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April 18, 2010

Barbara Douglas
Senior Endangered Species Biologist
U. S. Fish and Wildlife Service
West Virginia Field Office
694 Beverly Pike
Elkins, WV 26241

Dear Barbara Douglas,

It has come to our attention that during recent conference calls regarding the Captive Assurance colony of VBEB housed at Smithsonian Institution's Conservation Research Center (CRC) claims have been made to the effect that Bat World Sanctuary (BWS) was an active participant in this project. This is, in fact, untrue.

Initial plans for this effort were developed by members of an informally established VBEB working group. Participants included representatives from the Smithsonian National Zoological Park, Bat Conservation International, the Conservation Breeding Specialist Group (SSC/IUCN), the Association of Zoos and Aquariums Bat Taxonomic Advisory Group, Mesker Park Zoo and Botanic Garden, U.S. Geological Survey (USGS) Fort Collins Science Center, WVDNR, Virginia Department of Game and Inland Fisheries, North Carolina Wildlife Resources Commission, Kentucky Department of Fish and Wildlife Resources, U.S. Department of Agriculture National Wildlife Research Center, and the USGS National Wildlife Health Center. A list of participants is included in Appendix A. Note that neither BWS nor Bat World NoVa (BWN) are included in this section. While we are included in the list referenced in the appendix, we protest our inclusion as we were decidedly not regular participants with this working group.

Additionally, we are not, and have not, ever been included in ongoing conference calls, although Leslie Sturges, Director of BWN, was invited to participate in two calls very early in the development process. Despite numerous requests, by both e-mail and phone by three different people within our organization, we have not been included in any other calls concerning captive assurance colonies. Nor have we been invited to participate in any calls concerning the CRC VBEB project, despite the fact we have repeatedly voiced concerns regarding that colony (see attached string of e-mails and photographs).

We also take issue with FWS claims that other facilities were solicited to hold these bats when it is clear from the above list Smithsonian NZP was an active participant with the VBEB working group from the outset.

Further, claims that CRC is using BWS methods for captive maintenance of the bats in their care are false. While it is true that CRC staff trained at BWS and volunteered with our satellite rescue center, BWN, methods taught and recommended for long-term captive maintenance are not taught as part of our training workshops. While I personally took time to provide additional information to CRC staff during the BWS workshop, the primary goal of our workshops is to teach rehabilitation methods for insectivorous bats, something all parties were well aware of prior to attending. Additionally, the CRC keeper who volunteered at BWN spent approximately 20 hours learning basic daily care for bats in rehabilitation and permanent captivity. Obviously, this is not enough time to learn the nuances of long term maintenance for any wild animal, let alone one as specialized as North American insectivorous bats.

In fact, feeding methods, diets provided, housing, enrichment, and handling procedures used at CRC are not at all aligned with BWS methods, for instance:

- Neither BWS nor BWN ever recommended placing animals in stainless steel pans of mealworms in order to train them to self feed
- We do not recommend the use of giant mealworms as whole prey items for bats and only recommend them for viscera feeding if bats remain clean
- We recommend that bats are kept clean during the hand-feeding process and are never put away wet or soiled
- We recommend the use of immediate systemic antibiotics and pain management for large wounds
- We strongly recommend against the over-handling of bats or attempting to force-feed bats that appear stressed
- We recommend the addition of vitamin and mineral supplements be added to the food
- We recommended that 1/8" mesh be used. In the construction of the CRC flight cage, 1/4" mesh was used
- We recommended a padded flight cage floor. In the construction of the CRC flight cage, concrete was used
- We recommended a steady humidity level of at least 60% for cave-dependant bats and a regular photoperiod of 12 on/12 off; we do not know what photoperiod or humidity levels were actually maintained at CRC, but we were told that black mold developed, and that an attempt was made to completely darken the bats' environment
- We strongly recommend an enriched environment for captive bats; the only reference to enrichment we have gleaned from CRC is the addition of a single artificial tree placed into the enclosure weeks into the project, and some bucket feeders for crickets
- We do not recommend using gloves to handle bats destined for permanent captivity, especially once they can reasonably be assumed to be healthy. We find that reliance on Nitrile and leather gloves interferes with accurately assessing bats' body condition, properly administering medical treatments, contributes to soiling and matting during feeding, and interferes with gaining trust and acceptance of handling by bats

We are hard-pressed to find evidence that CRC is using methods outlined in the *Virginia Big Ear Bat Plan for Controlled Holding, Propagation, and Reintroduction* appendix titled Virginia Big-Eared Bat - Husbandry Recommendations & Considerations. Additionally, as we were not involved in developing those husbandry recommendations, we fail to see how it can be claimed that we were in any way involved in establishing guidelines or protocols for the VBEB project.

