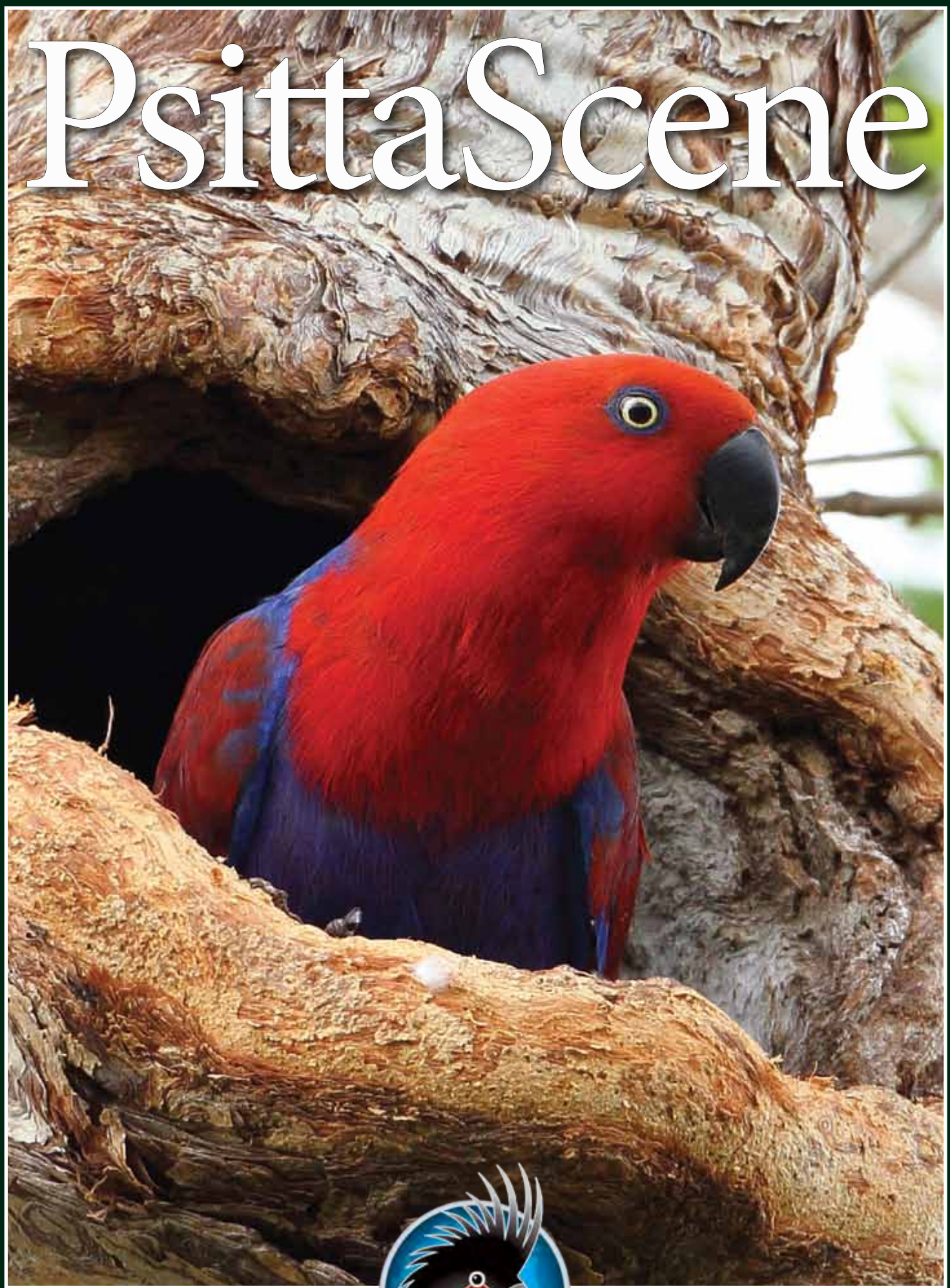
Magazine of the World Parrot Trust

PsittaScene



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fromthedirector

Progress in parrot conservation comes in many forms, and I'm happy to share three recent examples.

In response to input from many conservationists and field biologists – including many from the World Parrot Trust - three parrot species have been added to the Red List of Globally Threatened birds: two grey and one green.

As you'll read in this and many recent *PsittaScene* issues, African Grey parrots remain under great pressure from trade. These birds once ranged from the Atlantic coast of Guinea Bissau through over 5,000 kilometers of equatorial Africa to central Kenya. Now, the Timneh Grey Parrot is extinct in the vast majority of its former range, and while the Congo Grey Parrot is faring better, it too is extinct from much or all of Kenya, Tanzania, Rwanda, and Uganda. It's high time these two received due attention from conservationists, so we were delighted when both species were elevated to Vulnerable by the IUCN (International Union for Conservation of Nature).

In Central America, another parrot in high demand – the Yellow-naped Amazon – has suffered similarly dramatic declines. In the last two years, I've driven nearly all of the Pacific coasts of Guatemala, El Salvador, Honduras, and Nicaragua – all former "nape" strongholds. With a few notable exceptions, these birds are simply gone. Like the greys, saving the Yellow-napes will be challenging, but it helps to start with the recognition that there is a serious problem, so adding this species to the Red List is indeed a big step forward.

The serious work lies ahead of course, but for now, we're happy to share this bit of good news for these three tremendous talkers.

Jamie Gilardi
WPT Director

onourcovers

FRONT A female Eclectus Parrot *(Eclectus roratus)* shines at the entrance of her nest hollow. Quality cavities are difficult to find and fiercely defended. The Eclectus is notorious for its reverse colour dimorphism. This, as well as many of their unique behaviours, is directly related to the scarcity of quality hollows. © Steve Murphy

BACK *From the photographer:* Fig Parrots are the only Australian bird to excavate their own tree hollow entirely from scratch which probably explains why they heartily defend their nest when conspecifics come too close. This Fig Parrot is a female of the subspecies *Cyclopsitta diophthalma marshalli*. She sat motionless at the nest entrance allowing me to use a long exposure in the dim rainforest light. © Steve Murphy

© Roland Seitre

True Colours

Understanding the ecological and evolutionary forces behind the Eclectus' unique colouration

By Rob Heinsohn

As I broke above the canopy I realized that suddenly everything was below me. The birds and the butterflies whizzed past, and the cool breezes in my face felt divine.

