## Small Things

"Oftentimes, we have no reason to think there's a problem until well after the damage is both obvious and done." Story by Gregory H. Martin Page 8

Philanthropy is the key piece of the puzzle 3

Check out

Everything that happens at Liberty Wildlife depends upon support from the community Page 5

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A publication of Liberty Wildlife



Like many of you, I have spent a good part of the COVID-19 lock down doing jigsaw puzzles. It has made me keenly aware of the importance of each puzzle piece with its idiosyncratic shape that purposely meshes with its neighbors to provide an essential element of the whole picture. It is so satisfying to be able to find that most irregular piece and slide it

into a nest of somewhat similar pieces filling the empty space...and voila... the whole picture emerges. Occasionally, a piece gets loose and falls prey to the vacuum cleaner or the dog's disdain and vanishes forever leaving a gaping hole in the whole. That

bothers me to no end. The lack of connection destroys the whole picture and pretty much ruins the experience. I can't get past it.

When I ponder this, as I am want to do, I see it as a terrifying metaphor for a disconnected world. Our world is a mesh of systems that have evolved since forever to work together. Like the lyrics from the song, *Dry Bones*, "The shin bone's connected to the knee bone, the knee bone's connected to the thigh bone," etc., the systems can go into a tail spin if a piece is missing. And, yep, that impacts everything else.

Our current battle with COVID-19 is an ugly reminder of what can happen very quickly if even a tiny little virus can spread virtually unseen across the globe, killing and crippling in its path, leaving hospitals to fill, businesses to fail, jobs to flounder, families to fracture, and life as we know it to change fundamentally. Yes, we will survive it, but how long will it take to get the systems we depend on up and running again, and what will our

new normal look like? Who will know how to fill the holes to regain connectivity in what remains? Will they? "The thigh bone is connected to the hip bone."

This issue of WingBeats spotlights the importance of nature and its parts relative to the whole.

As Madison Taylor, in her article, "*Connection*," writes, "One of the many gifts that nature offers us is a clear demonstration of the interdependence between all living things. The person who exhales the carbon dioxide, the clouds that produce the rain, the sun that gives light, the leaf that transforms all these things into sustenance for a tree—not one of these could survive without being part of this cycle."

"Each living being is dependent upon other living things for its survival. When we look at the world, we see that this is not a place where different beings survive independently of one another. Earth is home to a web of living things that are connected to each other through a spinning kaleidoscope of relationships. We need each other to survive and thrive."

Our pollinators, many of whom are in trouble, are necessary for our survival. These "Guardians of our Gardens" make it possible for us to have food on our tables as they carry out their mighty and critical jobs. Many of our daily problems can be innovatively solved by mimicking the cleverness of nature through the study of biomimicry. Assuming your role as a supporter of the planet, you can choose to help an injured animal; you can clean up a park from hazardous fishing line; you can support philanthropy and make it possible for a non-profit to carry out its mission. All of these pieces are parts of the puzzle that help keep the systems we depend on strong and functioning.

Look around for the absences in the fabric of things and when you find what is lacking, do what you can to supply the missing puzzle piece. Safeguard all of the systems as they are each a critical part of the whole.

"The hip bone's connected to the back bone..."

MegarMosby

Megan Mosby Executive Director

Each living being is dependent upon other living things for its survival.

## **Liberty Wildlife's** Wishes for Wildlife



## A Virtual Event...Wishes for Wildlife 2020

In 2020 we celebrate our annual signature event with a bit of talloween flair, and in a virtual setting. On October 24th our annual "Wishes for Wildlife" will be an online program streaming live from the Rob & Melani Walton Campus of Liberty Wildlife.

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Invitation (left): Wishes for Wildlife 2020 by Barb Del'Ve

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White-breasted nuthatch Photo by Christie Van Cleve



## A friend to Liberty Wildlife

We used to easily spend over \$2,500 a year on fresh groceries...lettuce, fruit, vegetables, and the kind of foods that must be bought regularly and not necessarily in season because the critters need it to stay healthy and heal. It can be costly. But in July 2019 that all changed. Enter the Sprouts on Gilbert and Brown Roads and our emissary of fresh goods, Robert Coonrod. Rather than throw out food that was ready to leave the shelf and never to see the inside of a home, Robert approached the folks at his Sprouts and worked out a deal. Once a week he would show up with his van and load in all of the unwanted and otherwise unusable fruits and vegetables, nuts, breads, and a few other treasures like salads and other out of date items that were soon to be sent to the compost bin. We have need for these items. The store can't use them. People won't buy them. So, Sprouts gets rid of their excess, and we have more room in our budget...a win-win situation.

On every Thursday, Robert shows up in his very handy van and loads in the "throw-aways" that were placed in the determined spot. All loaded up, he travels to Liberty Wildlife to then unload it and share the wealth with the commissary crew. What we can't use we pass on to the other animal nonprofits that can also use these kinds of recycled goods.

Lest you think that humans should be getting these things first...that is also done prior to our distribution. There are items that aren't long lived enough to go to a food pantry, and they are past their prime for human consumption. A huge shout out goes to the generous folks at Sprouts at 1933 E. Brown Rd, Mesa. We are better able to fulfill our mission with the help of wonderful people like them.



Robert Coonrod, a Liberty Wildlife volunteer, transports food donations from Sprouts.

# **Community Support** is the **Biggest Piece of the Puzzle**

Each piece is related. Each piece meaningless without the others.

Your gift is a

critical piece

of the puzzle.

Your support

matters.

#### by Chris Sar, Development Consultant

Everything that happens at Liberty Wildlife depends upon support from the community. Each day's operation relies on the continual care of dedicated volunteers.

And those volunteers can only provide that care when there is sufficient food

and resources to nurture this wildlife. And that relies upon financial support from dedicated friends in the community who make contributions. Those donations help feed the animals in our care. They help maintain the enclosures. They help make sure educational supplies are ready for each and every school child and sum-

mer camper that comes to learn more about nature and living in harmony with wildlife. Through winter, the busy spring, through the long hot summer, these donations help "keep the lights on" so to speak.

This spring when we had to restrict public hour access to our campus, we turned to our community of supporters. And you stepped up, yet again. In just a few weeks, our friends responded with gifts of \$25 or \$50 or \$100, or even more, to support the burgeoning population of orphaned wildlife that were brought to our intake window. We placed certificates with the names of each of these supporters opposite the door to our orphan care room. And soon it became like wallpaper, lining the entire hallway.

Individuals are the biggest single source of support for the services provided at Liberty Wildlife. Gifts both large and small. Some people give once per year. Others give monthly. Each gift provides hope and care for the next animal dropped off at the intake window. Each gift provides education to the next child who will become a champion of wildlife in our community.

Your gift is a critical piece of the puzzle. Your support matters. Thank you.

### Where do Charitable Gifts Fit into Your Financial Plan?

Liberty Wildlife is important to you. But have you made formal plans for how you will support charitable organizations like Liberty Wildlife over time? There are many pieces of the financial puzzle to consider. You

must factor in your own needs in retirement. And consider what you'd like to be able to give to loved ones (college savings for kids or grandkids). What about after you are gone? Do want to leave a "legacy" for family or for charity in your will or estate plan? Is there a family busi-

ness interest you need to consider? What about insurance policies? How are retirement plans treated if they are not taken as income by you personally?

For many of us these questions seem intimidating, if not overwhelming. But there is help. Many financial and legal professionals work with Liberty Wildlife and other charities to help guide you through some of these tricky issues. And some solutions are straightforward.

#### **Retirement Plans**

Here are some quick tips for ways to give a meaningful gift to Liberty Wildlife if you have a large retirement plan. For individuals over the age of 70½ years who have a qualified retirement plan, you may be familiar with what's called a Required Minimum Distribution from your retirement plan. This is money that you deferred as income in order to invest and save for later. New legislation waived the required distribution this year. But we don't know if that will be renewed, and regardless, some people in this age group may still be working, or may have other income, and taking a distribution from their IRA or 401k will count as additional income that they owe taxes on.

There is a tax law that allows you to have your plan administrator gift a distribution directly to a charity like Liberty

#### **Community Support**

continued page 34



Melinda Miller and Kathleen Scott, Orphan Care co-coordinators, stand in front of the wall of donation certificates.

# Are YOU that person...

#### by Claudia Kirscher, Contributing Author

"Never doubt that a small group of thoughtful committed citizens can change the world; indeed, it's the only thing that ever has."

- Margaret Mead

While standing at the front of a school classroom with a red-tailed hawk on my arm, I look around the room making eye contact with the audience, looking for that spark that flashes as someone gazes in interest and awe at this avian denizen of nature. Aha! Almost as though a light switch has been turned on, one by one the spark flashes around the room, it's almost a physical jolt



Students learn the value of wetlands during a field trip to Liberty Wildlife – photo by Laura Hackett

when it happens. After class, those students will come up closer hoping to make eye contact with the bird, a palpable connection has been made!

Part of the mission of the Liberty Wildlife Education Team is to foster connectivity of our world to nature through education, teaching the public and future generations about wildlife. not only the inherent beauty of wildlife but the benefits, challenges, and threats to those creatures who share the planet with us. Whether it is a Desert Botanical Gardens or Verde Canyon Railroad booth, a school classroom, an online Zoom program, an animal rescue, or our intake window, every time we interact with the public is an education opportunity.

Those sparks of education are like fingers, rivers spreading out, running in different directions, hopefully with the end goal of connecting that person to nature, showing that one person at a time can help change our personal small world and that our spark can connect to another and then another.

We are often rewarded with unexpected surprises – a young girl painting owl rocks as a fund raiser, school-sponsored in-kind donation drives, trash pick-up projects, and injured animals brought from far-flung locations. We see neighborhoods banning rat poisons that kill not only wildlife but our pets, declining use of sticky traps as well as declines in indiscriminate shooting of wildlife.



Two public hours visitors enjoy learning the message of Education Ambassadors, Cheese and Quackers.

Yes, one person, one bird, one snake, one tortoise, one coati, or one condor can shake up and change our world.

"Change will not come if we wait for some other person, or if we wait for some other time. We are the ones we've been waiting for. We are the change that we seek."

- Barack Obama

Are YOU that person?



## **Diversity in Desert Shelters**

#### by Gail Cochrane, Contributing Author

nimals must wonder at our elaborate homes. Wildlife shelters from extreme elements with simpler techniques, utilizing materials on hand or borrowed from others. Whether it's a hummingbird borrowing silk from a spider to bind together her cunning nest, or a gopher snake finding shade in a burrow dug by a fox, desert homes illustrate a tightly woven web of interdependence.

Birds construct homes to protect their eggs and young, utilizing mostly plant materials found nearby. During nesting season, you might see birds carrying twigs, stems, grasses, rootlets, or strips of bark. Plant fibers of every kind, as well as animal fur and spider webs, are used in efficient and often beautiful nest designs. Cavity nesters make use of the entire plant. A cavity nest in a saguaro cactus is a cool, safe and humid space to incubate eggs and keep young safe. Other species will borrow time in the cactus condo as these cavity homes are prime real estate.

Enterprising bird species, such as the phainopepla, find resources in the parasitic mistletoe. This bird comes to the desert to feast on the berries of mistletoe. The phainopepla usually builds its nest within the mistletoe as well. The hatchlings grow up with ample shade and protection from predators. Mistletoe depends on nutrients and water from its host tree. As the bird needs mistletoe, mistletoe needs the tree. To round out the beneficial relationship, phainopeplas spread mistletoe seeds onto the branches of many other trees, helping mistletoe move about.