Finally, while BWS and our associate BWN made numerous offers of assistance, offers to visit and observe, offers to provide phone or e-mail advice to FWS and WVDNR personnel and to CRC staff, those offers were rebuffed or completely ignored. The reason given was that CRC was angry with their own consultant's final report (when numerous concerns were initially raised) and that therefore CRC no longer 'trusted' the bat rehabilitation community, in particular, BWS and associates. Even in the face of continuing mortality of an endangered species and the recommendation for 'neutral' advisors by BWN, as far as we can discern no known insectivorous bat care specialists were brought in to help, and no meaningful attempts have been made to include BWS or associates in helping mitigate losses in this colony, which now numbers only eight bats.

For these reasons, we insist that no further claims be made that suggest our methods or advice have been used by CRC or FWS in the course of the VBEB captive assurance project. In fact, if such claims do not immediately cease, we will pursue legal action to protect our professional interests.

Regards,



Amanda Lollar, Founder and President
Bat World Sanctuary

From: "Ware, Lisa H." <WareL@si.edu>
To: Bat World Sanctuary <sanctuary@batworld.org>
Cc: "Derrickson, Scott R." <DerricksonS@si.edu>; "Wildt, David" <WildtD@si.edu>; "Williamson, Linwood" <WilliamsonL@si.edu>; "Padilla, Luis" <padillal@si.edu>; "Hope, Katharine" <hopek@si.edu>; "Lynch, Warren" <LynchW@si.edu>; "Lang, Kenneth" <LangK@si.edu>; "Crowe, Chris I." <CroweCI@si.edu>; "Songsasen, Nucharin" <SongsasenN@si.edu>; "Viner, Tabitha" <VinerT@si.edu>; "Maslanka, Michael" <maslankam@si.edu>; "Moore, Don" <moorede@si.edu>; "Ralls, Jack A." <RallsJ@si.edu>; "Woolf, Wayne" <WoolfW@si.edu>; "Jenkins, Frankie (Nelson)" <JenkinsN@si.edu>
Sent: Friday, August 28, 2009 2:19:47 PM
Subject: CRC bat enclosure design

Hi Amanda,

Our Animal Management team has drafted a design for our bat enclosure and we would like your thoughts on it, especially any "red flags" that should steer us in a different direction. We were also hoping for Barbara's thoughts, so please forward this along if you don't mind (I don't have her email address).

Essentially the design is a soft walled tent suspended from high tension cables. The mesh will hang down to the floor and be held against the floor with weighted PVC pipes. The mesh would be attached to the tension cables and PVC pipes using plastic cable ties and seamed together between rolls since there would be no wall studs to serve as anchor points. There would be no floor padding so the mesh would be epoxied to the floor to seal the edges. The corners of the enclosure would have a PVC pipe coming part way up from the floor to provide the corners with some shape. The actual bat enclosure would be encased in a second similar structure to provide secondary containment against escape. The entrance vestibules are proposed to be chain link dog kennels to which the netting would attach. I have attached a diagram to help you visualize the design but it may be easier to describe/explain some of this over the phone. If you need clarification on anything I can be reached at the below numbers, or I can call you if you can recommend a good time to try and catch you.

As stated we are looking for "fatal" flaws in this design and would appreciate any open and honest opinions that you can provide before we begin construction. Please provide any comments you might have to entire group that is copied on this email.

Thanks in advance for your time and thoughts,

Lisa

Lisa H. Ware / Veterinary Technician/ Smithsonian Institution
National Zoo's Conservation & Research Center
1500 Remount Road, Front Royal, VA 22630
Phone: 540-635-6521 ext 232, Cell: 202-207-5403

From: Bat World Sanctuary [mailto:sanctuary@batworld.org]
Sent: Sunday, August 30, 2009 4:34 PM
To: Ware, Lisa H.
Cc: Derrickson, Scott R. ; Wildt, David ; Williamson, Linwood ; Padilla, Luis ; Hope, Katharine ; Lynch, Warren ; Lang, Kenneth ; Crowe, Chris I. ; Songsasen, Nucharin ; Viner, Tabitha ; Maslanka, Michael ; Moore, Don ; Ralls, Jack A. ; Woolf, Wayne ; Jenkins, Frankie (Nelson); french@batworld.org
Subject: Re: CRC bat enclosure design

Hi Lisa,

I'll be happy to help. I'm cc-ing Barbara on this message in case she has any additional comments. I've also attached a document that you may find helpful. The primary things to keep in mind in any flight enclosure are safety and well-being of the bats, accessibility of the bats for keepers, and ease of cleaning/maintaining. Keeping these things in mind I'd like to offer the following:

The cage size is good. It allows plenty of room for flight with enough space left over to section off a smaller area if needed. The ceiling height should be high enough to permit adequate flight but low enough to allow workers access to the bats. I recommend a ceiling height of 7' to 7.5'. A cover should be constructed over at least half of the roof of the cage to provide a

dark section. The actual bat roost should be placed in this darkened area.

