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# Wing BEATS

*A publication of Liberty Wildlife*

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## An Education Solution

Wildlife Ambassadors and Human Educators

Pack a Powerful Message

*by Terry Stevens*

*"In the end, we conserve  
only what we love. We will  
love only what we understand.  
We will understand only what  
we are taught."*

**T**hese words from the Senegalese naturalist Baba Dioum are the raison d'être for Liberty's Education team. Liberty Wildlife has grown to be one of the most success-

ful wildlife rehabilitation facilities in the nation. With a release rate of nearly 50% and an intake of around 4,000 animals per year, we have a positive impact on nearly 2,000 native and migratory animals annually. Is this impressive? You bet! But early on, Dr. Orr and the staff found that five types of injuries were occurring to the wildlife time and again: gunshot wounds, automobile collisions, window collisions, electrocutions, and

poisoning. What these things had in common was that they were all caused by human activity. Realizing that since we, as a species, were the root cause of most of the injuries that Liberty Wildlife wound up treating year to year, we felt we must get people to adjust their behavior. If we could mitigate our negative impact on the world around us, we would reduce the overall number of harmful

**Education Solution - cont. page 3**



# Dream Big Dreams

*The Future Belongs to Those Who Believe  
in the Beauty of Their Dream*  
Eleanor Roosevelt

Recently, I was reminded of three important things. As I write them out in black and white they seem so obvious that I am not sure why I needed reminding. None of this will be news to you, but just in case you also need reminding, I will pass them on.

*Somewhere over the rainbow, skies  
are blue, and the dreams that you dare  
to dream really do come true.*

Lyman Frank Baum

The first one was: Don't be afraid to dream big dreams. These dreams might at first seem to be ludicrous, like the idea of taking on a huge project - building a center to help us fulfill our mission. At first it seemed impossible.... but we persevered. Then soon it only seemed to be improbable, but still we persevered. Eventually, slamming it with enough institutional and personal will is propelling it to an inevitable success. After finalizing our change in location and obtaining building permits, we will finally be on our way. And, this is just the beginning of where dreaming big dreams could come into play.

*No one has the right to  
rain on your dreams.*  
Marion Wright Edleman

The second important reminder is that

no one has the right to limit your dreams, nor should you ever surrender your dreams. It has always been our vision at Liberty Wildlife, not just mine, but ours, to be able to "nurture the nature of Arizona" beyond our wildest dreams to get our message out to everyone possible, to assist all and any native wildlife when needed -- not just popular and charismatic wildlife, but all wildlife -- to provide not just a little education, but as much as we possibly can. We will stand firm here. In this issue you will learn about the owls in Arizona and realize how blessed we are with a resource both beneficial and beautiful. You will learn that something as numerous and necessary as bats can be so fragile, so in peril, and so in need of an awareness of their plight. Educating each of you regarding something as simple as your coffee drinking habits could lead to huge benefits for many species of migrating birds. A small change can make a very big difference for both the birds and the humans.

*Commitment precedes vision.*  
High Eagle

The third reminder was that whatever we do, it should be done to the best of our ability, with the best people, using the best strategies, garnering the best outcomes. Also in this issue of *Wing-Beats*, you will learn that we do indeed have the best volunteers on the job, from our Education, Daily Care, Medical Services, Hotline, Rescue and

Transport, and Orphan Care departments to our participating veterinarians, Board of Directors and Wildlife Guardians. The commitment of our volunteers is highlighted here through the endeavors of a few standouts spotlighting some of their accomplishments that go beyond the call of duty. Of course, that doesn't mean there aren't others with just a little less time to give but the same heart, the same energy, the same commitment - the same dream. Our staff rises to every occasion under less than perfect conditions and with limited resources -- there's no complaining. Everyone is dedicated to supporting the mission. Read about our Research and Conservation group that professionally addresses calls from corporations, agencies, and the public to assist when wildlife interfaces negatively with civilization and rectify problems before they occur.

And, please don't miss our retail catalog and Special Event entries -- the funds raised here allow us to do what we do so well. Our centerfold presents, as always, stunning wildlife photographed by Liberty Wildlife volunteers.

Remember: Dream big dreams, allow no one to limit them, do the best you can with the best you've got to get the best results.

*I have learned that if one advances  
confidently in the direction of his dreams,  
and endeavors to live the life he has  
imagined, he will meet with success  
unexpected in common hours.*  
Henry David Thoreau

*Megan Mosby*

Megan Mosby  
Executive Director



Liberty Wildlife's future home -- original rendering by Pirate Design



# Education Solution *continued from page 1*

human/wildlife interactions. Clearly, education was going to be a large part of the solution.

The education team at Liberty Wildlife came along a couple of years after the rehabilitation efforts started. At first, it



*Education event*

was a small team of people with no real training, just some of the volunteers who had an idea: Get the general population to better appreciate the wildlife around them and perhaps they would treat the environment with more care. That is still the core principle behind the Education team today.

Borrowing some techniques and equipment from the falconry world, some of our non-releasable birds were impressed into service as ambassadors to their species. Soon they began to make appearances at local schools and civic functions on a regular basis. Many people got their first exposure to Liberty Wildlife at the Tempe Arts Festival and some would return every year to see their favorite bird and possibly buy a new T-shirt. It was also a great learning experience for the volunteers holding the birds, as they explained what the bird's injury was, why it was with Liberty Wildlife, and what its role was in the environment of Arizona. Our tent always had one of the largest crowds at the festival!

The real organization of the Education team began in the early 1990s. At that point we began to actually train the people who would be going in front of the public, displaying the birds, and talking about what Liberty Wildlife was and what we did for the state of Arizona. Formal classes were begun and hands-on bird handler training was initiated to better present a professional



*Learning about wildlife*

look to the education message. The team began to hone their presentations and wear shirts that identified them as volunteers for Liberty Wildlife. And always, the safety of the birds came first!

Fast forward to 2009. The Education team, currently under the direction of long-time volunteer Linda Scott, has about 40 members, all of whom are experienced and dedicated volunteers. They have gone through a long, sustained training process involving the biology of the birds they will handle and display, public speaking techniques for various sized crowds of different backgrounds, and both theoretic and hands-on handling skills for each of the birds they are qualified to take to a presentation. They come to know the birds personally through hand feeding them and through practice with senior volunteer partners. They can often judge the health of the bird perched on their glove, just by sitting with it for a few minutes. This kind of bond is critical for a safe, smooth presentation at which neither bird nor volunteer sustains injury or even ruffled feathers. It is to the credit of the Education team and all the volunteers at the facility that we still have some of the same birds presenting in the education group today that began their careers as wildlife ambassadors in the 1980s!

