

Field Observations in Brazil on the Biology
and Comments on the Conservation of the
Golden Conure
(*Guaruba guarouba*)

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The Golden Conure (*Guaruba guarouba*), also known as the Golden Parakeet and as the Ararajuba in Brazil, is a striking psittacine that is unique in having bright yellow with green primary wing feathers. It is endemic to the Northern Amazonian region of Brazil. The habitat in which it occurs, occupies an areas of terra firma in a sub-montane open forest. Although often listed as a conure because of its common name, it is listed in a separate genus, *Guaruba*. Helmut Sick, one of Brazil's foremost ornithologists of the 20th century believed that this species should be named the Brazilian national bird as green and yellow are the primary colors of the Brazilian flag.

The Brazilian Ornithological Society, at its 2001 meeting, voted this species as the official symbol of the society. The journal of the Society is called the Ararajuba, the common name for the Golden Conure in Brazil.

Historically, the species has been known since the end of the 17th century. From the historical record, all of the European explorers of the 18th and 19th centuries that passed through the area always make mention of the species in manuscripts or iconographies of the time. When the Swiss explorer Martius Spix traveled through the Amazon region (after having gone through the Juazeiro area in Northeastern Brazil and collecting a specimen of what later became known as the Spix's Macaw) he then traveled to the Amazonian region where he noted that the Golden Conure was extremely prized and that its price was the same as that of a black slave. The live conure is still used as currency among many of the indigenous tribes of the Amazon. Also, the tail feathers are prized by the Indians for head dresses as they are totally yellow. This is a species that has always been valued not only by the tribes, but also by collectors and aviculturists, both in Brazil and internationally.

The area that has the major density of the species is located between Maranhão and Pará. This is the region that has had the greatest environmental problems as the impact of a high rate of deforestation, colonization, and cattle ranching have destroyed much of the forest. In addition, governmental projects of the 1970s that tried to provide incentives for the utilization and development of the area have all contributed to the loss of habitat and range of the Golden Conure. New selective logging practices that have been implemented to cut back on the impact of deforestation, actually have had a greater impact on the species. The

problem is that this practice takes the primary hardwoods and the largest trees of the largest diameter that have the cavities necessary for the birds to roost all year long. Many of these trees are centuries old and were probably just seedlings when the first colonists reached the area.

Social Structure and Diet

Golden Conures use roosting trees during the year and breeding is conducted in them as well. It is common to see Golden Conures in pastures and altered habitats, but no matter where they are found, the necessary elements for the species are usually close by. This includes the feeding areas, and the large old trees and snags, some hundred of years old, of hardwood that they use for roosting and nesting. The species usually occurs in areas that are a mosaic of different types of habitat and close to principal feeding areas.

The group sizes range between 2 to 7 individuals that are the pair and the offspring. Although they can reach up to nine individuals, seven is likely the limit of the group size. The chicks of the first year always stay with the family group and can be easily identified by the still green feathers on the back. There is considerable social cohesion in birds.

The young chicks do not leave the family group after fledging, but stay in the same nest cavity in which they were raised, are familiar with the area – the largest number of birds recruited into a same nest size is three, but the median is likely less than two. The most common group size is seven and it is likely that if the numbers exceed this size, they become peripherals. Seven seems to be limit and it is likely that they are territorial in nature. True fledging from the group likely occurs a few years after exiting the nest cavity. It is likely that they will then join other birds that have been marginalized. The estimated home range for each group is approximately 10 square kilometers of primary area.

The principal diet item is the *Croton matoensis*, which reaches 8 to 15 meters in height and the second species is *Byrsonima crispera*, a tree that will reach 25 meters in height. Its fruit is about 1 cm in width. The only part of this fruit that the conure eats is the seed. Feeding bouts difference is 70% of the first 20% of the second and the rest of consists of other food sources as available. These two species are commonly found in forest borders and gaps in the forest. The water is always taken from the forks of the tall trees. If

one knows where there are reservoirs of water, it is easy to find the Golden Conures.