The vestibule also looks good. I'm not sure how well the dog kennels will work but have some general knowledge about them. At the cost of thousands of dollars, the director of a dog rescue dog group I'm involved with has had to replace her kennels three times due to poor framework. She finally purchased "Options Plus" kennels which are expensive but much harder. It may prove cheaper to build the vestibule rather than use pre-manufactured dog kennels. Something else to consider is how the door opens. If it opens into the cage rather than into the vestibule, you risk crushing a bat in the framework of the door. The door should open into the vestibule, not the flight area, or, clear Plexiglas can be applied to the door frame as well as a portion of the cage walls surrounding the door. The slick surface will prevent bats from being able to grip on and roost close to the door or between the door frame. However, with no framework on the cage I'm not sure how Plexiglas can be attached.

Unfortunately, there are several potential problems with the proposed cage. An obvious problem is a lack of anything to connect a cover, feeding shelves, water dishes, roosting apparatus or Plexiglas. Assuming a hose will be used for cleaning, there is danger in hosing bats that may become downed. Insectivorous bats are easily stressed and the noise of rushing water may startle them, causing them to fly out into the hose, or land on the floor and become sopping wet. The concrete floor is also very likely to cause injuries such as abrasions and broken wings. Although concrete floors are used in zoos for fruit bat exhibits, even these bats become injured when they fall (we have several zoo bats that were retired here after suffering such falls). Insectivorous bats are much more delicate than the harder fruit bats.

My suggestions are keeping the same size flight area and constructing a framed cage from PVC planks (simulated wood). This will provide stability and the necessary framework to secure a cover, roosts, water and feeding stations. If the netting becomes accidentally torn, the section between the framework can be easily replaced, which would not be the case in the proposed design. Spacers should be placed along the entire top edge of the flight cage and additional netting attached to the spacer, this will provide cushion for bats landing on the cage walls. I also recommend a padded floor to prevent injuries that will be sustained on a concrete surface. The floor can be padded with inexpensive carpet padding and covered with fire-resistant laminated polyester as seen at Bat World Sanctuary (<http://www.mytarp.com/vinyl-tarps-13-oz-20x30.aspx>). This type flooring is very easily maintained by sweeping and mopping daily with a disinfectant solution, causing no disturbance to the bats.

I have designed and built several flight enclosures. Each cage had unforeseen flaws and was subsequently improved upon. The cage I am using now is the result of numerous improvements over the past decade. I fear the proposed VBEB enclosure will have numerous problems that aren't yet obvious, and corrections/modifications will need to take place for months down the line. With a project this critical, the last thing that should be considered is reinventing the wheel. It's doubtful you can start over if something goes wrong as there may not be any VBEBs left to start over with. On a positive note, I believe the proposed design may work well for the outer cage.

I hope these comments are helpful. Please let me know if I can be of any further assistance.

Amanda.

Amanda Lollar, Founder/President

Bat World Sanctuary

www.batworld.org

Bat World Sanctuary is a non-profit bat conservation organization that also provides rescue for bats worldwide. For more information about bats and how they make our world a better place please visit www.batworld.org

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From: Bat World Sanctuary <sanctuary@batworld.org>

To: barbara_douglas@fws.gov

Sent: Fri, October 16, 2009 4:25:37 PM

Subject: Smithsonian bat caging

Dear Barbara,

I understand that you are meeting with Leslie Sturges in order to inspect the caging and husbandry at the Smithsonian for the VBEB and I am glad that Leslie will be involved in this important project.

Please excuse my intrusion as my advice was not solicited, but I want to voice my concerns due to the critical nature of this project. I have designed and built several bat flight enclosures over the past two decades, including the design currently being used by the Springs Preserve in Las Vegas. I've attached my CV to show that my concerns are supported by experience.