The role of the Education team has grown and evolved over the years, along with the team itself. From several dozen shows and a few civic functions and fairs in the early years, to over 525 presentations last year, the Liberty Wildlife Education team is in high demand in the Valley of the Sun -- and

**Education Solution - cont. page 7**

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*Zone Tail Hawk feathers  
photo by Lesley Guenther*

# The Homecoming

by Megan Mosby

In this business we try not to assign human characteristics to animals -- a professional no-no related to what we do, but sometimes the facts defy this 'scientific' notion. One such story follows.

Many have heard the tale of the goose that was shot out of the air, landing in the lake dying, while its mate flew down and stayed with it as the rest of the flock migrated on along their predetermined path. The mate stayed as long as the wounded bird was alive and then very reluctantly flew off in hopes of catching up with the flock. An urban myth ...who knows? The following story, however, is well documented.

Liberty Wildlife volunteer, Claudia, was dispatched to a lake in the far west part of the Valley to assist in the capture of what appeared to be an injured Canada Goose. Geese, and water fowl in general, are difficult to catch because they can fly, swim, and run. They have to be in pretty bad condition to be rounded up. This particular goose had fallen prey to the insidious effects of monofilament line. It seems every body of water

ligament, muscle, and bone. Around the neck or beak it can cause slow starvation. As it tightens it cuts to the bone, often resulting in infection and ultimately death.

This goose was lucky, as the situation was noticed early and dealt with before too much damage had been done. Our rescue volunteer and a park ranger were able to make the capture. In order to limit any struggling, the goose was wrapped in a sheet held together with duct tape so that it could make the trip across town to Liberty Wildlife without further damage.

Because of the fast action, the triage procedure found that the injuries were minimal. The monofilament line was removed and the injuries treated. In most situations it is best to get the animal in and out as soon as possible.

This goose was ready to be released in less than a week. Here's where the story gets better.

Our dedicated volunteer gathered up the recovered goose and trekked back across town to the lake. Upon arrival she noticed that, as before, there were about 200 geese arranged in what looked like four "family flocks" scattered around the lake, all doing the Canada Goose thing ... swimming around looking for food, preening, and

hanging out.

The park ranger was there for the release and two folks from the public

stopped by to see what was going on. As always with Liberty Wildlife releases, they were invited to stick around to watch the successful culmination of the rehabilitation process. They were given a brief education about what Liberty Wildlife does and why.



*"No mistake about it, this was a purposeful gathering of the geese."*

Claudia opened the carrier and released the goose into the water. Perfect. Looking around the lake at all the geese, he gave an inquisitive honk ... fine ... a good sign. Then from across the lake a goose in one of the "family flocks" started to honk. First it was one little "honk" which was followed by a response from our releasee. One contagious "honk" led to another "honk," and to the amazement of the onlookers the goose conversation turned into a chorus of calls and responses. The interesting part is that only one group got into it. There was silence from the other three groups. "HONK, HONK, HONK," blasted back from the vocal family, and then an excited response was heard from our guy. With a flurry of activity the calling flock across the lake began to assemble on the shore with much flapping and excitement. Waddles, flaps, and honking created a sense of urgency. No mistake about it, this was a purposeful gathering of the geese.



*photos this page by Terry Stevens*

*Released Canada Goose*

contains this wildlife hazard. It silently snakes around beaks, necks, wings, and legs. If the strand is allowed to remain, it can cut into tissue damaging



*Happy to be home*

The releasee started to paddle straight in the direction of the vocal ones -- healed injuries forgotten -- as fast as he could with absolutely no interest in the silent groups. When the paddling wasn't fast enough, he lifted his heavy body out of the water with wings beating furiously against the surface. He became airborne, then landed just off-shore from the honkers. He hit the water, running, flapping and sort of flying, all motion modalities engaged simultaneously, until he found himself swallowed up in the

middle of the welcome home celebration. Okay, I know I have just stepped over the line of "scientific," but that is what the crowd of people saw across the lake.

It was clear that this group was eagerly accepting our rehabbed goose back into the flock. It was clear through the tears in the on-lookers' eyes, without a word being spoken, that this goose had been given a second chance and was

home, back where he belonged with family. And, it was clear to the humans that they had witnessed something special. No urban myth here.

It is enough to say that we will always try to return an animal to its home territory if it is safe and possible. This is just one such story. But there are others that lead us to believe that they know ... somehow they just know.

## *Wishes for Wildlife*

Sending wildlife home is our goal at Liberty Wildlife. You too can play a part in this glorious job. Support our annual fundraiser presented by the Liberty Wildlife Guardians.

**What:** Wishes for Wildlife

**Where:** Our new venue at the Fairmont Princess, Scottsdale, AZ

**Why:** To help support the mission of Liberty Wildlife,  
"to nurture the nature of Arizona"

**When:** April 17, 2010

6:00pm View Educational Ambassadors,  
Silent Auction, Raffle

8:00pm Live Bird of Prey Show - Part 1

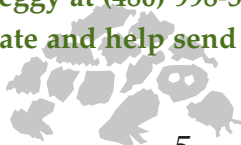
8:15pm Dinner

9:00pm Live Bird of Prey Show - Part 2  
Release of rehabilitated Great Horned Owl

9:30pm Live Auction

9:45pm Live Bird of Prey Show - Part 3

Check [www.libertywildlife.org](http://www.libertywildlife.org) or call Peggy at (480) 998-5284 for detailed information about how you can participate and help send more wildlife home.



*"Liberty Wildlife's many accomplishments are generated by the talented and compassionate staff and volunteers, from our Education, Daily Care, Medical Services, Hotline, Rescue & Transport, and Orphan Care departments, to our participating veterinarians, Board of Directors, Wildlife Guardians and generous donors."*





# Volunteers with a Mission

by Gail Cochrane

Over 300 dedicated folks donate to Liberty Wildlife the greatest gift of all: a bit of themselves. For several hours each week they give their time, energy, talent, sweat, humor and a personal touch. Thousands of animals would suffer every year without the help of these wonderful people. We are so grateful!

That being said, there are some individuals who have embraced the Liberty Wildlife mission and spend many hours working outside of an ordinary volunteer position to help wildlife and the people who help wildlife. Four of these greatly valued individuals are recognized here.

