



Bat World Sanctuary
299 High Point Rd, Weatherford, TX 76088
(940)325-3404 - sanctuary@batworld.org

- Founder and President of Bat World Sanctuary (BWS)
- Scientific wildlife rehabilitator licensed with the State of Texas, specializing in bats
- Permitted to hold and rehabilitate threatened and endangered species of bats, USFWS Permitted
- Author of both popular and scientific literature about bats

ACHIEVEMENTS

- Founded Bat World Sanctuary, an indoor, simulated natural habitat facility that currently houses over 200 non-releasable bats. The population includes bats that are orphaned, injured, confiscated from the exotic pet trade and retired from zoos and research facilities. The main sanctuary building contains a rehabilitation center and serves as a training facility for veterinarians, biologists, zoologists and other bat care professionals. Significance: Approximately 80% of all bats admitted to rehabilitation (800 bats per year) are returned to the wild after treatment. An additional 400-500 bats are rehabilitated annually, across the country, through Bat World Sanctuary satellites with the same release rates. Bats that cannot be released are given lifetime sanctuary.
- Using personal finances, purchased a building in 1992, located in the downtown area of Mineral Wells, TX, in order to protect a wild colony of 30,000 Mexican free-tail bats (*Tadarida brasiliensis Mexicana*) that were in jeopardy of extermination. The building has served as a habitat for this colony since 1930. The bat colony is now protected by the BWS organization. The population in the wild sanctuary has the ability to consume over 54 billion insects annually. The structure also serves as an established migratory stop-over for bats. Significance: The bat population has increased 60% due to ventilation, temperature and structural improvements.
- Created the first nutritionally sound diet for convalescing insectivorous bats. Significance: Allows bat care specialists and rehabilitators to provide proper nutrition to bats that are too frightened or compromised to self feed.
- Conducted the first successful mating behavior study for the Mexican free-tailed bat (*T. brasiliensis*). Significance: Proved that insectivorous bats can successfully breed in a proper captive environment.
- Conducted the first behavioral study for the Mexican free-tailed bat (*T. brasiliensis*). Significance: Proved that *T. brasiliensis* has at least 25 different vocalizations they use to communicate, laying the groundwork for future studies showing these bats have a rich repertoire of distinct and complex calls that play a major role in social interactions. Their language also contains tonation, using the same sounds, changing the pitch and depth, to alter the meaning of the 'words'.
- Created a website for bat care professionals to access updated medical treatments and medications for insectivorous bats, free of charge. Significance: The ability to save a species begins with up-to-date, readily available information.

- Established 20 BWS Rescue Centers across the U.S. Individuals must have graduated from BWS workshops and meet stringent requirements to be considered for application as a satellite rescue center. Each center is established by invitation only after a strict review of qualifications. Significance: BWS Centers improve the viability of all bat species in the U.S. through rescue, rehabilitation and education, reaching 50,000-100,000 people annually.
- Presented seminars on the medical care of bats for the International Wildlife Rehabilitation Council, National Wildlife Rehabilitation Association, and the Lubee Bat Conservancy. Research has included collaborative work with Bat Conservation International, the California Bat Conservation Fund, The University of Tennessee at Knoxville, Boston University, and the Rabies Branch of the U.S. Centers for Disease Control and Prevention. Significance: Introduced wildlife groups and universities to established, proven medical treatment for bats.
- Co-authored the first medical reference available for insectivorous bats: *Captive Care and Medical Reference for the Rehabilitation of Insectivorous Bats*.
- Authored *Standards and Medical Management for Captive Insectivorous Bats*.
- Co-developed the United States Fish and Wildlife Service protocol for wildlife rehabilitators in response to White Nose Syndrome (WNS) affected bats in the northeastern U.S. Significance: Provided set procedures for the care of debilitated bats suffering from a disease with, to date, has no known cure.
- In 2007, after an unprecedented loss of 85% of bat pups being raised on popular commercial milk replacement formulas across the U.S., Ms. Lollar commissioned four independent laboratory analyses of the commercial formulas. Results from these laboratories included the presence of heavy metal toxins (including arsenic) and inaccuracies in nutrient levels. Significance: With the help of a PhD Nutritional Scientist, Ms. Lollar implemented the development of the first insectivorous bat-specific milk replacement formula made from fresh grocery store ingredients, and made the recipe available to bat care professionals around the world, free of charge.
- Instructed the only one and two week workshop available in the world on the rehabilitation of insectivorous bats. This workshop was conducted annually for 10 years with over 400 students educated. Significance: Animal care professionals from every bat-inhabited continent have trained at Bat World Sanctuary and have taken that knowledge back to their own states and countries to teach others.
- Proved that hand-raised, orphaned *T. brasiliensis* and *L. borealis* can be released into the wild and learn to forage for insects on their own. Significance: Thousands of orphaned pups, across the globe, that would have otherwise perished, are now saved to be returned to the wild.
- Co-authored the North American Migratory Bat Act, a proposed bill three years in the making. Significance: Provides the stimulus for legislation to be passed to give bats federal protection under the Migratory Species Act.
- Established a wild preserve with bat houses (and natural Indian caves) on Lake Whitney, TX, on donated land that is inaccessible to the public. Significance: Wild colonies of bats have the opportunity to roost in a protected area.
- Secured private land and architectural plans to build a man-made cave outside the city limits of Mineral Wells, TX in order to move more than 2 million bats out of the city limits. Significance: Provide protected habitat for current population and future generations of *T. brasiliensis*. This species has been identified as being the front line defense for the United States against the second most destructive crop pest known to humankind.
- Secured 13 acres of wild land, with a clean natural water source, and built a first of its kind bat castle to house up to 100,000 bats. Significance: Provided a roost site for wild bats that are in decline due to exclusion in the downtown district of Mineral Wells, Texas, in an area where no chemical spraying takes place.

