

DVEA

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page 11

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WILDLIFE AND THE ENVIRONMENT



## ABOUT THIS ISSUE

Conservation and preservation is a challenge that touches us all. Through the Nature's Newsletter, we strive to facilitate the free access and exchange of information of critical issues in the world today; to educate, inspire and empower all to take part and take action to enable all life to exist and prosper on Earth.

This current issue features a diverse collection of articles about wildlife and the environment. We hope you enjoy and are as inspired as we are by the dedication, amazing work and successes of the individuals and organizations who have contributed to this issue.

Yoke Bauer DiGiorgio, Editor

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## FRONT COVER PHOTOGRAPHY

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Center Bottom.. Provided by Chris Palmer

## CORRECTION PRIOR ISSUE

In the Spring, 2016 Issue (Volume 11, Issue1) "Rescuing and Rehabilitating Orphan Baby Elephants" article, we were asked by the US Friends of the David Sheldrick Wildlife Trust to correct their photo credit on the page-6 photograph to: © Jan Brykozynski Der Spiegel  
We are happy to make this correction notation.



Photograph courtesy of the Arizona Game and Fish Department

## NEWS UPDATE

# "Bringing Back" the Most Endangered Wolf in the World

The Mexican gray wolf, commonly referred to as "El lobo", is the most endangered subspecies of wolf in the world. There once were approximately 4,000 wolves in their historic range, which included central and northern Mexico and the southwestern United States. In May 1976, the species was listed on the Endangered Species List by U.S. Fish and Wildlife Service (USFWS). By the early 1980s, they were considered extinct in the wild with just a handful existing in zoos. Their demise, which began in the early 1900s, was the result of anti-predator campaigns in the U.S. and Mexico. The last 7 survivors in the wild were captured between 1977 and 1980, and bred in captivity. In 1998 USFWS released 11 Mexican gray wolves (offspring of the original 7 survivors) back into the wild in Arizona as part of the newly established Mexican Gray Wolf Recovery Program. Their numbers have grown slowly, and as of December 2015, a minimum of 97 Mexican gray wolves were living in the wild in Arizona and New Mexico.

On April 25, 2016 the Chicago Zoological Society (CZS) announced the birth of a litter of 5 Mexican gray wolves at the Brookfield Zoo. This was the second litter born to F1265 (named Zana) and M1195 (named Flint). 3 of the puppies remained in the den being nurtured by their pack at the zoo's "Regenstein Wolf Woods" habitat. They began to emerge from the den site late May and were visible to the Zoo's guests.

The remaining 2 puppies, M1471 (named Blaze) and F1472 (named Brooke), were placed in the Arizona-based Elk Horn Pack of wild wolves, which will foster them with its own litter. In pup fostering, very young pups are moved from one litter to another litter of similar age so that the receiving pack raises the pups as their own. This is the second time in

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## **“Bringing Back” the Most Endangered Wolf in the World**

the history of the Mexican Grey Wolf Recovery Program that pups born in “professional care” were placed with an established “wild pack”. Fostering has proven to be successful in this species, and shows promise to improve the genetic diversity of the wild wolf population.

Since 2003, CZS has been a partner in the Mexican Gray Wolf Recovery Program, which is a multi-agency collaboration between USFWS, the Association of Zoos and Aquariums, the Arizona Game and Fish Department, the White Mountain Apache Tribe, the USDA Forest Service, and the USDA Animal and Plant Health Inspection Service - Wildlife Services, as well as private organizations. As part of this program, adult and offspring wolves at Brookfield Zoo are potential candidates for release to the wild.

*“We are extremely proud to be able to contribute to this important conservation effort for the Mexican gray wolf population,”* said Bill Zeigler, senior vice president of animal programs for the Society, which manages Brookfield Zoo. *“The collaboration with USFWS and the other participating organizations is a real team effort and demonstrates the dedication of all parties to make this a successful program while also raising awareness for this highly endangered and iconic North American species.”*

CZS plays a pivotal role in the recovery program, demonstrating its commitment to helping the Mexican gray wolf population. The first successful fostering of Mexican gray wolf pups occurred in the wild and included offspring born to a wolf from Brookfield Zoo who was the alpha female of the Coronado Pack living in the Gila National Forest in western New Mexico. Sadly, she was found deceased in January 2015, but her legacy lives on with her pups.

*“The USFWS is extremely grateful to the Chicago Zoological Society. We*

*value our partnership with the Society and other member institutions of the Mexican Wolf Species Survival Plan managed breeding program who have contributed so much to the recovery of the species,”* said Benjamin Tuggle, USFWS southwest regional director. *“Pup fostering is just one of the management tools we can use to improve the genetic health of the wild population.”*

### **More About Wolf Pup Fostering:**

Wolves, foxes, and dogs (canid species) are known to be very accepting of fostering of pups if coordinated at a specific time in the development of the puppies and after maternal bonding is established, usually after 5 to 7 days of life and before the puppies’ eyes open. Thus the process of successfully moving Mexican gray wolf puppies from one pack to be fostered by another requires a well-coordinated effort executed by several organizations:

- Chicago Zoological Society (CZS);
- Association of Zoos and Aquariums’ Mexican Gray Wolf Species Survival Plan;
- and the Interagency Field Team (biologists from the U.S. Fish & Wildlife Service (USFWS), the Arizona Game and Fish Department, the USDA Forest Service, the USDA Animal and Plant Health and Inspection Service—Wildlife Services, and the White Mountain Apache Tribe).

Before fostering is attempted, it is essential to select the appropriate wild wolf pack the pups would be fostered in. The Association of Zoo and Aquariums’ Mexican Gray Wolf Species Survival Plan coordinator and behavioral specialist consulted with USFWS regarding both the wild-born and zoo-born litters. Factors considered include: the puppies in both litters are born within six days of each other; the donor mother and receiving mother are experienced



*Photographs provided by Chicago Zoological Society*

**TOP THREE:** Chicago Zoological Society veterinary and animal care staff perform neonatal examinations on both Blaze and Brooke, the two 5-day old Mexican gray wolf pups, prior to their departure from Brookfield Zoo.

**BOTTOM:** Brooke is examined by a U.S. Fish & Wildlife Service veterinarian in Arizona prior to being placed, along with her brother Blaze, in the Elk Horn Pack of wild wolves (which will foster them with its own litter).

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Photographs provided by: Interagency Field Team (Left) and Chicago Zoological Society (Right)

**LEFT:** A biologist with the Interagency Field Team uses radio telemetry to locate the den site of the Arizona-based Elk Horn Pack where the 2-Mexican gray wolf puppies born at Brookfield Zoo will be placed for fostering as part of the recovery program.

**RIGHT:** U.S. Fish & Wildlife Service veterinarian and Chicago Zoological Society veterinary technician head back to the plane for their trip home after successfully placing the two Mexican gray wolf puppies born at Brookfield Zoo with the Arizona-based wild wolf pack, which will foster them with their own litter.

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## "Bringing Back" the Most Endangered Wolf in the World

and have had previous successful litters; and the donating litter is large enough to provide pups for fostering in a wild pack. The zoo pups are reviewed and the ones that showed the best promise to improve the genetic diversity of the wild wolf population are selected.

### Timeline:

- The Brookfield Zoo is one of several institutions selected from the managed Mexican gray wolf breeding population to provide pups for fostering.
- CZS staff tracked when the alpha pair at the Brookfield Zoo - F1265 (Zana) and M1195 (Flint) - bred and reported possible due dates to the USFWS. Within 48 hours after puppies were born on April 25, CZS staff reported the number of individuals in the litter (five) to USFWS.
- Members of the Interagency Field Team identified the Elk Horn Pack (in Arizona) as a compatible pack.
- In the early morning hours of April 30, animal care and veterinary staff found the den site at the Zoo and evaluated all the pups. The two largest and most vigorous puppies in the litter were selected for the fostering program - M1471 (Blaze) and F1472 (Brooke). The remaining three puppies were placed back in the den (F1265 - Zana returned to the den site to care for those three remaining puppies.).
- M1471 (Blaze) and F1472 (Brooke) were taken to the zoo's Animal Hospital for complete neonatal examinations.
- An animal care and veterinary staff team of two accompanied the puppies on the flight to Arizona. During the trip, the pups were kept warm and received supplemental feedings every several hours.
- While the puppies were on route from Brookfield Zoo, the Interagency Field Team arrived in the area of the Elk Horn Pack to located its den site and check on activity. The adults are collared and were located using

radio telemetry (The collars on the wolves send out a signal that the biologists can locate using an antenna.)