Feeding groups can be composed of up to 30 individuals, but it should not be surmised that they are of the same group. These are different groups that are utilizing the food resource and within the spatial area that they use one can still recognize the individual groups and there is aggression between the bands.

Threats

This is a species that is faced with a number of threats to its future survival. Certainly habitat loss is one of the most serious as the range of this species overlaps almost directly with the region of the Amazonian basin that has suffered the most extensive deforestation and degradation due to industrial and artisanal logging, human settlement that includes farming, ranching, and infrastructure development (roads, dams, hydroelectric projects) needed to accommodate the growing human population of the area.

The other major threat to this species is collection for the wildlife trade. This is a very complex issue that has a long cultural history in the region, both in the indigenous and settler populations. This is a malaria ridden area that is very cash strapped and poor, so collection of birds for the trade is very important to the survival of many groups as it provides for extra income. The Golden Conure is the most prized of the collected birds and obtains the highest prices.

Although the most targeted for collection, it is also one of the most difficult to collect as the roosting and nest-

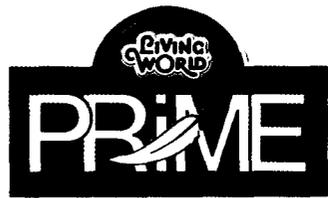
ing cavities are so high. Many people have died climbing into the trees, and it is estimated that on average, one to two individuals die per year from falls while poaching. This is a very high mortality rate as this is considered a very specialized job.

There are a number of ways to capture the birds in the wild. The first is to close all of the roosting cavities and then take the whole group from one cavity. These are large cavities with various entrances and if not closed will allow an escape route for the birds once a trapper tries to get them. This is a continuous effort and the trapper will close one hole at a time over a period of time. Then, the family group to be taken together.

Another form of capture is to localize the nests and place another high point close to the nest, use limestick on these branches and set out a lure bird to attract the birds. As the Golden Conure is a very territorial species, they will attack the lure bird and will be caught.

The third is simply to cut the tree down. This is done at night when the trees are cut with chainsaws and while the birds are in the nest cavities. But the reason that they do so at night is because that is when the chicks' crops are still empty and when the tree falls their crops will not burst from the fall. This is certainly the most wasteful method of collection as it ends any chance of the nest being utilized again. As they nest in old hardwood trees that have commercial importance, the trees are then sold to the lumber brokers.

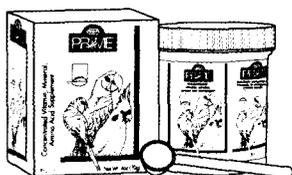
After the birds are captured, they are sold to local brokers. These brokers then utilize the new transportation



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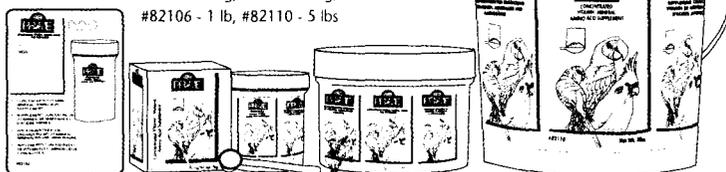


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routes and highways in the Amazon to transport them to larger brokers who then distribute them to the larger Brazilian cities such as São Paulo, Belo Horizonte, Brasília, Rio de Janeiro and others. Most are sold to the internal Brazilian market, but some are exported to the international illegal trade. This is a species that experiences very high mortality once captured from the wild, both during the transportation process and also after arrival to the buyer. Confiscated birds that are placed in zoos or those held in illegal facilities after capture die at an extraordinarily high rate. It is likely that they have problems adapting to a captive diet.