Industrious cactus wrens work steadily on sheltering nests. These lifelong partners build nests for their eggs and hatchlings as well as roosting nests for themselves. While the female sits on the eggs, the male weaves another roosting nest for the new fledglings. For security, cactus wrens' football shaped nests are often constructed within the dense thorns of a sprawling cactus. The nest itself is completely enclosed for shade and protection. The entrance hole leads to a short tunnel, which in turn leads to the main nest chamber. When the wrens move on, other birds come to borrow abandoned nest materials.

Then there are the burrowing builders. Harris's antelope squirrels actively forage throughout the day, even in summer. They need a protective retreat, so they dig multiple holes leading to an underground den. When overheated from foraging, the squirrel heads inside to lay spread eagle on the damp earth, allowing the heat to ebb from his body. If a vacancy comes up, snakes, lizards and spiders are potential new residents. None of these critters have what it takes to dig a burrow!

Pack rats construct impressive homes from items they find: sticks, stones, and cactus pads. Usually placed at the base of a prickly pear or other spiny cactus, the large mound covers an underground maze of chambers that leads to a cozy



Top: cactus wren on spiny cactus Bottom: Harris's antelope squirrel burrow

Desert Shelters...continued on page 24

all Things by Gregory H. Martin, Contributing Author

### "Does the flap of a butterfly's wings in Brazil set off a tornado in Texas?"

MIT professor Edward Lorenz coined this famous idea at a scientific symposium: that tiny variances can have outsized, and often long-reaching, effects.<sup>1</sup> Our fully globalized, completely integrated, and ever-changing world is proof of this principle, whether we appreciate it or not. Every action we take, no matter how mundane or miniscule-what we buy, what we do, how we proceed with our daily lives-affects our ecosystem in myriad ways. We're often unaware of the damage being done, let alone the sometimes-obscure chain of events that got us there. Regal horned lizard populations are plummeting, for instance, not because of predation, or hunting, or even habitat destruction, but because of a poison never intended for lizards at all. It's unlikely that the scientists who developed the pesticides which kill ants (ants that the lizards rely on for food) consciously saw themselves as the nightmarish scourge of desert-dwelling reptiles. Yet the regal horned lizard is dying nonetheless.

The inherent connectivity of our world means that the actions of individuals, corporations, countries, and everything in between each have the possibility to bring about a cascade effect, for good or ill. Remember that it was a single shot fired for a localized cause which killed Franz Ferdinand and ushered in World War I and all that followed (including World War II). Your decision on whether to use humane traps or poison when dealing with your rodent problem may not start a global conflict, but one of them has ramifications beyond what you might think.

After all, something eats the rats.

The opaqueness of decision-making and the potentially colossal impact even small, personalized choices can make are on display in 2020 like never before. Of all the things that might have happened at the start of this new decade, who would have made the bold prediction that an innocuous virus on the far side of the map would make the leap from animal to human and help to set the world ablaze? The disparities in COVID-19's impact across varying regions of the planet offer a sober testament to both the vagaries of chance and the tangible effect that individual choices can have on the collective whole. Some things in life (like the mutation of a novel virus to make it transmissible to humans) are beyond our control. Others (like widespread habitat destruction and ever-accelerating planetary warming) require actions bigger than any single citizen. But the fact remains that even in global crises, we still leave a footprint. We are a connected species living on a connected planet. It's well worth pausing to consider how what we do affects the world around us.

 ${}^{1} https://www.americanscientist.org/article/understanding-the-butterfly-effect$ 

### Small Things... continued page 24

"We are a connected species living on a connected planet. It's well worth pausing to consider how what we do affects the world around us."



### A ribbon through the desert, the Rio Salado puts nature at our backdoor.

We humans are inextricably linked to nature and will even unknowingly search for this connection. Look at real estate prices in small to mid-sized cities across the West and see the pattern of urban flight – those with the means, or the imagination or desire to do so are fleeing big city life. Despite the fact that modern urbanites may be completely insulated from nature, deep down we all crave that very contact.

Not many can actually move to rural areas, and luckily, we don't need to. Even in the heart of the city, even in hectic time frames created by work, freeway commutes and caring for others, nature can be found.

I walk my dog in the early morning when darkness blots out daytime awareness.

Stars glimmer overhead and occasionally shoot sideways across the horizon. The lovely, luminous moon presides on the best of the mornings, casting her soft light and creating her shadows. Orion strides ever-confident across the inky dome, while the Big Dipper hangs motionless. Sometimes, in the early hours, I see coyotes trotting along – carefree, and could they be laughing? Owls converse in hoots from the rocky hills, treetops and even rooftops.

On the drive to work sunrise happens. Moisture in the air this time of year creates spectacular sunrises. Good morning Sun Father. I try to remember to consciously note the sunrise and

to feel gratitude for the sun's warmth and its importance to life.

I watch for the different birds that frequent my place of work versus where I live, and I try to notice distinctive behaviors at various times of year. The soft dirt where I walk between buildings shows silent clues of wild passings. Lizards, butterflies, hummingbirds scurry, flutter and hover; so many lives unfolding in our midst. A pile of pigeon feathers speaks eloquently of cycles of life. Glimpses of a cotton-tailed rabbit, hopping to a hiding place brightens my day. Quail families foraging in my backyard provide a window into the workings of a feathered commune.

At a gritty, intercity intersection two zone-tailed hawks circle lazily above the fray. I pull over to watch these rare visitors soar. In the suburbs, a shaggy mesquite tree overfed on irrigation has grown to prodigious size, despite drastic pruning that has scarred its hide. Even the darn ants, ever searching for ways into our pantry and the sugar bowl, are evidence of the living world that underpins our lives.

When you can't escape the city, know that by fine tuning your awareness you truly can connect to the beauty of nature all around you.

> Top: Rio Salado near Liberty Wildlife – photo by Barb Del'Ve Inset top right: zone-tailed hawk – photo by Christie Van Cleve

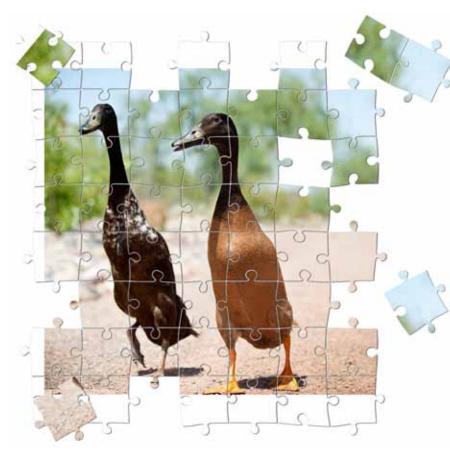
## Sustainable Messages

"In addition to our water catchment system, our solar panels, xeriscaping, etc., we have added a couple of new practices and messages."

At Liberty Wildlife, we strive to be sustainable and to broadcast a sustainable message. If you have visited us, you have seen our LEED Platinum building with many features that help lessen our footprint and encourage economic and environmental sustainability.

In addition to our water catchment system, our solar panels, xeriscaping, etc., we have added a couple of new practices and messages. The first is the introduction in our open hours programming of our Indian runner ducks (*top right photo*). The fact that they are cute and entertaining is one thing... their message is another. Being brought in for rehabilitation because they could not fly was a mistake, because they are RUNNER ducks, and they don't fly. But, what they are really good at is eating pests. In other countries, they are used to keep the crop pests at bay without the need for disastrous pesticides. To add to their environmental benefit, they also fertilize as they run through the fields. When you add their prolific egg laying capability, Indian runner ducks definitely earn their keep. Since they are non-native to the U.S., we were not able to release them.

In addition to the ducks, we have landscapers that specialize in weed control. With 6½ acres to maintain, desert landscaping or not, weeds grow shamelessly. We now have a small herd of goats who love to do the weed patrol...at least six hours a day! The herd consists of two LaMancha goats named Marshmallow and Hershey, one Alpine goat named Kaluha, a pygmy Nigerian goat named Cannoli, and two LaMancha Nubian crosses named Cookie and Oreo. (*Photo on right*)



The herd also provides its own fertilizing help if a human is willing to follow after them with a broom.

And, just to add to the mix, goat antics are amusing.

The next time you visit us you may get to meet the ducks and the goats to get a close-up and entertaining view of natural pest and weed control.

You can now add these actions to our stable of sustainable practices at Liberty Wildlife.



photo by Alex Stofk

"We have a duty to care for the environment."



#### by Megan Mosby

It is reptilian; scaly, cryptically colored with wicked looking spikey neck-ware jutting out threateningly. It enthusiastically scarfs down fleeing prey by the thousands. It appears and disappears terminator style in and out of its surroundings—right before your eyes.

No, it is neither Godzilla nor the Terminator—not even close. Although it appears to be the formidable predator in the area, looks can be deceiving.

The regal horned lizard, sometimes called a horny toad, is no movie star monster or wanna-be dragon. Rather, this docile denizen of the desert's defenses are not muscular or shredding as one would think by looking. An unsuspecting road runner or coyote would find this lizard delectable were it not for its nasty habit of shooting blood out of the corner of its eyes. As if that weren't horrifying enough, the blood is vile tasting sending the direct message that this little dude would taste really bad...move on Mr. Coyote.

So, he looks frightening, shoots blood from his eyes, is very hard to discern from the surrounding ground, can puff up and erect his spikey scales, and just act and appear to be baaaad. But, the good so outweighs the appearance of bad. Over 90% of the diet of the regal horned lizard is harvester ants, consuming up to 2,500 in one meal. That is a lot of ants, but it is nothing for him to accomplish. Nature has given him an extra large stomach to hold the numbers, as they are less nutritious requiring larger amounts to satisfy his needs.

Along with his other attributes, he can also bury himself half way into the sand. This has two major benefits for him. One, it makes it hard for a predator to get its jaws around his body to snatch him up and devour him. Two, it allows him to bury the bottom half of his body when it is cold outside. He has a nifty mechanism that allows blood to pool in the back of his head where it is warmed by the sun. The warm blood is circulated through the rest of his body keeping him warm on cold days.

Despite all of the natural defenses from predation, he has a designated threatened status. This a result of his inability to overcome the number of changes human beings have wrought on his environment. The need for a hot dry climate found in the Sonoran Desert Mountains is a favorite for the horned lizard and unfortunately, for him, it is also favored for human development. Habitat loss in addition to the rampant trapping by the pet trade are nails in the coffin. Added to that is the widespread use of pesticides, originally used to address the invasive fire ant problem, which is wiping out harvester ants, the mainstay of the regal horned lizard's diet....no 2,500 harvester ants a meal....no more regal horned lizard.

There are so many reasons to fix the increasing scarcity of the regal horned lizard. He has a pleasing personality. He doesn't bite or poison you. Ok, he does spit nasty tasting blood from his eyes, but you have to ask for trouble to get it. He has also gained more popularity in the field of biomimicry. He was selected by students in a biomimicry contest. By mimicking the hydrophilic hairs that cause capillary action on this reptile, moving water from his skin into his mouth, students created the Moist Brick. These affordable Moist Bricks collect moisture during the night utilizing them in the day for evaporative cooling in the buildings. This is a win-win benefit for the environment.

Ah! Beauty in nature—inspired innovation. God save the Regal Horned Lizard!

