ABQ BIOPARK

AUGUST 2016

OUR ACTIONS MATTER

ABQ BIOPARK CONSERVATION SPOTLIGHT

Researching Our Desert Island Wildlife

by Dylan Frentzel

The Sandia Mountains can be thought of as an island of wildlife habitat, one of many sky islands that occur in New Mexico and elsewhere in the Southwest. This mountain receives more precipitation than the surrounding semiarid landscape due to its higher elevation. Largely because of that moisture, the Sandia Mountains serve as a stepping stone for wildlife traveling from mountain island to island. The Sandia Mountains also are an island of wilderness surrounded by a sea of humanity that continues to eat away at previously undeveloped areas.

In the summer of 2016, the ABQ Biopark's Conservation Committee began a citizen science pilot project monitoring wildlife populations in the Sandia Mountains. The project uses camera trap equipment purchased by the New Mexico Biopark Society's Pride Grant Program. To maximize the value of this project, the Biopark has been consulting with the Sandia Mountain Bear Collaborative, a local group consisting of Native American pueblo, state, federal, county, city, private and citizen biologists dedicated to the conservation and study of black bears in the Sandia Mountains. This population of animals is often brought into conflict with humans as they move in and out of this isolated island of habitat.

Four cameras were purchased for the project, with mountain lions and black bears being of special interest because these species are difficult to survey. Cougars and bears tend to be solitary, secretive and they have large home range sizes. Camera traps also collect information about many other species that utilize the forest. Birds, for example, make up the greatest amount of diversity being captured on the cameras to date. Mule deer are common, and bucks are very easy to identify individually because of their unique antler configurations.

By placing several cameras across large swaths of the Sandia Mountains we can monitor not only the relative abundance of wildlife, but over longer time periods we also can map species composition, and track the movement of

individuals. Reproductive data also can be recorded when wildlife is photographed with its offspring. One of the Bio Park's cameras recorded a hen Merriam's turkey rearing her 3 poults this summer. This is significant since Merriam's turkey were likely extirpated from the Sandia Mountains until they were reintroduced in 2004. Documenting this reproduction is documenting the successful recolonization of a once diminished species.

More than 20 employees from the ABQ Bio park are participating in this project so far. Employees are quickly becoming skilled in the use of camera traps in a field setting, and are gaining a greater appreciation for the diversity of wildlife found so close to home. Most of these cameras have been placed in the wilderness after hiking to isolated water sources. Interim Biopark Director Holly Casman went a step farther and used her equestrian skills to place a camera on an isolated water source on the east side of the Sandias.

Educating ourselves better about local wildlife populations and their conservation will hopefully make Biopark employees better public educators, as well as ambassadors for conservation. Our actions matter very much in the case of black bears. Black bears in the Sandias often come into contact with humans in Albuquerque, Rio Rancho and other nearby communities, and these bears often must be relocated or euthanized because of the risk they can pose for people and pets. By making these secretive animals more visible, we can remind communities that actions such as not securing garbage properly, feeding wildlife and pets outside of our homes, and not taking proper precautions while camping or recreating in the forest can prove deadly for bears, our state mammal. We are also hopeful that our efforts will help add to the knowledge that is being captured by camera traps across the globe. By studying wildlife in our own communities we can gain a better understanding of how they utilize their habitat, and hopefully better manage our actions in the future and help us coexist with the wildlife in our communities.

Lemur Project

by Angela Harrell

In May, 2016, the ABQ BioPark was thrilled to announce the birth of a critically endangered Black and White Ruffed Lemur. This is the first birth of this species

of lemur for the BioPark. Baby Bruno is full of personality and growing by leaps and bounds every day. Mother Nuit, father Darby and uncle Kirby have all adjusted very well to having a playful baby added to the family. The group can often be heard all over the park when they raise a raucous with their typical loud alarm call. Bruno is just starting to join in and find his voice in the group.

And once again, excitement surrounds our lemur group. This time though, the changes will be happening in the yard itself. We recently kicked off a short project to re-mesh the exhibit and add new substrate to support the growth of grasses, plants and flowers. The new mesh will help create a more secure enclosure for the lemurs and better viewing of the animals for our guests. Over time the substrate in the exhibit has settled and even been removed through basic daily cleaning. By adding new substrate we will be able to spruce up the exhibit creating a lush environment for the lemurs to live in and the public to enjoy. Please come by and visit our growing lemur family and enjoy the upgrades to their home.