**Peggy Cole** has been a tremendous asset to Liberty since she started in the fund raising area 10 years ago. She came to help out with *Wishes for Wildlife* in 1999 and has been at it ever since. Peggy is the president of the volunteer group, Liberty Wildlife Guardians, that creates *Wishes for Wildlife*, our annual benefit. This event, and the people behind it, raise over half of our operating budget. The Liberty Wildlife Guardians work throughout the year to procure donations and supporters, and Peggy shoulders the bottom line responsibility.

She also rolls up her sleeves and works hard at the facility, where she is a talented and enthusiastic educator. "My passion is education," she declares. "The feedback you get from people at presentations is inspiring, be it from the folks at the retirement home, the kids at the detention center, the special-needs kids, or the 2nd graders at the local elementary school. The response is overwhelming. There is a connection people make with these animals. I think everyone can relate to the idea of getting a second chance."

Peggy is a Program Coordinator and leads many education programs. She also volunteers one day a week hand

feeding the education birds, including the Golden Eagle, Apache. She will soon be able to take Apache and the other eagles out to wow the public.

Another volunteer who has made a huge impact on the organization is **John Glitsos**. John started in Rescue and Transport and quickly became known for being willing to go out anytime and on short notice to pick up an injured animal. He signed up for the education classes, where he eagerly absorbed the natural history material. His enthusiasm for wildlife shines through in his education presentations where skills he has built in his "other" life serve him well. Here is John's quote from a recent Scottsdale edition of the Arizona Republic: "I spent my life as a Fortune 500 president thinking that the environment was what I drove through to get to the office. Volunteering has profoundly changed my environmental perspective. It has made a huge difference in my life. I am so passionate about this." John has charmed and educated folks far and wide through his service to the Liberty Wildlife Education program.



Peggy Cole  
with American Kestrel, Elliott



John Glitsos  
with Red-tailed Hawk, Acoma

Recently John has been working out of the limelight using his software writing skills. He has set up a database tied to a badge system to count volunteer hours. This will allow us to quantify the incredible support we gain from volunteers. The first month of counting indicated 3,600 hours of volunteer work. John also has put our education scheduling and volunteer application processes online.

The Rescue Mapping program John wrote drastically reduces the time it takes us to rescue a raptor. Our hotline volunteers often make many calls to find a volunteer who can go pick up an injured animal. John's program allows the hotline volunteer to enter the address of the injured animal on their computer and pull up a map showing the rescue volunteers that live in the vicinity and are available to go on rescues that day. This improves our rescue response time, and saves time and mileage for the rescue volunteers. John's level of involvement with the organization and his unique background came together with brilliant results.



Claudia Kirscher  
with Barn Owl, Henry

**Claudia Kirscher** has volunteered at Liberty Wildlife for five years. She currently works as the daily care team coordinator one day and hand feeds the education birds on another. Keeping volunteers on the same page as far as diets and specialized care, as well as training new volunteers is critical if we are to give the animals

**Volunteers - cont. page 8**

# Education Solutions continued from page 3



Phoenix, Golden Eagle Education Ambassador

been working well for many years and has decreased the number of electrically injured birds coming in for medical treatment.

From our collaboration with Scottsdale Community College and the CNUW (Center for Native and Urban Wildlife) program, to new partnerships with a number of schools in the Phoenix area, including an effort to collaborate with the Arizona Agribusiness & Equine Science Charter High School, we never stop adding to what we

photo this page by Terry Stevens

beyond! Sure, we still do school presentations, and no, we don't charge for the presentations. (Although we do ask for a donation to cover the expense of the program, it is NOT required!) In addition to the usual public and private schools, a few years ago we began visiting two of the youth detention centers in the area. These have become some of our favorite education offerings each year, and the volunteers who present these programs get as much from the contact as the students do. We also have several schools where the students put together unique activities such as read-a-thons that raise funds for Liberty Wildlife. Last year, the world's largest mining company, Freeport-MacMoRan, provided a grant that helped fund our educational activities, including two trips to New Mexico and Texas with a traveling team of birds and educators. Thus, the Liberty Education team brought their environmental message to many schools in these neighboring states. A total of 20 programs were presented to students and adult groups in a little over seven days and 1,500 miles. In addition, we continue to provide training for workers at several large power companies in Arizona through our Research and Conservation Department. This supportive effort has

accomplish. Another school in the South Phoenix area is also working with us to supplement their already fine environmental curriculum with a joint effort to include

our Class-to-Field program. Here we work with the school to develop a plan to provide information and resources to the teachers prior to our visit with our feathered educators. The students are involved from the outset, and after following the outline for several weeks, the classes

go out into the field to make real-time observations of wildlife to support what they have learned in the classroom.

The bottom line has always been that seeing wildlife in person has immeasurably more impact than any two dimensional graphic. A picture in a book or a video on TV (even in hi-def!) cannot provide the same visceral connection you get from looking into the eyes of a Great Horned Owl or feeling the wind from the wings of a Bald Eagle. We help provide the connection to nature that a lot of kids miss in today's world. And the Education team volunteers enjoy doing it more than anybody will likely ever realize!

***"The bottom line has always been that seeing wildlife in person has immeasurably more impact than any two dimensional graphic."***

*The greatness of a nation and its moral progress can be measured by the way in which its animals are treated.*

**Mahatma Ghandi**



*Libby, Education Ambassador*



## Volunteers *cont. from page 6*

the best care possible. Claudia is phenomenal in anticipating issues and solving problems, and has been a model for the day team coordinator role. A natural teacher, talented in working with the raptors, she is also a Program Coordinator, going on a variety of education programs throughout the season.

She realized how beneficial it would be for volunteers to meet one another and share the experience of observing wildlife in their natural setting. She explains, "We all hope to see our rehabilitated birds once again free." Claudia began sharing her passion for kayaking on the lower Salt River with other volunteers, organizing paddle trips several times each summer. A founding member of the Desert Rivers Audubon, Claudia knows the Salt well and can point out nesting sites for Barn Owls, Ravens, numerous waders, and, her favorite, Bald Eagles. She also has organized winter birding field trips. "I feel it is important for volunteers to see the birds in the wild, exhibiting normal behavior as

opposed to what we see in captivity during rehabilitation. We become better caregivers." Claudia learned about Liberty Wildlife when she met Anne Peyton, another exemplary volunteer, on an Audubon Christmas Bird Count.