- Conducted the largest urban rescue of bats in the state of Texas. Bats were sealed within the walls of a building being renovated in Fort Worth, TX. After rehabilitation over 1,200 bats were released back into the wild via the wild sanctuary. Significance: A vital bat colony was saved which allowed for open discussions with the city of Fort Worth to embrace and protect the bat population. Bat houses have now been installed outside the city parking garages and under existing bridge systems in addition to the exterior of the building where the bats were rescued.
- Established a unique environment within the wild sanctuary wherein biologists and researchers have conducted studies working with the existing population of 50,000 bats rather than performing studies in the field. Significance: Prevents untrained individuals from carrying out invasive field studies that causes casualties to healthy bats.
- Convinced the City of Mineral Wells, TX to avoid fogging with pesticides in areas where bat populations reside within the downtown area. Significance: Exposure to pesticides significantly increases bat fatalities as well as birth defects in unborn bats.
- Produced CD (Bat Talk) on the language of the Mexican free-tail bat which, for the first time, demonstrates the complicated social structure of the species. Significance: Identified over 20 different vocalizations, including tonation and associated behavior.
- Consultation on bat care has been provided to veterinarians and bat care professionals in Germany, France, Mexico, Italy, Bulgaria, South Africa, Cayman Islands, Australia, New South Wales, China, England and other countries, free of charge. Significance: Unifies a global community concerning the care of bats.
- Designed the first of its kind bat exhibit in Las Vegas to demonstrate insectivorous bats can be publicly viewed without creating undue stress to the animals. Bats remain asleep in a simulated natural environment during daylight hours and are on display via infra-red cameras. They are taken off display and placed into a large flight cage each night. Significance: This project was created to help improve the style of exhibits typically utilized for insectivorous bats in various zoos, science and nature centers, where bats seldom survive due to the stress of being placed on public display under bright lights.
- Consultant to zoos, aquariums, animal control agencies, wildlife parks and animal care professionals, around the world, regarding the captive care and rehabilitation of bats.
- Created guidelines for educational programs using live bats. Significance: Improves general knowledge concerning the vital role bats play in our environment. By utilizing live bats, dispels myths and centuries of misinformation about the intelligence, gentleness, cleanliness and small size of bats as opposed to the villainous image all forms of media have imposed on bats.
- Established a bat house project on buildings throughout the downtown area of Mineral Wells and other cities. Significance: The bat houses provide alternate roost sites for the bat colonies that were being excluded from businesses and homes to protect and preserve the species and provide insect control to the populace.
- Convinced the owners of the Fort Worth Convention Center parking garage to utilize a humane bat excluder rather than exterminating an existing colony. BWS installed custom made bat houses to provide additional bat habitat. Significance: The colony of over 30,000 bats that were saved will consume over 150 million bugs nightly in an urban area.
- Bat World Sanctuary and the work done by Ms. Lollar have been featured on 20/20, Animal Planet, Nickelodeon, The Disney Channel, the David Letterman Show and the CBS Morning Show. Significance: Media attention brings greater recognition to the plight of bats as well as the importance of bats as it pertains to our own well-being.

- Ms. Lollar won the 2005 Doris Day Kindred Spirit Award, was one of the ten finalists for the Animal Planet Hero of the Year Award in 2008, and was nominated for the Indianapolis Prize in 2009 and again in 2014. In 2016 Ms. Lollar won The Carol Noon Award for Sanctuary Excellence. Significance: Awards bring greater recognition to the plight of bats as well as the importance of bats.