Tamarisks, Russian Olives and Elms (Oh My!)

Invasive trees in the Bosque

by Monika Skiba

The Rio Grande is often referred to as the "main blood artery" of Albuquerque. This vital resource is in danger from invasive plants, so let's take a look at what's being done to protect it.

There are many local trees such as Cottonwoods and Coyote Willows in the Bosque, but more and more we find non-native and invasive species like the Tree of Heaven, Siberian Elm and Tamarisk (also known as Salt Cedar). What's the problem? It's true they are pretty and provide shade and habitat for local wildlife. And some non-native trees like the Tamarisk prove to be useful as windbreaks and in refining the river bank. So why are some people passionate about removing these non-native trees? I love the bosque and was eager to learn more so I attended the 2016 Tamarisk Coalition Conference to get a better sense of the story.

Here is what I learned

The Tamarisk tree was introduced in New Mexico in the early 1900's from Europe and Asia partly as a natural way to reinforce river banks. It's fast growing and resilient: it can survive being submerged in water for up to 70 days and each tree produces half a million seeds per year. Their deep roots stabilize and define the boundaries of the river and help to prevent flooding (same purpose as the big metal jetty jacks that border many parts the river). As with many introduced species, the problem comes when there is no natural predator to keep their numbers in balance.

Since the Tamarisk was introduced it has significantly altered the bosque. These alterations are happening above and below the surface. Because the

Tamarisk is such a hardy tree, it out-competes native vegetation and begins to take over an area. Where that happens, the area becomes less diverse and very dense, and high density forest is not as beneficial to wildlife and is more susceptible to high intensity fires. Certain trees, like the Rio Grande Cottonwood, can handle low intensity fires but high intensity fires can have devastating effects. Tamarisks are especially flammable and act as a "fire ladder", assisting the flames in climbing higher, which gives the fire access to the top canopy and increases the burn temperature.

Another change that has been observed since its introduction is the way the river flows. Because the Tamarisk's roots can grow down 25 feet it does a fine job of reinforcing the river banks; such a fine job that it has played a role in creating a much swifter and straighter river. This has altered the surrounding ecology and made the environment difficult for some animals, like the Rio Grande silvery minnow, who need areas of slow moving and shallow water to survive.

Below the surface it has been found to destroy *mycorrhizal mutualism* in the soil (the mutual relationship between fungi and certain trees like Cottonwoods). This relationship keeps the soil rich, which is the basis for a healthy forest. Without it many plants and trees wouldn't be as healthy and strong or might not even grow at all.

With so many negative effects on the environment why not just destroy this tree for good? Well, as it turns out this tree, once established, is incredibly difficult to remove. Also, some wildlife have adapted to it and now use it as their habitat (the federally endangered Southwestern Willow Flycatcher, for example). So the goal is not to get rid of the tree completely but rather to diversify the bosque and lower the fire hazard. How do we do this?

In 1987 the Department of Agriculture began looking into introducing the Tamarisk beetle as a form of biocontrol. Many tests were conducted over the course of 14 years before the beetle was deemed "safe for release". In 2001 there were limited open releases and today the Tamarisk beetle is considered to be one of the greatest biocontrol success stories of all time.

Why the Tamarisk beetle has been such a success

1) the Tamarisk Beetle eats only eats the leaves of the Tamarisk. This beetle is so specific about its food that it won't even venture out to other types of Tamarisk trees. There is no concern that these beetles will destroy the native trees;

2) the larva scrape the trees leaves, defoliating the tree and critically weakening it; and

*3) the larva defoliates the trees **before** they seed out which helps prevent the tree's seeds from spreading.* This allows other species of plants and trees to thrive. And with less Tamarisk-only stands there will be less high intensity fires and more room for other plants to grow and thrive.

How does this all help the Bosque?
One way to picture a healthy Bosque is to imagine a mosaic - a variety of colors and shapes that together create a picture. This is the goal for the Bosque, a healthy variety of plants in type, size and age. The Tamarisk beetle can help us achieve that but some forethought is still required, such as planting other local trees by hand to prepare for the open niches and making sure animals who have become dependent on the Tamarisk have other options available.

The river stimulates our senses. We see it, feel it, smell it and it balances us emotionally. More and more studies show spending time outdoors stimulates our emotions and our sense of creativity, and makes us more empathetic. Ultimately humans need green spaces to be healthy and happy. Preserving a riparian area and its wildlife benefits the river and ultimately the citizens who live around it.

What can you do to help?