- To ensure a successful fostering, it is important that the puppies in the wild litter and the ones being fostered have the same scent. At the den site, biologists removed the Elk Horn Pack puppies and rubbed them with the same puppy milk formula that M1471 (Blaze) and F1472 (Brooke). They also rubbed hair and debris from the den site onto M1471 (Blaze) and F1472 (Brooke). In addition, feces and urine from all the puppies were rubbed on all of them. Once this was complete, the team placed all the puppies, including M1471 (Blaze) and F1472 (Brooke) in the den.
- Since the introduction of M1471 (Blaze) and F1472 (Brooke) to the Elk Horn Pack, the adult female has returned to the puppies and has moved the den site a short distance away from the original one (not unusual).
- The Interagency Field Team will be providing the pack with supplemental feed of meat and road-killed elk to offer the best chance that they raise the litter successfully.
- Remote cameras will be placed in the area to attempt to document the survival of all pups. This information may indicate that M1471 (Blaze) and F1472 (Brooke) are alive, if seven pups are documented in the picture.
- In addition, the Interagency Field Team will attempt to capture puppies from the Elk Horn Pack when they are approximately 3 to 4 months old and during end of the year helicopter count and capture operations. If M1471 (Blaze) and F1472 (Brooke) are captured, they will be radio-collared and monitored.

The current population of the Mexican gray wolves in "professional care" is 243 individuals in 54 institutions. As of December 2015, a minimum of 97 Mexican gray wolves were estimated to be living in the wild. This reintroduced

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## "Bringing Back" the Most Endangered Wolf in the World

population is now a naturally functioning wolf population with regular births occurring.

Bringing back the Mexican gray wolf is an opportunity to bring a natural balance and fully functioning ecosystem back to the wild lands of the Southwest by keeping deer, elk and javelina (type of peccary) populations healthy and in check. Wolves strengthen these animals by preying on the old, sick and young, and prevent their populations from growing so numerous that they overgraze and destroy habitat that countless other species depend on.

### RESOURCES:

<http://www.fws.gov/southwest/es/mexicanwolf/>

<https://www.czs.org/Chicago-Zoological-Society/About/Press-room/2016-Press-Releases/Mexican-Gray-Wolves-Born-at-Brookfield-Zoo>

[http://www.biologicaldiversity.org/species/mammals/Mexican\\_gray\\_wolf/](http://www.biologicaldiversity.org/species/mammals/Mexican_gray_wolf/)

### More About Mexican Gray Wolves

Mexican gray wolves prefer mountain forests, grasslands and scrublands.

Weighing in at 50 to 85 pounds, with males typically heavier and taller than females, Mexican gray wolves are about the size of a German shepherd. They are the smallest subspecies of the gray wolf in North America (about half the size of their cousin, the North American gray wolf).

Have a keen sense of smell, excellent hearing and highly sensitive vision. They are intelligent, family-oriented animals who live in family packs and maintain home ranges-or territories. They communicate through howling, body language and scent marking.

Kill and eat a variety of prey, including elk, mule deer, white-tailed deer, and javelina. Opportunistic, they will scavenge dead elk and deer, cattle carcasses and hunter gut piles during hunting season. They occasionally also prey on livestock; and wildlife biologists believe this behavior could be exacerbated by scavenging on livestock carcasses.

Mexican gray wolf packs are generally fairly small, consisting of an adult alpha pair, a yearling or two, and pups of the year. Social cohesion in the pack is strong. Adults are very tolerant of the growing pups, feeding them meat brought back from kills. Pups establish a dominance hierarchy and learn hunting behavior through play.

Pups are born blind and defenseless. About 8 to 10 weeks after birth, pups are moved from the den site to a rendezvous site, where they remain while the adults hunt. A pack member often stays behind to "babysit" the pups. Pups are mature at about 10 months of age.

Reproduction: Mating season is mid-February to mid-March; Gestation is 63 days; Litter size is 4 - 7 pups

Lifespan is 6 to 8 years in the wild; up to 15 years in captivity.

**Did You Know? Mexican gray wolves are not necessarily gray. Their fur is a mix of gray, rust, black and cream.**



Photographs Courtesy of: Mexican Wolf Interagency Field Team (Top Three) and Steve Dobrott (Bottom)

**TOP:** Mexican wolf pups in the wild.

**2nd FROM TOP:** Two Middle Fork pups in the summer of 2011.

**3rd FROM TOP:** Luna mp1241 in the summer of 2011.

**BOTTOM:** 16 M859's track in the wild.





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**HOW DID "LILY" GET HIS NAME?** *The eagle was named by a 4-year old girl in the Pittstown neighborhood where he was found and captured. We typically do not name any of our rehab birds, but Lily, a male, came to us with a name. Already having been publicized in the media when the little girl and her family were interviewed, he continues to be known as "Lily" - even though he turned out to be a male!*

## WORKING TO SAVE A BALD EAGLE

by Chris Soucy  
Director, The Raptor Trust

The Raptor Trust is recognized as a national leader in the fields of raptor conservation and avian rehabilitation. Located in central New Jersey, our facility includes a hospital with state-of-the-art medical facilities, quality exterior housing for several hundred birds, and an education building.

And so it was not unusual when we received a call in early Dec., 2015 that an adult Bald eagle had been perched for two days in a tree in a suburban yard in Pittstown, NJ. We investigated and saw that the bird had an injured right leg. We were able to capture the eagle (though it took three days) and bring it to The Raptor Trust for examination. What was unusual and so distressful was that x-rays revealed two gunshot pellets: one lodged in the bird's side; the other in the leg where it had shattered bones and broken into fragments. Further examination revealed that the eagle

(3 or 4 year-old male, whose age is estimated by his coloring and weight) also had elevated levels of lead in its system.

Treatment began immediately. The broken leg bones were pinned. A process called "chelation" was started to treat the lead poisoning. We removed as many of the lead fragments as we could without doing further tissue damage.

We are six months in and the bird is still in our care. The bone in the leg has healed well enough, but the nerves in the leg sustained significant damage and it is still too soon to say whether they will heal well enough for this bird to survive in the wild. Nerve tissue can heal itself, but it can take a very long time. Each time we treat for the lead poisoning the levels drop and then after the treatment they rise again. This is unusual and likely a result of the many tiny, tiny fragments of lead we could not safely remove

from the leg.

The story is not over and the outcome remains unclear. It's frustrating and heartbreaking, especially given the fact that this bird's injuries were the result of an intentional, criminal and malicious act of violence.

This particular story made the news in a hurry. Neighbors who had been watching the bird in Pittstown shared about it on Facebook and in no time TV news crews from Philadelphia and online reporters from NJ.com were at both the recovery site and The Raptor Trust for stories and interviews. When we began sharing the story of the bird's treatment here at TRT even more media outlets got involved: New York talk radio, local newspapers, bloggers. Local families started crowd-funding efforts to help pay for the eagle's treatment. People called and visited The Raptor Trust, lots of them, to inquire about the bird's welfare. We took it as an opportunity to provide some public education about these birds, the medical procedures involved in this bird's treatment (chelation for lead poisoning, for example) and perhaps most importantly about the law.

All migratory birds are protected by federal law under the Migratory Bird Treaty Act and eagles have extra protection under the Bald and Golden Eagle Act. Convictions in cases like these for shooting an eagle are rare however. Crimes of this type are rarely witnessed, and even more rarely reported. In an attempt to encourage someone to come forward, the US Fish and Wildlife Service, Crime Stoppers of Hunterdon County, The Humane Society of the United States and The Humane Society Wildlife Land Trust have offered a joint reward of \$8000 for any information leading to a conviction which could result in fines up to \$115,000 and up to one and half years in jail. As of this time, no suspects have been identified, but the investigation is ongoing.

The story is still developing and

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## WORKING TO SAVE A BALD EAGLE

the eagle remains here undergoing medical treatment without any clear picture of what the end result will be. The biggest issue for us right now is the nerve damage that had taken place in the leg. He's not responding to stimulation, cannot grasp and right now won't be able to hunt, but the leg and bone are healing. We called in a small animal neurologist to determine the extent of possible tissue and nerve damage. With a long road of treatment and observation ahead, our hope, as always, is that we will be able to release this beautiful bird back into the wild.

We hope that our efforts to publicize the story will lead to a better understanding of the role these birds play in the ecosystem, the law surrounding the protection of wild birds, and possibly even an arrest or conviction for the shooting of this eagle. If you or anyone you know has information about this crime, or one like it aimed at a protected migratory bird species, it can be reported anonymously to your local Fish and Wildlife Service office.