Prior to the building of the Smithsonian flight cage, I was in communication with Lisa Ware and Warren Lynch at the Smithsonian, and gave them recommendations for changes to the cage that would better accommodate the bats. In order for these bats to adapt to captivity it is critical that their enclosure provide an environment that reduces stress rather than foster it. I understand the design currently in place for the VBEB consists of net suspended with cable and glued to a concrete floor. This design leaves no surfaces to which roosting shelves, water, food, or enrichment apparatus or other necessary items can be attached and readily available to the bats. The current design will make it difficult for bats to locate basic necessities, which will significantly increase stress and hinder their adjustment to captivity. Also, any hooks or other hardware used to suspend the net will cause weak points and tears within the netting, resulting in subsequent escapes. I have reservations regarding the vestibule as I understand a dog kennel will somehow be implemented for this purpose. I fear the lack of framework around the cage will prevent a free-standing vestibule to be securely attached without risk of the netting being torn.

I would like to offer the following general recommendations to improve the current design:

- * The cage frame should be constructed of PVC planking to which netting, roosting shelves and other critical items can be attached.

- * The floor should be cushioned with carpet padding and covered with fire-resistant laminated polyester that can be easily cleaned by sweeping and mopping with a mild bleach solution without disturbing the bats.

- * The netting should be 1/8" polypropylene mesh (bats can get forearms caught in netting as small as 1/4"). The netting can easily be secured to the PVC planking without risk of tearing.

Although I have not seen the nutritional recommendations, I believe Lisa Ware and Warren Lynch have drafted excellent husbandry guidelines. Also, I am aware that Missy Singleton is going to serve as a consultant. Both Lisa and Missy have the knowledge and experience necessary to keep the bats alive and healthy if proven survivability methods are used. I hope this e-mail will prove to be of value to you. I feel it is critically important to do this correctly the first time as there may not be any VBEB left to repeat this project.

Amanda

From: "Maslanka, Michael" <maslankam@si.edu>
To: Bat World Sanctuary <sanctuary@batworld.org>
Sent: Tue, September 1, 2009 6:41:00 AM
Subject: RE: nutrition recommendations for insectivorous bats

Hey Amanda-

Is your use of the mealworm medium a cost-savings measure or have you seen a nutrient-content difference between this medium and the commercial gut loads on the market?

Just idle interest. Thanks!

Mike

Mike Maslanka, MS
Senior Animal Nutritionist
Head, Department of Nutrition
Smithsonian Institution's National Zoological Park
PO Box 37012, MRC 5503
Washington, DC 20013-7012
ph: 202.633.1109
cell: 202.497.5716
fax: 202.673.0040

Re: nutrition recommendations for insectivorous bats
From: Bat World Sanctuary <sanctuary@batworld.org>

...

View Contact

To: "Maslanka, Michael" <maslankam@si.edu>

Hi Mike,

I don't think I ever answered this question, sorry! I would think commercial gut loading medium is manufactured at a cost savings and therefore would not be as nutritious as the medium we recommend. The medium we use originated from the paper "Increasing the calcium content of mealworms (*Tenebrio molitor*) to improve their nutritional value for bone mineralization of growing chicks." We made a revision in the level of calcium added to the medium as a high calcium content kills mealworms in a matter of days. The amount of calcium we use in the medium has proved adequate for maintaining a reproductive colony of insectivorous bats a number of years now.

Cost savings has never been a factor in providing nutritious food for the bats in our care. The supplements we use are actually rather expensive - CoQ-10, for example, runs around \$50 per one-ounce bottle. If you are looking for a means to save funds, then yes, a commercial gut load would be the way to go, but I certainly wouldn't recommend it.

Amanda

Amanda Lollar, Founder/President
Bat World Sanctuary
www.batworld.org

Bat World Sanctuary is a non-profit conservation organization that provides rescue for bats worldwide. For more information about bats and how they make our world a better place please visit www.batworld.org
PLEASE GO GREEN, print only of necessary

From: Bat World Sanctuary <sanctuary@batworld.org>
To: barbara_douglas@fws.gov
Cc: Barbara <french@batworld.org>
Sent: Mon, August 31, 2009 2:13:28 PM
Subject: bat captive care/rehab

Hi Barbara,

I just want to remind you to please add Bat World Sanctuary to the captive care and rehab conference call list. Barbara was the captive care/rehab representative at BCI, but is now with Bat World, so we want to make sure we don't get left off the list by mistake. Also, I've attached a document that you might find useful. Please feel free to share the

information.