## **GSAHAT**







#### by Terry Stevens, Operations Director

Each year, we take in a large number of orphan Gambel's quail babies at the Liberty Wildlife intake window. For a little background, there are five species of quail in North America: Gambel's, California, Mountain, Scaled, and Montezuma, but in Arizona, people are most familiar with the Gambel's variety. The proper scientific name is *Callipepla gambelii*, a small grounddwelling bird in the New World quail family named in honor of William Gambel, a 19th century naturalist and explorer of the Southwestern United States.

Gambel's quail are gregarious birds that live in a group called a "covey" of ten to thirty quail, consisiting of several generations of joined families. Males and females both sport a bobbing black topknot of feathers. The male has a chestnut colored "cap," he sports a distinctive black face with white "headband" and white "throat strap" with a large black patch on his underside. Each covey includes a "sentinel quail." This member of the covey, usually a male, will sit on roofs, trees or poles as a vantage point above the feeding family. His only job is to watch for approaching dangers, and when a threat is seen, the sentinel will call to the group, which then quickly moves to a place of cover. This is important to a bird species that is ill equipped for extended flight and spends the greater portion of its life on the ground.

Quail chicks are "precocial" meaning they come out of the egg looking much like miniature versions of the adults, able to walk and feed themselves from the first day out of the egg. Other birds such as robins, mockingbirds, doves, finches, and most "backyard" birds are "altricial" (photo next page) which means the babies hatch out of the egg with huge unopened eyes, devoid of feathers, and who can barely hold their heads up except to beg for food, totally dependent on their parents who will feed and protect them until they can fly and find their own food.

In spring the quail eggs are laid in a shallow nest on the ground in a protected area under bushes, in flower pots, etc. Clutches are usually 8 to 18 light tan or ivory eggs with dark brown splotches. The hen lays an egg a day or every other day, but does not

## Gambel's quail continued



start sitting on the nest until all the eggs are laid. This technique ensures that all the eggs start the incubation period at the same time and hatch within a few hours of each other. Once the entire clutch is complete, she will sit on the nest continually, keeping the temperature of the eggs between 99 and 100 degrees, turning the eggs a number of times a day, only coming off the nest

long enough to eat, drink, and dust bath. The incubation period is 21 to 23 days. Quail pairs generally mate for life and if the female is killed, the male will often make a valiant and often successful effort to sit on the eggs, finish the hatching process and raise the chicks. When the parents feel that all the eggs that will hatch have done so, they take the chicks away and find cover for them to begin foraging for food. If any chicks are unlucky enough to hatch late, or cannot follow,

they are left behind. If you find one lone quail chick, he's probably one of these "late arrivals" wondering where the rest of the family went.

The chicks follow the parents closely as they scratch the ground trying to uncover seeds and insects, with insects and small green plants comprising the largest part of their diet. Being ground dwellers, the tiny chicks are easy prey for larger birds and mammals of all sizes. This probably led to the evolutionary development of "sentinel" behavior.

Gambel's quail generally have a life expectancy of five years or less with the greatest mortality occurring the first year as in most birds. The cooperative nature of their social structure probably contributes to their survival as a ground-dwelling prey species in a harsh environment such as the Sonoran Desert.

Photo this page: Altricial baby bird

Photos prior page: Top: adult male "sentinel" Top left - adult female Gambel's quail Middle left – adult male Gambel's quail Bottom left – covey of quail Photos by Terry Stevens



## **Orphan Care**

The Year of the Phoebe by Melinda Miller and Kathleen Scott

Orphan Care Co-Coordinators

For our Orphan Care Department, this has been the year of the Say's phoebe. In previous years, we would rehabilitate maybe five phoebes in a season. But halfway through this year's busy season we have already seen three times that many. Favorable environmental factors may account for why they've been having such a good breeding season. Say's One possibility is that it may have been a good season for available for the Say's phoebe. With more food, Say's phoebes are able to feed more babies.

It's always interesting to see certain species emerge and be year, we have seen more birds that are not typically associmetro area and others driven some distance to our facility. Some examples of the more unusual birds this year have crowned sparrow, and acorn woodpecker. We also have a young bird brought to us from Prescott, Arizona, which we guess! There's been some debate as to what it is, so we will just have to wait and see.

**Orphan Care**...continued page 17

Phoebe – photo by Barb Del'Ve



#### by Mare VanDyke, NEFR Assistant

The Liberty Wildlife Non-Eagle Feather Repository continues to support Native American cultures by providing feathers to tribal members for personal ceremonial use. In late 2019, we filled an application for a great horned owl from Travis Rhatigan of the Seneca-Cayuga Tribe in Oklahoma.

We were honored to receive feedback from Rhatigan, who is a Child Welfare Specialist with the Oklahoma Department of Human Services and creates fans for Native youth in the program. The goal of his agency's adoption service for Native American children is to keep them and parents connected to their culture and communities.

In a description of how the program works to get a child adopted back into his/her Native tribe, Rhatigan said, "What we have tried to do is support permanency for a child in whatever way they find it; returning home, adoption, guardianship, whatever it may be. I provide fans and rattles as a way to keep the child connected to their culture."

Fans are a part of Native American heritage steeped in tradition and fundamental beliefs. They can be a symbol of connection to a specific Tribe or Nation, or represent a clan or house. It is said that fans serve as a gift that can heal the heart. It is believed by many Tribal Nations that a fan has considerable healing power and will dispatch a prayer to the heavens. They also epitomize a beautiful symbol of rebirth and a fresh start.

When asked if there is a specific reason for using a certain species when creating fans, Rhatigan added, "Since obtaining feathers for this type of use is so limited, we speak to the child to see what color and size they prefer, along with if they would like a rattle or fan."

We received this photo (right) of how the great horned owl feathers were used along with a note of appreciation from Travis Rhatigan (below).

"I wanted to share with you another Fan that will be given to a Child at her adoption. This Native American Fan is a small symbol that will be given to a Native American Child as she finds permanence. Thank you for the service you provide in helping people stay connected to their Culture and Communities. Nya: Weh (Thank You) for all you do for our kids." In 2019, the Non-Eagle Feather Repository at Liberty Wildlife filled over 445 orders, shipping feathers to 100 different tribes in 29 states. As we continue our national efforts, we take time to reflect on the significant role that feathers of protected birds play in supporting Native American cultures.



## **Biomimicry**:

## Nature Inspired Innovations



#### by Natasha Loving, Contributing Author

The shape of a maple seed. The mounds of termites. The call of a dolphin. What connects these seemingly disparate things? The very human need to figure things out. Humans are problem solvers. Whether it's figuring out the best way to pack a suitcase or calculating how to put a person on Mars, we've spent our brief time on Earth constantly asking and answering questions. As we continue this quest of design and exploration, it has become more and more evident that some long-sought answers have been hiding in plain sight. They've been hiding in the trees and under the earth, in the rivers and on the mountains. The emerging field of biomimicry aims to uncover these answers.

Biomimicry, sometimes referred to as biomimetics, is the practice of imitating and learning from the systems and processes found in nature in order to solve complex human problems. It is rooted in the idea that, while humans are excellent innovators, nature has already spent billions of years solving our greatest engineering problems. From sustainable architecture to self-healing, drought tolerance to solar energy, the natural world has on display countless examples of structures and materials designed and refined by a geological lifetime of natural selection. It is then the responsibility of people to examine and understand how these engineering marvels work and how they may be applied to the never-ending reimagining of human civilization.

You might think yourself unfamiliar with the world of biomimicry, but the truth is



that nature has inspired a great deal of familiar technologies. The engineers of Japan's bullet trains were faced with the issue of massive "thunderclaps" whenever the trains entered tunnels and displaced the air inside. The engineers remodeled the nose of the train after the beak of the kingfisher (photo above) and created a quieter and more efficient vehicle. The bumps, or tubercles, along the edge of a whale's fin inspired the serrated edge of wind turbines. This blade design makes the turbines far more effective. The superhydrophobicity of the lotus leaf repels water and allows the plant to self-clean. Engineers have mimicked the plant's system to create sealants that can repel any number of materials. It's not just the showy and spectacular feats either: George de Mestral invented Velcro after noticing how burdock seeds clung to his clothing after his walks. Whether it's learning to hunt or mastering flight, it's clear that humans have always looked toward the

natural world for answers to questions of every magnitude. It's only now that we are making a conscious effort to look a little closer and listen a little harder.

At its simplest, biomimicry is simply the examination and imitation of biological structures and systems. Many argue, however, for a more nuanced and connected understanding of the practice. The Biomimicry Institute, a leading organization in the field, states that "biomimicry offers an empathetic, interconnected understanding of how life works and ultimately where we fit in" and that it is "about valuing nature for what we can learn, not what we can extract, harvest, or domesticate. In the process, we learn about ourselves, our purpose, and our connection to each other and our home on earth." The Institute posits that biomimicry is not the imitation of natural systems for human gain but rather a process by which we learn from and further integrate

ourselves into nature. The goal is not to copy elements of the environment for the benefit of only human life; it is to foster a stronger, mutualistic relationship between ourselves and the entirety of the natural world.

Ecosystems don't live on one-way streets. Ecosystems are, by definition, communities of living and nonliving components interacting with each other, linking and connecting as a system, to form cycles and flows that foster life itself. Modern day civilization often operates as though it is removed from these ecosystems. It is thought that by switching to greener forms of energy or by planting trees that we're servicing this separate world. In reality, we're servicing our own community. Biomimicry allows individuals to recognize this connection. It encourages people to view nature not as a victim in dire need of a savior but as a teacher and mentor from which they can learn how to efficiently and sustainably live. Biomimicry is founded on the idea that the challenges faced by people aren't that different from the challenges faced by organisms since the dawn of time. Biomimicry suggests that humans can find a meaningful place in the sustainable and regenerative cycle of nature. It notes that the natural world is generous, and that,

by taking a page out of nature's book, humans can forge a deeper connectivity to the environment.

In the past few years, the term "net zero" has become somewhat of a buzzword. It refers to a balance between produced and removed emissions. Essentially, the idea is to only put as much bad stuff into the world as we can take out. Biomimicry offers one step further: net positive. What if instead of just reaching zero impact by limiting the bad, we design systems that actively put good into the environment? What if we go beyond giving as much as we take? What if we give more? Biomimicry draws attention to how natural systems effectively operate, and natural systems don't stop at net zero. Life on this planet has not simply survived: it has thrived. Leaves don't stop at pulling carbon dioxide out of the air. They produce the oxygen that has fueled billions of years of life. Mesquite trees don't just provide homes for birds; they provide food for a variety of desert species, serve as nurse plants for young cacti, control soil erosion, and promote biodiversity. Worms don't live in the earth waiting for the day they're snatched up by a bird. They're vital to the decomposition of detritus and the continuation of the nutrient cycle. Current developments in

biomimicry, especially those in architecture and energy fields, are focusing on how to not only mimic natural systems but replicate and integrate natural connections. Janine Benyus, writer, cofounder of Biomimicry 3.8, and pioneer of modern biomimetics, asserts, "When the forest and the city are functionally indistinguishable, then we know we've reached sustainability." Biomimicry urges us to confront our own role in nature; it forces us to ask not only what we can learn but what we can provide. Nature is complex and connected and giving. Nothing serves one purpose, and nothing exists solely for itself.

People are working to integrate the facets of biomimicry into cleaner, better, and smarter designs that go beyond fixing the problems of today. Advancements in biomimicry have shaped how we perceive the natural world. It prompts immense appreciation for the incredible feats of engineering found in every corner of the planet, and it proves how much we have left to learn. Innovation is cornerstone of life itself. If people are to continue their quest for answers, it will be necessary to look towards to oldest problem-solvers. It is only when we realize that we're not so different from the place we call home will we be able to make it a better place.

