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Grey Parrots of the Congo Basin Forest

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It is 06:00 on an April day in the Congo Basin. Elephants move out of a swampy clearing and into a dark wet forest. A flock of 1,000 delicate bright green pigeons suddenly shifts direction in agile synchrony, creating a soft boom. Parrots, grey with bright crimson tails, trickle into the clearing - singles, pairs, triads, quads and they announce their arrival with whistles, squawks and screeches.

Two parrots stand in the mud, tethered to a wooden stake. Yesterday, they were free and strong. Today, they are enslaved and weak. Tethered to the branch above, four parrots perch and call. They, unlike their friends below, are accustomed to the routine. Behind a structure of carefully-placed palm fronds, four men hide and wait.

An hour passes. From a tall dead tree 100 meters away comes a chorus of whistles, chirps, buzzes, coos, squeaks, squawks and screeches. *Les perroquets gris*, with tails the colour of *noix de palme* (one of their favourite foods), begin to emerge from the tall tree and settle themselves atop shorter trees. After all have arrived, the hungriest and bravest descend into the swamp, seeking their salad and soil.

Then the cycle begins. Several Greys leave the ground and return to the trees and, in relay-like fashion, 20-30 descend to the ground and take their place. Then, again, others return to the trees and are replaced again. The cycle continues until suddenly, a net engulfs them, now a muddied, flopping, ear-shattering mass of beak and wing.

Men appear from their palm cache. By grasping only wing tips, they pluck the *koukourous* from the net and stuff them into cages. Inside, parrots succumb to a crouched posture dictated by meagre cage dimensions.

Poachers carry cages back to their camp where the parrots will remain for up to 40 days, eating only corn rations and water. Some will die tonight. Some will weaken or sicken and die, days or weeks later. Only the healthiest and strongest will survive until the arduous three day journey to the city. Then more will perish en route to their ultimate targeted destination.

This is one way that Grey Parrots enter the international pet trade and eventually come to live in other parts of the world including Europe, North America and Asia.

Grey Parrots flocking to enjoy the swamp. *Photo: Diana May*

As a student in Dr. Irene Pepperberg's lab, I consider how our research has positively impacted the world's population of Grey Parrots. Dr. Pepperberg's numerous talks at avicultural club meetings and extensive media coverage of the lab has had an educational effect: It has improved the relationships between "pet humans" and their companion Greys. Numerous telephone calls to the lab from ecstatic Grey companions support this assertion. Extensive media coverage has also led to a public understanding that Greys and other parrots are intelligent, highly social beings that in spite of their different evolutionary history, show striking similarity to humans. Again, conversations with people who "saw Alex the African Grey Parrot on television" indicate they do in fact understand that Greys are intelligent, social beings not unlike human beings. Finally, the research has or will positively impact wild populations in two ways. First, through her interviews, Dr. Pepperberg emphasises the importance of conservation of the Grey Parrot. Second, the research conducted by Dr. Pepperberg's students in the Congo Basin contributes to the knowledge and conservation of wild populations of Grey Parrots. In the following paragraphs, I highlight some of this research.

In 1995, I began my research on the ethology of Grey Parrots in Dzanga-Ndoki Park, located in south-western Central African Republic. During this two-month field study, with the aid of two forest guides of the Bayaka tribe, I made at least two important observations. First, Greys produce a vocal repertoire far more complex than has yet been reported. Second, Greys engage in a behaviour not yet described in any published scientific study of Greys: ground foraging. These observations led to our subsequent research in Cameroon.