Thank you,

Amanda

From: Barbara French <barbarathebatdoctor@yahoo.com>
To: jeremy_coleman@fws.gov
Cc: sanctuary@batworld.org
Sent: Fri, October 23, 2009 8:00:41 AM
Subject: WNS captive care and rehab groups

Hello Jeremy. This is Barbara French. I was the Science Officer at Bat Conservation International and was on the call list for the rehab and captive care committees. I am now the Director of Conservation at Bat World Sanctuary and just wanted to make sure we were on those call lists. I do believe we may have been added but there just haven't been any messages from the list recently. Just making sure we go through the correct channels. Thank you very much.

Barbara French
french@batworld.org

Amanda Lollar

----- Original Message -----

From: BatWorld NoVa

To: Craig Stihler

Sent: Friday, November 20, 2009 5:34 PM

Subject: things are not going well

2 Files Download All

wing check.JPG (928KB); vbeb4.jpg (1575KB)

Craig--you know I support the VBEB project and that I supported the choice of CRC as the best place to manage these bats. But that was before I got pictures of the bats at CRC. I've attached a 'before' and 'after' shot. Plus some more showing specifics. I'm also sending pics under a separate post of bats in my care that came in compromised and that have been here for a comparable amount of time, or longer, for comparison. If these are too small let me know and I will send larger version in separate posts.

The CRC bats look horrible, and I can tell from the 'after' picture that this bat won't last much longer. The black crusting around the face is from food--it is sticky mealworm goo adhered to the skin, which has formed a crust. The bats can't groom that off. It needs to be removed with warm water compresses applied with a cotton ball or gauze. If left in place it can interfere with the bats ability to chew and the underlying skin will get infected. Which has already happened to several of the bats, as is visible in the attached pictures. The crusted muck is also visible on the picture of the deceased bat. Other things to note on the 'after' bat.

The matted curled fur under the chin is caused by one of two things--the bat doesn't feel good enough to groom, or people are trying to get the food glop out and not drying and brushing the fur out afterwards. The swollen eyelids and facial expression are indicative of a very sorry bat. A healthy, self feeding bat that is being fed an appropriate diet in an appropriate manner does not get the crusting and subsequent dermatitis.

In my experience there is no justification for these bats to look so bad 10 days in, especially given they were healthy to begin with. .

I haven't said anything about what I've been hearing, but darn it, this is an endangered species and the first captive propagation project in the country. This needs to be done right, and I've lost faith that the zoo is willing to listen to people who have housed and cared for bats before. IMHO, these bats are being overhandled. They are being weighed, hand fed, and weighed again--feeding time should always be a positive experience, but even bats that have demonstrated the ability to self feed are still being hand fed. In my experience (I have received and either subQd or fed or euthanized about 500 bats at this point) bats that are eating appropriately sized whole food on their own will not have that crusting on their faces and will groom appropriately. Some CRC bats are still being hydrated with subQ fluids--there should be no need to do that at this point. If bats are dehydrating, there are stress or health factors at work that are not being addressed.

I'm afraid that the rest of these bats will go south, and everyone will throw up their hands and declare captive propagation a failure. In the interests of fairness, I would like to personally see the remaining bats. I recommend that you, Barbara, and I, plus some neutral observers (I recommend my vet) visit the bats and see them for ourselves. I realize I may not be seen as integral to this project, but I have a demonstrated interest in seeing this project succeed. I am also a taxpayer and it's ultimately taxpayer money that's going into this project! I hate to think of scarce WNS funding going into this project if that funding isn't being spent wisely and in the best interests of the bats themselves. I'm sure no one at CRC wants to meet with failure, and no one wants to watch animals die under their care, but something is going wrong and it needs to be addressed sooner rather than later.

Leslie Sturges, Director
Bat World NOVA
www.batworld.org
703-973-3157
Leslie Sturges, Director
Bat World NOVA
www.batworld.org
703-973-3157

----- Original Message -----

From: BatWorld NoVa
To: barbara_douglas@fws.gov
Sent: Monday, November 23, 2009 5:37 PM
Subject: Fw: In case...

----- Original Message -----

From: BatWorld NoVa
To: Craig Stihler
Sent: Saturday, November 21, 2009 6:22 PM
Subject: In case...

In case I haven't adequately expressed my concerns, I think the attached pics are of the same bat, which has since died I believe. One pic is from processing at my place and was taken by my husband, the other is from CRC taken 11/19.

What is the plan for the bats that aren't doing well? They are most certainly not candidates for return to the hibernaculum-- they wouldn't last the trip, let alone a day.