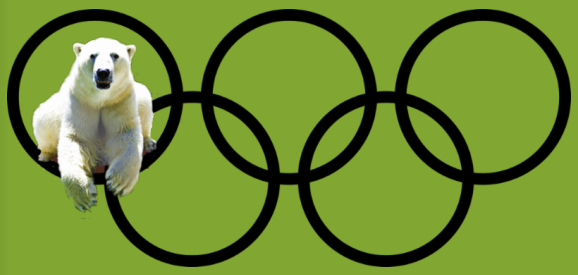
Consider removing non-native invasive plants in your yard and replacing them with local plants and trees. Seeds travel far and wide and even the seeds from one tree in a person's yard can affect the bosque. And spend time outdoors! Enjoy this beautiful river and do your brain some good!

The Swiftest, the Strongest, and...

the Cutest? Part II.

A recap of the contest of ABQ Biopark animals in comparison to the 2016 Summer Olympic Games.

By Patrick Gjorven



Well, the 2016 Summer Olympic Games in Rio De Janeiro are almost over and champions have been mostly determined for each event. Our own animal version of the games, however, has come to an end.

Some of the events have been incredible to research! To say there were a few surprises would be an understatement.

The results are as follows:

Weightlifting
Heaviest weight that the animal can completely lift off the ground.

1st | Leaf Cutter Ant: able to lift an object 50 times its own weight!
2nd | Gorilla: can lift an object approx. 10 times its own weight.
3rd | White Rhino: can lift an object of at least 1500 lbs.

Long Distance
Longest distance an object (solid or liquid) can be thrown or "shot".

1st | Gorilla: able to throw an object about the weight of a bowling ball across their exhibit.
2nd | Chimpanzee: most likely able to accomplish the same feat as gorillas, but with a smaller item.
3rd | Spider Monkey: most likely able to accomplish the same feat as gorillas and chimpanzees, but with an even smaller item.

Target Shooting
Greatest accuracy an object (solid or liquid) can be thrown or "shot".

1st | Black-Necked Spitting Cobra: capable of hitting a moving eyeball with its venomous spit from 5 ft. away with a 90%+ hit ratio.
2nd | Gorilla: there are rumors of one of our gorillas that is capable of throwing back an item with a 50% return rate.
3rd | (Tie) Most/all feline species: capable of spraying an object backwards from short range.

Gymnastics (ground dwelling only; non-flighted, non-swimming)
Ability to move through a complex environment at a fast pace.

1st | Siaming: able to swing through the trees at an astonishing 30+mph.

2nd | Klipspringer: can jump and move around on a cliff edge that is a few inches wide.
3rd | (Tie) Black Mamba/Green Mamba: is capable of climbing in trees at a very swift pace and "jumping" from tree to tree if necessary.

Sprint (1 representative each for land, sea and air dwelling animals)
Fastest an animal can go 100 meters at a horizontal plane.

1st | Spur-winged Goose: Surprise! 88.23 mph.
2nd | Cheetah: 70mph.
3rd | Tuna: 47mph.

Marathon (1 representative each for land, sea and air dwelling animals)
Longest distance traveled non-stop.

1st | Loggerhead Sea Turtle: ~8000 miles traveling.
2nd | Golden Eagle: ~2995 miles traveling.
3rd | Mountain Lion: Surprise! Male recently tracked from the Black Hills of South Dakota to Milford, Connecticut. ~1800+ miles.

Diving 1 (one representative for land, sea and air dwelling animals)
Biggest splash created while entering the water.

1st | (Tie) Polar Bear/Hippopotamus/Asian Elephant: huge water displacement when diving.
2nd | Sea Lion: huge water displacement when swimming (just watch the pool when Tony really gets moving).
3rd | Kookaburra: makes splash as large as itself when diving for fish.

Diving 2 (one representative for land, sea and air dwelling animals)
Furthest depth an animal can dive to.

1st | Comb Jellies: unknown depths it can thrive in.
2nd | (Tie) Mandarin Duck/Polar Bear: Several feet underwater.
3rd | (Tie) Polar Bear/Mandarin Duck: Several feet underwater.

Self Defense
Ability to fend off the largest opponent without the use of "weapons".

1st: (Tie) Most Venomous Snakes: Some can fend off an Elephant, or at least stop their advance by hissing.
2nd | (Tie) Most Venomous Arthropods: Arachnophobia anyone?
3rd | Poison Dart Frogs: Capable of killing an inexperienced predator by just licking it.