The Raptor Trust is a private not-for-profit conservation organization in Morris County, NJ that provides free medical care to over 4,000 injured and orphaned wild birds each year. The Raptor Trust also provides educational programs both on site and throughout the area. We receive no government support and rely on private contributions for our day-to-day survival.

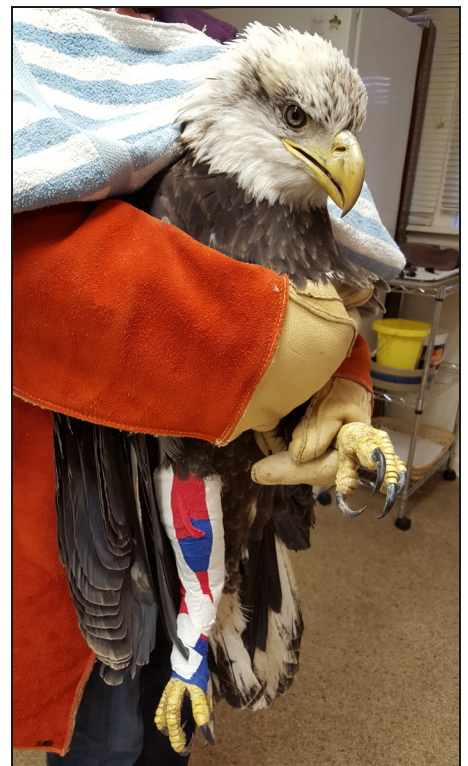
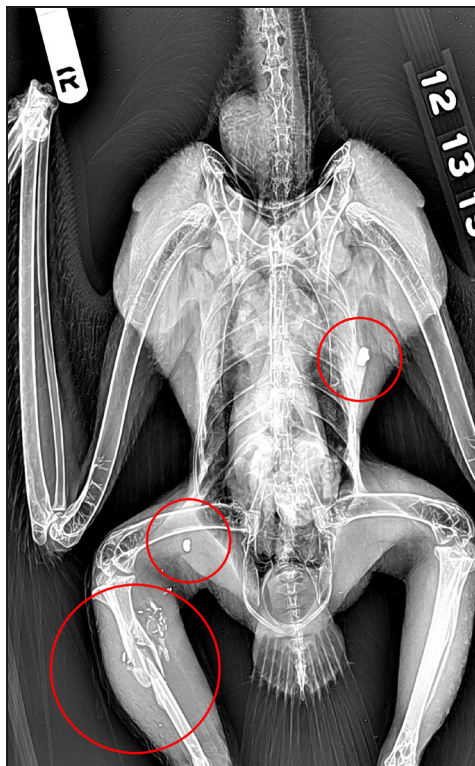
For more information, or to make a donation, please go to [www.theraptortrust.org](http://www.theraptortrust.org).

### ADDITIONAL RESOURCES:

*To learn more about Bald eagle protection please go to:*

*<http://www.dveaglealliance.org/about-bald-eagles.html>*

*(and click on the "Bald Eagle Protection After Delisting" article.)*



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**LEFT:** Chio, a wild red lored Amazon in Costa Rica. **RIGHT:** Bugsy, a blue and gold macaw.

Photographs by Tom Murray (Right) and Brian Jones (Right)

# HANGING IN THE BALANCE

## The Captive Parrot Story

by Karen Windsor

*Executive Director, Foster Parrots, Ltd.*

**In the Wild**, the sun is just beginning to dip below the line of trees surrounding our compound in Costa Rica, and the *red lored Amazons* are starting to congregate. They fly in pairs and in small groups of 3 or 5, coming from the fields and forests where they've spent their day foraging, dining on fruits and flowers in season, playing or napping through the heavy afternoon heat. During the day hours they're widely scattered throughout the region, but now as late day shadows begin to deepen, the trees are gathering hundreds of quarreling, calling, rejoicing parrots. Whether it's a certain color of dusk or position of the setting sun or a vocal cue somehow recognized by all over the cacophony of their concert, suddenly hundreds of *Amazons* take to the sky, setting out toward the nearby town, Puerto Jimenez. There they will clamor for their final nighttime roosting spots in the trees above the quaint restaurants that line the beach.

On the Osa Peninsula in Costa Rica this is the natural society of wild *red lored Amazons* as they prepare for the end of their day, pulling their numbers together for safety during the long night. And while these parrots typically spend their daylight hours widely scattered, they live their lives in their native range as a part of a multi-species community that supports their understanding of and survival in the natural world. Here the fields and the forests pulse with the songs and sounds of insects and amphibians, of hundreds of species of songbirds, parrots, raptors and scavengers, and of the resonant calls, grunts and growls of mammals and primates... it's a living tapestry of animal cultures and a web of interconnected communication woven together in

a fabric that supports each animal's position and purpose within it's own society – and its survival in the wild where multi-lingual cues alert all to the presence of predators, the possibility of danger, opportunities to mate and finding food.

Millions of years of evolution have prepared parrots for life in this world. A few decades of commercial production cannot even begin to prepare them for lives in *our* world.

**At the New England Exotic Wildlife Sanctuary**, the permanent care sanctuary facility of Foster Parrots, Ltd, nearly 400 parrots reside. We log an average of 300 – 600 requests for the surrender of parrots annually, and these numbers are echoed by rescue organizations across the country as we struggle collectively to catch the fall-out from the commercial trade in parrots. Many of these birds carry psychological scars etched by the trauma of capture from the wild, or exhibit behavioral issues typical of wild animals hand-raised by humans as "pets". Even under the best of circumstances it is difficult to locate homes capable of meeting the needs of an animal as intelligent and socially needy as a parrot. Complicate that relationship with issues of aggression, psychological manifestations of stress like feather plucking or self-mutilation, and vocal expressions that can literally damage human eardrums... Clearly, we are faced with a challenging proposition as we search for answers to an ever-expanding unwanted parrot problem.

The enormous volume of unwanted parrots being fielded by the rescue community indicates an epidemic failure of parrots as pets. But whose failure is it, really? We've

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## HANGING IN THE BALANCE

### The Captive Parrot Story

done everything in our power to manipulate parrots and to alter and change them to fit better into our lives. We clip their wings and confine them to cages. We remove them from their families and from their flocks and instead try to fit them into ours. We reject their language and expect them to recite our words. We genetically alter their colors and the contours of their feathers to create designer birds. We render them utterly dependent upon us and then, when we find we cannot entirely eradicate the true nature of the animal, we abandon them. Some of these parrots will find their way to a sanctuary or rescue organization. Millions will not.

Beverly Lewis (primary cockatoo steward at NEEWS) pushes her cart full of *Moluccan cockatoos* down the aisle in front of the series of large aviaries we refer to as "Cockatoo Row". Forty cockatoos reside permanently at the NEEWS and most of them live in these tenuously compatible aviaries where only our most highly trained staff and volunteers are able to work. Cockatoos are smart. They size up their human care givers, seek out weakness or trepidation and delight in games of manipulating or dominating their custodians. Beverly, at the age of 63, has been our primary cockatoo steward for over 10 years and has a special rapport with these, the most difficult of all parrot species kept as companions. They wait for her and anticipate their turn to ride on her food cart. They are positively delighted when tours are being conducted and they have the opportunity to entertain – and sometimes intimidate – groups of new and interesting people with their physical displays and their ear-splitting, acrobatic vocalizations.

"That's Henry," Beverly says. "He's in a mood today. He was being very fresh to Bebe this morning and I had to give him a good talking to, so now he's pouting." One has to smile at the notion that a woman and a parrot can communicate on this level, but in fact it is true. Beverly and her cockatoos are uncannily in-tuned to one another. They mind her. And part of the success of their relationship lies in the fact that Beverly understands their behavior is not arbitrary. Actually, it is very "human". They feel joy and delight and anger and jealousy. They get mad. They can feel frustration. They can also feel deep loyalty and love. When they bite it is not a mindless act. They are trying to express something. They rarely bite Beverly. The unusual connection they share denotes a communication that transcends mere words.