Leslie Sturges, Director
Bat World NOVA
www.batworld.org
703-973-3157

----- Original Message -----

From: BatWorld NoVa
To: barbara_douglas@fws.gov
Cc: Jeremy_Coleman@fws.gov
Sent: Sunday, February 21, 2010 3:47 PM
Subject: CRC bats

Dear Barbara--it has come to our attention that the CRC colony of VBEBs is now down to 50%. We are not getting the info from CRC directly, rather from staff at other zoos and researchers who are contacting us and asking questions about CRC bats. In fact Amanda Lollar has been contacted by no less than 5 people who THINK we're involved in the project and are looking for answers. Some of the people contacting Amanda for advice are people the CRC has contacted looking for advice. We know CRC is now contacting fruit bat experts at other zoos and aquariums because those folks then turn around and ask us for help. This of course begs the question: why isn't CRC seeking advice from the people who trained them and who have the experience to best assist them? The fact that these losses are occurring well after the departure of the consultant suggests to me CRC still isn't using established methods for captive maintenance. Is it really necessary to watch the entire collection perish because CRC didn't adhere to the methods they learned during training, didn't take the advice of their own consultant, and now refuse to openly share any information or ask for help from experts in husbandry of insectivorous bats?

Two zoos have been in contact with BWS to seek advice on establishing assurance colonies, along with at least one researcher who is concerned that such assurance colonies are not being modeled with less sensitive species, something we also suggested early on. We are also being told that FWS is no longer interested in funding captive colonies because CRC wasn't successful. If so, I don't know how to impress upon you that keeping bats in captivity, even big ear bats, will be successful if established captive care principles and methods are followed and facilities don't ignore the advice they are given by experts.

I will state right here and now, that I myself could have done a better job with those bats in my basement. I have 50% "success" and I get broken, battered, and rabid animals. Bats are not magical creatures; they are mammals, and the same principles of good husbandry, appropriate diet, and reduction in stress that apply to every other captive mammal also apply to bats of any species. I suggest that FWS should not judge the possibility of assurance colonies based on the CRC project. I understand the lack of "facilities" here in the east, but now western researchers are asking why people and organizations who have been successful in keeping reproductive colonies of insectivorous bats alive for decades are not being asked to establish these colonies rather than zoo facilities that have no experience whatsoever.

We freely provide husbandry information to anyone who asks for it, even though we are not funded to do so. However, we are getting good and tired of being treated like second class citizens by the only facility currently funded to house an assurance colony. And while I appreciate Nuch's efforts to help keep lines of communication open, it is too little and bats are still dying. My last communiqué with Nuch was in response to her telling me (via phone) that they were having issues with the bats' toes. I sent a path report and some pictures of toe issues and asked for feedback. To date I have heard nothing back. The rate of mortality is absolutely atrocious. The word is out on the failure of this project (and not because of anyone at Bat World --word is filtering out through zoos and WNS researchers), and speculation is running rampant. Several people have suggested that the remaining bats need rehab to keep them alive, and while I have been defending the decisions made by USFWS regarding these bats, I now think in the interests of future projects and the bats themselves, the bats should be transferred to someone who can keep them alive.

I admit to being really ticked off because this is a publicly funded project carried out by a publicly funded facility, yet we have more open and honest dialog with zoos and western researchers that cannot be FOIA'd. I've tried very hard to respect CRC's wishes and stay out of things for the most part, but this is getting frustrating, at best, and the bats are still dying.

Leslie Sturges
Bat World NOVA

From:
Bat World Sanctuary <sanctuary@batworld.org>

...

View Contact

To: barbara_douglas@fws.gov
Cc: robyn_niver@fws.gov; rick.reynolds@dgif.virginia.gov; Scott.Darling@state.vt.us; Andrew_King@fws.gov; Andy_Moser@fws.gov; angela_boyer@fws.gov; Anne_Secord@fws.gov; Annette_Scherer@fws.gov; Carole_Copeyon@fws.gov; David_Stilwell@fws.gov; Diana_Weaver@fws.gov; Diane_Lynch@fws.gov... more

AmandaLollar-IndyPrize.pdf (200KB)

Dear Barbara Douglas,

For the sake of the 10 bats that are still alive, I am once again e-mailing to offer critical advice that will save these animals. As I've never received one response from you, and have come to realize my previous advice was never shared, I have cc'd others who may find my information helpful.

As a bat care specialist and bat behavioral expert with two decades of experience caring for thousands of insectivorous bats (CV attached), I am stating for the record that those remaining bats absolutely must be moved if they are to be saved.