*Anne Peyton  
with female Bald Eagle, Sonora*

Anne came to Liberty 10 years ago through a partnership with Maricopa Audubon to teach bird watching and natural history to elementary students. She took training that prepared her to teach the four-week curriculum culminating in a bird watching field trip. At the end of the field trip, she was chosen to release a Swainson's Hawk. Hoisting the gorgeous bird up

toward the sky and watching it fly away, she realized she was hooked. She signed up for more education training and not long after was teaching the public about the wildlife of Arizona. She told me recently, "My personal quest is to inspire 1,000 children with the passion that I feel for wildlife."

Education is a crucial part of the Liberty Wildlife mission, and Anne has embraced it heart and soul. She was soon making the 65 mile round trip from her home to the facility three days a week to work with the education birds. She became a top handler when she got signed off on the eagles and began taking them out on programs. A Program Coordinator, Anne also teaches incoming education volunteers during the fall classes. Anne states, "Every day with these animals you learn something new. In 10 minutes a raptor can take away all of your assumptions and completely surprise you."

The capacity of humans to care about and dedicate themselves to wildlife is similarly amazing.

## Bats in Peril

*by Megan Mosby*

### *What's the truth about bats?*

Historically bats have been maligned ... falsely accused. They have been the victim of negative myths. The truth is that bats do not get tangled in your hair. Bats do not all carry rabies. Bats are not blind (they see as well as humans). And bats aren't stupid or inept, as the reference to a batty person or one with bats in his belfry might infer. The truth is that bats are furry, flighted mammals worth way more than their weight in gold.

Almost all of the 46 species in the U.S. (there are 28 in Arizona alone ) fall into two categories -- those that feed on insects (70%) and those that live on nectar and fruit. There are a few bat species that eat amphibians, other



*Brown Bat*

birds, and small mammals, and yes, there are the vampires, none of whom live in the U.S. The myth is that vampire bats suck the blood out of a victim. The truth is that they make a small incision in their prey, usually a cow or another kind of livestock, and lap

a small amount of blood without much notice by the donor ... hardly a Dracula kind of figure.

Bats make up nearly one-fourth of all the mammals on earth -- and they are in serious trouble.

### *What's the problem?*

The problem is that due to a little understood condition, hibernating bats seem to be dying in huge numbers. It is estimated that 1.5 million bats have perished in the Northeastern parts of the U.S., with the fatalities advancing rapidly down the Eastern seacoast and toward the Midwest. Many of the species are already threatened and endangered due to human related activities, including



persecution, habitat loss, and death from pesticides. This new, mysterious plague might be all it takes to snuff out locally this valuable and poorly understood animal. Some scientists believe that the disaster could reach the West Coast in a few years. They are not sure how it spreads, why it spreads so quickly, or even how the caves became so toxic. What they don't know outweighs what they do know, but the reality is that the magnitude of this potential loss is staggering.

*"Farmers stand to lose a billion dollars a year because of crop devastation due to an increase in insects. A single bat eats half of its weight in insects in one night ..."*

It is believed that the culprit is a newly discovered fungus, *Geomyces destructans*, which is believed to cause a condition called white-nose syndrome (WNS). The name is derived from the white fungus that is found on the muzzle, wings, and ears of hibernating bats. It is believed that WNS somehow interrupts the hibernation pattern of the bats, causing them to leave the caves to search for food that isn't available in the winter. This greatly depletes the body fat necessary to complete hibernation and results in starvation. Mortality rates in some caves can be 90%-100%. Since bats reproduce slowly, birthing only one or two pups a year, the ability to spring back from this devastation is unlikely.

### *Why does this matter?*

The natural history of bats reveals why this is so important to us. The fruit and nectar eating bats play an important role in pollinating plants like the saguaro cactus and agaves. These plants in turn play major roles in the desert ecology. Obviously, this pollinating capacity is critical to farmers whose crops benefit from this activity. However, it is the loss of the insect eating group of bats that will ultimately have the greatest impact. It is predicted that these mammals could be driven to extinction in the U.S. if this decimating disease isn't stopped.

Farmers stand to lose a billion dollars a year because of crop devastation due to an increase in insects. A single bat eats half of its weight in insects in one night while a lactating female easily puts away insects equal to her full weight nightly. A colony of 1,000 to 1,000,000 bats can devour tons of insects in a 24-hour period, or over 2.4

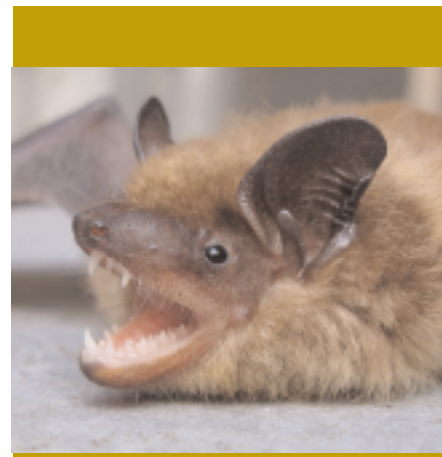
million insects a year, allowing farmers to control crop pests without the use of pesticides. Also crucial is the containment of insects that spread disease in humans from malaria to West Nile Virus. In another environmentally sound effort, farmers at a shade grown coffee plantation in Chiapas, Mexico discovered that during the wet season, bats ate more insects than did the birds that are so vitally important in that process. Droppings have been found to support bacteria used in detoxifying wastes, in

improving detergents and in the production of gasohol and antibiotics. As with any species, we will never discover the full benefits it provides if it becomes extinct.

### *What's being done to help the situation?*

The biggest problem is the lack of good information. Scientists are working as quickly as possible with the resources that they have. They agree that for now stop-gap measures are a starting place. Containment is the strategy. Many caves are being closed to humans now in case humans or even animals are responsible for the spread of the fungus ... a still unknown fact. In some places low-wattage heat sources are installed in caves with the hope that the slight warmth will help save fat reserves and stave off malnutrition and starvation. In bat caves where heat sources have been supplied, the mortality rate dropped to 8%. And, in case all else fails, island populations are being investigated--safe colonies -- should the disease spread across the Western Hemisphere extirpating bats from the continent. How ominous.

On an individual level, adding bat houses in your own yard might help you with your insect issues, and it might provide fungus free hibernacula for resident bat colonies. Ultimately we need to buy time and supply our scientific world with the resources needed to solve the problem that imperils our furry and misunderstood friend.