All of these cockatoos crave human attention and long to be a part of a human family; not a single one of them has any chance of ever successfully living as anyone's "pet". Their vocalizations reach impossible decibels and they are capable of extreme and unpredictable aggression. They have an insatiable hunger for social interaction and they are



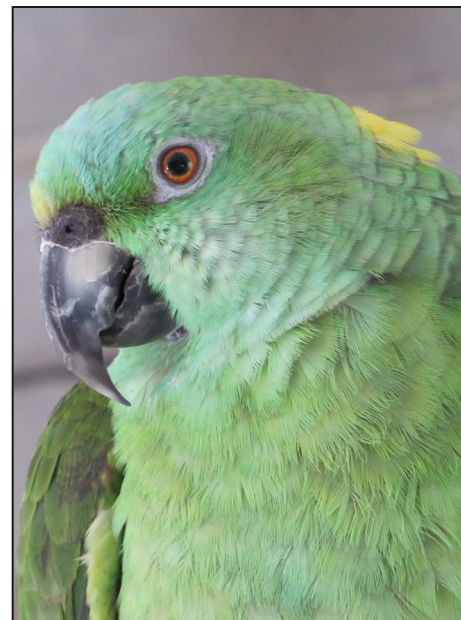
Photographs provided by Foster Parrots Ltd.  
**TOP:** Beverly Lewis and her cart of cockatoos. **BOTTOM:** Moluccan cockatoos in an outdoor aviary at the NEEWS.

psychologically and emotionally vulnerable to the extent that self-destructive behaviors like feather-plucking or self-mutilation are almost commonplace amongst Moluccan and Umbrella cockatoos in captivity. Generally speaking, few people are capable of meeting the needs of a cockatoo over the long term.

At NEEWS we have set our responsibility to meet the individual needs of all of our resident birds, and the difficulty of that cannot be over stated. Some parrots, particularly those who were wild-caught or who otherwise have emerged with their species identification intact, are able to transition back into avian society and establish bonds with other birds. This removes humans from the equation and it is what we hope for for all of our sanctuary residents. But even under the best of circumstances, avian social dynamics are complicated, and orchestrating compatible communities of parrots is tricky. There are rituals of initiation practiced by birds in the wild, and hierarchies and exchanges of information about social rank and lineage

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**LEFT:** Green winged macaws in an aviary at the NEEWS. **RIGHT:** Female yellow naped Amazon. Photographs by Brian Jones (Left) and Foster Parrots Ltd (Right)

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## **HANGING IN THE BALANCE The Captive Parrot Story**

that we can never understand. Most importantly, in the wild there is limitless space into which a parrot can retreat when conflicts arise. There's no way to escape confrontation in a 25 x 15 aviary. And the dynamics of an aviary can change seasonally, or with the addition or removal of a single flock member. As such, we must observe the birds continually for changes in behavior or social structure that can mean life or death for birds in a community setting.

Many people contact Foster Parrots Ltd believing their birds need to be with other birds in a flock situation, but the truth is that parrots who have been hand raised by humans very often identify themselves as human and are unable to relate to other birds. Our biggest challenge in the sanctuary setting are those birds who continue to require a high degree of human social support. Thirty-five to forty volunteers and a staff of eight people at the NEEWS struggle to divide their time between hundreds of parrots vying for attention.

To say that parrots are wild animals is to present only a part of the story. These birds may be ruled by all of the hard-wired behaviors and drives of their wild ancestors, but they have

been deeply impacted by socialization and by their relationships with humans. Whether they regard us as their mates, their enemies, their family or their gods... whether the ties that bind us are rooted in irrevocable love or psychological trauma, parrots in captivity suffer the weight of human-avian relationship and have been changed by it.

Working to meet the complex needs of hundreds of parrots in a sanctuary setting, we look toward the natural behavior of parrots in the wild to give us clues in regards to environmental enrichment, social structure and quality of life in sanctuary. Just like in our homes, however, the sanctuary setting represents a profoundly abnormal environment for parrots. Natural behavior is skewed, not only by the physical limitations of captivity but also by the indelible imprint of human socialization on these psychologically complex animals. Parrots hang in the balance between who they were evolved to be and what we have tried to mold them into. We now must acknowledge the damage that's been done and take responsibility for the tragic end result of our fascination with these beautiful, intelligent and profoundly

complicated creatures. Sanctuary is one answer, but it is not the only answer and it cannot work for every bird. In many ways it is evidence of our failure as guardians to parrots.

Foster Parrots, Ltd. is a non-profit organization dedicated to the rescue and protection of unwanted and abused companion parrots and other displaced captive exotic animals. Working on many levels to bring critical services to birds and animals in transition, we offer life-long sanctuary care for unadoptable parrots and other exotics at our permanent care sanctuary facility, The New England Exotic Wildlife Sanctuary, and provide adoption services for well-socialized parrots who desire human companionship. Our conservation work in Central and South America helps keep parrots and other animals safe in their natural habitat, and also embodies our ultimate message: *Parrots are worth more in the trees than in cages; parrots and all wild animals should be free.*

For more information about Foster Parrots Ltd, The New England Exotic Wildlife Sanctuary, our education programs, student internships and/or make a donation, please go to: [www.fosterparrots.com](http://www.fosterparrots.com)





© Paul Getty, Photographer

# THE MIGHTY SAGUARO

by Olivia Mazer Getty  
*Naturalist and Birder*

In the Sonoran Desert of the southwest United States, lives the mighty Saguaro Cactus. From first the moment you see it, you know it's something unique. The largest native cactus in the United States, the Saguaro grows naturally nowhere else on earth. I have lived in the Sonoran Desert with my husband Paul for 15 years and it has been such a remarkable experience.

The Sonoran Desert is located in southern Arizona, extreme southeastern California and western Sonora, Mexico. It covers approximately 100,000 square miles, and is the wettest desert in North America. It, therefore, has the highest level of biodiversity of the 4 North American deserts.

The Saguaro (pronounced Sah-wah-roh), has long been the cornerstone of life in this desert for many inhabitants. Most consider the Saguaro a plant, but a few classify it as a tree. In fact, they are listed in the National Register of Big Trees. The Saguaro Blossom is the Arizona State Flower. Protected by law, and revered by Native Americans, insects, birds, reptiles and mammals all co-exist with it in a symbiotic relationship. It helps ensure life for these desert creatures and in return they nurture and protect it.

The Saguaro is not currently listed as threatened or endangered but Arizona has strict regulations about harvesting, collection or destruction of this plant. It is illegal in Arizona to move a Saguaro cactus from public or private property without obtaining a permit.

The original Arizonans, the Hohokam culture, built their homes from Saguaro ribs. This cactus was an important

source of food. Even during droughts, its flowers bloom and produce fruit. The fruit is made into syrup, jam, butter, flour, chicken feed, and drinks. Many later tribes including Apache, Maricopa, Pima, and Yaqui, have depended up on the Saguaro in difficult times. The Tohono O'Odham personify Saguaro as honored members of the tribe. Their annual calendar begins with the harvest of the fruit in June or July. During the "Nawait l'i" (Rain Ceremony), they attempt to "bring down the clouds" as they dance for creation of rain, and drink wine prepared from the Saguaro fruit nectar. They build brush huts, cradles, baskets, animal traps, spears and fires from its woody ribs.

During the Saguaro's lifetime, its fruit can produce 40 million seeds, but on average only 1 seedling will survive to become a mature plant due to the desert's harsh conditions. The seedlings that do survive, usually sprout beneath a "nurse plant" such as Palo Verde, Ironwood, or Mesquite Tree, a Creosote bush, or even tall grass. The soil supporting the nurse plant holds moisture and nutrients, and the nurse provides protection from extreme temperatures (20 degrees cooler in the shade, and warmth at night). The Saguaro usually outlives its nurse plant.

The Saguaro begins its life when the seed germinates on the desert floor. At 3 months it is but a drop of jelly with tiny hair-like spines. Since it can only store a tiny bit of water, the first summer rains are crucial. The winter rains help the seedling mature and sustain a consistent population of Saguaro. The Saguaro is extremely slow growing, maybe an inch per year, but it grows faster as it ages. It will only grow to about 2 inches in the first 8-10 years. The

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Photographs by Paul Getty (Right Top) and Yoke Bauer DiGiorgio (Right Bottom and Right)

**LEFT TOP:** At 35-50 years Saguaro begins to grow beautiful creamy white flowers which usually bloom April -June. **LEFT BOTTOM:** Some Saguaro have deformed shapes caused by a genetic mutation. Instead of cells on the growing tip dividing symmetrically, they divide laterally causing growth sideways at the top. This creates a fan-effect. **RIGHT:** The Saguaro is the largest native cactus in the US. It will grow its first arm at 50-70 years, and where water is scarce it may never grow arms.

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## THE MIGHTY SAGUARO

beginning growth period is very difficult, but after 12 inches its spines become strong enough to discourage predators. It takes 25 years to reach 2 feet tall and 50 years to reach 10 feet. At 60 years it is about 18 feet tall and at 150 years it is 50-60 feet tall. A Saguaro goes through its longest growth period transitioning from an unbranched cactus to a branched one. The Saguaro becomes an adult when it is 125 years old and can live as long as 200 years.