Long Jump (one representative for land, sea and air dwelling animals)
Longest horizontal distance traveled without the aid of flight.

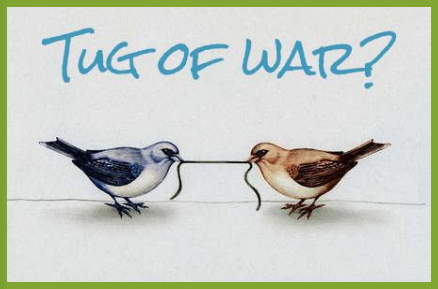
1st | Flea: Capable of jumping 200+ times its own body length.
2nd | Tree Frogs: Capable of jumping 150+ times its own body length.
3rd | Grasshopper/Locust: Capable of jumping 20+ times its own body length.

Pentathlon (one representative for land, sea and air dwelling animals)
Best all-around athlete.

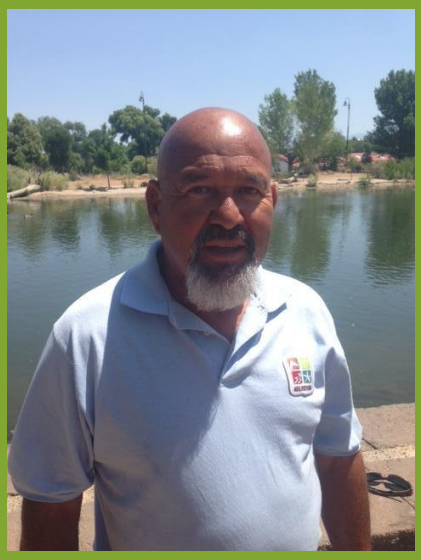
1st | Coral Reefs: They literally become the terrain on the seafloor.
2nd | Ants: Are able to change the entire landscape of a terrain, and are incredibly well organized.
3rd | Raven: Extremely intelligent for a flighted animal. Can use tools directly or indirectly to solve tasks.

Now remember, all is fair in the animal world. So let's not destroy what we have left. Otherwise, it would be a pretty dull planet to live in. And that would not be fair to us or the ecosystems we live with.

So, what is your favorite sporting/game to participate in?



Conservation Hero



This month we acknowledge the hard work that Raymond Ruiz does to keep Tingley Beach a clean and safe place for people and wildlife. Ray keeps the ponds clean by removing trash and excess algae. He picks up improperly discarded fishing line which becomes a life-threatening problem for ducks and geese. He also helps locate and capture injured and entangled birds for treatment. Raymond is clearly a conservation hero for Tingley Beach. Please help us recognize the good work he does by stopping by Tingley Beach to say hello and thank you!

More reasons to keep fighting

Good News For Dory

Animal Cams Good For People

Slowdown In Elephant Poaching May Not Be Good News

Tigers Are Incredible!

Alligator Gar Helps Eradicate Invasive Asian Carp

Stop Killing Coyotes

Upcoming Events

Saturday, September 3, 10:00 a.m. - 2:00 p.m. | Zoo
International Vulture Awareness Day

Thursday, September 13, 6-9pm
Red Door Brewing Company, 1001 Candelaria NE, Albuquerque
Science Café, "Sharks 'n Shells"

Saturday, September 24, 10:00am-2:00pm | Zoo
Elephant Conservation Day

About the Conservation Spotlight

Contact any member of the ABQ BioPark Conservation Committee to share your success stories and tips in an upcoming Conservation Spotlight. And join us on the last Tuesday of each month at 2 p.m. We meet for one hour and work to make the BioPark a greener place!

Conservation Committee Chair

Holly Casman
hcasman@cabq.gov
or 505-848-7176

Sub-committee Chairs

Education: Kathryn Venzor
Operations: Jon Stewart
In-Situ Conservation: Matt Eschenbrenner
Policy Advocacy: Barry Bitzer
Community Engagement: Keith Crow
In-House Conservation: Josh Davis

Treasurer: Greg Swyden
Secretary: Virginia Ludvik
Marketing: Tina Deines
Conservation Spotlight: Holly Casman

The Conservation Committee meets the last Tuesday of every month at 2:00 p.m., alternating between the Shark Reef Café and the Parq Cafe. Join the greening fun!

Green Awards: to nominate someone for next month's award, contact a Conservation Committee member.

City of Albuquerque, Cultural Services Department,
400 Marquette Ave NW, Albuquerque, NM 87102