Climbing above the hot and steamy rainforest on Cape York Peninsula, at the northern most tip of the Australian continent was an exhilarating experience. It's a privileged perspective that not many people will experience but one that I was fortunate to admire on many occasions over a ten year period. I was observing the comings and goings of the mysterious Eclectus Parrot *(Eclectus roratus)*. This involved climbing either to access nest hollows up to 30 metres (98 ft) above the ground, or sitting for long, uncomfortable days on a high wooden platform, just watching. I was terribly afraid of heights at first but after the first season I had mastered my fear and it was replaced by an addiction to the thrill of discovering the secrets of these extraordinary birds.

(top) Even Eclectus chicks far younger than these can be differentiated by sex based on the colour of their down. Males are light grey; Females dark.

Death to baby boys!

From the early days of the project I sensed that something sinister was killing some of the nestlings. Eclectus parrots virtually always lay two viable eggs, yet on the first climb to the hollow after they were due to hatch there was often only one chick in the nest. As it turns out, the missing chick was almost always a male. In a violent act of sex-specific infanticide, the mothers were tossing many of the males overboard within days of hatching. Sometimes we found the pathetic little corpses, with parrot beak-shaped marks on the back of their heads or necks, either in the hollow, on the edge, or on the ground below the nest tree.

The adaptive reason behind this gruesome behaviour soon became clear: infanticide was only happening in poor quality nest hollows. These nests are prone to flooding during heavy storms, leaving only a short window for those females to nest. It turns out that female chicks typically leave the nest more quickly than males, so it actually pays the mothers in these circumstances to rid themselves of male offspring. This allows them to speed up the whole nesting process and produce at least one chick before the rains come.

Humans are the only other animals known to kill offspring because of their sex. It is probably not even possible for most birds to make the choice because male and female nestlings look so similar. Eclectus parrots are highly unusual because the chicks grow straight into their adult plumage, and even before they get feathers the sexes are clearly distinguishable by their down colours. Males have light grey down and females have dark grey. It seems the parents make use of this unusual ability to distinguish gender to make decisions about which chicks to keep and which to kill. In theoretical terms, killing too many males can decrease the value of female chicks because they are less likely to find mates later in life. The balance is delicate and it only pays the mothers with really poor nest hollows to commit sex-biased infanticide.

The Eclectus Puzzle

The infanticidal tendencies of Eclectus parrots are just one in a long list of their bizarre behavioural tendencies, most of which ultimately relate to their colours. In fact, few birds have puzzled scientists more! One of the 20th Century's great evolutionary biologists, the late Professor Bill Hamilton of Oxford University, used to show a slide in his lecture series of a male and female Eclectus parrot sitting side by side. The male was a vibrant green, and the female a stunning red. Whereas evolutionary theory had plenty to say about why one sex in birds is often more gorgeously coloured, it stumbled somewhat in establishing what had happened in this species. No other bird has sexes so beautified but in such different ways. Hamilton ended his talk by saying, "When I understand why one sex is red and the other green, then I will be ready to die".

The Eclectus practice sex-based infanticide where male chicks are sometimes tossed from the nest by females with poor quality hollows. This allows them to produce at least one chick - the more quickly fledging female - before flooding rains swamp the nest.

Hamilton was essentially puzzled over why Eclectus parrot boys look like girls and the girls look like boys. The two sexes are in fact so different, they were long thought to be different species with even the best 19th Century naturalists fooled. It was not until about 100 years after their discovery that they were finally unified under the same name.

Eclectus parrots have been very popular as pet birds but there had been no field studies of these birds until our research commenced in 1997. This was understandable as few birds present the field worker with such logistical difficulties. Eclectus parrots live high in the canopy of rainforests in New Guinea, west to the Moluccas, east to the Bismarck Archipelago and Solomon Islands, and also on the tip of Cape York Peninsula in northern Australia. Their nest hollows are very high (20-30 m or 65-100 ft) and inaccessible, and the birds are notoriously shy. It was a rash moment when I committed myself to solving the Eclectus puzzle.

Eclectus parrots probably found their way into northern Australia from their ancestral homeland of New Guinea thousands of years ago when sea levels were lower and the two landmasses were connected. The first nest tree we encountered at Iron Range National Part on Cape York Peninsula was the remarkable "Smuggler's Fig"- a very large specimen of the Green Fig *(Ficus albipila)*. This majestic old denizen (now sadly fallen) had rusted metal spikes sticking from its trunk as a testament to the bad old days of parrot poaching, and was a microcosm of Cape York wildlife. In its various hollows, it supported 17 Eclectus parrots distributed among three different breeding groups, two pairs of Sulphur-crested Cockatoos *(Cacatua galerita)* and roosting cavities for bats inside its trunk. Its crown was decorated with a magnificent colony of Metallic Starlings *(Aplonis metallica)* with their multitude of nests hanging from the upper branches. Preying on all these creatures was a resident pair of Grey Goshawks *(Accipiter novaehollandiae)*, and a

large Slaty-grey Snake *(Stegonotus cucullatus)* haunting the ground below waiting for the chicks to fall.


© Steve Murphy

A scarcity of quality nest hollows plays a major role in the Eclectus' dramatic reverse dimorphism. Females protect these hollows fiercely.

A good hollow is hard to find

We spent most of our research time moving between and climbing 40 widely separated nest trees. Although we approached the nests cautiously we were often met by the raucous cry of Eclectus females quickly exiting their hollows. During our visits they usually sat in nearby trees, but those with eggs or chicks re-entered the hollows immediately upon our departure. Without such permissive behaviour on the birds' part our research would not have been possible.

One of our first discoveries was that females virtually never leave the vicinity of their nests over a very long breeding season (6-10 months). They sit in their hollows with their gorgeous heads sticking out watching the world go by for at least a month before laying eggs (usually August –September). The females then do all the incubation and brooding of small chicks. Where they differ from most other parrots is that they refuse to leave the hollow when the chicks are older. Even after the chicks have fledged, the females still return to their hollows every day to make sure no intruders have taken it over. A female with a good hollow has no choice but to sit tight and defend it from others. Scuffles often break out between females, and they will even fight to the death to defend this precious resource. They only manage to sit so tight for so long, and to avoid predation because they are fed by multiple males.