It will grow its first arm at 50-70 years, sometimes at 100 years, and where water is scarce it may never grow arms. The first arm usually develops at the widest part, around 7 feet up. The densest population of Saguaro is around Tucson, AZ. The largest known Saguaro lives at the Saguaro National Monument in Arizona and has 50 arms.

At 35-50 years it begins to grow beautiful creamy white flowers which usually bloom April -June. The flowers are 3 inches wide with a dense group of yellow stamens. The Saguaro has more stamens per flower than any other desert cactus. The flower lasts but one day opening in

the coolness of the night and closing as the day warms. Over a period of about a month, only a few of the plant's flowers open each night. The slow growth and ability of the Saguaro to store vast amounts of water allow it to flower every year, regardless of rainfall.

The Saguaro is fertilized by cross-pollination -- pollen from a neighboring cactus. The nectar and the color of the flower attracts birds, bats and insects. Flowers are pollinated at night by lesser long-nosed bats, and in the daytime, bees and white winged doves pollinate flowers. Once fertilized, the fruit begins to form immediately.

In a few weeks, the fruit develops where the flower has dried up. The 3-inch oval green fruit ripens just before the autumn rains and split open, exposing the bright-red pulpy flesh. This fruit is a very important food source to animals who enjoy the flesh, seeds and juice. Each fruit has up to 2000 tiny black seeds. When birds feed on the fruit and spread seeds, some of the seeds drop to the ground and

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Photographs by Paul Getty (Left) and Yoke Bauer DiGiorgio (Right Top and Right Bottom)

**LEFT:** Woodpecker feeds young in a nest contained in the hole it created. **RIGHT (TOP AND BOTTOM):** Even after it dies and falls over, the Saguaro continues to provide by housing insects, small mammals, lizards and snakes.

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## THE MIGHTY SAGUARO

are also spread by animals. Summer monsoons disperse the seeds widely.

Some Saguaros have deformed shapes caused by a genetic mutation (perhaps due to frost, infection, or lightning strikes). Instead of cells on the growing tip dividing symmetrically, they divide laterally causing growth sideways at the top. This creates a fan-effect. These are called a Cristate or Crested Saguaro and they are considered a botanical cult figure. Some are quite beautiful with up to 9-foot wide fans.

The Saguaro's growth is dependent upon water, temperature, and elevation. It is comprised of 95-96% water and can weigh up to 8 tons. Although the Sonoran Desert has rainfall seasons in both winter and summer, the Saguaro gets most of its moisture during the summer rains. Cold weather thins out Saguaro stands and confines them to small areas that have favorable conditions. Cold and frost can kill the Saguaro and can create downward pointing arms. Saguaro can only survive up to the 4000-foot elevation.

The Saguaro has an extremely shallow root system

considering its enormous height and weight. Most of its roots are very shallow, 4-6 inches deep and are as long the height of the plant. The cactus is supported by the tap root which only grows 2 -3 feet deep. The roots rapidly collect up to 200 gallons of water during a rainstorm.

Constructed of wood, long tubes called ribs run from the base to the top. The 12-30 ribs are pleated and expand like an accordion as they absorb and store water and minerals. They can store up to 40 gallons of water allowing it to live for weeks at a time without water. As it ages, the ribs (skeleton) fuse into a cylinder. There is very little evaporation since there are no leaves. The green trunk performs photosynthesis and the cactus stores water beneath its waxy outer skin. The plant breathes through little openings called stomates which open at night when colder and close during day. They store carbon dioxide and covert it to sugars in the daytime. Spines/needles grow out of the areoles on the trunk and protect the cactus from animals and sunlight. Spines point downward to direct rain to the base of the plant until the cactus reaches 5 feet tall.

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## THE MIGHTY SAGUARO

The Saguaro is home to birds, reptiles and mammals such as mice, rabbits, desert rats, ground squirrels, big lizards, snakes. A Gila Woodpecker or a Gilded Flicker (also a woodpecker) pecks a deep hole which forms a pocket inside, where the bird builds a nest. A callus forms when this irritation causes chemicals to flow in order to heal the wound. The cactus is not harmed and the birds eat insects that would injure the cactus. After the woodpecker carves a home, it usually lays 2 eggs in the hole containing the nest and raises its young in the spring. When the bird moves out and creates a new hole to build another home, a small elf owl or bat might move in. When Saguaro's flower and fruit, the birds inside are able to eat without expending much energy in the summer heat. Gilas make holes in the middle part of the plant, but thin billed Flickers make holes near the less dense top.

Even after it dies and falls over the Saguaro continues to provide. It then houses insects, small mammals, lizards and snakes. Its woody ribs were once used to build roofs, fences, and parts of furniture. The holes that birds nested in or "saguaro boots" were used by Native Americans as water containers or storage bins. Sometimes a callus or boot is pierced by a saguaro's inner ribs and protrudes beyond the skin to form a gourd-like structure.

Paul and I have witnessed the Saguaro in front of our home mature over the years. We watched it grow its first arm and it now has four. A Gila Woodpecker arrived one morning several years ago and began construction of its first nest. Now there are three holes. Last spring a White Winged Dove arrived to build its nest on one of the arms. This spring the Gila Woodpecker returned to renovate last year's hole to make room for its new chicks.

My favorite time of day is when afternoon approaches dusk and the shadows grow longer. The sun is low in the western sky and it illuminates the Saguaro needles. As the light dims, silhouettes of Saguaro's with arms reaching towards the sky stand at attention along the hillsides. These stately sentinels remind me of people long ago and of our little desert friends living in harmony.

We celebrate the amazing world of the mighty Saguaro and the Sonoran Desert.

### ADDITIONAL RESOURCES:

[www.dbg.org](http://www.dbg.org)

<https://www.desertmuseum.org>

<https://www.nps.gov/sagu/index.htm> (For information about the Saguaro National Park, AZ)

### DID YOU KNOW?

*The giant saguaro is the universal symbol of the American West.*

## NEWS UPDATE

### "Scenic Wild, Delaware River Geotourism" Initiative

Geotourism is defined as *tourism that sustains or enhances the distinctive geographical character of an area - its environment, heritage, aesthetics, culture, and the well-being of its residents.* The National Parks Conservation Association and publishers of National Geographic have formed a partnership to promote "geotourism" in national park locations along the middle and upper Delaware River region. Only a few hours from New York City, Newark and Philadelphia, the region is home to three river-based national parks: Upper Delaware Scenic and Recreational River, Delaware Water Gap National Recreation Area and Middle Delaware National Scenic River. Delaware River.

Organizations in New Jersey, New York and Pennsylvania joined with National Geographic Maps to launch this new Geotourism initiative. A community-based nomination process was used to create a National Geographic interactive MapGuide titled "Scenic, Wild Delaware River". The online MapGuide includes Sussex and Warren counties in New Jersey; Delaware, Orange and Sullivan counties in New York; and Monroe, Northampton, Pike and Wayne counties in Pennsylvania.

The MapGuide is an interactive travel website which features more than 600 landmarks, natural resources, attractions, activities, events, lodging and dining venues. The MapGuide aims to attract national and international geotourists to the Scenic, Wild Delaware River region. Here visitors can explore locations to fish, swim, kayak and/or canoe in a river carved by geologic time and history. They can experience and connect with nature by watching eagles soar overhead and deer browse in forests and fields. They can enjoy waterfalls, fish and fly fish, and picnic along the river's many picnic areas. And they can explore friendly communities rich in culture and history nestled alongside the river's banks.

The Scenic, Wild Delaware River geotourism initiative is one of 23 geotourism programs worldwide, including – projects implemented along the Mississippi River corridor, the Gulf Coast states, Sedona / Verde Valley, Greater Yellowstone, the Crown of the Continent (Alberta, British Columbia, Montana), Sierra Nevada, Newfoundland, and other locations.

The MapGuide may be previewed at [www.delawareriver.natgeotourism.com](http://www.delawareriver.natgeotourism.com).