CHALLENGES OVERCOME

Until recently, the conservation of bats has not been well accepted by the public. It has been a constant uphill battle to overcome the ignorance, superstition, fear and apathy the public has exhibited towards bats as a whole. When Ms. Lollar first established BWS, local support such as volunteers and donations were non-existent (although that has now changed). Financial hardship has been substantial due to the unpopularity of bats. Ms. Lollar educated herself in the anatomy of bats while working on deceased specimens. She subsequently developed the widely accepted medical procedures used worldwide by animal care professionals. These procedures save the lives of bats that were previously euthanized. Additionally, she developed a nutritionally complete captive care diet to maintain captive reproductive colonies of insectivorous bats as well as those in rehabilitation. She also established proper housing and flight area protocol to increase the survivability of bats during rehabilitation.

Since 2010 Amanda Lollar, with the aide of renowned animal rights attorney, Randy Turner, has battled a cyber-stalker (a former intern who found the work at Bat World to be too challenging). The woman is an SEO expert and used Google bombs to spread malicious defamation about Amanda Lollar and Bat World Sanctuary all over the Internet. In 2012, after a 4-day trial, Judge William Brigham stated that Amanda Lollar is to bats what Jane Goodall is to primates, and noted that Mary Cummins defamation of Lollar was “egregious as well as malicious as well as intentional” and awarded Ms. Lollar a \$6.1million dollar judgment. However, to this day, the defamation from this disturbed woman continues despite the fact she has been sanctioned and found in contempt of court numerous times. In spite this hardship, Ms. Lollar has managed to keep the mission of BWS on the forefront.

PERSONAL SACRIFICES

In 1994, Ms. Lollar liquidated her furniture business in order to establish the Bat World Sanctuary facility. Capital did not exist to fund the project, so she sold all personal belongings and moved into an upper area of the building that once served as an office. She took out several personal loans to subsidize the facility. In addition, she sold her personal vehicle to finance the purchase of a utility vehicle for the organization.

The Bat World wild sanctuary, previously located in a separate commercial building in the downtown area of Mineral Wells, TX, has been a particular adversity. A major over-haul of the building had to occur in order to protect the bats who had been living in the crawlspace for decades. Approximately 6000 lbs. of guano was removed from the crawlspace, the roof was repaired, the entire ceiling was removed to increase ventilation, and a new roof and solar extraction fans were installed. A safety net was erected to protect fallen pups in the maternity area, and catwalks were built to assist with rescues and research. In order to further increase support, Mineral Wells city officials were invited to inspect the wild sanctuary to gain official support for the facility. Approximately 50 pounds of guano is swept from the sanctuary floors daily, in temperatures that exceed 105°F in the summer.

Ms. Lollar has worked a minimum of 14 hours per day, 7 days per week, 365 days per year for almost 30 years to further the protection of bats. A contingency plan is in place to ensure her lifework to support bats will continue for decades to come.

LIST OF PUBLICATIONS

- The Bat in My Pocket: A Memorable Friendship 1990. Lollar, A. Capra Press, Santa Barbara, CA.
- The Wonder of Bats. 1993. Lollar, A. *Biology Digest*. 18(6): 72-76
- Rehabilitation and Captive Care of Mexican Free-tail Bats. 1994. Lollar, A. *Bat World Publication*, Mineral Wells, TX.
- Observations on the reproductive behavior of Captive *Tadarida brasiliensis mexicana* (Chiroptera: Molossidae). 1998. Schmidt-French, B.A. and A. Lollar. *The Southwestern Naturalist* 43(4).
- Notes on the mating behavior in a captive colony of *Tadarida brasiliensis*. 1995. Lollar, A. *Bat Research News*. 36(1):1
- Treating Blunt Force Trauma in Bats. 1999. Lollar, A. and B.A. Schmidt-French. *Wildlife Rehabilitation Today*. 10 (2).
- Notes on the behavior of a building-dwelling colony of Mexican free-tailed bats (*Tadarida brasiliensis Mexicana*) in Mineral Wells, Texas. 2000. Lollar, A. *Bat Research News*. 41(1)
- Communication among Mexican free-tailed bats. 2000. French, B and A. Lollar. *Bats*. 18(2)
- Captive Care and Medical Reference for the Rehabilitation of Insectivorous Bats. 2002. Lollar, A and B.A. Schmidt-French. *Bat World Publication*, Mineral Wells, TX.
- Vocalizations associated with social communication in the Mexican free-tailed bat, *Tadarida brasiliensis Mexicana* (Chiroptera: Molossidae). 2003. French, B; A. Lollar, et al. *Bat World News* 8(1).
- Acoustic mimicry in a predator-prey interaction. 2007. Barber, J.; W.E. Conner, et. al. *Proceedings of the National Academy of Sciences of the United States of America* 104 (22): 9331-9334. doi:10.1073.
- Diagnostic and Treatment Update for the Rehabilitation of Insectivorous Bats. 2007. Lollar, A. *Bat World Publication*, Mineral Wells, TX.
- Rescuing the Orphans. 2008. Lollar, A. *Bat World News*. 14:2
- Chemically-Mediated Roostmate Recognition and Roost Selection by Brazilian Free-Tailed Bats (*Tadarida brasiliensis*). 2009. Englert, A; M.J. Greene, et al. *PLoS ONE* 4 (11). doi:10.1371/journal.pone.0007781.
- Male bats' mating songs could be valuable for research. 2009. Patel, V., et al. *Bryan College Station Eagle* (Bryan-College Station, Texas).
- Standards and Medical Management for Captive Insectivorous Bats. 2010. Lollar, A. *Bat World Publication*, Mineral Wells, TX.
- Standards for Bats in Captivity. 2011. Tomlinson, D., Lollar A. *Bat World Publication*, Mineral Wells, TX.
- Recovery of little brown bats (*Myotis lucifugus*) from natural infection with *Geomyces destructans*, white-nose syndrome. 2011. Meteyer CU, et al. *J Wildl Dis*. 2011 Jul;47(3):618-26
- The Essential Bat. 2012. Rugroden, K., Lollar, A, *Bat World Publication*, Mineral Wells, TX.
- Baby See-through, 2012. Lollar, A. *Bat World Publication*, Mineral Wells, TX.