## **Orphan Care**...continued from page 14

While the uncommon backyard birds are interesting to see in our facility, we value all birds. Orphan Care treats a baby dove with the same dedicated care that they would give to a Gila woodpecker. All backyard birds have their role in the ecosystem and are equally important to us.

We have taken in well over a thousand more animals than last year, which could explain why we are seeing more of the uncommon species. But where do all of these orphaned animals come from? One of the main reasons we get orphaned birds during the summer months is that they fall or, in extremely hot weather, jump out of their nests before they can fly properly. Once they're out, usually mom and dad will still take care of them until they can fly. If you see a baby and are unsure about whether or not they're actually orphaned, watch them for a while and see if a parent comes back with food. If mom and dad don't come back, or if the little one is injured or in imminent danger (lots of outside cats, close to the street, doesn't have a place to hide) bring them in to our intake window. We will raise them until they are ready to be released back into the wild!

> Photo: Horned lark by Barb Del'Ve







# WILDLIFE

<image><image>

Above:

Hepatic tanager – photo by Christie Van Cleve Big horn sheep – photo by Christie Van Cleve

Below: Bald eagle – photo by Christie Van Cleve Pied-billed grebe – photo by Matt VanWallene

#### Opposite page

clockwise from top left: Pyrrhuloxia – photo by Christie Van Cleve Female brown bear with her cub photo by Mike Ince Trogon – photo by Laura Pappagallo Ladderback woodpecker photo by Christie Van Cleve Spiny lizard – photo by J.P. Carter Cottontail – photo by Christie Van Cleve

















#### by Nathan Thrash, Public Outreach Coordinator

It's an early morning. You rise before the sun does and drive to your favorite spot. You sip your coffee and watch the sun rise slowly over the horizon. It's nice to get away every once in a while and immerse yourself in nature. As the early morning rays illuminate everything around you, you suddenly notice it. The beer cans. The plastic water bottles. The fishing line. The plastic bags. How did all this litter find its way to your favorite outdoor spot?

Everyone who frequents the outdoors has had these moments. Finding trash in the most unlikely places. It not only ruins the beauty of the world around you; it is dangerous for wildlife.

I really enjoy fishing. It's relaxing, almost meditative. But without fail, every time I go fishing, I see tangles of fishing line on the shore, discarded by some previous fisherman. Monofilament fishing line is not biodegradable. Once wildlife



becomes tangled in fishing line, it's often a death sentence. The fishing

Top: Milford Sound – photo by Nathan Thrash

Left: an x-ray of a turtle that has swallowed a fishing hook — medical photos by Terry Stevens

Right (above): a duck with fishing line wrapped around the bottom part is its bill

line can get wrapped around the legs, beaks, or wings of birds and act like a tourniquet, restricting blood flow. Birds can also become ensnared in trees, unable to escape because of the fishing line. Some birds will find fishing line and use it as nest material, occasionally resulting in the baby birds becoming ensnared. If the fishing line has a hook still attached, it's even worse. Fishing hooks can be swallowed by birds, reptiles and mammals, causing internal bleeding. A fishing hook in a bird or turtle's mouth will make it unable to eat, causing it to eventually starve to death.

But maybe you don't enjoy fishing. Maybe you're a hiker or a birder. Whatever your hobby, you will inevitably find plastic bags, cans, water bottles, or other discarded trash when you're out in nature. Discarded food and drink containers present a tempting treat to wildlife, but this temptation can often have devastating consequences. In the case of a plastic container, a small mammal or bird may think that they are getting a tasty treat, but end up eating some of the plastics, causing stomach or intestinal blockage. Or, they'll get caught in the plastics, impeding their movement. If you're a prey ani-

> mal, this means you're more likely to be eaten. If you're a predator, this means you won't be able to catch any prey. If the container is made of metal, the sharp edges can cut into wildlife and cause significant injuries.

So, what can we do about it? Well, obviously, you shouldn't litter. If you see someone you know littering, educate them on why it is bad. When you go out into nature, bring a small trash bag with you. That way, when you see litter, you can pack it out with you. Organize a trash pickup day along your favorite hiking trail. Try to consume less single-use containers, instead opting to use re-useable water bottles and grocery bags. Every little thing you can do helps, and wildlife will appreciate it.



#### by Max Bessler Eagle Handler Volunteer

Tuesday 5:00 a.m., time to feed the eagles. Food prep takes an hour to get their food weighed within approved amounts to keep them in top shape. With all ten servings in hand, I covertly approach the eagles. The three selfappointed bald eagle lookouts recognize me – the guy with the food. Each begins to bugle, culminating in a chorus of sounds that one biologist described as "a snickering laugh expressive of imbecile derision." I know what they are saying: Me First! Me First!

I begin with Paco, a bald eagle with a wing injury. Despite his mature appearance of a white head and tail, he is still working on his bugle. I laugh at his similarities to a teenager who hopes his voice will change soon. Then on to Maverick, another bald eagle. He meets me at the door pacing, waiting for his meal. I have to scoot him back in order to enter his enclosure. A typical bald eagle behavior, demonstrating he is alpha and I am not. Having placed his food on his perch, I move my gloved hand just in time to have him miss it as he grabs his food. On to Orion, a beautiful golden eagle with breathing issues due to the avian version of valley fever. He moves quietly to the side of his perch while I place his food near him. He never attacks his food as do the bald eagles. Returning to Paco and Maverick, I give each a shower. Paco appreciates it;

## **Eagle Handler**

A Morning in the Life of a Liberty Wildlife Eagle Handler

Maverick savors it, spreading his wings to absorb the cooling beaded water on his feathers. His wingspan amazes me.

Moving to Sazi, a golden eagle with one of the saddest injuries. Taken from the nest illegally and fed an incorrect diet, as she grew her bones could not support her weight. Her legs bowed making her incapable of hunting successfully. I feed her on the glove frustrated for her as she struggles to hold on to her food. Next is Cochise, an imprint who eats quietly. Laddie, one of the rowdy lookouts, is an alternating personality bald eagle – one day your friend, the next, not. She quickly devours her fish. Next up, Aurora, who takes the food ravenously. Sonora, the lead and most boisterous lookout, is next. She does not like waiting for her food and shows

it. Pulling my glove on as high as I can, I have her fly to the glove and secure her to it. Moving to the amphitheater, she flies to my glove for pieces of food. Returning to her enclosure, we begin a developed routine: entering her enclosure, I release her, she flies to her perch, then leaps to the ground and rushes me. She is testing to see if

she can intimidate me. If I jump back, she laughs derisively. When I remain in place, she disappointedly opts to jump in her pool.

Finally, Apache, our oldest eagle, with age-related sight difficulties. Despite limited vision, he knows I have food in the glove and takes small bites. If I am lucky today, he will eat. Most often, he prefers to preen for half an hour during which, I have been known to nap. Eventually, he will eat enough to keep in good health. After returning him to his enclosure. I start his shower while he stands in his water bowl. Then he begins his "butt dance" alternately dipping his head in the water, then his butt for the duration of the shower. On that happy note, my morning with Liberty Wildlife's eagles ends.



Top: Max Bessler and golden eagle Education Ambassador, Anasazi Bottom: Max gives bald eagle Education Ambassador, Maverick a shower Photos by Barb Del'Ve

## **Education** Staying Connected Virtually

by Laura Hackett, Education Coordinator



Left: Volunteers Doris Peterson and Laura Irving present Education Ambassadors during a Facebook Live program.

Below: Volunteer Sandi Novak introduces Education Ambassador Henry, a barn owl.

Photos by Laura Hackett



Liberty Wildlife's mission is more than just rehabilitating wildlife. We aim to educate Arizonans about the natural world around them and how to care for all of it. For over 30 years our Education volunteers have been trained on how to handle our animal ambassadors, ranging from stunning American kestrels to the grand golden and bald eagles. These particular animals cannot be returned to the wild due to various ailments, physical and mental, but our education program has given them a second job in life. By going to schools, community events and corporate meetings, people are able to witness the animals' beauty up close and therein, hopefully awaken an inspiration in themselves to help protect the species.

Then COVID-19 struck. Right at Spring Break. March and April are the end of our main education season and usually our busiest time for programs. It is also when visitors from around the country come to Arizona on vacation. School programs cancelled first, then large events. We tried to keep our doors open for our public open hours but then came the Governor's stav-at-home

order. We locked the doors and tried to think of how to fulfill our mission in uncertain times.

Like many of you, we turned to the screen. I had a quick study on how to go live on Facebook. Luckily, my daughters had changed to distance learning and became unwitting participants in my new attempts at reaching the public. They happily did various chores around Liberty Wildlife, such as walking our goats and moving ducklings to different enclosures - all while being filmed live so I could learn the best angles and how to capture sound. Then, on March 22, 2020 we had our first Facebook Live transmission on Liberty Wildlife's page. Many of our volunteers had never done a program like this. I had them line up alongside our wetlands to have a beautiful backdrop. And then I asked them to start talking about the animals they had brought out. Allison Ruby was our first presenter with Hedwig, a great horned owl. I was sure I would have to coach her on how to present to the camera without an audience and their gazing eyes willing her to continue. But both volunteer and bird were professionals and jumped right into their new job with ease. The video continued with viewers jumping on and asking questions and giving the "thumbs up" and "heart" emojis continuously as we went along. Twentyfive minutes and six birds of prey later, we signed off and waited for feedback.

People loved this break from the scary news on TV and were happy to be connecting with nature instead of hiding inside their homes. We have over 2,300 views on that video! And requests to see more. So that's what we did. Our programs ranged from readings of children's books about our birds, to focusing on our reptile ambassadors and our Non-Eagle Feather Repository. Most of these were scheduled programs, but people also loved the surprise "pop-ups"

Education...continued on page 35

## **Medical Services**

## Fostering the Future: Paising Orphaned Wildlife

by Jan Miller, Animal Care Coordinator

The foster program at Liberty Wildlife was created back in the early 2000s to help us raise hundreds of orphans every year. We had heard about similar organizations implementing the program and decided to give it a try. Back then, we used to always feed the babies ourselves while wearing camo and using a puppet to prevent imprinting. The process took a lot of time, and we were not raising nearly as many babies back then as we are now. The foster program is one of my favorite programs at Liberty Wildlife. It gives orphaned raptors the opportunity to be raised by the best teachers, members of their own species, and it makes them stronger individuals.

The foster program at Liberty Wildlife was started with one of our Education Ambassador great horned owls, Hogan. She was very hormonal and feisty, two things that make a great foster parent. She was alone in her enclosure and ended up laying an egg, so we took advantage of the opportunity and swapped the egg with a couple of orphaned nestlings. She immediately accepted them and began raising them as her own.

Right from the get-go, the program was a success, so we continued to expand it over the years. We received injured animals that could not be released, but were also not suitable as an education ambassador; so we shifted them over to the foster program. Their main role has become fostering, and they all picked up the skills really well. They still educate the public, but not in the same capacity as some of our other educational animals. We now have three sets of foster barn owls, two sets of foster great horned owls, one set of foster western screech owls, a foster burrowing owl, one set of foster red-tailed hawks, one set of foster Harris's hawks, one set of foster Swainson's hawks, two sets of foster American kestrels, one set of foster peregrine falcons, and a foster raven.