### *What you should do if you find a bat on the ground*

1. Put a laundry basket or box gently on top of the bat to contain it while you get handling equipment (dustpan, gloves, tape, and box with holes punched in it).
2. Put on relatively heavy work gloves.
3. Using a dust pan or similar item, gently scoop the bat into the box or container.
4. Seal the top tightly with tape.
5. If you are in Arizona, call Liberty Wildlife at (480) 998-5550 to seek help.
6. If not local call your state Game and Fish agency.
7. Keep everyone from touching it.
8. If the bat has been touched, be sure to get the name and contact information of anyone who had physical contact with it.
9. Keep the bat in a dark, ventilated area until it can be delivered or picked up by a rescue and transport volunteer or a state agent.

# The Wonder of Wildlife



## *Photos This Page*

### *Left (top to bottom)*

- 1) Harris' Hawks  
"Band of Brothers"  
Terry Stevens
- 2) Great Blue Heron  
Allen Spencer

### *Right (top to bottom)*

- 1) Curve-billed Thrasher  
Kenny Wilkins
- 2) Wild Horses  
John Glitsos
- 3) Red-tailed Hawk  
Terry Stevens







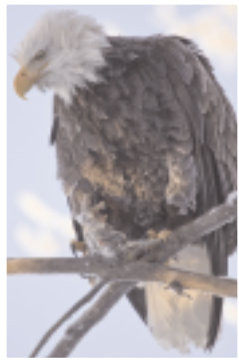
*Photos This Page*

*Left (top to bottom)*

- 1) American Kestrel  
Terry Stevens
- 2) Bald Eagle in winter  
Terry Stevens
- 3) Rescued Raccoons  
Terry Stevens

*Right (top to bottom)*

- 1) Great Horned Owl family  
Barb Del'Ve
- 2) Golden Eagle  
Terry Stevens



# A Cup of Coffee and a Bird Song

by Robert Mesta

Out on the patio you watch the sun rise, it's another beautiful morning with just a hint of dew. You have your hands wrapped around a large steaming cup of your favorite coffee, the aroma of that dark roast rises and you inhale deeply just before that first sip. Ahhhhhhhhh. After a few more, you lean back, close your eyes and listen to a backyard concert of bird songs: nature's symphony. A cup of coffee and a bird song -- it doesn't get much better than that.

Traditionally, coffee grows under the forest canopy of sun-filtering shade trees, where it matures slowly, producing fewer bean berries, which concentrates the natural sugars, resulting in a richer flavored coffee.

The ecosystems created under these shade trees support a diversity of multi-layered plants that provide food and cover for wildlife and insects, soil replenishment from leaf litter, and protection from water runoff and soil erosion. Additionally, these plants are a source of fruits, vegetables, nuts, and medicines.

The worldwide demand for coffee has led to the development of sun tolerant coffee varieties to increase production. Unfortunately, most of these varieties require the clear cutting of forests that are replaced by full-sun monocultures of densely planted and intensely managed coffee plantations, with the sole objective of producing as much coffee as possible with no regard for the environment. The operation of these plantations requires the heavy use of chemical fertilizers, pesticides, herbicides, and fungicide. Soil erosion, toxic runoff, and soil acidification require the constant clearing of new land for planting, making this type of operation unsustainable. The ultimate by-product is abandoned lands useless to both man and animals.

There are over 200 species of "neotropical migrants," birds that breed in a variety of natural habitats and backyards in North America and

migrate to winter under the forest canopies found in Mexico, Central and South America, and the Caribbean Islands. Many of our warblers, tanagers, orioles, and thrushes depend on these South American forest habitats for cover and food, and in turn control harmful insects with their constant foraging.



*Barn Swallows*

photo by Barb Del'Ve

There are approximately 7 million acres of coffee producing lands, and 60% have been cleared of their forest habitats and replaced by full-sun coffee plantations. The loss of these forests has caused an estimated 50% decline in bird populations over the last 25 years. Full-sun plantations support 95% fewer bird species than their shaded counterparts. Reduced bird counts in North America can be attributed to deforestation in South America.

Shade grown coffee, also referred to as "bird-friendly" coffee, is grown on small farms that promote the growth and conservation of native forest habitat. Coffee plants are interspersed under a shielding canopy of native trees. These farms are essentially small ecosystem islands that are second only to tropical rainforests when it comes to biodiversity. They provide refuge for over 150 species of resident and wintering birds, which equals more than two-thirds of the bird species known to occupy nearby forests. Next to tobacco, coffee plants are sprayed with more chemicals than any other crop consumed by humans. Shade grown coffee, on the other hand, is usually organically grown

and chemical free. This chemical free environment not only protects birds, it also protects the health of local farm owners and ultimately those that drink the coffee, the consumer.

In many areas of South America, shade-grown coffee farms are the only forest habitat that remains, making their protection and promotion critical to the preservation of hundreds of bird species. These farms are usually small family operations or community cooperatives fighting to compete with the large full-sun corporate plantations. Organically grown shade coffee represents only 1% of the \$30 million dollar U.S. market for coffee beans. The philosophy of shade grown coffee brings ecology, economics, and culture together to promote increased biodiversity and bird habitats along with healthy farmers and environments, while providing families and communities with a sustainable economy.

Next to oil, coffee is the most valuable legal export in the world, with North America accounting for over 33% of its consumption. Thus, coffee drinkers can influence coffee cultivation strategies and contribute to bird conservation by purchasing coffee brands that are produced from shade grown plants.

So sit back and savor that cup of shade grown coffee and enjoy your favorite bird songs knowing that with every cup you're helping to conserve the birds in your backyard. It doesn't get much better than that.

**Y**ou can help migratory birds by investigating the conditions under which the coffee you drink is grown. The following organizations have excellent websites that address these concerns as well as sell shade grown coffee beans: Tree Frog Coffees, Peace Coffee, Counter Culture Coffee, Poverty Bay and Café Sombra.



# Weapons of Mouse Destruction:

## Arizona's WMDs

by Terry Stevens

Depending on which "expert" you happen to be reading at the time, the number of owl species worldwide runs from about 130 to 222. That's quite a disparity, even for bird experts. The number of North American species is a matter of more agreement, most counting 17 on this continent, 13 of which can be found in Arizona. This makes us Zonies the lucky landlords to more owl species than nearly any other state! So how come you haven't seen many in your backyard?

Most owls are nocturnal (active mainly at night) or crepuscular (active at dawn and dusk) so they have a circadian clock that is opposite of us humans. It's natural for them to be out and about doing owl things when we're done with our outside activities, so our chances of seeing one of these reclusive birds is minimized. Their main skill is stealth and they are very good at their job.