The females need large hollows in tall emergent rainforest trees to breed, but useable hollows are few and far between. Herein lies the first clue to solving the Eclectus colour puzzle, as much of the reversed colouration in Eclectus parrots (and other bizarre behaviour like the infanticide described earlier) ultimately relates to the scarcity of nesting hollows. Nest hollows are typically in very large emergent rainforest trees. In fact, 75% of our known nest trees are in just three major tree types: figs, *(Ficus sp.)*, milky pines *(Alstonia sp.)* and the Black Bean Tree *(Castenospermum australe)*. The trees used for nesting are clearly visible from the air, as they tower prominently above their neighbours.

Using light aircraft, we conducted comprehensive aerial surveys for potential nest trees in the rainforests in and around Iron Range National Park and found that there are only a few hundred trees in the whole region, which incidentally makes up half of the Australian Eclectus habitat. We found at most only one suitable nest tree per square kilometre of rainforest.


© Robert Heinsohn

© Michael Cermak

The male's bright green helps to camouflage him as he forages. The female's red serves as a warning in defence of her hollow.

Not only are nest trees rare, but many of the hollows are hopeless for breeding because they flood in heavy rain. When that happens, even large chicks drown, and the previously cosy hollows become unavailable for several weeks. A good hollow is clearly one that stays dry for at least four months during the crucial breeding period: one month for incubation plus three months from hatching the eggs to fledging chicks. One of the best hollows in the Iron Range study area was in the Smuggler's Fig. This hollow never flooded, and the same female was in residence from 1997 until 2008 when the tree finally toppled over. During this period, she fledged more than 20 chicks, compared to many of her neighbours, which managed, at best, one or two fledglings.

Enforced wife-sharing

Each female is attended by up to five dutiful males that scour the countryside for fruit. Upon returning to the nest, they lock beaks with the female and regurgitate the fruit pulp and seeds. With great effort we managed to catch some males in mist nets that were hoisted into the rainforest canopy. We then attached tiny transmitters to their tail feathers before letting them go. This proved to be a wonderful method from the birds' point of view, because the attachment to the tail guaranteed that the transmitter would fall off when the feather moulted.

The only way to follow the birds over the rugged rainforest terrain was by mounting our aerials on a light aircraft and radio-tracking them from the air. We found that males travel up to 20 km (12-13 mi) on each trip to find food and have very large home ranges of up to 100 square km (35-40 mi^2). They clearly work extremely hard but are rewarded with sexual favours if they feed the females well enough.

Our genetic studies using the birds' DNA showed that the males are not related to each other. They jostle, peck and claw one another for access to their shared bride. They cannot all be fathers, because she lays only two eggs at a time. However, our genetic studies have shown that many of them do eventually become fathers, at least once, if they stay with her long enough. This can happen if the female lays a second clutch in the same season, or over multiple years. One male we studied fathered two chicks with the same female seven years apart but failed to gain any offspring with her in between.

The adult males outnumber the females by about two to one (for reasons described below), and many miss out on fatherhood despite their hard work feeding the chicks. To increase their chances they often "two-time" their partners and visit more than one female. We saw some of the males flirt with up to five different nesting females! They would typically alight near the nest hollow and chirp and chatter to the female. Sometimes they were chased away, but on other occasions they succeeded in mating with her. This mating system, in which both sexes seek multiple sexual partners, is unlike that of any other parrot. Males and females in most parrot species live in monogamous (but harmonious) marital bliss. The strange system in Eclectus parrots seems to be due to the all-important shortage of nest hollows that forces males to wife-share and to look elsewhere for sex and reproduction when it is not forthcoming at home.

Different colours make sense

Ultimately, the shortage of hollows also drives the remarkable reversed colour scheme of male and female Eclectus parrots. We used a technique known as spectrometry to work out the purpose of their dimorphic plumage. This entailed catching the birds, scanning their plumage and measuring the surrounding light and colours in the rainforest using a spectrometer connected to a laptop computer. All hollows are in bright light, and females usually sit at the entrance with their heads and chests glowing like beacons. Their bright colours act as an obvious signal to other females, saying in effect "This hollow is occupied."

Such a strong proclamation seems essential in the females' competitive world, where hollow ownership is at such a premium, but it comes at a high price. Old females with good hollows can use them as an option for "switching off" their signal. All they have to do is duck inside the hollow when a predator is nearby. The younger, hollow-less females do not have this option. Although they do their best to hide in the foliage, they remain painfully conspicuous to their predators and are twice as likely as the males to be attacked by Peregrine Falcons *(Falco peregrinus)* and Rufous Owls *(Ninox rufa)*.

The colour of male Eclectus parrots is very different for good reasons. Given the fact that females stay at their hollow and the males go out to forage, it begins to make sense. The males spend virtually all of their time in the tree-tops and, unlike females, need to blend in with their green surroundings for safety from their aerial predators. However, they also need to be bright and showy when they compete for the females' attention at the nest hollow. To achieve this double-act, their green has an extra quality. It positively glows in ultra-violet wavelengths that are beyond the range of their predators' (including humans) capabilities. Males look dull green and camouflaged to hawks and owls (and us) when they are out collecting food, but stunningly gorgeous to the other Eclectus parrots back at the nest hollow. It was only by using a spectrometer that we could detect this hidden colour.

The female's red when contrasted with the shiny green of the males as she slips out of the nest to receive food is one of nature's truly beautiful sights. Although it took ten years of grueling field work to get as far as we have in both solving Hamilton's mystery and working out why Eclectus parrots kill their male chicks, the rewards of finding each piece of the puzzle have made all the effort incredibly worthwhile. The name Eclectus (with the same Greek origin as "eclectic") is indeed apt as the birds' ecology, colour and sexual behaviour are truly remarkable for their oddity and variety.

© Robert Heinsohn

Part of the difficulty of studying Eclectus parrots is that their nesting hollows are in extremely tall trees with challenging access.

Rob Heinsohn is Professor of Evolutionary and Conservation Biology at the Fenner School of Environment and Society, Australian National University. He has worked on a wide variety of vertebrates including lions and pythons, but specialises in the behaviour and conservation of parrots. His most recent project is on methods for tracking the migratory movements of endangered Swift Parrots from their breeding grounds in Tasmania to the mainland of Australia. Rob is the newest member of the WPT Scientific Committee.

aiding GREYS

Confiscated greys begin their rehabilitation. The inset shows feather regrowth after plucking which helps speed release.