In 1997, Carolyn Bentley and I conducted research, with the aid of two Baka guides, for seven weeks in the recently established Lobéké Reserve. Lobéké is located in the south-eastern corner of Cameroon, 110 km from Dzanga-Ndoki Park. (Political unrest in the capital of Central African Republic prevented us from continuing research in Dzanga). For my dissertation research, I began to make audio and video recordings to examine variation in the call patterns of Grey Parrots. Currently in progress, my acoustic analyses of these and subsequent recordings indicate that Greys may have a minimum of 30 different calls. Such a large and varied repertoire is consistent with the communicative abilities demonstrated in our lab. Future research should examine the function and acquisition of each call in this rich repertoire. Ms. Bentley, for her senior honour's thesis, began a study of ground foraging. In fact, our very first day of observation at a large marsh clearing, Boulou Savanne, revealed that not only do Greys come to the clearing to forage on vegetation but also to engage in geophagy, or soil-eating. We observed flocks of up to 800+ Greys as they descended and foraged in select areas of the clearing. Ms. Bentley also collected soil samples for biochemical analyses to address hypotheses regarding the function of geophagy. We are now preparing an article for publication.

At Boulou, we also discovered another interesting Grey parrot behaviour that also was not yet

reported in the scientific literature. Although parrots are notorious for "chewing" things, we observed what we thought was chewing with a purpose: groups of up to 20 Greys chewing the bark of thin young branches of a tree. The parrot clips off a piece of bark, chews the piece for 1-2 minutes, and then drops the piece. It appears that Greys do not actually eat the bark, especially the fibrous part, but rather extract something from it. We hope that this observation will lead to future research that examines the function and physiology of this behaviour.

During this second field season, we also encountered several groups of men as they trapped Grey parrots for the international pet trade. These poachers used two different methods. One (the method that I illustrate at the beginning of this article) is a highly efficient capture method that capitalises on the ground foraging behaviour of Greys. The method involves the use of caller parrots ("appellants") and bait (usually ground plants and occasionally table salt) to lure large flocks of Grey parrots into vine-framed nets that are pre-set flat on the ground. I wanted to learn the method because it would be useful for many kinds of research studies. We could collect feathers for genetic studies, colour band and identify individuals for behavioural studies, and attach radio transmitters for studies of ranging and social behaviour. Therefore, I employed a parrot trapper. Under his direction, we trapped, measured, banded (with coloured aluminium bands), and released 40 Grey parrots. The second method employs the use of glue sticks, and it targets primarily Greys as they land on the ground and secondarily Greys as they land in trees. First, trappers gather palm fronds and strip them of their leaves. These are the sticks to which the glue is applied. Second, they slash a special vine and gather its sap. They heat the sap until it turns black and gooey, like tar. Next, they dip the ends of the sticks into the glue and place them either in the ground where the Greys descend or in a device (that they have constructed) that is placed on a tree branch. Finally, when the parrots land, their wing feathers adhere to the sticks and they cannot fly.

The impact of these methods, at least as they are typically practised, are incalculable and frightening. Although both methods are stressful to the birds, the net is particularly stressful. When trappers use it, they wait as long as possible before closing the net so that they can maximize number of parrots. But, when they close the net, the parrots are tightly sandwiched together; when the parrots struggle and try to bite and claw their way free, they maim each other and themselves. If they do not die immediately, some will die days or weeks later, probably from some combination of stress, infection resulting from wounds, respiratory infection resulting from poor living conditions, and pre-existing parasites.

Diana May feeds semi-tame African Greys. *Photo: Diana May*

The main problem with the glue method is that a number of parrots that get glue on their wings will escape and die because they cannot fly and/or because they are killed by predators.

To sum up, both methods clearly remove far more parrots from the population than are eventually exported - 10-50% according to my interviews with trappers.

In 1999, I returned to Lobéké Reserve and began collaborative research with Spencer Lynn, another graduate student in the Pepperberg Lab whose research goals included the study of the social structure and movement patterns of Grey Parrots. Our research goals were ambitious. Through collaboration with Mr. Lynn and use of a less-stressful variation of the poachers' net trapping method, coloured leg bands and radio tags, I aimed to expand the scope of my 1997 research to determine whether vocal variation corresponds to social interaction/contact patterns (or groupings). Tools consisting of brightly coloured PVC leg bands and radio transmitters (attached as collars) would enable us

1 to identify individuals and their corresponding vocalisations,

2 to determine which individuals "talked" to one another,

3 to track parrots to their communal night roosts, and

4 to determine which birds travelled or aggregated together.