*Barn Owl*

Owls come from two families, the *Strigidae* and the *Tytonidae*. The Strigids comprise the bulk of the owl species in North America and include all owls except the Barn Owl, the only member of the Tytonids. Although owls come in many shapes and sizes,

as night-time hunters they share many adaptations. Better than average night vision is to be expected in any nocturnal species, and most owls have this trait. Many owls have extraordinary night vision capabilities, able to hunt prey in very low light intensity. But, as everything in nature involves a trade-off, for this wonderful low light acuity, owls have given up the ability to move their eyes within their heads. To make up for this lack of ocular mobility, they have a few extra vertebrae, giving them the ability to swivel their heads over 270 degrees in each direction. This head

turning sometimes leads to comical postures!

Another adaptation common to most owls is highly acute hearing. Although the ears of owls are not readily visible, they are very effective. The Barn Owl has some of the best (and most tested!) hearing of any animal on the planet. Though they can actually hear a narrower spectrum of frequencies than humans, they have been honing their hearing skills for many millions of years. Owl ears are asymmetrically placed on the sides of their heads, the left ear being placed at a different level above or below the eye line than the right, and oriented to acquire sounds from different heights and directions. This arrangement allows them to modulate the intensity of incoming sounds from top to bottom by bobbing their heads up and down. At the same time, they can differentiate the arrival time of sounds by panning their heads left to right. They can then form mental cross-hairs in their brains and target the source of sounds, perhaps a mouse skittering through the leaves.

If you're going to use sound to locate your prey, and to continually update the position of a moving target, minimizing the sounds you generate is vital. Owls have a variety of "stealth" features, including soft feathers that cover almost every square millimeter of their bodies. The smooth surfaces prevent noise-causing vibrations as they pass through the air. These same owls usually have a unique fringe or comb-like structure on the leading edge of their primary feathers that aerodynamically dampens sounds when the molecules separate over the air-foil formed by their wings.

One of the lesser known talents of many owls is their ability to form three



*Great Horned Owl*



*"Better than average  
night vision  
is to be expected  
in any nocturnal  
species, and most  
owls have this trait."*

*WMDs - cont. page 16*

# A Peek Inside Radiology

by Tanya Wyman, DVM

Veterinarians rely on several tools when trying to reach a diagnosis on a sick or injured animal. They use the physical exam, blood work, and last, but definitely not least - imaging. "What is imaging?" you might ask. Imaging encompasses anything with which the veterinary team can obtain diagnostic pictures: x-rays, CT scans, MRIs and ultrasound are all used widely today. But what is the most recognized and most used imaging technique? You guessed it - x-rays!

Radiology (x-rays) is one of the backbones of diagnostic work at Liberty Wildlife. X-rays allow us to treat more precisely and accurately by giving a peek at the 'inside' of the injured and sick. Among the most common radiographic findings at Liberty are subtle fractures to bones, unexpected bullets, strange objects in the digestive tract, and organ enlargement. Before x-rays became available, few of these findings would have been discovered or treated properly.

Of course, that does not mean that x-rays are without limitations. Radiographs give us a two-dimensional picture in shades of gray - dense things like bullets show up brightly, while less dense things like muscle show up in varying shades.

Sometimes those areas of gray can blend together leaving the veterinary team scratching their heads. It is like looking at those 'hidden image' pictures - the longer you stare, the more sure you are that you are seeing something! Besides the challenge of interpretation, the process of obtaining a radiograph can be tedious. The patient must be held in the correct position for the actual exposure, then the film needs to be developed in a special processor; the entire procedure can take up to three to five minutes per radiograph. Once the radiograph is developed, it is assessed to make sure the positioning and exposure were good enough to make a diagnosis. If they are not, the whole procedure starts all over again. A good set of traditional radiographs could take even experienced wildlife handlers and veterinarians 10 or more minutes to complete - definitely not an ideal

situation for an injured animal. In the last few years, digital radiography has become available in the veterinary world. For those of us who have had the pleasure of years of working with traditional x-rays, digital radiography is like magic! Because the images are digitized, they can be viewed within seconds of snapping the picture. If the animal is incorrectly positioned or if the exposure settings are not quite good enough to make a diagnosis, the picture can be retaken immediately. This is much less stressful for the patient (and the handler!). Most digital radiography machines are equipped with programs that allow the veterinary team to 'play with' the images - they can be enlarged, lightened or darkened, measured and inverted. This digitized information can be easily stored on discs or emailed to specialists for more in-depth consultations. Image quality is also greatly improved when compared to traditional radiographs; we are now able to clearly see things that might not have even been visible before. There is definitely still some scratching of heads - no matter how sophisticated the technology becomes it is still all shades of gray - but the improvement is amazing.



*Ready to shoot*



*Broken leg*



*Pellet caused damage*



*Real-time imaging*



## Improving the Product

by Gail Cochran

It is a good thing if you are an animal and you don't spend much time at Liberty Wildlife. Better to be released right back out to the wild, to reproduce and continue holding your place in the cycle of life. But many of Liberty's people have been around for years, and it seems everyone has a "back in the day ..." story.

In daily care, early volunteers tell that back in the day they cleaned all of the cages and fed all of the animals all by themselves! Now nine to twelve volunteers work every day, just keeping the animals fed and the cages clean. Megan can tell "back in the day" stories of when just she and three or four others did everything.

Well, times do change, and the organization has grown up to be a major force in the Valley for wildlife conservation and education. You can no longer just holler across the way to communicate to the other volunteers. We are fortunate to have over 300 volunteers now, and this means Human Resources! With many more hands contributing, communication has become critical. Keeping track of the volunteers, their hours, their vacations, their various roles, as well as communicating to everyone changes in protocol, seasonal food quantities, animals that have been moved or released, upcoming programs, and generally keeping information flowing has become a major issue. Luckily, talented people keep joining, bringing ideas and innovation along with them.