CONSERVATION EFFORTS



Bat World's wild sanctuary building.

For well over 60 years, Mexican free-tailed bats have been using older buildings throughout Mineral Wells, Texas as roosting sites and as nurseries in which to raise their young. Future planned development in the area has made it difficult to continue having bats roost in any of these buildings, including Bat World's wild sanctuary building - a 100 year old hand-hewn sandstone building located in the heart of Mineral Wells, Texas.

Nearly 20 years ago, Amanda Lollar, Founder and President of Bat World Sanctuary, purchased this historic building. Brazilian free-tailed bats had been occupying the attic space of this charming, old structure for 60 or more years. It was home to a nursery colony as well as a stopover site for migrating bats. The previous owner of the building wanted them exterminated so he could sell the building. Amanda sold everything she had in order to buy the building to protect the colony of 30,000 bats. She then transferred ownership of the building to Bat World Sanctuary.

In order to make the building bat friendly and to give the bats an environment conducive to their likes, she removed ceiling boards to allow increased ventilation, and removed 6000 lbs of guano that had collected in the crawlspace over the decades. She located areas within walls where bats could become trapped and die, and opened those areas. She installed a padded floor and safety nets under the nursery area to protect the young bats from falling, a unique design that would later be called a 'pup catcher'. (A design now used on some commercial bat houses to prevent injury to bat pups).



Tadarida brasiliensis (Mexican free-tailed bats) roosting on rafters at the wild sanctuary.

Cat walks were erected to give bat workers easier access to any orphaned, injured or otherwise compromised bats. During the 20 years Bat World owned the building, the population of the colony increased over 60%, and thousands of bats that would have otherwise met their demise, were rehabilitated at Bat World's rehabilitation teaching center and later released back into the wild sanctuary. However, future city plans for development make it no longer feasible or safe for the bats to remain in this location. Further, the building needs structural repair that would exceed the financial limits of the organization. Amanda made a decision to return the building to its original purpose, and move the bats to safety in a building constructed solely for conservation of the colony. As well as other wild bats in need of a protected habitat.

The wild sanctuary building allowed Amanda a unique look into the habits and preferences of wild bat colonies. It provided two decades of observations of what worked and did not work for wild bat populations. Out of the valuable information Amanda collected came Bat World's bat castle, a structure designed so that every single inch of the interior could be used for roosting space. A castle specifically for conservation of the species, and capable of holding over 100,000 bats.

CONSERVATION EFFORTS, CONTINUED

With a generous grant from Chase Community Giving and private donations, construction was finished on the bat castle in March of 2012. As bats are being partially excluded from the wild sanctuary and other local buildings in the downtown area of Mineral Wells, Texas, Amanda is training these displaced bats to learn the location of the bat castle by releasing them inside the castle during the day. These bats are marked with a non-toxic tattoo ink before being released into the castle, located less than 5 miles away. The bats are free to leave at night and return to their original roosts. As marked bats are spotted, they are again taken to the bat castle to establish familiarization. Training will take place over a period of three years.

The bat castle is located on land that was purchased by Bat World Sanctuary for the purpose of protecting bats and other wildlife that naturally occurs on the property. Once occupied, the bat castle will provide a safe refuge for hundreds of thousands of bats for decades to come.



Upper left: The bat castle during construction.

Upper right: The inside of the newly completed bat castle.

Middle left: Security gates being installed to protect bats from predators and vandalism.

Middle right: The bat castle sits on a bluff overlooking a one-acre pond.

*Bottom: *T. brasiliensis* occupying the bat castle from a previous training release.*