasil to unlock earmarked funds that currently are restricted to two activities: One is habitat purchase around the nests of this species and two is implementation of an eco-tourism infrastructure. For each dollar that WPT contributes to the search for roost trees, BioBrasil should be able to access as many as 5-15 dollars of matching funds for purchase of forest tracts, and for the installation of permanent guards and a rustic eco-tourism site. The matching funds are rigidly restricted to forest purchases and protection of the purchased habitat and cannot be used for the initial research. To unlock this funding, the nest tree search must be successful.

The potential for WPT support to unlock five to 15 times as much funding should make this project especially attractive, because it greatly increases the chances that the initial seed money will produce an ongoing, self-funding conservation effort for this amazing but unknown species.

Income from eco-tourism should eventually support year round protection of the mapped out nesting and roosting sites.

Range and wild population

Golden Conures are distributed in pockets strewn across northeastern Brazil, south of the Amazon River, in eastern Pará and northern Maranhão to the western edge of Tapajós. Their range has been reduced by as much as 30% in the past two to three decades. Although our field project has not yet included a comprehensive population survey, Carlos has estimated as few as 2,000 birds left in the wild, and cautions that their numbers will most certainly not exceed 3,000.

The range of Golden Conures extends far westward into the Amazon basin reaching all the way to the right bank of the Madeira

Rio in Amazonas state; the bird reaches as far east as the Gurupi in Maranhão state. It is found in much higher density (almost ten times) within the confines of the current study area. This coincides almost directly with the heaviest deforestation zones.

Diet of wild birds

In our current research area the most predominately eaten substance by Golden Conures is the seed of the *Croton matouensis*, which is in the castor bean family. The fruit is similar in size and appearance to a green blueberry, and contains three or four seeds. These seeds are commonly eaten by all of the larger parrots in the region. The outer fruit is tough and requires a strong beak to tear it open and get to the seeds. This tree is in abundance and is not one usually cut for its wood; therefore, food sources are not a real concern in this particular area. Carlos states that a flock of Golden Conures will stay at one tree until all of the fruit is gone, which takes about three days.

In Tapajós Gil Serique reports them feeding on Muruci fruit (*Byrsonima crispa*), a berry-like fruit very much appreciated by humans. He has also observed Golden Conures feeding at Mango trees, which are



Golden Conures at Paradise Park receive a varied diet.

widespread in Brazil. Açai (pronounced assai), an Indian name meaning “weeping tree” is also in their main diet list, and he describes them just like the Muruci, but it belongs to the palm genus *Euterpe*. This plant species has been heavily exploited for palm heart and for the last 10 years for its iron-rich fruit-pulp as well, which is heavily sold all over Brazil. Eating these palm hearts has become a fad over the last 2 years. It is exploited by the communities in the estuary area, and the seeds are commonly used as fertilizer in vegetables crops.

Breeding behaviour of Golden Conures

Carlos has stated that wild Golden Conures are very nervous around the nesting tree particularly when the size of the family clan is larger than seven to nine birds. He notes a great deal of aggression between the older birds, which may indicate that this is the time that the older birds may leave the family to form their own clan. He noted that there are a lot of broken eggs in the nesting cavities and suggests that it may be beneficial for captive breeders to pass their eggs off to other similar species with better nesting habits, if possible.

DNA results

The first phase of our study, which was based out of Paragominas, Pará, was to try to locate active, productive nesting sites and observe them biologically. Furthermore, we wanted to analyze blood samples to determine the degree of relatedness among members of clans (small multi-generational flocks of related birds) identified in specific sites and then to determine the relatedness from clan to clan. In the first six months of the study Carlos located thirteen active sites.

The last time that I had corresponded with Carlos, he had trapped 22 adult birds for sampling. There is no question that we need to trap and sample many more. So far the DNA tests are revealing that the birds within a clan are almost all of one multigenerational family, and that most of the birds trapped from various clans are very closely related. Carlos has stated that the degree of relatedness is much closer than what would usually be expected in a geographically dispersed group such as the one that he has tested. This could indicate real trouble for this species if action is not

taken immediately. Interestingly, he is also finding what seems to be an unrelated young female “helper” within the family clan.