In addition to being able to place orphaned babies with foster parents, we can also switch out non-viable eggs for fertilized ones. We get viable raptor eggs fairly often, from either a failed nest move or from parents who lay their eggs in a bad spot. A permit from USF-WS is required to move any eggs from a nest. Our foster parents will lay infertile eggs with or without a mate. We do not have a breeding program, and are therefore unable to breed our animals. When we get a viable egg we can swap it with a non-viable egg that the foster has laid. The foster parents will hatch it, raise it, and teach it everything it needs to know to survive out in the wild. We can perform the same swap with hatchlings and nestlings. A baby is placed in the nest and an egg is removed.

A couple of our foster parents tend to do better if the babies are a little bit older, around 3 weeks old. Our red-tailed hawk foster parents, Sam and Sable, are really old. The female, Sable, no longer lays eggs, but they will both raise and take care of orphans. When we have fledgling aged orphans arrive, we can place them with other orphans their age or put them in with older 'mentor' birds. This way they are still around their own species and can learn how to survive in the wild.

In a sense, the foster program brings things full circle. We do not run into the issues of imprinting, habituation, or having them be too docile to survive out in the wild. If the orphaned raptor becomes imprinted and cannot be released, the cycle for that bird comes to a stop. But the foster program ensures that we have well-adjusted birds to go back out into nature to meet others of their species, breed, and raise a family; the cycle of life continues.

> Liberty Wildlife great horned owl foster families









## **Desert Sheiters**...continued from page 7

nest of soft plant fibers. The protective and insulating mound can be large: 8 feet wide and 2-3 feet high.

Plants create shelter for themselves and for other plants. Thorns on cacti provide shade, protecting tender skin from brutal sunrays. Thick waxy coating on creosote leaves prevents the loss of precious moisture as summer's heat builds.



Mistletoe in ironwood/mesquite Phainopepla

Wildflowers wait out the arid months of summer in seed form, ready to sprout when rains come. Nurse plants, such as wolfberry and palo verde shelter the mighty saguaro when it's just a sprout. Some plants extend their growing season by sheltering in north facing, shady alcoves. Desert legumes such as ironwood share nitrogen with other plants that thrive in their sheltering cover.

In these ways, plants and animals manipulate their environment to make conditions more suitable for survival. Survival for themselves as well as for others, in a web of mutually beneficial and interwoven relationships.

Typically, plants grow where the conditions are best for them, finding the shadier north side of a hill, or space near a legume tree that adds nitrogen to the soil and provides shade. Great horned owls are not builders at all, but sublet unoccupied nests made by other birds. By breeding very early in spring, they claim prime nest spaces before the original builder arrives. Great horned owls are true minimalists and may just lay their eggs in a palm tree or an out of the way building ledge...not worrying about the niceties other birds require.

## Small Things...continued from page 8

Oftentimes, we have no reason to think there's a problem until well after the damage is both obvious and done. DDT is one

example. Long before the regal horned lizard found its foodstuffs laced with toxins, the infamous acronym DDT was coined for a substance that had, on its surface, entirely benevolent intentions. This particular pesticide went to battle for us, shield-

"... it's the choices we make, as individuals, as societies, as nations, and as a species, that comprise our legacy."

ing American GIs from insect-carried diseases in World War II. It also played a great part in protecting vulnerable crops for needy populations both home and abroad. It wasn't until decades after the guns fell silent that bald eagles and peregrine falcons started dying in the United States. It took time for experts to realize that their numbers were plummeting because they could no longer effectively reproduce, and that their reproductive deficiency was due to abnormally thin eggshells collapsing under the weight of well-meaning mothers. It's a bit of a walk there to realizing that the egg deformities were caused by DDT buildups in the birds themselves, buildups accrued over time by eating the animals that ate the insects explicitly targeted by DDT. DDT was meant to protect Ameri-

> can soldiers, not kill the national bird; to everyone's credit, understanding cause and effect led to real and lasting change. The conservation initiatives that came out of the DDT crisis not only saved America's vulnerable birds of prey but directly paved the way for modern institutions like Liberty Wildlife, organizations existing within the premise that positive actions cause ripples too.

Whether we love it, hate it, or fear it, a connected world is our reality. But it's the choices we make, as individuals, as societies, as nations, and as a species, that comprise our legacy. Every decision counts, which itself can be daunting. But daunting decisions are the most important ones in life.

Do it for your children. Do it for future generations. Do it for yourself. Do it for the horned lizard.

Will your individual choices really make a difference?

Well, smaller things have changed the world.

24

to Save

# Mockingbird

#### by Nathan Thrash, Public Outreach Coordinator

I magine seeing a cat the size of an elephant wander into your yard. What would your first reaction be? Or, better yet, imagine having some guy the size of a 5-story building come into your yard. Would your first instinct be to attack him? Well, if you're a mockingbird, that's exactly what you'd do. Mockingbirds are notorious for being fierce little birds. They'll attack predators that are 5x, 10x, or even 20x their own size. They will dive bomb any perceived threat to their nest, whether it be a snake, crow, raven, hawk, cat, or human.

Mockingbirds are also VERY vocal. A male mockingbird can learn up to 200 songs in his lifetime. Mockingbirds can learn human speech if they hear a particular phrase enough times. They have even been known to learn and recite the noise of car alarms!



So why would you want this noisy, aggressive

little bird in your neighborhood? Well, when they aren't repeating the noise of car alarms, they are beautiful singers. They are also bug-eaters, so having a nest close to your home can help keep it bug-free. Beyond the immediate benefits to you, mockingbirds are an important part of the environment, where everything is connected. Research has shown birds that mix fruit and insects in their diets and actively forage across open and forested habitats, such as mockingbirds, can play keystone roles in the regeneration of deforested areas (Carlo, Tomás). Reforestation plays an important role in helping us reverse the effects of greenhouse gases, and mockingbirds play a key role in reforestation.

So how can ordinary people help? Peter Fredlake, a retired teacher and photographer, rescued a fledgling mockingbird from his backyard when it was in distress.

"I was taking some photos in the garage when my wife called and said, 'Hey, there's a mockingbird here.' Sure enough, there's this young mockingbird, too young to fly. And it was obviously in distress. There was an adult mockingbird up on the fence, that was also in distress. So, we just figured, if we don't bring it in, it's going to get eaten by the cats. We've got cats everywhere around here. So, we thought the best thing to do would be to get it in a box. It was very docile, probably in shock. Then I drove him over to you all."

As part of a raffle that Liberty Wildlife held, Peter was able to release a fully rehabilitated mockingbird back into his yard.

"When I was teaching, I taught English. And every year our freshmen read *To Kill a Mockingbird*. So I knew it was a sin to kill a mockingbird. There's not a lot of opportunities you have to do something like this [the mockingbird release] that's full circle. You know, to get something from the beginning and then have it tied up neatly like this was. The only thing I can compare it to would be teaching, you know you get kids when they're freshman and you follow them through till they graduate, I suppose it's kind of the same thing."

Carlo, Tom . 2016/03/10. Generalist birds promote tropical forest regeneration and increase plant diversity via rare-biased seed dispersal. 97. 10.1890/15-2147.1 Ecolog

Above: An adult mockingbird Left: A young mockingbird Photos by Barb Del'Ve

## **Animal Encounters:**

## Meet some of Liberty Wildlife's Educational Ambassadors

### Josita, the common chuckwalla

Who doesn't love and respect a reptile? Well, if your answer is a negative, our job in education is important and Josita, the chuckwalla, has her work cut out for her.

Chuckwallas are one of two large lizards living in the Sonoran Desert. They are the harmless, non-venomous one as opposed to the Gila monster, which is venomous. Josita's tastes run more to a vegetarian menu of fruits, flowers, and other vegetation. They have been known to eat an insect or two.

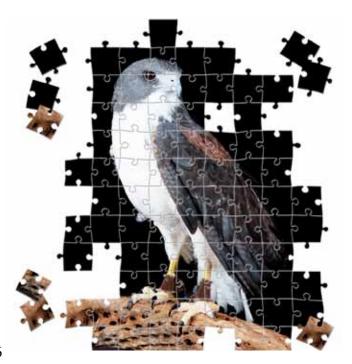
Josita came into us as a youngster, after being captured in a Mexican restaurant. She appeared habituated and was very thin. At first sight, we assumed the lizard was a male and named him Jose. Male chuckwallas acquire vibrant colors in their tails at adulthood along with femoral pores in their legs. Our new chuckwalla has neither, so she became more appropriately Josita. Males also can reach 16 to 18 inches and weigh up to two pounds. Josita is smaller.

Chuckwallas are commonly found in the Southwest and Northern Mexico. They live around rock piles, in canyon walls, and rock outcroppings where they can easily wedge themselves into crevices and inflate themselves to make it difficult for a predator to remove them.



The females lay 5 to 16 eggs in sand that is moist and has been slightly excavated. The babies emerge from their eggs in September. Chuckwallas then prepare for a winter hibernation and wake up in late February.

The life span of the chuckwalla is 15 to 25 years. The Education Team hopes Josita can wow guests for well beyond 25 years!



### Austin, the white-tailed hawk

Austin is a white-tailed hawk and a very special buteo, indeed. Not only is she stunningly beautiful, but she is also a rare bird in our area. Found mainly in Central and South America, the white-tailed hawk has carved a bit of territory along the coastal and plains areas of Texas. They are occasional visitors to Arizona.

With dark gray on top and a white underneath, they strike an impressive pose as they perch on branches and posts in open arid country, savannas, and prairies. Compared to other buteos, they sport longer and narrower wings allowing them to hang motionless in the air. Known for their graceful flight, white-tailed hawks can soar, sail and hover.

They are considered permanent residents where they breed, and in the United States this would be along the coastal

area of South Texas. They nest in trees six to ten feet off the ground and nests usually contain two to three eggs.

White-tailed hawks prey opportunistically but mainly on small birds and snakes. They may add some mammals, insects, and lizards with a little carrion when necessary and available.

We are very lucky to have been chosen by the clinic in Brownsville, Texas and the USFWS to give this bird a second chance by adding her as a member of Liberty Wildlife's educational team.

### Pogo, the common opossum

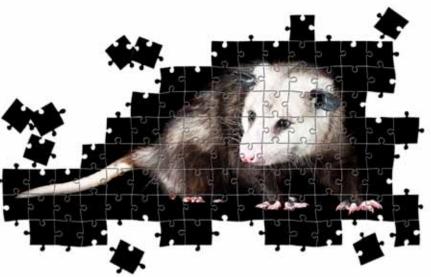
Pogo is a common opossum, and to say he is maligned is an understatement. Opossums have some interesting adaptations that have made them the subject of scorn and jokes. We won't glorify those here.

The only marsupial in North America made its way north from South America. The opossum is found in a wide variety of habitats and living conditions. The mother opossum gives birth to as many as 20 bumblebee-sized babies, but less than half ever

make it into the pouch to nurse and grow up. They can climb in and out of the pouch, and when they are older can be seen riding on the mother's back as she forages for food.

Foraging consists of looking for mice, birds, insects, worms, and snakes as well as munching an occasional chicken or carrion if it is available. One of the most beneficial traits of the opossum is the fact that it not only eats all of the ticks off its own body, but it can also consume as many as 5,000 ticks during the tick season.

They are famous for a defensive mechanism called playing possum. This action is not totally under their control but is rather a response to stress. The opossum flips to its side, opens its eyes in a wide, stationary stare or totally closes its eyes, sticks out its tongue and emits a rather unpleasant odor from its body. Not only does it look dead, it also smells dead, and most predators don't like that.