It appears that, once again, a collective decision was made without consulting experts in the field. The decision was made by unqualified people to keep these bats at the very facility where 75% of them have perished in a few short months. This was not a complicated, high-risk, extremely difficult endeavor. This subspecies is not some magical creature, it is an insectivorous bat just like all the other insectivorous bats that have been raised in captivity for decades by hundreds of bat care specialists. The 'lessons' that the Smithsonian is learning are lessons that others learned over 20 years ago. Despite claims to the contrary, we are aware that offers of help from AZA facilities were ignored by CRC, including the Lubee Conservancy. In addition, we have been unable to unearth ANY contact between the CRC and the so-called 'bat rehab community.'

It also appears that, again without consulting bat care specialists, it has been declared that moving the bats will create additional stress. This is absurd. Transferring them will not kill them. As an example, a few years ago we rescued 1,200+ T. brasiliensis from a sub-basement. These bats had been stuck inside the basement for almost two weeks. Over 1000 had fallen

through an abandoned elevator shaft and landed in a pool of oily water at the bottom of the shaft. After falling, the survivors managed to swim to the edge and crawl half way up the sides, where their exit was blocked. They hung there, oily, filthy and wet, for over a week before we were notified. These bats were covered with oily, polluted water which also contained dead bats, so their coats smelled like death. Others had foam sealant covering their fur, and were lying on the floor [deleted scattered] throughout the basement. Almost all 1,200 bats were comatose and barely breathing, yet the vast majority survived being transported to our facility two hours away, where they were rehydrated, bathed and medically treated. All but a handful were able to be released back to the wild less than a month later. This is what bat care specialists do, we transfer sick and dying animals to bat care facilities and bring them back to health. This can, and SHOULD, be done for the remaining 10 VBEB that are still alive.

Despite pointing fingers, paperwork, red tape, cover-ups and all the other excuses, the immediate focus here should be saving these last few bats. Bats are highly intelligent, and these animals fully realize they are in a toxic environment. If those bats are transferred to a different setting with different caretakers they can be saved. Please, look at the faces of those dying bats and then make up your mind. Then, JUST ONCE, listen to the experts in this field. Those bats have suffered enough and deserve a chance to live, and this project deserves a chance at some semblance of success. For the sake of those animals, just do the right thing one time, before it is too late.

Amanda Lollar

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Bat World Sanctuary is a non-profit conservation organization that provides rescue for bats worldwide. For more information about bats and how they make our world a better place please visit www.batworld.org

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Summary of Recommendations for the Captive Care of Breeding Colonies of Insectivorous Bats

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Maintaining breeding colonies of insectivorous bats can be difficult and time intensive. However, with proper care these animals can thrive and reproduce in captivity. Bat World Sanctuary has maintained a captive colony of non-releasable Mexican free-tail bats (*Tadarida brasiliensis Mexicana*) for the past 16 years. This colony has been reproducing for the ten years, producing second and third generations ranging in age from one to 16 years. We offer the following recommendations for collecting and maintaining captive colonies of insectivorous bats.

Colony Structure

The number of bats collected should be between 50 to 70 bats with a ratio of three females to one male. Ideally, captive colonies should consist of both juvenile and adult bats.

Collecting and Transporting

The manner in which bats are collected will directly impact their ability to adapt to captivity, therefore, collecting bats should be done in a manner that greatly minimizes stress. Gathering bats by hand is preferred. Bats should be transported in soft-sided mesh dog crates with zippered doors. These cages should be covered with a towel and the floor should be padded to reduce injury during transport. Huck towels should be draped inside the cages and against the walls to provide hiding places for the bats in transport.

Introduction to Captivity

Bats should not be separated but instead be housed together as a colony. On intake, each bat should be initially examined in a manner that does not place undue stress on the animal. These exams may enable the handler to find marks on the bats that can later be used to identify that particular animal. During the adjustment period bats will need to be hand fed twice daily until they learn to self-feed from dishes.

Handlers

All caretakers working with insectivorous bats should be vaccinated against rabies. Caretakers should also be skilled in providing the intensive daily care requirements needed in order to maintain insectivorous bats over extended periods of time. As bats adjust to captivity they become acclimated to their caretakers. Caretakers should therefore be limited to three or four individuals per colony. Each caretaker's routines and handling techniques should be analogous. The sudden introduction of a new caretaker and/or handling techniques has been known to result in mortality among insectivorous bats.