There were some preliminary studies done of the genetic variability of groups separated by 300 km that in reality was shown to be the same population, therefore it is seen that this fragmentation of populations is very recent. It also appears that these populations exhibit low genetic variability, a situation that could pose a threat in the future as more groups are isolated and fragmented due to habitat loss and increasing pressure from colonization.

Conservation

Because of the many threats that this species is faced with, it is important to begin instituting major conservation initiatives to protect the species in the wild. There are many approaches that can be used, but it must be remembered that this is a vast region that has suffered greatly from the impact of colonization, heavy logging and clear cutting practices, construction of dams for hydroelectric power, and increasing pressures from direct human impact through ranching, farming, and general habitat degradation. Therefore, much of the original habitat of the Golden Conure has already been lost. What remains are pockets where the conditions for the species are right, even if the land is degraded. These are areas that have the large century hardwood trees needed for nests and roosting, and an abundant resource of plants on which they feed.

The management plans for habitat in the area will have to take into account the dynamics of the forest and mortality rate of habitat, the effects of fire and successional phases to maintain the needed habitat strata for the long term, so that there is continuous productivity and availability of seeds (food items) and old hardwood trees (nesting and roosting sites). What will be important for the species is to maintain a mosaic of habitats in different stages of succession (estimated at 30 years) so that there is continuity in food and nesting resources.

One important area for the Golden Conure is in the eastern distribution range of the species. Observing this area from a satellite photo shows that this is just one isolated block and includes the large governmental biological preserve (Reserva Biológica do Gurupi, 132,000 ha) and three Indigenous reserves (962,000 ha) that still maintain large tracts of habitat. Preliminary results of research con-

ducted in the area has shown that although this is technically a protected area, the tribes within the reserve have been the primary suppliers of the Golden Conure and other psittacines to the illegal wild bird trade. These tribes have become increasingly dependent on the hard currency obtained through the sale of poached birds and the sale of centuries old hardwood trees for selective logging (legal and illegal). These are the trees that are the primary nesting sites of the Golden Conure.

Unfortunately this is one of the few ways that the Indians can obtain hard currency to purchase needed supplies that they cannot obtain otherwise. To develop a long-term conservation program, it will be important to deal with the tribal system and infrastructure to make sure that conservation becomes institutionalized within the tribe and that they have other sources of currency besides poaching and logging.

If a long-term conservation plan in the region is to be developed, it will be important to manage the forest in a manner so that the large hardwood trees are left and are not removed as this creates a reduction in the availability of this resource for the birds to nest and roost.

Land purchase and guards has also been proposed as a conservation option for this species. However, this is an option that is very labor and cost intensive. If this approach is taken, then it will be important to purchase enough land that encompasses the proper habitat to secure the necessary number of birds to protect the nests from poaching and the timber industry.

Conclusion

The Golden Conure is a species that is under great threat not only due to habitat destruction, but also to poaching for the live animal trade. In order to conserve it for the long term, new approaches to conservation management need to be implemented and compared for their effectiveness. As there is still very little known about the natural history of this species, more long-term research is needed particularly as to their social structure. The live animal trade needs to be controlled and the demand for wild birds curtailed. The Golden Conure has now been bred to the F2 generation in Brazil, allowing these birds to be legally commercialized. (In Brazil, commercial breeders can own and legally sell birds that are proven F2 stock.)

Although there are many conservation approaches that can be taken, these need to be implemented to examine their efficiency in dealing with the problems facing this species. One conservation strategy is being formulated that proposes a dual approach that involves working with the tribes to help them obtain needed currency by safeguarding of the birds and trees on one hand and on the other continuing the field research program. This project is being developed with collaboration and input from Rara Avis Conservation Consulting and the American Zoo and

Aquarium Association (AZA) Parrot Taxon Advisory Group. The World Parrot Trust (WPT) has also initiated a fund-raising campaign to support the Golden Conure and develop a conservation project in Brazil. There is much to be done and all support is needed to try different approaches to the conservation of this unique species in the wild.

Acknowledgements

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