These innovations help us operate more efficiently, wasting less time and less paper. They help us communicate more effectively within the organization, and to reach supporters with messages regarding our mission and our needs. A few key folks began blogging for Liberty in '08, providing an insiders' glimpse of day to day activities at the facility. The blog has readers around the globe, far flung fans of wildlife and this foundation. We continue to publish the e-newsletter *Nature News*, educating readers about wildlife, fund raising events, and volunteer happenings. The *WingBeats*

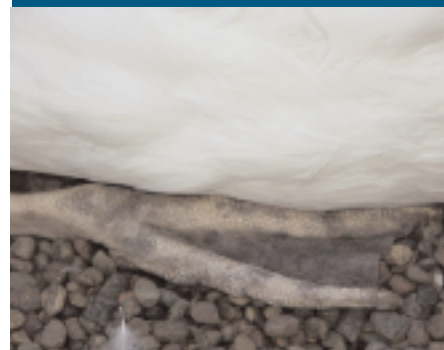
newsletter reaches out to supporters of the mission with stories and reports from the past 12 months as well as super photographs of our favorite subjects. *WingBeats* will also be offered electronically this year.

Thanks to John Glitsos, we have a new volunteer database tied to badges that are scanned each time a volunteer comes and goes. This allows us to keep track of the gargantuan number of hours logged by these dedicated folks. We have put our volunteer manuals, each a monster in itself, on our webpage and new volunteers can read the material on their computer before coming for their first shift, saving lots of trees. The scheduling of our education programs is now online, saving hours of time at Liberty Wildlife and providing more convenience for the public interested in our education outreach programs. Volunteer applications are also online, so volunteers can spend their time at orientation looking around instead of doing paperwork.

We continue to update our webpage, working closely with Cramer-Krasselt to ensure wildlife enthusiasts everywhere can access information about Arizona's native animals and the goings on at Liberty Wildlife. And we opened an online store in late '07, where supporters may buy T-shirts, hats, and tote bags, or sign up for and pay for our benefit events. Our first ever virtual Baby Bird Shower debuted in the store this year, allowing many generous people to purchase food and supplies for the Orphan Care area of the facility, greatly benefitting thousands of hungry baby birds.

All of this makes the organization streamlined and efficient. The laws of survival apply to a non-profit organization just as to the raptor swooping after its prey. We plan to be around in the future to continue the work of saving and promoting wildlife ... just like "back in the day," only better.

*"The laws of survival apply to a non-profit organization just as to the raptor swooping after its prey. We plan to be around in the future to continue the work of saving and promoting wildlife ..."*



Swan Foot, photo by Lesley Guenther

dimensional spatial maps of their territories to guide them as they fly in limited light. Like blind humans who "learn" the location of objects and structures in their homes, owls can remember where trees and other objects are in order to avoid them as they fly at night. This might be why owls that live in cluttered environments, like forests, have relatively small territories. And yes, they do, unfortunately, occasionally collide with something!

When all of their abilities are combined, owls are a spectacular group of aerial predators. And given the number of different types of owls, they are a nightmare for a wide range of prey species.

Beginning with the smallest of all, the most common owl in Arizona is the Elf Owl. Only six inches tall, this diminutive insect eating bird is often mistaken for a moth or a bat. Mostly nocturnal, Elf Owls live in cavities in trees and cacti for an average of 4-5 years in the wild.

The next size owl in Arizona is the Flammulated Owl. Barely 7 inches tall with small ear tufts, this secretive little owl can live as long as 7-8 years. Another insect eater, the Flammulated Owl is under extreme pressure due to habitat loss.

Moving up the size chart, next we find the Ferruginous Pygmy Owl. One of only a few diurnal owls in Arizona, this owl lives in mesquite woodlands, and along with insects, it will eat small mammals and songbirds. Its habitat is also shrinking disturbingly.

The Northern Pygmy Owl is another mostly diurnal owl but can be crepuscular at times. Their population has

actually increased in recent years. Larger, but not by much, is the Saw-whet Owl. Sporting a pronounced facial disc and possibly the most asymmetrically placed ears of any owl in North America, the Saw-whet is one of the most common owls in forests to the north. Their preferred food is small mammals, but they will also hunt larger insects and small birds.

Western Screech Owls are almost miniature versions of the Great Horned Owl, only 8 inches tall. They are nocturnal but appear quite tolerant of human presence and activity. This might be why their population is apparently stable - for now.

Another diurnal denizen of the desert is the Burrowing Owl. Once common over a large part of the country, they would appropriate the burrows dug by prairie dogs and live with them in relative harmony. The openings to their burrows are often decorated with different material, including mammal dung, possibly to camouflage the scent of their own presence. The young Burrowing Owls mimic the sound of rattlesnakes to deter aggressors.

Moving into the medium sized birds, we find the Long-eared Owl. Secretive, with prominent ear tufts, this strictly nocturnal owl is found most often in thick forests but will hunt in open areas such as prairies and farmland. Because of deforestation and loss of riparian habitats, their numbers are declining.

The next owl we come to is the Short-eared Owl. This is another of the diurnal/crepuscular birds that has barely discernable ear tufts and bright yellow eyes. Its flight is a mixture of flaps and glides that is described as

moth-like as it hunts small rodents. A long, slow decline in population has it listed as either endangered, threatened, or of special concern in many states.

The Spotted Owl is one of the best known but least often seen owls in Arizona. A bona-fide endangered species, what we see here in upper-elevation forests in southern Arizona is often considered a subspecies but is also threatened throughout its habitat. Their main diet consists of small to medium sized mammals like squirrels, rats, and gophers.

The only *Tytonid* owl in Arizona is the Common Barn Owl. A beautiful bird with lots of white feathers with grey and amber splashes on the back and poppy-seed dots decorating its body and wings, the Barn Owl is one of the premier mousers on the planet. Ornithologist, Paul Johnsgard, estimated that one Barn Owl might eat 11,000 mice in a 10-year life span. They are strictly nocturnal and can have as many as six babies in a clutch.

The largest owl in Arizona is also the strongest and longest-lived owl in North America. The Great Horned Owl is found in almost every habitat, from the Arctic Circle to the Caribbean. Mainly crepuscular, the Great Horned Owl is sometimes called "The Tiger of the Sky" and can kill prey as large as a raccoon or a badger.

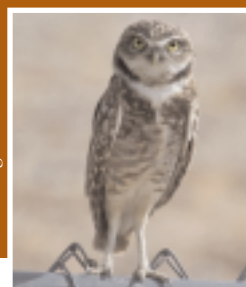
Over the past 28 years, we have seen nearly all of these owls come to Liberty Wildlife for medical care and rehabilitation at one time or another. Understanding these birds can help us learn to live with this fascinating and beneficial family of birds in whose backyard we have chosen to live.