With only a few hours of sleep and bleary-eyed due to the 50-hour journey from my coastal home in California to my new temporary home in Cameroon, West Africa, I began my work as a volunteer veterinarian at The Limbe Wildlife Centre. I was excited to help even if the heat and humidity of the tropics and the jet-lag made my first few days in Limbe feel quite hazy.

On December 7, 2010 The Limbe Wildlife Centre was notified by LAGA (Last Great Ape Organization) and MINFOF (Ministry of Forestry and Wildlife) that they had seized yet another group of African Grey Parrots *(Psittacus erithacus)* and they were on their way. The Wildlife Centre had just 3 hours to prepare for the arrival of over 600 parrots. They had to scramble to find a place to house them, in addition to procuring food and extra caregivers. Unlike all of the other groups of confiscated parrots seized at airports and brought to Limbe, this group had been taken from a truck on the road from Douala to Tiko, a small port town, en route to Nigeria. As is so often the case, they had been transported in small, very crowded crates without food or water for an unknown period of time and were in deplorable condition upon arrival. Unfortunately, many were dead or very sick.

The poaching and smuggling of African Grey Parrots in Cameroon is rampant and is likely causing an overall decline in their population throughout the region. The Limbe Wildlife Centre is a sanctuary located on the west coast of Cameroon, operated by the NGO Pandrillus and the Cameroon government. It houses and cares for over 200 orphaned great apes, a variety of monkeys and some reptiles. Although they lack adequate facilities for parrots, especially on this scale, the Centre has become the regional authority on confiscated parrots and always has an open door. Between 2007 and 2010, they received and took care of over 3,500 seized African Grey Parrots. Although a huge challenge, they always make space for them in their small great ape quarantine area and rehabilitate them until they can be released back into the forest where they belong.

The parrots seized in December 2010 had been in their temporary home at Limbe for a few weeks before my arrival with much needed medications and leg bands, donated by the World Parrot Trust (WPT). Upon their arrival, the parrots that were healthy and excellent flyers were released on the nearby forested Mt. Etinde. The sick and injured birds were set up for care in the Centre's quarantine area. When I arrived, we immediately started medical assessment of each parrot, gave injections of antibiotics and de-wormers and banded them. Sadly, the poachers had clipped or tied string around many of their wings to stop them from flying or used glue as a means of catching them. Their affected feathers were de-glued or plucked under anesthesia. The latter allows quicker feather growth and a shorter stay in rehabilitation – better for the birds and the Centre.

Next, the parrots that were healthy and moderately good flyers were moved to the newly-built large wooden flight cage located in the beautiful, shady and quiet 48 hectare (118 acre) Limbe Botanic Gardens which are conveniently located across the street from the Wildlife Centre. Although still caged, the birds appreciated the move – their vocalisations completely changed from those full of stress to those of apparent contentment. We took much precaution to make sure the parrots were kept in a very private location, their cages covered

Thousands of African Grey Parrots have been confiscated from traffickers thoughout central Africa (see p. 10).

in Cameroon

By Emily Talkington

The healthiest birds were released immediately. The rest were assessed and prepared for freedom in the botanical gardens.

with green vegetation and away from people and other animals, while they were continuing to build their strength for flight.

The release site in the thick and lush Botanic Gardens was absolutely beautiful! A clear, fast-running river meandered through the green, pristine gardens full of palm trees, mangroves, and a variety of ferns, plants and massive mature trees that had been there for hundreds of years. The Limbe Botanic Gardens are the second oldest botanic gardens in West Africa and abound with a myriad of wild mammals, snakes and birds. The palm trees were full of palm nuts, the parrots' apparent favourite snack.

Once we observed that the birds were flying well in the flight cage, the release into the Botanic Gardens began! And what a day that was – the release itself was magical! We had all worked so diligently on the rehabilitation and we wanted the release to go smoothly and successfully. We opened the door on the flight cage and allowed the birds to fly at-will through the door and out into the forest. Most flew beautifully – high up into the surrounding trees. The few that were having a little difficulty flying were brought back into the flight cage for re-assessment and more practice. Seeing the parrots soaring up into the trees after being treated so poorly by the poachers and being "locked up" in captivity during rehabilitation was the best sight I had seen in years. Tears sprang to my eyes as they flew enthusiastically and found comfortable and safe places to rest high up in the trees. We laid out fresh fruit, vegetables, nuts and water for them daily on the top of their tall flight cage while they learned about the natural buffet of wild fruits, nuts and plants in the surrounding trees and bushes.

The Limbe Botanic Gardens are very similar to the Grey's natural habitat except they are located in the middle of a bustling town where it is relatively safe and where visitors can view them up in the trees and appreciate their beauty and presence. It appeared that they would do very well here! They were free to fly out of the Gardens and into the nearby Bimbia-Bonadikumbo Forest or beyond anytime they chose. Free at last!

Before leaving Cameroon a few months later, I went for one last visit to the Botanic Gardens. It appeared that most of the parrots that had been released were still in the area chirping and whistling happily high up in the tree-tops. I could see them flying from tree to tree in search of the perfect palm nut

FlyFree has enabled more organisations to respond with proper facilities and trained staff, which means more birds can be successfully rehabilitated and released.


© Sophie Mielvang

or bush mango and it brought a smile to my face. I was again bleary-eyed but not from exhaustion this time – rather from the joy of seeing the parrots living freely and doing so well! The workers at the Botanic Gardens told me that they loved the presence of the parrots and enjoyed pointing them out to people who were always enchanted to see and hear them whistling and chirping in their natural environment. Viewing African Grey Parrots in their own habitat is an extraordinarily rare sight that I felt very lucky to have experienced.

Several months after my departure from Cameroon I received news that all of the parrots had left the Limbe Botanic Gardens. Maybe in search of an even grander forest? One that is deeper in the bush with safer breeding sites or offers a larger variety of food? Will they stay in Cameroon? Or fly to a neighboring country? It is my great hope they will only be viewed in the trees or in the sky and not again in crowded, wooden crates on their way back to the sanctuary.

Emily Talkington is a small animal and wildlife Veterinarian who has traveled and worked in Africa several times over the past 14 years. Most recently, she spent 6 months in Cameroon volunteering at The Limbe Wildlife Centre and Sanaga-Yong Chimpanzee Sanctuary. She is already planning her next trip back to Africa!