They are underestimated for several reasons. First, researchers have found that they have great memories for where good food can be found, and they have a penchant for being able to recall the smell of toxic substances they have encountered. Good memories...

They are also found to be immune to all snake venoms except that of coral snakes, and researchers have been able to mimic a peptide found in opossums, which when injected in rats makes them immune to rattlesnake venom. On top of that, they are almost totally immune to rabies because their low body temperature creates an unsuitable place for a virus to live.

All in all, this is one very cool and often maligned animal that we are welcoming into our educational cadre.

No man is an island, entire of itself Every man is a piece of the continent A part of the main... John Donne



the unexpected family

Daily Care happens whether it's 50 degrees or 120 degrees. Daily Care happens whether it's a holiday or not. Daily Care happens 365 days a year and is accomplished by 120 hardworking volunteers each week. This volunteer position is one of the more physically demanding jobs you can sign up for at Liberty Wildlife. Volunteers are cleaning enclosures, preparing food, checking on the well being of our patients, and ultimately, returning them back to the wild. It's the hottest, dirtiest and smelliest job of all our volunteer positions. The majority of volunteers will begin their journey in Daily Care. I reached out to the volunteers to see what brought them to Liberty Wildlife and what motivates them to continue to volunteer in Daily Care year after year. I can guarantee it is not the grueling hard labor or the constant sweating.

People begin volunteering at an organization for many different reasons, most of them being that they want to make a difference, or they love to continue to learn, or are retired and have some free time and want to help an organization that aligns with their own ideals. Others volunteer to gain experience for their resume, or to give them a way to stand out on their future school applications. But why do people stay with an organization with such dedication as our volunteers do? In the case of Liberty Wildlife, "the animals" is one of the most common answers that connects all our volunteers.

An anonymous volunteer said, "I love the birds I work with, and love seeing the new and interesting patients we get in. The work is rewarding, and I feel like maybe I am making some small good difference in the world".

"The animals" was the number two response. So what could the number one response be? The answer is "the people," the co-volunteers and staff.

Another anonymous volunteer wrote in response to why they continue to volunteer, "I love seeing the successes of Liberty Wildlife's efforts and the compassion of fellow volunteers and staff. The people I work with are amazing and very supportive. I've learned so much from them. The team has kind of become my family."

New volunteers are starting every month, and some of our seasoned Daily Care volunteers have been at Liberty Wildlife for over 10 years. These people create a bond, a family. They support one another and enjoy the camaraderie that has formed between them. Daily Care is a thankless job, and we so strongly need each other to be able to be and do our best for the many patients at Liberty Wildlife that are relying on us. Just like with any family dynamic, people can grow out of a specific role. There are many opportunities for growth at Liberty Wildlife and many volunteers who move on to other positions will volunteer in their new role during their original shift time to maintain the close relationship with their Daily Care family.

While your love for animals may have brought you here, the connection to the



other volunteers is what will get you to stay. Liberty Wildlife is no longer just a place to fill some free time or help support a mission. It has become a unit; a very diverse, awkward at times, hardworking unit. And once you sweat together, you stay together. Or so I like to think.



Above: A Daily Care volunteer prepares food for animals in rehabilitation – photo by Barb Del'Ve

Bottom left: A group of Daily Care volunteers – photo by Alex Stofko

Below: A Daily Care volunteer dons camo and cleans the raven foster enclosure – photo by Nathan Thrash



## **Rescue & Transport**

by Nathan Thrash, Public Outreach Coordinator

A Passion for Flying

Liberty Wildlife took in 274 animals in 1981, the year we were founded. Since then, we have steadily increased the number of animals we take in every year, and in 2019 we took in 9,819 animals.

Most of the animals are brought to us by the public via our intake window. However, when there is a raptor that is orphaned, sick, or injured we don't want the public to put themselves in danger trying to capture it, so we send out trained Rescue & Transport volunteers. Occasionally, we have animals in desperate need of care that are quite far from Phoenix. In these cases, time is of the essence, and every hour they wait for care decreases the chance that they will be successfully rehabilitated.



Enter Doug Robb (photo above), a volunteer of four years. Doug first heard about Liberty Wildlife when he was running a construction business. He kept finding baby rabbit, quail, and other critters in need in the construction yard and would bring them into Liberty Wildlife. When Doug sold the business, he suddenly found himself with more time on his hands. He decided to give back and volunteer for Orphan Care (feeding orphaned backyard birds) and Daily Care (feeding animals and cleaning enclosures). But, Doug knew there were other ways he could help.

That's when he got Bob Anderson, a long-time friend, involved. Bob has been passionate about flying for a long time, so when there was a California condor up in Marble Canyon that needed to be transported for treatment, he was ready to help. Bob and Doug loaded up into Bob's plane and flew up to the rescue.



"My favorite transport story is the first one, going up to Marble Canyon. It's a real small airstrip, so it's like landing a plane on a small country road. We're coming in between two canyons, and you're actually flying into the beginning of the Grand Canyon there below Lake Powell. So you're coming in on a little strip that looks like a country road, and you could have actually mistaken the road for that strip, because it runs right next to it. I had never flown into there, and so it's spooky for your first time to do it," Bob said. "I love the condors, and I think the story of them coming back on the North Rim is great."

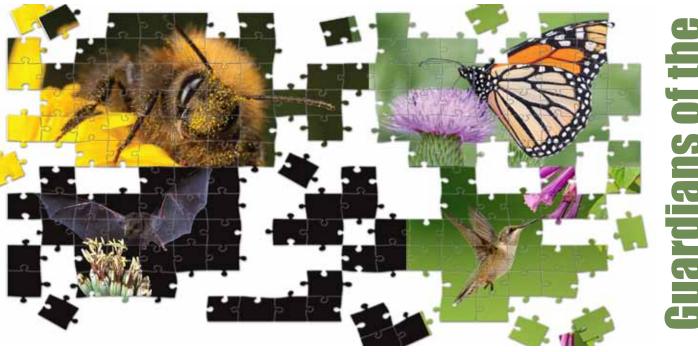
Since the first rescue, Doug and Bob have flown up north to rescue many more condors, bald eagles, and golden eagles (*pictured below*). "The way I look at it, what I try to do is donate as much time as I can to do these rescues with Bob and help in that little way," Doug said.

"Even though I am flying them, I just feel like I'm helping out my friend, Doug, and Liberty Wildlife by extension. Doug and I have known each other for 31 years. Our families are friends and we have been friends for a long time. We do a lot of things together, we've always had this thing where you don't leave your wingman, and he's been a great wingman for me," Bob said.

Thank you to Doug, Bob, and all of our Rescue & Transport volunteers for transporting these animals when no one else can.



## **Liberty Wildlife Kids**



## Bats, Birds, Bees, Bugs, Butterflies - Good Guys in the Garden!

by Carol Suits, Volunteer Contributor



Bats



Birds





**Butterflies** 

Did you know that people, plants, animals and all other living things are connected in some way? Are you thinking, "How am I connected to butterflies or bees?" To find out you might ask someone, search the web or read a book. Most of all, you could go outside to watch what butterflies and bees are doing. What you'll discover is a connection story called pollination. Pollination is the activity that makes seeds so new plants can grow. Plants are important to people because they grow

much of the food we eat. But plants need help. So they make beautiful flowers that smell nice and nectar that tastes good to animals and insects. Along come critters like the Good Guys attracted to the flowers and while they are buzzing and crawling on them and tasting the nectar, pollen made by the flower sticks to them and gets carried to the next plant. That pollen mixes with the new plant and seeds begin to form. Pollination has

- People grow flowers
- Flowers attract and feed bats. birds, bees, bugs, and butterflies
- These critters carry pollen to new plants to pollinate them

happened!

- Pollinated plants grow seeds and make flowers and food
- People pick flowers and food made by plants

Watch this great video about pollination: https://www.youtube.com/watch?v=3bgwcky-01M

## **Guardians of the Garden**...continued

## **Get Planting**

### What a Pollinator Garden Needs

### Choose plants that will attract pollinators



Measure a garden space that's easy to care for. It can be large or small, in the ground or in a pot!



Pick a space that has the right amount of sunlight for your plants.



Find out what soil your plants need to be healthy and grow.



Water your garden and look for weeds that need pulling.

## **Help Pollinators**

### **5 Things Kids Can Do To Help Pollinators**

1. Be kind to your pollinator friends. Pollinators like bats, birds, bees, bugs and butterflies are small and fragile. Be gentle and quiet when they are near!

2. Look, but don't touch! When you see a butterfly, bee, beetle, or hummingbird outside, look, but don't touch!

3. Don't use poison sprays. Ask your family to stop using poison sprays in your house and garden. This poison kills bad bugs, but it hurts pollinators too.

4. Keep pollinators' homes safe and help make a habitat for them. Take care of a garden. Plant some flowers. When you find a bug in your house, gently take it outside to its natural habitat.

5. Bug someone! Bugs and pollinators are fun and interesting. Teach your family and friends about these important animals. You can "bee" an expert!

## **Guardians of the Garden Challenge!**

## Your challenge is to decide which Good Guy in the Garden you would like to change into a Guardian Super Hero!

- Create a cartoon strip showing your Guardian Hero in action or even create a whole team of Guardians. (photo examples by Morgen Hackett)
- Share your picture with friends, family and Liberty Wildlife on Facebook and Instagram.

Tag Liberty Wildlife (#libertywildlifeaz #libertywildlife)

- Instagram: @libertywildlifeaz
- Facebook: @liberty.wildlife
- Or email your picture to share to LauraH@LibertyWildlife.org
- All entries will be entered into a raffle and 20 individuals will be selected to join us for a pollinator release party in our gardens at Liberty Wildlife.
- Pictures must be posted/submitted by October 1, 2020.







## **Kindness Rocks**

#### by Laura Hackett, Education Coordinator

Our Education team loves bringing out our Education Ambassador animals to schools, programs and our public open hours. Part of it is their obvious love for the animals in our care, but their real hope is that they are spreading their joy and enthusiasm about Arizona's wildlife to the audiences they serve.

Every year we tabulate the number of hours and number of programs that Liberty Wildlife has done. We share this with our board, with our donors and use it for grant applications. But there is usually no way to quantify the affect we have on our audiences. Until people like Lauren.

Lauren L. is a 10-year-old valley resident who found herself in the midst of change during the coronavirus pandemic. Her school shut down as well as all extracurricular activities. She was faced with the threat of boredom. But instead of slinking down behind video games and binge-watching TV, she found her own inspiration.

Lauren's class was visited by Liberty Wildlife Education volunteers and Animal Ambassadors, and she connected with one of them immediately. She loved "Snickers" the great horned owl. For anyone who has met Snickers, she is definitely unforgettable. She's a large female with a very self-assured person-



ality which makes her great at presentations. She's also an amazing foster mother during our springtime orphan season. Snicker's visit to the classroom inspired Lauren to pick up her brushes and start painting. She found perfect sized flat rocks and spent hours turning them into a variety of owl species, from the barn owl to the burrowing owl and, of course, the great horned owl.