Elf Owl



Flammulated Owl



Burrowing Owl



Saw-whet Owl



# What is R&C, anyway?

by Nina Grimaldi

The day always starts early, but with optimism we go out to meet the crew. It is spring, and another nest has been spotted on a power pole. This time it is a Red-tailed Hawk nest. When we get to the site, we watch the pair closely. They appear to be feeding their babies in the nest. Birds are amazing parents. The only problem is that in this case they built their nest on top



*Nest relocation*

of a transformer. The adjacent pole is safer and is a perfect place for a nest platform. The crew goes to work attaching the platform and then moves over to the nest. The parents retreat to a safe position where they can watch the action and voice their opposition. Slowly the babies are removed and brought down to us. We feed the babies and give them fluids if necessary. Next the crew moves the nest to the new nest platform. The parents are still circling, often screaming at us. Once the nest is secured, the crew places the babies back in the nest. Then it's a mad dash to clear out and wait. We wait and watch. The parents hear their babies, but the nest is in a different place. They are cautious, but slowly they make their way over to the nest. Success! We have managed to save the entire nest from electrical harm, and we have kept the family together. We always hope that the parents will return to the nest, but had they not returned, we would have retrieved the babies and raised them at Liberty Wildlife. "We" are the R&C Department, and "the crew" is usually an APS or SRP crew. You might be wondering what the R&C depart-

ment is. The term is tossed around Liberty Wildlife quite often, however most people are unclear who or what it means. R&C is Liberty Wildlife's Research and Conservation Department. This small department is made up of several biologists who are available to assist wildlife when conflict between nature and humans happens. We work with utility companies, construction companies, environmental consultants, and state agencies. We do nest relocations, we create artificial habitats for wildlife such as Burrowing Owls, and we conduct field investigations to determine the cause of injury or death, just to name a few.

We work very closely with APS and SRP. Both companies have an Avian Protection Plan that manages the coexistence of power facilities and wildlife. The programs are in place to benefit all birds, but an emphasis is placed on raptors such as hawks, owls and other large birds. This is because their wingspans are large, and they encounter more problems with power lines. Both APS and SRP have worked hard to develop devices that help protect birds from electric shock. These devices include insulated wires, plastic caps called raptor guards for transformers, bushings and lightning arresters. They also have T-Perches that they place on poles. Since most birds like to land on the highest possible point, these perches provide a safe place to land. Perhaps the most unique device that the two companies have created is the nest platform mentioned in the above story. Birds tend to build their nests in high places, and unfortunately this often ends up being a utility pole. They unknowingly build their nests on transformers, capacitor banks, and other dangerous places. The nest platforms can usually be attached to a nearby pole in a safer location, and the nests can be relocated to the platforms.

The R&C Department is dedicated to responding to any challenge pertaining to native wildlife. Our goal is to develop and maintain a successful cohabitation between our ever expanding urban landscape and the wildlife that lived here long before us.



*"Our goal is to develop and maintain a successful cohabitation between our ever expanding urban landscape and the wildlife that lived here long before us."*



*Creation of Burrowing Owl habitat*

# LIBERTY WILDLIFE CATALOG



■ **A - Sandhill Crane Tee**  
Gildan 100% Cotton in Navy  
Adult Sizes S, M, L, XL, XXL  
\$14



■ **B - Frankie Blue Eyes Tee**  
Gildan 100% Ultra Cotton in  
Slate Blue  
Adult Sizes S, M, L, XL, XXL  
\$14



■ **C - Sandhill Crane Long Sleeve Men's Tee** Hanes Tagless 6.1 oz Preshrunk 100% Cotton in White  
\$18 - Men's Sizes S, M, L, XL  
\$20 - Men's Size XXL

■ **D - Sandhill Crane Long Sleeve Women's Tee** (not shown)  
Bella Baby Rib Knit, Contour Fit  
Preshrunk 100% Combed  
Ring-Spun Cotton in White  
\$20 - Women's Sizes S, M, L



■ **E - Golden Eagle Tee**  
Gildan 100% Ring-Spun Cotton  
Softstyle Preshrunk Jersey Knit  
Color - Sand  
\$18 - Adult Sizes S, M, L, XL  
\$20 - Adult Size XXL



■ **F - Eagle X-ray Tee**  
Gildan 100% Cotton in Black  
Adult Sizes S, M, L, XL, XXL  
\$14



■ **G - Golden Eagle Sweatshirt**  
Hanes Crew Neck  
50% Cotton 50% Poly  
7.8 oz in Deep Red  
\$20 - Adult Sizes S, M, L, XL  
\$22 - Adult Size XXL



■ **H - Kid's Quail Tee**  
Gildan 100% Preshrunk Cotton  
6.1 oz in Turquoise  
Youth sizes S, M, L  
\$12



■ **I, J - Baseball Cap**  
With big brim and embroidered  
logo  
I - Desert Sand (shown), J - Khaki  
\$15



■ **K, L - Visor**  
Comfortable cotton visor with  
embroidered logo - Adjustable  
K - Desert Sand, L - Blue (shown)  
\$15



■ **M - Great Horned Owl Tote Bag** for your green shopping.  
Black canvas with gorgeous image  
and Liberty Wildlife name and logo.  
Made in the USA  
\$15





■ **N - Liberty Wildlife Charity Charm**  
This beautiful sterling silver charm of the Liberty Wildlife logo comes with black cording for necklaces or clips on charm bracelets. Gift boxed for \$50.



Sponsor a Liberty Wildlife education animal through our AWE Program. You receive a tour of the facility and get to meet your animal, as well as receive a beautiful full color book full of photos and facts on that animal and its species.

Sponsorships are offered for most education animals at varying levels of support. Visit [www.libertywildlife.org](http://www.libertywildlife.org) and click on the "How Can I Help" link for more information.

Orders can be mailed or faxed to Liberty Wildlife,  
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Scottsdale, AZ 85267

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# Join or renew!

It is with your help that Liberty Wildlife has furthered wildlife conservation through quality rehabilitation, education, and consultation services. Because of your support and your interest in aiding wildlife, we hope that we can count on you to help us continue these programs.

Maybe it's a good time to add a gift membership for a friend - or maybe raise your own membership level.

Fledgling level members will receive the *WingBeats* newsletter electronically. Naturalists and above will receive a paper copy of *WingBeats* unless requested otherwise.

Cut along the dotted line and mail with check to: P.O. Box 14345  
Scottsdale, AZ 85267

## Annual Membership

- ☐ **\$25 Fledgling**  
Supports the orphan care program
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Provides funding for medical supplies for wildlife in our care
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☐ Contact me about volunteering

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Baby Herons  
Photo by Barb Del'Ve