GREYS *in trade*

Status Change:
As of February 2012, both African Grey species *(Psittacus erithacus* and *P. timneh)* are deemed Vulnerable by the IUCN and are therefore officially listed as Globally Threatened Species.

FlyFree Assistance:
The World Parrot Trust, through our FlyFree program, has been working to set up a network of facilities trained to manage these confiscations occurring throughout Africa. We have contributed significant funds over several years to the organisations involved and have provided advice on husbandry including feeding, cleaning and basic care. We have funded medical supplies, caging, veterinarians and food and generally help to guide most of the steps in the process, all so that, when confiscations happen, birds can be cared for and released as soon as possible.

Recent confiscations:
Cameroon (7), Uganda (2), and 1 each in Kenya, South Africa, Democratic Republic of the Congo (DRC), and most recently in Liberia and Congo-Brazzaville. In total these confiscations involve more than 3,500 birds.

aiding GREYS

By Cristiana Senni

The Republic of Congo and the adjoining Democratic Republic of Congo (DRC) are the last two countries legally exporting wild-caught African Grey Parrots *(Psitticus erithacus)*.

In November 2011, about 160 Greys were confiscated by the police in the Republic of Congo and taken to the Wildlife Conservation Society (WCS) field camp in Kabo, located in a forested area in the northern part of the country, where an existing cage was adapted for the parrots.

We, at the World Parrot Trust, were contacted shortly after, and we provided as much advice as possible on treatments, housing and diet.

Fortunately, Dr. Ken Cameron, wildlife veterinarian with WCS-Congo was able to process the parrots quickly, separating the healthy ones from those that needed more treatment.

As we become involved with more confiscations of Grey parrots, we are also learning more about the different trapping methods used in Africa and the challenges that they can pose to the rehabilitation of the birds.

In this case, as in Cameroon (page 8), many of the parrots had their feathers either covered with glue or tied with string. The glue is commonly used to trap them. The string is used to tie the flight feathers on one wing together to prevent the birds from flying. This practice can cause a severe infection to the follicles when new feathers are trying to grow but are blocked by those that are tied up.

in Congo


© Ken Cameron, WCS-Congo

Gluing new feathers into the cut shaft of those feathers damaged during trapping is called "imping". It helps speed up the release of otherwise healthy birds.


Photos © Davide De Guz

THE GOOD NEWS in this case was that, despite their ordeal, most of the Greys appeared to be in rather good health. In March, WCS-Congo decided to reassess the conditions of the parrots to see how many were ready to be released. They asked us if we could send an avian specialist to Congo to assist them. This is how, on March 15th, Dr. Davide De Guz, of the World Parrot Trust Field Veterinary Team, found himself on a flight to Brazzaville, Congo.

He had previous experience as in 2010 he had traveled with Dr. Gino Conzo and Noel Arinteireho to the Democratic Republic of Congo (DRC) for the World Parrot Trust to provide veterinary assistance for a large confiscation of African Grey parrots. To reach Kabo, Dr. Davide traveled for two days with Dr. Ken Cameron. On their arrival they found that most of the glue covering the parrot's feathers had been washed away by the rains. This was great news as it meant that those parrots were again able to fly and could be released. It also meant that there was more time to focus on the parrots that were still not healthy, to perform tests, and to work on repairing the remaining injured feathers using a technique known as "imping." Imping is a process of replacing damaged or broken flight feathers by splinting healthy ones into a portion of an existing shaft. The great benefit of imping is that the bird's flight ability is immediately restored.

Dr. Davide and Dr. Ken were able to release all but about 60 of the parrots in late March. The remaining birds needed a longer rehabilitation period. For the first time, that we are aware of, confiscated Grey parrots were rehabilitated and released in the Republic of Congo. We hope it will set a precedent for any future confiscation.

We are extremely grateful to the Wildlife Conservation Society team, and particularly to Drs. Ken Cameron and Paul Telfer, for their efforts for these parrots that lead to such a successful outcome. We also thank Dr. Davide De Guz who volunteered his time to help the parrots in Congo.

Cristiana Senni has been a Trustee of the World Parrot Trust since 2000 and our representative in Italy since 1997. In recent years she has become increasingly involved in issues related to the wild bird trade and has helped orchestrate the WPT response in several confiscations.

Parrot Enrichment & Training

P·E·T Pages

Long Live the Parrot

Varied Lorikeet © Steve Murphy

This issue's contributor, **Anna Young**, received her PhD from New Mexico State University studying vocal learning, behavior, and social stress in budgerigars. Before attending graduate school she worked at the Phoenix Zoo as a zookeeper, and at Reid Park Zoo as a zoo educator. Anna will continue her passion of working with parrots and zoos in her new position later this year as a professor in the Zoo and Conservation Science program at Otterbein University in Ohio.

Parrot lifespans are the stuff of legend!

We've all heard stories about parrots outliving their owners,

but how many years can we really expect each species to live?

It is difficult for scientists to conduct studies on wild parrot lifespans as parrots can be hard to track in the short term, much less over several decades. Since there isn't much data available about parrot lifespans, some collaborators and I set out to estimate how long parrot species live in captivity by using data gathered in zoos. Not only is this information interesting to parrot owners, but it is also important for conservation planning such as managing captive breeding programs.

The International Species Information System (ISIS) is a global database for the zoological community that contains information on animal births, deaths, transfers, and medical records from zoos all over the world. Data has been collected for more than two centuries on thousands of different species of captive animals. In collaboration with my lab mate Elizabeth Hobson, advisor Tim Wright, and ISIS database manager Laurie Bingaman Lackey, we collected more than 80,000 parrot records from the last two hundred years.

We analyzed these records to determine how long parrots live and breed on average in captivity. We found that some individuals live extremely long lives. The ISIS longevity winner was a Salmon-crested, or Moluccan Cockatoo *(Cacatua moluccensis)* that lived to be 92! On the whole, though, parrots weren't living as long in captivity as expected. In fact, of the 260 species we analyzed, only 11 species besides the Salmon-crested Cockatoo had an individual that lived longer than 50 years in a zoo *(Figure 1)*. In over half of the parrot species in the ISIS records there were no individuals over 22 years old. However, when we analyzed the birds that are still alive

Zoo records were analyzed to determine longevity of individuals and clades of parrots. **The Moluccan Cockatoo** (right) had the longest living individual in captivity at 92 years. Overall, the Amazons and macaws had the longest median lifespans.