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An effective method for trapping parrots. *Photo: Diana May*

Rich pickings for African Greys. *Photo: Diana May*

Marginal success

Unfortunately, we achieved marginal success because of competition from poachers. In spite of regular patrolling of the reserve by forest guards (but who had no firearms), groups of poachers still succeeded in trapping and transporting parrots from Boulou Savanne. Not until late in the field season, did we process a mere 30 Grey Parrots, of which 24 we attached leg bands and 10 we attached radio collars (and some of these were birds confiscated from the trappers). Of the ten radio-tagged parrots, four returned to Boulou; we made no re-sightings of leg bands. If the poachers had not interfered with our research, our success would have been greatly increased because we could have tagged more birds and had more time to track them.

And, now it's April 2001. It's Animal Rights Month, the time of year when I think most about the safety of everyone in our research laboratory, including the birds. Animal Rights activists, who want to help the parrots, may ultimately be harming them in two ways. First, through their illegal activities around the globe, they force us to expend extra time, money, and in taking safety precautions that require extra time, energy, and money. Doing so has necessarily reduced the quality of life of parrots that live in lab. For example, we cannot have windows and this may be harmful to their health. Second, these activists prevent or inhibit the research that is essential for both the health and happiness of captive Greys and the preservation of wild populations.

Research is critical, whether the goal is sustainable harvest or pure conservation of Grey Parrots. When we began our research, little was known about wild populations. And, although we have only just begun, our data provide some of what is badly needed for success in preserving wild populations. First, our research and the subsequent research that it ignites provides information about the natural diet, habitat requirements, and behaviour of Grey Parrots. Results are invaluable to breeders and others who maintain captive Greys. When this information is used properly, it improves the lives of captive Greys, and, in turn, reduces or eliminates the demand for wild caught Greys. Second, our research reports on the harvest itself, particularly the impact that it has on wild populations. Reporting does three things:

1 It generates more focused, intensive studies of the Grey Parrot trade, studies that provide data essential for the design of sustainable harvest practices or conservation projects.

2 It affects the conscience and consequent behaviour of current or would-be importers (yes, some do turn away from the Dark Side).

3 It provides evidence and rationale for governments and other organisations that possess the power to implement effective trade regulations and conservation projects.

Finally, when combined with our laboratory research, it has an extraordinary impact on both people who might otherwise unintentionally contribute to the decimation of wild populations and people who might support (e.g., World Parrot Trust members) more research and conservation action.

If Greys are to have a bright future, then clearly, immediate and drastic changes are needed. First, export quotas should be abandoned. Why? Because they do not appear to work. For example, Cameroon has exceeded its Grey Parrot quota of 12,000 by up to 11,000 parrots (WCMC 1997)! Another reason is that quotas are based on little if any scientific data. The primary method for assessing the effects of trade and establishing quotas appears to be counting parrots; the typical timeframe for these population counts is very short, anywhere from a few weeks to a few months. Because, like other animals that live long and reproduce slowly, population counts provide little if any information about the rate of population replacement and therefore are insufficient for assessing the health of wild populations. Worse yet, population counts could falsely indicate large healthy populations that could in fact consist of predominantly senior parrots that will never reproduce; if so, a population crash can occur. The second major change, if possible, should be a ban on the import of wild-caught Grey Parrots into Europe and Asia either temporarily, until sufficient scientific data are available (to determine proper levels of sustainable harvest), or permanently. Currently, many Greys are bred in captivity across the globe; when bred and raised properly, there should be no need to import wild-caught Greys. If there were no importation of wild-caught birds, then there would be little incentive for Africans to trap, export, or even smuggle Greys. Furthermore, trapping can greatly hinder the success of gathering important scientific data, even in areas where it is legal (as I described earlier). Finally, perhaps the most important change that needs to be made is to support and carry out rigorous scientific study of wild populations, particularly reproduction. If we are armed with this knowledge, then we can save Grey Parrots.

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These birds join the tens of thousands taken from the wild every year. *Photo: Diana May*