### RESOURCES:

[www.delawareriver.natgeotourism.com](http://www.delawareriver.natgeotourism.com)

[www.natgeomaps.com](http://www.natgeomaps.com)

<http://travel.nationalgeographic.com/travel/geotourism/>

<http://press.nationalgeographic.com/2015/10/30/national-geographic-and-groups-in-new-jersey-new-york-and-pennsylvania-launch-geotourism-project-for-middle-and-upper-delaware-river-area/>

<http://press.nationalgeographic.com/2016/04/25/national-geographic-and-partners-unveil-scenic-wild-delaware-river-americas-newest-travel-destination/>





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# ETHIOPIAN WOLVES

## GUARDIANS OF THE ROOF OF AFRICA

by **Claudio Sillero-Zubiri**  
*Founder and Director, Ethiopian Wolf Conservation Programme*

Ethiopia is a land of wonders. From the Danakil depression, to the mystic lakes of the Rift Valley, the rock churches of Lalibela to their wild spaces harbouring many endemic plants and animals. While the country is often remembered by the droughts and famines of the 1980s, it contains vast expanses of fertile highlands, once covered by forests and now sustaining one of the highest human densities of rural Africa. Over 80% of its population, now exceeding 90 million, live in the Ethiopian highlands. It was there where, at the peak of the last glaciation, the ancestors of the Ethiopian wolf became successful rodent hunters, the dominant mammals in the open Afroalpine landscape. With the warming up of the continent, and more recently the expansion of agriculture, the marvellously adapted Ethiopian wolf was pushed into mountain relicts where we found them today, Afroalpine islands in a sea of cropland and villages.

Living and working in the country for many years exposed me to the many dimensions of the concept of uniqueness. Ethiopians have their own alphabet, a different calendar (the ancient Coptic calendar, ticking along seven years behind ours), a different way to count the hours of the day, a 'bleeding heart' gelada baboon, and a red wolf that eats only rodents –the beautiful Ethiopian wolf. I had the opportunity to study these exceptional animals, which combine solitary foraging with intense family life, putting to test the evolutionary meaning of sociality. In pursuing this my research, I became forever committed to protect these rare wolves from extinction. The Ethiopian wolf is a flagship for the conservation of the Afroalpine ecosystems and the services they provide to the Amhara and Oromo people that share the mountains with the wolf.

### **The plight of the Ethiopian wolf.**

Our early research revealed the fascinating life of this poorly known canid. In doing so he became acquainted with many wolf families and knew all the wolves by name. But in 1992 rabies decimated our beloved wolves. The perilous status of the species was then fully acknowledged, with the species formally recognized as Critically Endangered

by the IUCN Red List. As a result in 1995 I funded the Ethiopian Wolf Conservation Programme (EWCP).

By 1997 the Bale population was slowly recovering and, in a more stable political context, we embarked on a countrywide search for other wolf populations, confirming the presence of wolves in mountains enclaves where they had been historically reported, but also described new populations and, sadly, some local extinctions. We estimated a global population of 500 adult and subadult wolves, distributed in six populations –Bale, in the Southern Highlands, is the largest with some 300 wolves. With the recovery of wolf numbers in Bale the species was down-listed to Endangered, but our extensive surveys had shown that the conversion of Afroalpine habitats to agriculture was putting the smaller populations at serious risk of extinction. In response to this crisis, EWCP expanded its operations to the northern highlands of Ethiopia at the turn of the millennium. Here human pressure is higher and as a result the habitats for wolves degrade at a steady pace.

### **What can we do?**

How can we save the world's rarest canid, and Africa's most threatened carnivore? We hope the answer is simple and unequivocal, which is rarely the case in wildlife conservation. The main pillars of the EWCP are monitoring, disease control, education, outreach, capacity building and habitat protection, with a mission "to secure viable and ecologically functioning Ethiopian wolf populations and habitats, and to emphasise its role as a flagship for the conservation and sustainable use of the Afroalpine ecosystem, on which present and future generations of Ethiopians also depend". In 2011 experts, governments, conservationists and members of the local communities gathered in the city of Lalibela to delineate a strategic plan for the conservation of Ethiopian wolves, which guides our work for the next 10 years.

Managing the threat of rabies remains a cornerstone of our work, as recurrent epizootics continue killing wolves

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## ETHIOPIAN WOLVES GUARDIANS OF THE ROOF OF AFRICA

in the Bale Mountains. We vaccinate domestic dogs in and around the National Park, conduct education campaigns, and also vaccinate Ethiopian wolves when an outbreak is detected. By creating a *cordon sanitaire* of protected wolf packs, we have contained disease epizootics from spreading widely across the Bale population. Our next challenge is to develop a more pro-active approach to managing disease, involving the oral vaccination of wolves - pilots to test the delivery and efficacy of the oral vaccine were very promising.

Protecting the smaller wolf populations, where anthropogenic threats are greatest and wolf behaviour poorly understood, remains a main priority. With the support of Born Free USA, important research and conservation work is unravelling in north Ethiopia. We set about to evaluate the drivers of habitat loss and degradation in remote areas, and to gauge the needs and attitudes of local peoples, persisting knowledge gaps that were constraining the conservation options available to those with a vested interest in Afroalpine conservation.

Central to our work are our 'Wolf Ambassadors', our eyes and ears in remote wolf ranges, building links with their communities and informing of serious problems as they happen – such as epizootics in dogs nearby wolf habitat and illegal encroachment. Also the work with communities to assess, by themselves, the condition of natural resources in their localities – including Afroalpine pastures, sources of firewood and water. This exercise led to important discussions about the environmental consequences of unregulated uses of Afroalpine resources, which are typically in communal land, and facilitated outreach activities that we are now implementing.

Our research is also contributing to understand how human disturbance, grazing and other forms of land

uses are affecting wolves and their prey. An extensive study of rodent populations in South Wollo showed how prey species respond to different management practices, and where habitat degradation is reaching unsustainable levels. We hope to start a long-term monitoring programme of rodents in this region and to assess the potential for habitat/prey restoration. A detailed study of Ethiopian wolves in North Wollo showed that their foraging behaviour is being influenced by the timing and presence of people and livestock in wolf range. For a solitary forager of small mammals, any change in the foraging budget can be energetically costly. Shifting to killings lambs can in such cases become particularly tempting... We are also gathering information on livestock predation and have identified where conflicts between people and wolves might escalate if they go unchecked. Sometimes the task of saving the Ethiopian wolf seems enormous, but the longevity of our programme is bearing its fruits, as we get to know the wolves better, learn from our failures and successes, and work with a more diverse range of partners and collaborators.

EWCP is a University of Oxford endeavour, working under an agreement with the Ethiopian Wildlife Conservation Authority and the Regional governments. A dedicated team of over 40 Ethiopian nationals implements all project activities in Ethiopia. The programme is funded primarily by the Born Free Foundation (UK), the Wildlife Conservation Network (USA), Born Free USA and private contributions/donations.

For more information, or to make a donation, please go to: [www.ethiopianwolf.org](http://www.ethiopianwolf.org)

### ADDITIONAL RESOURCES:

[www.ethiopianwolf.org](http://www.ethiopianwolf.org)  
<http://www.bornfree.org.uk/>  
<https://wildnet.org>  
<http://www.bornfreeusa.org/>



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### About Ethiopian Wolves

**Scientific name:** *Canis simensis*

**Common names:** Ethiopian wolf, Abyssinian wolf, Simien fox, Simien jackal, ky kebero (red jackal in Amharic), jeedala fardaa (horse's jackal in Afan Oromo).

**Distinguishing features:** a specialist rodent hunter endemic to Ethiopia, with long legs and long muzzle, and a distinctive bright tawny rufous coat with black and white marks; 14-20kg in weight.

**Habits:** Solitary, diurnal foragers of small mammals with an intricate social life. They live in families of up to 18 animals which together defend a territory and help raising the pups of the dominant pair.

**Life history:** Typically long-lived, females tend to disperse, dominant females synchronized their oestrus and give birth to one litter of up to 7 pups.

**Habitat and distribution:** Very localized endemic species, confined to Afroalpine grasslands and heathlands above 10,000 feet in Ethiopia.

**Status:** IUCN Red List: Endangered - Protected by law in Ethiopia. Global population estimated at less than 500 adults and subadults in 6-populations.

**No animals exist in captivity.**





© Lauren St John, Photographer

## How I Fell in Love With Rhinos

by Lauren St John

Author and former correspondent to *The Sunday Times*

When I was a teenager at boarding school in Zimbabwe, my best friend, Merina, and I decided that we had to do something urgently to save the rhino. We wanted to save all animals, but it seemed to us that the rhino was in greatest peril.

Earnestly, we composed a letter to the Environment Minister, offering our help. Of course, we had no real plan and never really expected an answer. We simply thought that doing something was better than doing nothing. Next thing we knew, a government car with blacked-out windows pulled up outside our hostel and whisked us away for an audience with the minister. We were minor celebrities for a day in our boarding school.