Great Green Macaw © Steve Milpacher

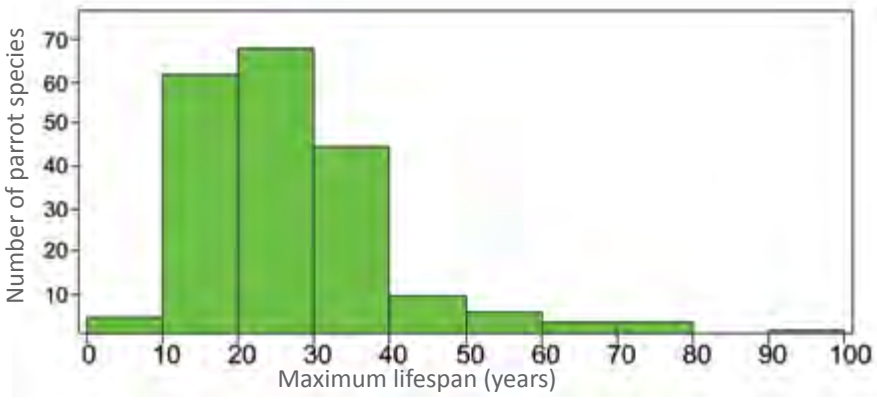
© Paradise Park

today, we found a trend for these to outlive previous generations, indicating that captive care of psittacines is improving over time. Like most animals studied to date, larger parrot species generally live longer than smaller species *(Figure 2)*. We found the difference in lifespan between large and small-bodied parrots might be only a decade.

We looked more closely at six distinct clades of parrots (each representing one branch of related species on the evolutionary "tree of life") that are of particular interest to conservation: cockatoos, lorikeets, rosellas, macaws, conures, and Amazons. We found that the cockatoos had the highest average maximum lifespan of the six clades, but that the macaws and Amazons had higher average median lifespans. This means that while cockatoos have the potential to live long lives, most individuals are not, and many are not living as long on average as individual macaws and amazons.

Several parrot species such as the Yellow-shouldered Amazon *(Amazona barbadensis)*, the Puerto Rican Parrot *(A. vittata)*, the Hispaniola Parrot *(A. ventralis)*, Scarlet Macaw *(Ara macao)*, Echo Parakeet *(Psittacula echo)* and the Rimatara Lorikeet *(Vini kuhlii)* have been successfully reintroduced into the wild from captive populations. Because of the potential for more parrot reintroductions we also analyzed breeding parameters in an effort to guide captive managers in husbandry choices. We analyzed female breeding parameters, such as age at first breeding and last breeding across all the species in our study, and in more detail for the six clades as well. We couldn't do this analysis for males as paternity isn't always clear. The results were varied for different species; some small species can breed before they turn a year old, some larger species can breed into their 40s.

Figure 1. Captive parrots from the ISIS records aren't living as long as expected.



We were also interested in post-breeding duration, which is how long an individual lives after it stops being able to reproduce. We found that post-breeding duration is relatively long and that it is similar in duration to the number of years parrots actively reproduce. There are few species studied

Just 7% of the parrot species in zoo records are Endangered; 3% are critically endangered species like the **Blue-throated Macaw**.

to date (humans being one of them) that have post-reproductive durations close to their active reproductive durations. Of course, we have to take into account that these data are coming from zoos, where not all parrots are housed with a potential breeding partner. Still, we can draw three possible conclusions from this data: 1) parrots in zoos are not being housed in a manner which allows them to be productive, long-term breeders, 2) parrots stop being able to breed earlier in their lifespan relative to other species, or 3) captive parrot lifespan is greater than it would be in the wild and females are living longer than they have the ability to produce eggs. Whether one or a combination is true, this information would be beneficial to conservation managers in making decisions about how to house and breed endangered parrots.

We wanted to see if there was a relationship between lifespan and breeding data and the conservation status of parrot species housed in zoos. Using the IUCN Red List, we assigned a conservation category to each species of parrot housed in zoos and found that the majority of parrots being housed were actually of Least Concern (68%). Some were Near Threatened (10%) and Vulnerable (11%), while 7% were Endangered, and only 3% were Critically Endangered. The species listed in the three highest threat categories had greater average lifespans, bred later into their lives, and bred for longer durations than the species listed in the two lower threat categories.

Our study has multiple conservation implications. First, captive lifespans should be considered by zoos when deciding which species to breed. We suggest that zoos focus on breeding

What about my bird?

Bear in mind that individual bird's lifespans, just like humans and other animals, can vary considerably. Factors such as diet, exercise, and overall care can affect results dramatically.

The ISIS records are a wealth of information going back over 200 years. As such, they cover a lot of history. Parrot husbandry has come a long way in that time. In fact, it has only been in the last 20-30 years that good care and husbandry have been widely practiced for parrots. Prior to that time many birds likely faced shorter lives due to improper care, diet and caging.

Also consider that up until the 1990's many birds in captivity originated in the wild. As we know from our work studying the trade, many of those birds faced incredibly difficult circumstances prior to coming into our care as a result of being taken into captivity. Your bird has his or her own unique background, medical history and lifestyle – all of which contribute to what we all hope for – a long and healthy life. *- World Parrot Trust*

Lifespan records for all 260 species in this study can be perused in "Survival on the Ark: Life History Trends in Captive Parrots" from *Animal Conservation* - available online at www.psittascene.org

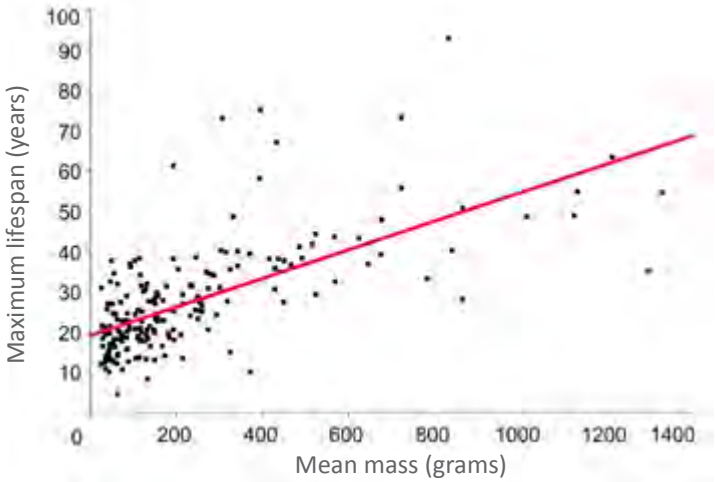
Of 260 species analyzed, 12 had individuals on record that lived longer than 50 years in captivity, New Zealand's **Kea** among them.

endangered species that fare well in captivity and for which reintroduction programs exist. We also suggest a long term goal of parrot conservation should be to study species that aren't currently as successful in captivity to improve their care and husbandry. Additionally, our data could be used to model the stability of wild populations and to demonstrate how captive reintroductions could augment dwindling wild populations.