With the help of her parents, she spread the word about these gorgeous pieces of art and said that they were free for the taking. She placed them in a box outside her door with a jar and a simple request. They were free, but if anyone wanted to make a donation, she would bring the money to Liberty Wildlife to help feed Snickers and all of the animals who come to our organization for care. What an amazing group of friends and family she must have. People stopped by and took the adorable rocks and left money out of the goodness of their hearts. When Lauren counted the total, it came to \$203! At 10 years old, Lauren

has become a true businesswoman. But lucky for us, she also remained a steadfast environmentalist and brought all of that money and a few extra owl rocks to our reopening weekend this June. I was lucky enough to be working the front desk and got to see her smile and excitement at telling me the story and handing the money over. I also looked at both of her parents who, rightly so, were beaming





with pride as well. And then I got to tell the story over and over – to my boss, to my Education volunteers, to my family, and ultimately to the social media world. The number of "thank yous" and "Wow! Amazing girl" comments was unlike any other post we've had in a long time. Everyone was able to see that this is the hope we have in our future!

It was also so important for the Education volunteers to see that the only numbers that matter are the numbers of people they touch. What matters is the impact that they make on those people and the hope that there's enough of them that think that our natural world rocks.

Photos on this page show Lauren and her creative artwork representing some of Liberty Wildlife's Education Ambassadors. Photos by Laura Hackett

## **Events at Liberty Wildlife**

Wishes for Wildlife

Join us October 24th for our annual *Wishes for Wildlife*. It will be a virtual event, with costumes and masks still an option as we invite guests to join us on our virtual red carpet, and to take an online behind-the-scenes stroll through our education trails, and into our wildlife surgery suite.

In Fall 2019 this event was a tremendous success and provided support for almost one-third of our operating costs for the year! So please join us and enjoy the silent and live auctions, the libation pull, and a special live wildlife program. Your "attendance" and support of this event will fund much of what you see throughout the rest of the year.

#### For more information, please visit: http://libertywildlife.org/W4W/home/





Top photo: *Guests enjoy the evening at Wishes for Wildlife 2019* Bottom photo: *Guests vie for auction items at the 2019 event* 

### **Ceremonies**

Cheri and Jerry Gries held their wedding at Liberty Wildlife and celebrated the occassion by releasing a pair of American kestrels.



photos courtesy of Cheri and Jerry Gries



## **Community Support**...continued from page 5

Wildlife from your IRA. This avoids that income and any tax related to it! This is a great way to support the causes you care about and possibly your tax situation, also.

#### **Appreciated Stock**

Similarly, many of Liberty Wildlife's supporters have some stock investments that have done well over the years. But these gains are also subject to tax - a capital gains tax. Liberty Wildlife can accept gifts of shares of stock. And as a charity we are not subject to the capital gains tax. So, if you are planning to make a gift to Liberty Wildlife and you own shares of appreciated stock, consider making your gift through a stock transfer instead of cash. More of your money will go to our mission, and you will owe less in taxes!

## Wills and Trusts – an often "taboo" subject

Another piece of the financial puzzle many people avoid talking about is their will. But it is so important to do this planning. It's important to have a will. This is how you tell family and friends what you'd like to have done after you are gone. This will ease their worries in a difficult time. It will ensure that your wishes are carried out. It can help prevent arguments between those you love. are there when Liberty Wildlife needs them later. We have been nurturing the nature of Arizona and the Southwest since 1981. And we hope to continue doing so far into the future.

Any gift through your will or estate plan qualifies you as a Wings of an Eagle Legacy Society member. Joining is an easy way to support native wildlife, while costing you nothing today! Simply add Liberty Wildlife (Tax ID 94-2738161) as a beneficiary (either a dollar amount or a percentage amount) in your will, trust, insurance plan, retirement account or other account. In many cases this can be done in an online form, or with a single sentence added to your will or account.

Legacy donors are recognized in our donor honor roll, in annual publications and on our donor board. They receive special invitations to events at Liberty Wildlife, along with an invitation to an annual reception at the Rob & Melani Walton Campus of Liberty Wildlife. And they get the good feeling of knowing they've done all they can for the wildlife of Arizona and the Southwest.

#### Membership is the Corner Piece

Annual membership at Liberty Wildlife gains you admission throughout the year (photo below), and it also sustains the vital education, rehabilitation, and conservation work that Liberty Wildlife conducts every day. And thankfully our membership rolls are growing!

The many dozens of animal "ambassadors" that you are able to visit at Liberty Wildlife are representatives of the great care provided to the thousands of birds, mammals, reptiles and amphibians that are brought to our doors sick or injured. On average, year-round, Liberty Wildlife takes in over 21 animals each day. And during the busy spring and summer months it is often three or four times that number!

Your membership provides support to care for these animals as they receive emergency care, surgeries, and intensive long-term rehabilitation. This is only possible because of our members.

And starting at just \$30 per person, membership has its privileges. Depending on your level of membership, some benefits include:

- Admission throughout the year; plus extra guest passes at higher levels
- Invitations to special events at Liberty Wildlife
- Invitations to members-only activities and events
- Discounts off preview events, new exhibits and special event programs

And when you include Wildlife Liberty in those plans, we will include you in our Wings of an Eagle Legacy Society. You'll be joining many others who have made gifts both large and small to help Liberty Wildlife far into the future. And we can recognize you for this commitment now, and show our appreciation to you now, even though those gifts are deferred far into the future. We can give you guidance on how best to ensure those gifts



### **Community Support**...continued

- Discounts on merchandise in our Gift Shop
- Invitations to our Speaker Series, Nature Hikes, Shadowing Wildlife Trainers; and more...

And even if you don't plan to visit or attend activities at Liberty Wildlife, we now offer a new way to show your support for our wildlife Ambassadors. Sign up as a Sponsor of a particular type of animal. You can sponsor an eagle, owl, raven, hawk, corvid or vulture. Or you can sponsor all the animals taken into our Orphan Care. These sponsorships also make great gifts for special occasions, or just to remind a loved one how much you appreciate them.

For information on becoming a member or to become a wildlife sponsor, contact Liberty Wildlife today, at 480-998-5247 or

http://libertywildlife.org/how-to-help/ donate/.

## A Borderless Puzzle: The Campaign to Stretch Our Wings

Since moving into our new Rob & Melani Walton Campus for Liberty Wildlife in late 2016, we've been constantly growing into the space. Every day we leverage the support from a vast team of dedicated volunteers to provide care to wildlife and to share this important message of conservation and environmental stewardship with our community. Even now, in this state-of-the-art facility we are still adding new enclosures, adding signage, expanding programs in the space.

This growth requires the talents of many volunteers and the expertise of staff. It also requires cash investments – for program and facility supplies, for staff and for the care of the animals we treat and rehabilitate.

Contact Liberty Wildlife if you would like more information on how you can help expand our campus and our educational offerings.

## **Education**...continued from page 22

of some of the animals that don't usually come out to classrooms – like Junior our black-crowned night heron and Groot the curious coatimundi.

Eventually we were informed that we had to expand past Facebook since not everyone is connected on that platform. Again, we looked at current trends and discovered Zoom. HopeKids Arizona was our first group to sign on. As we all said "hello" during our intro, we looked like the opening of the Brady Bunch, but with about 10 families of children fighting cancer. Their eyes stared directly into the screen as Sandi and Teresa brought out each raptor. Truly, the smaller the bird, the closer it could get to the camera and the more "awwwwww"s we saw on the lips of the children. The days that followed came with letters and pictures and stories from these kids who were so happy to have made that connection with our animals, especially since many of them are not able to have field trips of their own due to their medical conditions. The director of HopeKids asked if we could do another program and we gladly agreed. Teresa and Sandi again presented, but this time it was to Chapters of HopeKids across the entire country.

After three months of online programming, we finally were able to reopen Liberty Wildlife in June so that people can return to our public open hours. But in uncertain times, not everyone is ready for that step. Now that we've found a way to connect to people through our screen, we can continue to broaden our audience and inspire a love of nature and a desire to protect our natural world throughout the country – and even the globe.



Shade sails for Intake Window entrance New laptop computers Microscopes for Children's Interactive Room Telemetry system for flighted birds Hardware cloth Lumber/enclosure building materials Indoor/outdoor swamp coolers Cushions for Amphitheater Forklift Bobcat tractor Pea gravel Decomposed granite Surgery lights Anesthesia machine Stainless steel mammal cages Fencing for outdoor mammal runs Barn fans

> Chipmunk photo by Barb Del'Ve



Liberty Wildlife, Inc. 2600 E. Elwood Street Phoenix, AZ 85040 Wildlife Hotline (480) 998-5550 Visit us online at www.libertywildlife.org



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As part of our ongoing commitment to the community, SRP is proud to provide the printing for Liberty Wildlife's WingBeats magazine.



### Become a Member!

Membership at Liberty Wildlife gains you admission for a year and other exclusive benefits depending on your membership level. It also sustains the vital education, rehabilitation, and conservation work that Liberty Wildlife does every day.

Choose the membership level that is right for you and join today!

Mail the completed form and your donation to: Liberty Wildlife, Inc. 2600 E. Elwood Street Phoenix, AZ 85040

You can also join or renew online at www.libertywildlife.org

### Annual Support Levels

#### Songbird (\$30)

Free admission for one, stickers, store discounts

#### **Flock** (\$95)

Free admission for two adults and two kids, stickers, one guest pass, member-only nature hikes

#### **Kestrel** (\$50)

Free admission for one, stickers, store discounts, one guest pass, member-only nature hikes

#### Hawk (\$100)

Free admission for one, stickers, store discounts, two guest passes, member-only nature hikes, spend an hour with a trainer

#### **Owl** (\$250)

Free admission for two, stickers, store discounts, five guest passes, member-only nature hikes, spend an hour with a trainer, early entrance to events

#### **Eagle** (\$500)

Free admission for two, stickers, store discounts, 10 guest passes, member-only nature hikes, spend an hour with a trainer, early entrance to events, behind the scenes hospital tour