To cut a long story short, we never did do much to help the rhino, beyond dreaming up cake sales in aid of Save the Rhino that never quite happened. It's not that we stopped wanting to save animals; far from it, we were passionate about them and, at

seventeen, spent a year working as veterinary nurses. It's just that there always seemed to be something cuddlier or cuter to rescue.

That was one of my biggest challenges when I sat down to write *Operation Rhino*: their image. They're not cuddly. Elephants aren't cuddly either, yet we adore them. When we look into their eyes, we see a whole world of intelligence and emotion. Rhinos, on the other hand, have tiny, piggy eyes that, from a distance or in photos, convey nothing at all. Most people know only three things about rhinos – they're short-sighted, short-tempered and their horns are worth more than gold to the criminals who sell them to gullible Chinese, Vietnamese and other Eastern and Middle Eastern customers who believe that a substance (keratin) no different to our fingernails can cure cancer and dozens of other diseases and ailments.

Many of the people who do want to save rhinos do it on principle,

because they feel an entire species shouldn't be wiped out because of man's greed and idiocy. They don't do it because they're madly in love with rhinos.

Growing up in Africa, my own view of rhinos was a bit like Martine's at the start of *Operation Rhino*. If they have a personality, I used to think, it's well-hidden. That changed on a visit to a South African reserve, when I spent nearly an hour watching two rhinos. At first, they were on their feet and bristling, warning us off. When they realised we weren't a threat, they lay down and dozed. I was taken aback by how vulnerable they seemed.

Then my sister, Lisa, took me walking with wild-orphaned rhinos at dawn in Zimbabwe. Up close, I could look into their eyes and what I saw there shocked me. Far from being the myopic, belligerent modern-day dinosaur of myth, their gentle, beautiful, intelligent spirit shone from them. I would defy anyone to touch a rhino or even be close to one and not fall in love.

Even if you were stony-hearted enough to meet a rhino and not fall for them, you simply couldn't resist a rhino calf. Have you ever seen one? OMG they're the cutest things on earth. They really are like the most adorable lily-eared alien nature could have dreamed up. Don't believe me? Go to the Facebook page of the Rhino Orphanage and look at their gallery of rhino babies.

In *Rhino: at the Brink of Extinction*, conservationist Anna Merz describes her work saving black rhinos in Kenya. The story of her relationship with orphaned rhino calf, Samia, the inspiration for Jabulani in *Operation Rhino*, is one of the most moving and wonderful human-animals stories I've ever heard. Merz believes that rhinos are most similar to horses. They have intricate social systems. They're sensitive, smart, playful and deeply loyal to their loved ones. Time and time again, Samia saved Merz's life, often chasing off her own friends

**Continued on page 7**



## How I Fell in Love With Rhinos



Photograph Provided by Lauren St John

to protect her adopted mum.

Nobody could hear Merz's stories or those of wildlife vet, Dr Will Fowlds, who reconstructs the faces of rhinos attacked with axes, or see the traumatised babies at the Rhino Orphanage and fail to understand that to lose Africa's unicorn because of human greed and wickedness would be to lose something irreplaceable. Over 1,215 rhinos were killed in South Africa in 2015. All signs are that that figure will be eclipsed year after year.

Don't save rhinos just because you think you should. Save them knowing that, beneath the rhino's suit of armour beats a huge, soft heart and a vast intelligence that can teach us so much. Save them because rhinos have been around for 50 million years and they're a million kinds of wonderful.

Do you really want them to go extinct on *your* watch?

### ADDITIONAL RESOURCES:

[www.laurenstjohn.com](http://www.laurenstjohn.com) (For more information about Lauren St John and her many award winning books for adults and children including, the *White Giraffe* series.)

[www.lewa.org](http://www.lewa.org)

[www.therhinoorphanage.co.za](http://www.therhinoorphanage.co.za)

[www.rhinos.org](http://www.rhinos.org)

## THE RHINO (*Rhinocerotidae*)

There are 5 species of rhinoceros (often abbreviated to rhino), 2 native to Africa (White and Black rhinos) and 3 native to Asia (Greater one-horned, Javan and Sumatran rhinos).

At the start of the 20th century, 500,000 rhinos roamed the wild; by 1970, the worldwide population fell to 70,000; today, only 29,000 rhino survive in the wild.

3 out of the 5 species are now considered critically endangered.

All 5 species can grow to weigh over 1000 kg (2200 lb); the White rhino (the largest) can weigh over 3500 kg (7700 lb); the Greater one-horned, Sumatran, and Javan rhinos are all much smaller in size.

### DID YOU KNOW?

*White rhino calves will run in front of their mothers; black rhino calves will run behind their mothers during flight. A newborn rhino should be up and walking within one hour after birth, but will remain wobbly for a few days. Rhinos can run up to 25-31 mph (or 40-50 kph).*

### MORE ABOUT RHINOS .....

*Rhinos have brilliant hearing and a keen sense of smell; however they are well known for having poor eyesight.*

*Life expectancy in the wild ranges approximately 30-45 years, depending on the species. Females and sub-adults maybe social, but bulls are typically solitary.*

*Because of the poaching crisis, it is possible that rhino deaths in Africa may soon outpace births. Mothers give birth to one calf every 2-3 years; gestation lasts approximately 16 months.*

*Rhino milk is more dilute than that of other hoof stock, being high in carbohydrates, low in solids and proteins, and very low in fat.*

*Rhinos are often hunted by humans for their horns. Their horns are made of keratin, the same type of protein that makes up hair and fingernails in most animals including humans. Both African species of rhino and the Sumatran rhino have two horns, while the Greater one-horned and Javan rhinos have just one horn.*

*Rhinos are herbivores (plant eaters), eating grasses, leaves, shoots, buds and fruits in order to gain the nutrients that they need to grow and survive.*

*Both black and white rhinos are actually gray; different not in color but in lip shape. The Black rhino has a pointed upper lip, while the White rhino has a squared lip. This difference is related to their differing diets. Black rhinos are browsers getting most of their sustenance from eating trees and bushes and using their lips to pluck leaves and fruit from the branches. White rhinos graze on grasses, walking with their large heads and squared lips lowered to the ground.*

*White rhinos can't swim as their head is pointing down, but they will often lay in shallow water to cool down*





Photograph Provided By Chris Palmer

## FIVE BEST CONSERVATION FILMS OF ALL TIME

by Chris Palmer

**Professor of Film and Media Arts at American University, Speaker, Author, and Environmental and Wildlife Film Producer**

For the past ten years I have had the pleasure of being a presenter at the Environmental Film Festival in Washington DC. This past spring I returned again; my topic - the five best conservation films of all time.

Every wildlife film has to compete for audience attention with every other film genre as well as other media, including the internet, video games, and hundreds of television channels. Reaching the largest and most demographically diverse audience today means taking advantage of every possible distribution mechanism.

The first step is getting people's attention, otherwise nothing can happen. Once we have their attention, we can start building awareness, which may lead to active involvement. Although I appreciate productions such as *Planet Earth* and *Earth*, my personal allegiance is still to true conservation films that motivate viewers to take action. And given the current state of the planet, I believe good conservation films and programs are needed more urgently

than ever.

I know all too well that conservation films can be boring, one-sided, and lacking in entertainment. Too many of us in the conservation movement are so convinced of the importance of our issues that we forget our first job to capture and hold people's attention. We forget the audience. But there are ways to produce films that entertain, inform, and create change.

So what are the most impactful films, then? With the help of one of my top grad students Sam Sheline, I came up with an idea. I wrote to over a dozen of my most successful filmmaking friends and asked them for their opinions. These folks included Dereck and Beverly Joubert from Botswana, Mark Deeble and Vicky Stone from Kenya, Bob Poole from Idaho, Adam Ravetch from Vancouver, Howard and Michele Hall from California, and Tim Martin from the BBC in England. They are among the best wildlife filmmakers in the world and have all been honored with top prizes at Jackson Hole, Wildscreen, and other

highly esteemed film festivals. Derek and Beverly Joubert, for example, have not only produced some of the best films ever made on big cats, but have also performed pioneering conservation work for animals like rhinos.