Our data has also raised interesting questions about post-reproductive lifespans, suggesting that zoos should attempt to house and breed species later in life than perhaps previously attempted, and to document how successful or unsuccessful these attempts are. Lastly, the trend we discovered relating IUCN (threat) status with life history parameters suggests that we can proactively identify which species might become endangered or threatened, and act to manage wild populations accordingly. For example, an aging population may appear stable based on numbers, but not necessarily based on demography. As the population ages it may move beyond its reproductive potential. With little to no recruitment of new birds for breeding, the population could drop dramatically. Breeding data can be useful in understanding these subtleties.

So what does this mean for parrot owners who want to see their beloved companion live to a ripe old age? While our study didn't address why parrots are living to the age that they do, the fact that parrots are reaching older ages in zoos today suggests that your pet parrot can live a long life if it has access to modern diets and health care, plus an enriching environment. So here's to many more years with your feathered friend.

Figure 2. Larger parrot species tend to live longer than smaller ones.



Longest Lived

The longest living captive parrot species (based on ISIS records), each with an individual living 50 years or longer, are:

Salmon-crested (Moluccan) Cockatoo
(Cacatua moluccensis)

Major Mitchell's Cockatoo
(Lophocroa leadbeateri)

Sulphur-crested Cockatoo
(Cacatua galerita)

Roseate Cockatoo
(Eolophus roseicapilla)

Yellow-naped Amazon
(Amazona ochrocephala)

Green-winged Macaw
(Ara chloroptera)

Golden Conure
(Guaruba guarouba)

Ducorps's Corella
(Cacatua ducorpsii)

Red-tailed Black Cockatoo
(Calyptorhynchus banksii)

Military Macaw
(Ara militaris)

Hyacinth Macaw
(Anodorhynchus hyacinthinus)

Kea
(Nestor notabilis)

Cruisin' parrot style

By **Carol Cipriano** (cruise coordinator)

If you have ever gone to a camp as a child and **experienced** the **thrill** of those **carefree** days, you will understand what it is like to **join us** on the **Parrot Lover's Cruise**. Sharing vivid **memories** with other **like-minded people** builds **lasting friendships** like nothing else.

All your cares and stresses disappear, and you have only to enjoy and learn and experience with the group...

In 2011 our cruise took us to Cozumel, Honduras and Belize. Even before we set sail, we went on our first parrot laden tour of Natural Encounters Inc. (NEI) in Winter Haven, Florida. NEI president and renowned animal trainer Steve Martin personally showed us around his magnificent facility. "The Ranch" houses over 200 birds representing over 50 species including parrots, raptors and corvids. NEI is best known for its free-flight bird shows which take place in zoos and parks around the country. Within minutes of our arrival, Steve and his staff treated us to a spectacular free flight demonstration with Green-wing Macaws *(Ara chloropterus)*. The gorgeous, boisterous birds emerged from their enclosure to fly above our heads and play in the treetops. Afterwards we toured the rest of the facility including their captive breeding facility for Blue-throated Macaws *(A. glaucogularis)*, a joint conservation venture with the World Parrot Trust (WPT). After a fabulous day, we returned to Tampa to board the Norwegian Star for the rest of our adventure.

A few days later, we docked in Belize and traveled inland to visit WPT partner Belize Bird Rescue (BBR) where we met with Nikki Buxton and her husband, Jerry. This charming couple founded the rescue in 2004 after a chance encounter with a pair of Red-lored Amazon *(Amazona autumnalis)* nestlings which had been taken from a nest and were being sold illegally. Their passion to save, rehabilitate and re-release the parrots in the wild eventually led to the creation of the rescue facility. BBR has had over 100 successful releases to date. Nikki and Jerry served as our tour guides for the day with a little help from Harry – a friendly White-crowned Parrot *(Pionus senilis)* and permanent resident of the rescue. They showed us huge flight cages in the forest where the birds are kept in preparation for their release.

Xcaret

Afterwards, we ate a home-cooked lunch as we learned about the plight of parrots in Belize. The conservation issues are heartbreaking but we were relieved and uplifted to know about BBR's successes. Nikki has worked diligently to educate the local people and promote the welfare and conservation of Belizean parrots.

Excitement was high for our last tour to Xcaret Ecological Park in Cozumel, Mexico. In this beautiful setting among tropical trees, restored Mayan ruins and natural lagoons we were treated to a behind-the-scenes look at the park's captive breeding program for Scarlet Macaws *(Ara macao)*. Xcaret has an impressive population of over 800 macaws with almost 100 breeding pairs. In fact, they hold the Guinness World Record for the record hatching of over 100 macaws in 2009.

and Tanya Martinez (passenger)


Natural Encounters


Belize Bird Rescue


Xcaret

These captive birds will be released in southeastern Mexico to bolster the number of endangered Scarlet and Military Macaws *(A. militaris)* in this region. As special guests, we accessed the breeding and weaning facility where we had hands-on encounters with macaw chicks in addition to working with the older macaws in their flight training exercises. Handling the macaws was a treat, but the highlight of the day was when we walked to the hilltop decorated in Mayan architecture and released the birds for their daily flight around the park. What a stunning sight!

There is nothing like the Parrot Lover's Cruise out there for the parrot lover.

It was an incredible experience – enriching, informative and so much fun! Not only did we share our get-togethers and evening meals with our remarkable, informative, and dynamic speakers – animal behaviorist Susan Friedman, animal trainer Steve Martin and Joanna Eckles of the World Parrot Trust – but we also made a difference for parrots. All proceeds from the excursions went back to NEI, Belize Bird Rescue and Xcaret for their non-profit conservation programs. Silent auction, raffle and cruise proceeds went to the World Parrot Trust.