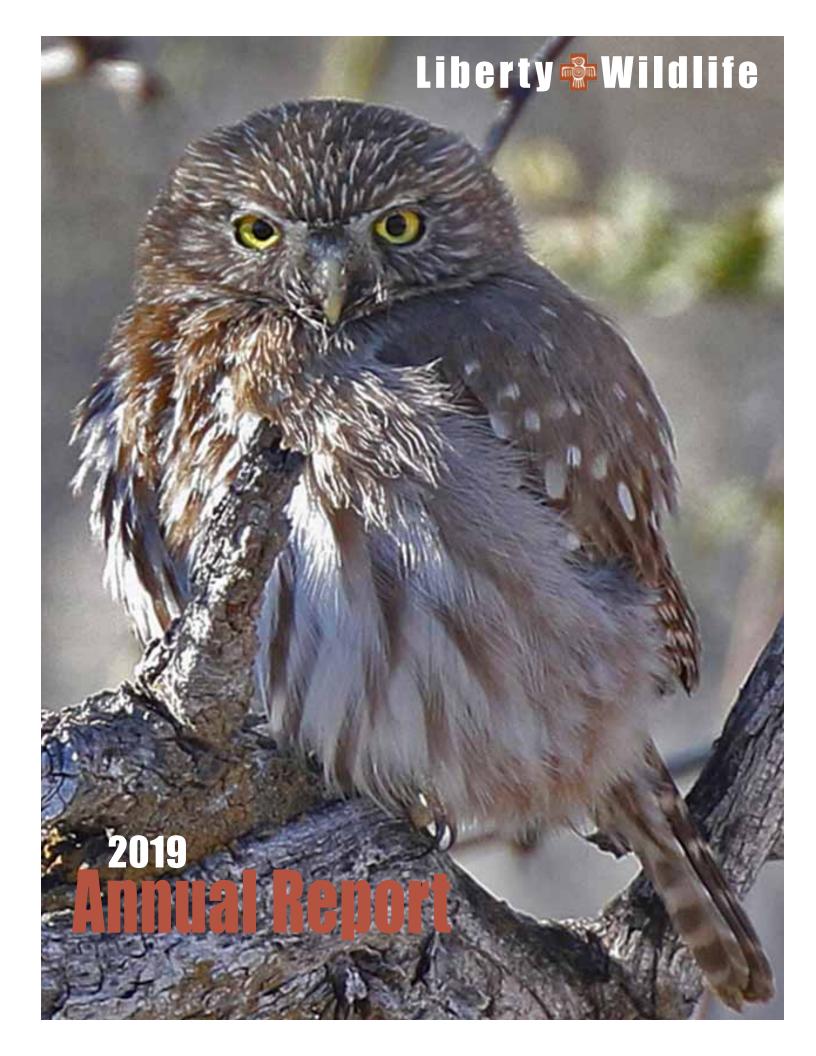
#### My Membership

Name	
Company	
Address	
City	StateZIP
Phone	
Email	

Contact me about volunteering

#### Gift Membership

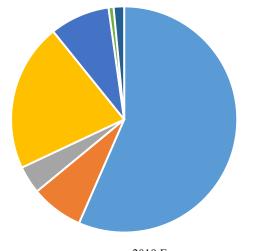
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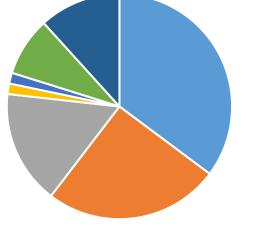
## Liberty Wildlife Statement of Activity

## FOR THE YEAR ENDING DECEMBER 31, 2019

#### 2019 Income







- Donations
- Education & Public Outreach
- Research & Conservation
- Special events, net
- Donated services & goodsInvestment income
- Other income

#### Income:

Donations	\$ 635,442	57%
Program services:		
Education & Public Outreach	84,174	7%
Research & Conservation	44,702	4%
Special events (net)	238,236	21%
Donated services & goods	96,451	9%
Investment income & other	8,122	<1%
Other income	16,817	>1%

Total unrestricted income: \$1,123,944



- Food
- Education & Public Outreach
- Research & Conservation
- NEFR
- Management & General
- Development & Fundraising

#### **Expenses:**

Program services:		
Rehabilitation		
and Medical Services	\$ 263,539	35%
Food	188,566	25%
Education & Public Outreach	122,623	16%
Research & Conservation	11,341	2%
NEFR	11,637	2%
Management & General	63,158	8%
Development & Fundraising	87,777	12%

Expenses before	
depreciation & interest	
expense:	\$ 748,641

# Statistics for 2019

Number of animals assisted	9,819
Number of species	167
Highest intake month – May	2,085
Education programs	1,084
Private tours	32
School field trips	27
Facility rentals	19
Media events (16 television, 2 radio, .	10 print) 28

Net income before depreciation and interest expense:	\$ 375,303
Depreciation & amortization	231,276
Interest expense	89,644
Net income	\$ 54,383
Income with Donor Restrictions:	208,600
Change in net assets	\$ 262,983

Cover photo: *ferruginous pygmy owl* by Matt VanWallene

# Statistics for 2019 continued

## Liberty Wildlife Goes Grocery Shopping

Chicken	1,462
Crickets	37,000
Eggs	4,008
Exact tube formula	154 lbs
Fish	2,040 lbs
*Fruits and vegetables	189 lbs
*Heads of lettuce	27
Mice	206,500
Quail	13,875
Rabbits	227
Rats	3,020

\*Purchased amounts reduced due to generous in-kind donations.

**Rehabilitation Services** Cooperating veterinarians

Medical Services

Daily Care

Orphan Care

Intake Window

Support Services

Board of Directors

Rescue & Transport

Individual Offsite

NEFR Outreach

Wishes for Wildlife

**Total Volunteer Hours** 

Landscaping, Construction

Internships

Publications

Publications

Teen Leads

Hotline

Certified veterinarian technicians

Non-Eagle Feather Repository Board

Advisory Board of Directors

Liberty Wildlife Guardians

Non-Eagle Feather Repository Outreach 2

#### Number of Active Volunteers:

#### **Campus Events**

Wishes for Wildlife	58
Baby Bird Shower/Wild About Wildlife	1
Picnic	6
Weddings	2
Camp Liberty Wildlife	2
Story Hour & prep	1
Arbor Day	3
Support kids	4
Sippin' the Spirit of the Southwest	2
Education Services	
Education handlers	61
Hand-feed trainers	24
Interpretive guides	12
Internships	8

#### **Volunteer Hours:**

Badge In – (Daily Care, Hotline, InTake,	
Orphan Care, Rescue & Transport)	52,076
Board of Directors	2,160
Campus Events	1,499
Cooperating Veterinarians	950
Corporate Support	3,248

Conservatively, the value of volunteer time donated: \$1,878,184\* (73,857 hours of volunteer time x \$25.43 per hour)

\*Based on documented volunteer hours and figures from Independant Sector research.



Black hawk – photo by Matt VanWallene

## Liberty Wildlife Board of Directors

#### William Weese, MD, President

Emil Burr (Treasurer)
Peggy Cole (Secretary)
Heather Eaton
David French
Joanne Gain
Richard Hayslip
Tom Henze
Craig Hyatt
Kara M. Montalvo
Megan Mosby
Barry Nidiffer
Lori Singleton
Ken Vegors (Vice-President)

8

6

52

113

94

21

4

23

15

8

12

40

2

112

2,234

1,000

7,542

1,536

1,236

73,857

376

## Advisory Board of Directors

Richard Adkerson
Missy and Lyle Anderson
Don Budinger
Richard Burnham
Terry Goddard
Victoria and Rod Granberry
Sharon and Ollie Harper
Karen and Bob Hobbs
Nan and C.A. Howlett
Craig Jackson
Rich Rector
Richard Silverman
Vern Swaback
Patti and Ken Vegors
Louis A. "Chip" Weil
Deborah Wilson, MD
Julie Wrigley

## **Director Emeritus**

Darlene Fitchett Kathy Orr, DVM



American kestrel – photo by Christie Van Cleve

## **Liberty Wildlife Staff**

Megan Mosby Terry Stevens Jan Miller Nathan Thrash Melinda Miller Kathleen Scott Alex Stofko Laura Hackett Amy Day Mare VanDyke

Susie Vaught Chris Sar Robert Mesta Katie LaPrade Debbie Ordorica Carol Suits

**Executive Director Operations Director** Animal Care Coordinator Public Outreach Coordinator **Orphan Care Co-Coordinator** Orphan Care Co-Coordinator **Daily Care Coordinator Education Coordinator** Senior Accountant Accounting Assistant, **NEFR** Assistant Accounting Assistant **Development Consultant** NEFR Coordinator Hotline Coordinator Medical Services Assistant Human Resources

## Liberty Wildlife 2019 Annual Report Non-Eagle Feather Repository (NEFR) Highlights

## Inventory

The NEFR inventory included as many as 160 species of hawks, owls, falcons, vultures, corvids, water birds, shorebirds, upland birds, and songbirds.

## Donors

NEFR received 95 donations from 52 donors. These included 772 bird or feather donations representing 89 species and numerous bags of molted feathers.

Humankind has not woven the web of life. We are but one thread within it. Whatever we do to the web, we do to ourselves. All things are bound together. All things connect."

Chief Seattle, Duwamish

## **2019 Operational Summary**

NEFR received 473 applications for feathers, carcasses or parts. We filled 429 of those applications, 91% of the applications received. In addition, we filled 17 older applications submitted between 2017 and 2018.

In total, NEFR filled 446 applications.

- Forty-five different species were sent out with red-tailed hawks being the most requested species.
- One hundred tribes from 29 states received feathers, carcasses or parts.
- The top two tribes to receive feathers, carcasses or parts were: 1. Hopi, 2. Navajo.
- The top three states to receive feathers, carcasses or parts were: 1. Arizona, 2. Oklahoma, 3. California.



Rock squirrel - photo by Christie Van Cleve

# **2019 Intake Species List:**

### 167 species were treated at Liberty Wildlife

#### **Native Bird Species**

Abert's towhee acorn woodpecker American coot American kestrel Anna's hummingbird ash-throated flycatcher bald eagle barn owl black-chinned night heron black-crowned grosbeak black-necked stilt blue-gray gnatcatcher Brewer's sparrow bronzed cowbird brown-headed cowbird burrowing owl cactus wren California condor Canada goose canyon wren cattle egret cedar waxwing Chihuahuan raven cliff swallow common loon common poorwill common raven Cooper's hawk Costa's hummingbird curve-billed thrasher crested flycatcher dark-eye junco double-crested cormorant eared grebe elf owl ferruginous hawk flammulated owl Gambel's quail Gila woodpecker gilded flicker golden eagle great blue heron great egret

great horned owl greater roadrunner great-tailed grackle green heron Harris's hawk hermit thrush herring gull hooded oriole house finch house wren Inca dove killdeer lark sparrow least bittern lesser goldfinch lesser nighthawk long-billed dowitcher MacGillivray's warbler mallard duck merlin mourning dove Neotropic cormorant northern cardinal northern harrier northern mockingbird northern rough-winged swallow orange-crowned warbler osprey peregrine falcon phainopepla pied-billed grebe plumbeous vireo prairie falcon red-shafted flicker red-naped sapsucker red-tailed hawk ruddy duck Say's phoebe sharp-shinned hawk snowy egret Swainson's hawk

turkey vulture

verdin western grebe western kingbird western screech owl western tanager white-crowned sparrow white-throated swift white-winged dove yellow-billed cuckoo yellow-headed blackbird yellow-rumped warbler yellow warbler

#### **Non-Native Bird Species**

African goose Barbary dove Bourke's parrot chicken cockatiel conure coturnix quail domestic duck domestic goose domestic quail Eurasian collared dove European starling fancy pigeon house sparrow Indian runner duck Muscovy duck parakeet parrot peacock rock dove (pigeon) rosy-faced lovebird zebra finch

#### **Reptile Species**

common king snake Couch's spadefoot toad desert spiney lizard desert tortoise gopher snake leopard tortoise long-nosed snake ornate box turtle ornate tree lizard red-eared slider rosy boa Russian tortoise Sonora mud turtle Sonoran Desert toad spiny softshell turtle sulcata tortoise western diamondback rattlesnake whiptail lizard yellow-bellied slider

#### Mammal Species

big brown bat black rat black-tailed jackrabbit bobcat California leaf-nosed bat deer mouse desert cottontail domestic rabbit Harris's antelope squirrel hoary bat house mouse javelina kangaroo rat little brown bat Mexican free-tailed bat pocket gopher pocketed free-tailed bat racoon rock squirrel round-tailed ground squirrel southern yellow bat striped skunk Virginia opossum western pipistrelle bat western red bat white-throated woodrat vellow bat

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American robin – photo by Christie Van Cleve

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*Zone-tailed hawk – photo by Matt VanWallene* 

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Red-tailed hawk – photo by Matt VanWallene

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Ruby-crowned kinglet - photo by Christie Van Cleve



Left to right: Turkey vulture photo by Matt VanWallene Song sparrow photo by Christie Van Cleve Trogon photo by Laura Pappagallo





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