The results of the genetic testing, so far, suggest that all of the birds within a given group are closely related with the exception of a young unrelated female. This completely changes the way that aviculturists should be looking at Golden Conures. What was previously misconstrued as flock-breeding behaviours in wild Golden Conures was falsely interpreted. These are not flocks of unrelated birds producing concurrent clutches of offspring in a common area. These are multigenerational family clans of related birds, which share a nesting cavity, the duties of protecting the nest, and possibly assisting in the raising of subsequent clutches of young from the adult pair. Nesting cavities are being found that are twelve to eighteen inches in diameter and as deep as fifteen feet.

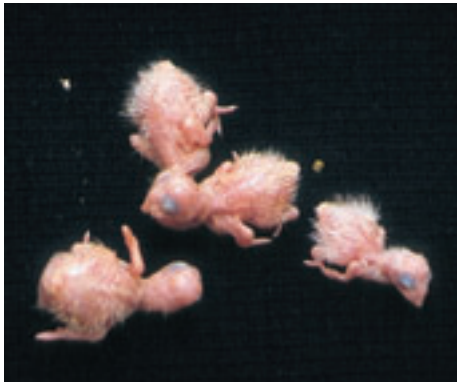
Captive breeding

I have surveyed several large Golden Conure breeders from around the world and have found that the average age for first successful breeding in captivity is between six to eight years. This seems to be a much more reasonable age to expect captive Golden Conures to breed, than the two to three years that so many breeders in the US claim, when trying to sell their offspring.

Our research into this region of Brazil has uncovered a dramatic decline in primary rainforests, which has affected hundreds of species of birds, mammals, reptiles, amphibians and fish. To help the Golden Conures, which we have chosen as the flagship species for this area, is to help all of these species affected. Furthermore, helping the Golden Conures may boost the economy in this area, which in turn may reduce the incidence of birds poached for the illicit bird trade and the destruction of rainforests.

Traditionally the best-known way to keep track of a captive population is through a studbook. There is a Golden Conure Studbook in existence, but it has not been published since January 1998. This most recent issue of the studbook lists 804 Golden Conures in captivity worldwide, with some facilities housing as many as 50 individuals. As a general rule I would consider there to be at least one bird not listed for every one that is; therefore, the captive population could easily be as many as 1,600 birds.

Golden Conures seem to be prolific once they get started breeding. On average they lay four eggs and as many as three consecutive clutches per year. My pair produced their first clutch at the age of four. They laid three consecutive clutches



A brood of recently hatched chicks.

of six eggs, but none were fertile. I find them to be very nervous and protective of the nest even though they were domestically raised and are very familiar with me. In my observations the female will avoid eating and drinking, if necessary, in order to protect her eggs. They will bolt into the nest box, when I enter the room. Because of this they tend to crack or break eggs. I found that my pair broke all of the eggs in their first few clutches. I used an egg from the third clutch to make a plaster mould and subsequently produce fired ceramic eggs. Moreover, I designed a nest-box that would prevent them from jumping directly on the eggs.

Wild Golden Conures use much deeper nesting cavities, but this size box seems to work well with my pair.

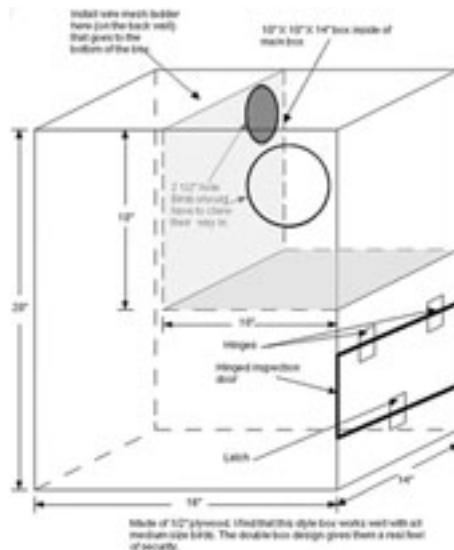
I replaced their next few clutches with ceramic eggs. The following year they sat their eggs without breaking any. I have noticed a visible loss of weight in the female while she is incubating.

Carlos suggests that captive breeding of

Golden Conures may prove to be more fruitful if adolescent birds are left with the adults for several years to simulate these instinctive behaviours. It might prove beneficial to try and simulate this behaviour after the first few years by adding a young unrelated female.