2012

Parrot Lover's Cruise

October 28 - November 4, 2012
Departing from New Orleans, LA USA

JOIN US onboard the 4th Annual Parrot Lover's Cruise. Discover some of the bluest waters and best sightseeing in the world. Educate yourself with onboard parrot seminars and visit exotic ports of call. Get a chance to see wild parrots. A spectacular cruise for all parrot enthusiasts! There is nothing else like it for the parrot lover!

Support parrot conservation while you cruise. Raffles, donations, and a portion of conference fees will directly aid the World Parrot Trust and their efforts to protect parrots.

Ports of Call: New Orleans, LA, Montego Bay, Jamaica, Grand Cayman, Cayman Islands, Cozumel, Mexico.

On board speakers include: Dr. Scott Echols (AvianStudios.com), Phoebe Linden Green (Santa Barbara Bird Farm) and David Woolcock (Paradise Park).

www.parrotloverscruise.com
carolstraveltime@gmail.com
+1 570-226-2569


On-board Seminars

Psitta News

© New Zealand Department of Conservation

Courtesy Madeleine Lenke

parrotnews

Missing Kakapo found!

There was exciting news for Kakapo Recovery following the rediscovery of Jane, an unknown-age female, who had been missing on Anchor Island for the past two years.

Department of Conservation researcher Joris Tinnemans happened to be on Anchor Island shooting branches off beech trees (yes, with a shotgun!) to check seed set. He didn't find much seed but something much better...

Joris shot a few branches from one beech tree... after checking all the transmitter frequencies of the Anchor Island Kakapo to make sure none were nearby of course. He completed the seed count at that location and continued along the track to sample a few more. On his way home he decided to re-check the original tree. It was then that Joris noticed a rustling in the undergrowth nearby. He had a look and saw it was a Kakapo sitting in the ferns! He tried all the Anchor transmitter channels with his receiver and got nothing except a signal for "Boomer" who was close – but not right next to him.

So what did he do? He picked up the Kakapo to read the transmitter number, let it go and radioed the Kakapo team. The response was, "WHOAH, can you catch that Kakapo again? That's Jane and she has been missing since her transmitter failed almost 2 years ago!" And so Joris caught her again and waited until Daryl and Sarah from the Kakapo team arrived with a new transmitter. Kudos to Joris for his savvy action – that's the kind of find we all dream of!

Source: Kakapo Recovery Program

thankyou

Running for parrots

Florida runner **Madeleine Lenke** is logging miles while promoting the World Parrot Trust. Madeleine sent this photo from the Torrey Pines Race for Research, a half marathon (13.1 miles). She wrote, "I finished in 1 hour 46 minutes. As you can see, I am proudly wearing a singlet with the WPT logo printed both on the front and back. I try to participate in as many races as possible and wear a WPT shirt every time!

I am getting ready for the Stockholm Marathon in Sweden on June 2 with over 20,000 runners. Of course I will run in a WPT shirt! Perhaps there are other runners who are members of WPT who would like to do the same thing? Thank you for the fantastic job you are doing - I follow your news updates on Facebook."

Thanks and best wishes to Madeleine!

parrotevents

Think Parrots 2012!

May 20, 2012
Woking Leisure Centre, Surrey, UK

MEET WORLD PARROT TRUST STAFF AND TRUSTEES. We are exhibiting at the first show organized by Parrots Magazine. Parrot enthusiasts can see birds and chat with experts about their care, health, and conservation. There will be exhibitors offering foods and treats, and a variety of products, plus various parrot societies and rescues, and even a talking parrot contest!

There will be FREE workshops including two different presentations by World Parrot Trust trustee David Woolcock.

Other presenters include Neil Forbes MRCVS, Rosemary Low, and John Hayward.

SAY HELLO at the World Parrot Trust stand and take part in our free prize draw. Tickets from www.parrotmag.com are discounted if you buy in advance. Workshops are included but reserve your place as seats are limited.

www.parrotmag.com
www.parrotmag.com/show-tickets
01273 464777

Behaviourtect Workshop

September 30, 2012 (8:30 am - 4 pm)
Currumbin Wildlife Sanctuary, QSLD, AU

Nicholas Bishop and **Jim McKendry** - two of Australia's most experienced and engaging animal trainers are offering a unique day of immersion into the art and science of animal training and behaviour called "Building Rewarding Relationships with Positive Reinforcement." The event is strictly limited to 30 participants and a portion of the funds will be donated to WPT.

www.pbec.com.au
jim@pbec.com.au
0421 175 841

In memory of

Wendy Duggan Riches

Tribute by
Rosemary Low and
Rosemary Wiseman

We regret to report the death of Wendy Duggan of Putney (London, UK) on February 21.

She was known for her great affection for parrots, especially cockatoos, with whom she shared her home for many decades, from at least the 1950s.

For many years she worked for the BBC, in connection with children's programmes. Her Sulphur-crested Cockatoo "Katoo" became famous for his regular appearances on "Playschool".

Wendy was an active member of the Southern Foreign Bird Club from its inception in 1963. She exhibited cockatoos at the annual shows and won many awards with them. She was proud to be a Fellow of the Zoological Society.

Wendy was always delighted to see "bird friends" and was always interested in their news. She had a fund of stories from the past and was a most entertaining raconteur. With her husband, Wendy shared an interest in art and antiques – especially any object connected with birds and animals. Rumour has it that when the Queen Mother decided she would like a cockatoo, she asked Wendy for one. In exchange Wendy received several bottles of a very expensive brandy!

Wendy was instrumental in the formative years of the Trust, garnering national television coverage on the BBC for many WPT projects. She was a wonderful and very helpful lady who cared passionately about parrots. Condolences are offered to her husband Ron.

moreonline

Read more online with easy links to related information including:

- More African Grey photos
- African Grey videos
- Full manuscript on parrot longevity from *Animal Conservation*
- Links to all the websites in our articles, news and events

www.psittascene.org

contacts

Online
Main: www.parrots.org
Change your Address:
www.parrots.org/addressupdate
Languages: Dutch, German, Italian, Portuguese, Spanish & Swedish

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Parrots in the Wild