As you can imagine, I received a variety of replies. My filmmaking friends recommended films that were at the top of my list, but also some new ones. Included are: *The Plow that Broke the Plains*; *Food Inc.*; *Die Serengeti darf nicht Sterben* (*Serengeti Will Never Die*); *Virunga*; *To Fly*; *Never Cry Wolf*; *Eternal Enemies - Lions and Hyenas*; *Born Free*; *The Emerald Forest*; *The Trials of Life*; *Wall-E*; *DamNation*; *Whale Wars*; *End of the Line*; *Mission Blue*; *Green*; *Miss Gooddall and the Wild Chimpanzees*; *Whale Rider*; *Grizzly Man*; and *Racing Extinction*. Those are all great films. But I want to tell you my top five conservation films of all time:

### ***An Inconvenient Truth***

Now, my friend Dr. Randy Olson, who is both a scientist and a filmmaker, dismisses Al Gore's film, calling it "stupid." Randy says, "Laurie David panicked in the fall of 2005, grabbed Al Gore, and with almost no story development filmed him giving his slide show. She ended up with the predictable "and, and, and" presentation with no story that wowed the choir but bored the masses." But I include *An Inconvenient Truth* in my list because it came up in responses from my filmmaking friends more than any other film, and it changed the discussion over climate change. A Nielsen and Oxford University survey found that two-thirds of people who saw the film changed their minds about climate change, and three-fourths said they had changed some of their habits because of the film. And many people saw it: in the US it's the 10th highest-grossing documentary of all time. It also broke the mold as far as conventional wisdom about documentaries goes. It's a film about a scientific process, based on

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## FIVE BEST CONSERVATION FILMS OF ALL TIME



Photographs Provided By Chris Palmer

a PowerPoint presentation. It appeals to our heads more than our hearts—long thought to be a mistaken approach for documentary filmmaking. It gives me hope that we can continue to use meaningful science to talk about big issues in films that lots of people will see.

### **Blackfish**

*Blackfish* also came up on many of my colleagues' lists. *Blackfish* brought an important ethical issue about the mistreatment of some of the world's most intelligent creatures into the international spotlight. Most people were not aware of the issue before the film, and afterwards it created a huge dialog around the subject. SeaWorld has been severely impacted. The number of visitors has sharply declined. I wrote about this extensively in my recent book *Confessions of a Wildlife Filmmaker*. Just last week, SeaWorld announced it will stop breeding orcas and phase out theatrical orca shows. I believe captivity should end and that all the remaining captive orcas should be released to seaside sanctuaries or pens.

### **The Cove**

*The Cove* came up on many lists, including mine and Sam's. The ingenious structure of the film, which ramps up in tension until the final reveal of its grisly footage, leaves a lasting impression. *The Cove* made over a million dollars during a limited box office run, and won both the audience award at Sundance and the Oscar for best documentary in 2010. Although the Taiji dolphin slaughter has not been completely stopped, it recently reached its lowest levels ever, and the film increased awareness of cetacean conservation around the world.

### **Bambi**

I wanted to include an old classic to highlight the fact that environmental themes have been coming up in films, including mainstream fiction films, for ages. *Bambi*, the 1942 Disney animated film, was the first film to show

animals with family lives destroyed by man. It allowed audiences to form an emotional connection to wild animals. Many of my own films have followed in *Bambi*'s footsteps in showing the familial relationships and personalities of wild animals. This film is still having an impact on how children think about animals.

### **Cousteau's Silent World**

Although there were ethical issues during the filming of this 1956 classic, it began a new era in ocean conservation. It was the first film to show the ocean depths in color, and Jacques Cousteau went on to have one of the most distinguished careers in the history of conservation or filmmaking. Ted Turner even calls him the father of the environmental movement. It was also the only documentary to win the Palme d'Or at Cannes until Michael Moore's *Fahrenheit 9/11* repeated the feat almost 50 years later.

There are many films which were close contenders to get on my list of the five best conservation films of all time. For example: *Whale Wars*; *Grizzly Man*; *Racing Extinction*; *Avatar*; *Born Free*; *Local Hero*; *Whale Rider*; *DamNation*; *The Day After Tomorrow*; *The Plow That Broke the Plains*; *Miss Goodall Among the Wild Chimpanzees*; *Wall-E*; *Planet Earth*; *The Trials of Life*; *Emerald Forest*; *Green*; *Eternal Enemies*; *Never Cry Wolf*; *To Fly*; *End of the Line*; *Gasland*; *Food Inc.*; *Cowspiracy*; *Last Call at the Oasis*; *Serengeti Shall Not Die*; *Mission Blue*; *Year of the Wildebeest*; *Disney's Living Desert*; *Chasing Ice*; and *Virunga*.

Films which have no impact are not worth making. Remember that the only reason to make a film is to change the world - to change the minds of the audience, to inspire them to think differently and ultimately to move them to take new action.

### **ADDITIONAL RESOURCES**

<http://www.chrispalmeronline.com/>



## DISCOVERING NATURE



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### BACKYARD WILD: Battling the Grey Squirrel

by Yoke Bauer DiGiorgio

*Director, Delaware Valley Eagle Alliance*

We mounted our brand new bird feeder onto a pole we had positioned for the perfect view in our front yard. The excitement of watching beautiful birds feeding began to fade as the first grey squirrel shinnied up the pole and jumped on top of the feeder's roof. We smiled as we watched the greedy squirrel crack and eat dozens of seeds in short order. Very quickly however, we realized that the squirrel aggressively prevented a cardinal from getting to the feeder. In fact, we saw fewer and fewer birds at the feeder as the bushy tail became increasingly comfortable gobbling up huge quantities of bird feed.

Grey squirrels are the greatest paradox of all backyard wildlife. They can be aggressive, destructive, persistent, and annoying pests. But they are also intelligent, inquisitive, skillful, handsome and very interesting creatures to observe.

We recognized two individual squirrels that returned again and again. We marveled at the distance they both were able to jump from a nearby tree limb onto the roof of the feeder. We trimmed back the tree limb several feet, certain that this would discourage them. *No problem*, they jumped farther. The battle was on. We began to read up on squirrels and plan our strategy.

Grey squirrels (Sciuridae) are tree-climbing rodents weighing 1-1.5 lbs. and range from black to white in coloring. Their average life span in the wild is only 1-year. Females have 2-litters (3-5 per litter) a year, one in the winter and one in the summer. Naked and blind at birth, the babies double in size the first week and are weaned and fending for themselves by 3-months. They recognize each other, by sight and sound. The tail plays an important role in communication and locomotion, helping to maintain balance when they are on tree tops - and bird feeders.

We decided to buy a new "squirrel proof" feeder with a smooth pitched slippery copper roof - *no luck*. They now jumped and landed "spread eagle" on the roof. We were becoming frustrated. Finally, having read that squirrels don't like certain types of feed (ie: thistle seed; safflower seed; and plain suet), we changed the feed mix - success. Their return to the feeder was now significantly less frequent. As we continued to enjoy watching them, we were now also enjoying the birds return.

The reality of any successful backyard habitat is that the word "wildlife" means all wildlife, not just lovely birds and butterflies. The same high quality food, water and natural cover that attracts cardinals, chickadees, gold finches, and woodpeckers also attracts gray squirrels, chipmunks, whitetail deer, bears, raccoons, skunks, and "bully birds" like starlings and pigeons.

*Surely life in the back yard would be dull without all of them.*

## THE DELAWARE VALLEY EAGLE ALLIANCE

*working towards the conservation of  
our wildlife and natural resources*

### ABOUT US

*The Delaware Valley Eagle Alliance is a 501 (C)(3) not-for-profit organization; our mission: to increase awareness, understanding and promote conservation of our wildlife and the natural environment.*

*We believe that raising awareness and understanding will change attitudes toward conservation and our natural resources. We are committed to this because we believe that it essential to enabling all life to exist and prosper on Earth.*

*We are dedicated in our focus to bring awareness through our publications, educational programs and events, and projects.*

*John A. DiGiorgio, Chairman and President  
Richard Crandall, Director and Vice President  
Yoke B. DiGiorgio, Director and Treasurer  
Debra Reimer, Secretary*

### ABOUT OUR PROGRAMS AND EVENTS

*We work with communities and other organizations on wildlife and environmental programs and events. Our focus, education and entertainment, is accomplished by providing enhanced programs with new speakers and presentations and providing all attending, young and old, opportunities to see and experience new and interesting programs.*

### ABOUT OUR PROJECTS

*We are available to work closely with biologists and conservation groups to document ecological and wildlife research on rare, sensitive and endangered wildlife and environmental issues.*

### SUPPORT

*The Delaware Valley Eagle Alliance grew out of a grassroots effort of individuals who want to help protect our wildlife and habitat. Our organization depends on responsible citizens and organizations who share our concern for the environment. Our educational publications, documentaries, programs and events would not be possible without the generosity of our sponsors and supporters.*

***For more information about having a project, program or event and/or to make a tax deductible donation contact:***

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