How you can help

Dr. Charles Munn III has predicted that it may take as much as \$15,000 to \$20,000 (£9,000-£12,000) per year for the next several years to save this species and its natural habitat. So far we are doing well, but we will need continued support from groups and individuals. BioBrasil is interested in eco-tourism in this area. The money that we put into the mapping of nesting trees stands a good chance of unlocking matching BioBrasil funds; therefore, any amount large or small will be very helpful.



Speak with your local bird club

If you would like to help and can't do so as an individual; speak with your local bird club. If your club contributes to conservation projects put the WPT-USA Golden Conure Survival Fund on the list for their next contribution.

Purchase T-shirts

The Golden Conure T-shirt has been a big seller and has resulted in quite a bit of income for our fund. Purchasing a T-shirt is a way that you can help with only a small investment.

Purchase a print

'Golden Conures' by the world-renowned wildlife artist, Grant Hacking, has become the icon of the WPT-USA Golden Conure Survival fund. His giclee prints on canvas are spectacular. We have been offering prints for over a year now, which have provided a steady flow of income for our fund. We have plenty of prints left and have just released 20 enhanced artist's proofs. All proceeds from the prints and the artist's proofs go directly to the fund.

You may order Golden Conure merchandise or make donations to:

World Parrot Trust-USA, P.O. Box 353, Stillwater, MN 55082, Phone (1) 651-275-1877, Fax (1) 651-275-1891

World Parrot Trust-UK, Glanmor House, Hayle, Cornwall TR27 4HB, Phone (44) 01736 751026, Fax (44) 01736 751028 www.worldparrottrust.org



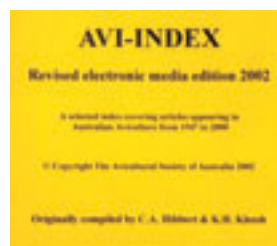
Reviews:

Australian Avi-Index on CD-ROM

Australian Aviculture is a monthly magazine with, not surprisingly, the emphasis on Australian species. Throughout the period of more than 50 years since publication commenced in 1947, countless interesting articles on Australian parrots have been published. These could now be at your fingertips even although you have never seen a copy of the magazine. Last year a CD-ROM was made indexing all the articles published.

The Index is in the form of 36 chapters such as Aviaries, Breeding results, Diseases and Equipment. Each chapter has six headings: Subject, Article, Author, Issue and Page. The sixth column is for ordering a photocopy of the article. An A4 sheet (two pages of the magazine) costs 20 cents, plus AUD\$2 for airmail postage.

Although other magazines have issued an index, I believe that this is the first avicultural magazine to do so in the form of a CD-ROM. It will prove invaluable to aviculturists and researchers all over the world, and can be obtained from Ian Grant, 242 Civic Parade, Altona 3018, Victoria, Australia, price only AUD\$13 including airmail postage.



The Birdie Cookbook

Making nutritious foods enjoyable for our parrots was the aim of Ellen Gyberg when she published The Birdie Cookbook earlier this year. This 12-page booklet is full of interesting ideas for varying their diet in an enticing way. The recipes are quick and easy - and very American. For example, you can bake "Quick Birdie Bread" using a packet each of cornbread mix, squash (the vegetable, that is) and "Southwest mix" (frozen corn, beans and bell peppers). You simply mix the items together, pour the mixture into an 8in (20cm) square pan and bake for 25 minutes.

This little booklet also tells you how to bake sweet potato and pellet muffins, spaghetti for the birds, birdie French toast, oatmeal pellet treat, pasta salad - and more. You can also make a toy using pellets and Cheerio cereals.

The booklet starts with some information on feeding your pet bird and the dangers of an all-seed diet. It warns that grit is "actually toxic for birds and should never be offered" as it contains lead. I don't agree - and neither do the wild parrots in Australia, for example, that risk their lives to take grit from the roads. The popular myth that macaws live to 80 is repeated. The truth is that few have lived beyond 60 years. - RL

You can buy the cookbook (suggested price \$4) from Ellen Gyberg, 5116 Tehachapi Way, Antioch, Ca 95531, USA, or order it by e-mail at Birdiecookbook@hotmail.com.