Rabies and Parasite Control

North American insectivorous bats are a rabies vector species. Infected individuals have survived for as much as a year or more in captivity, seriously jeopardizing the health of entire colonies as well as human caretakers. Bat World Sanctuary has been routinely vaccinating bats since 1990 and we recommend that all captive bats be vaccinated on intake as well as annually. We have submitted serum samples from some of our vaccinated bats for rabies titer checks. Although the bats developed rabies antibody titers, it should be noted that use of the rabies vaccine on bats is extra label use. Exposure to potentially infected bats should be treated as recommended by the CDC (www.cdc.gov).

Ecto-parasites should be removed with a cotton swab dampened with alcohol. Revolution™ can be applied to the tail membrane to eliminate additional ecto-parasites. Treatment for both ecto and endo-parasites can be found in *Diagnostic and Treatment Update for the Rehabilitation of Insectivorous Bats* available online at www.batworld.org.

Roosts and Flight Cages

Most insectivorous bats are crevice-dwelling species. These bats seek the shelter of caves or tight, darkened crevices that create a sense of security. Roosts must simulate natural conditions to minimize the stress of captivity and promote natural behavior.

Indoor flight cages should be a minimum of 35'x20'x7.5' for up to 70 insectivorous bats. Ideally, the flight cage should include an additional outdoor area of 30'x20'x7.5'. Black lights can be installed to encourage insects to enter the outdoor cage and allow natural foraging behavior in juvenile bats born in captivity.

Enrichment

Bats are highly intelligent and long-lived. Environmental enrichment is necessary for insectivorous bats as it is for many other mammals. Poor quality of life will have a profound effect on both the physical and psychological well-being of insectivorous bats in captivity and is likely to result in increased mortality and failure to reproduce. The psychological needs of bats in captivity must be met to ensure their well-being and overall health.

Crevice-dwelling bats should only be housed alone when absolutely necessary (such as in cases of illness). In circumstances where crevice-dwelling bats must be housed alone, providing enrichment and simulated natural habitat may greatly enhance the emotional security of an individual bat.

Diets

Almost all insectivorous bats are fed a diet of gut-loaded mealworms in captivity. Mealworms should be fortified in a nutritional medium before being fed to bats, and should also be allowed to feed on moisture food such as corn on the cob, sweet potatoes, carrots and apples. This will provide additional nutrition as well as variety for the bats. Additional supplements such as Vionate® and Missing Link® should be sprinkled on fresh mealworms before feeding to the bats. The Bat World blended mealworm diet found in *Diagnostic and Treatment Update for the Rehabilitation of Insectivorous Bats* (available online at www.batworld.org) is recommended for bats being introduced to captivity that are too frightened to eat whole mealworms. This diet is also excellent for weak and emaciated bats and bats with dental disorders. Whole wax worms should be avoided as they cause severe gum infections in insectivorous bats. However, wax worms can be frozen and added to the blended mealworm. Note: Bats should not be maintained exclusively on mealworm or wax worm viscera.

Health Problems

Reproductive colonies of insectivorous bats maintained in captivity are prone to a variety of health issues including, but not limited to, dehydration, periodontal disease, abscessed teeth, bladder stones, kidney disease, liver disease, bite wounds, and complications during pregnancy and delivery. Infections can result in death within 24 hours. Avoiding these problems necessitates daily examinations of each bat, as outlined below. Additional ailments and preferred treatments and medications can be found in *Diagnostic and Treatment Update for the Rehabilitation of Insectivorous Bats* (available online at batworld.org).

Daily Checks

Captive bats should be given daily physical examinations. These exams will allow detection of problems in early stages, thereby increasing the likelihood of successful treatment. Examinations should initially be done with each bat in hand, however, once handlers are familiar with individual bats, cursory visual exams are often sufficient.

Orphan Care

A mother experiencing an episiotomy and a cesarean section may not care for her pup. First time mothers occasionally drop their pups, particularly in captivity. Therefore, handlers will need to be experienced in the care and feeding of orphans. Some of the species in the family Vespertilionidae will not lap liquids so it is therefore critical that these pups are fed from foam tips. Foam tips provide crevice-dwelling pups the ability to nurse formula rather than lapping. Methods to hand feed orphaned crevice-dwelling bat pups can be found in *Diagnostic and Treatment Update for the Rehabilitation of Insectivorous Bats* (available online at batworld.org).

Identifying Individuals

PIT (passive integrated transponder) tags are microchips implanted subdermally which can be scanned to identify individual bats. Before adoption of such a marking technique, effects of PIT tags on different species of bats should be examined. The size of needle used to implant the microchip may also necessitate local anesthesia during the application process. Discerning marks on individual bats will allow identification of that particular animal without the use of PIT tags. Research shows that a great many bats are harmed by the use of wing bands, therefore, we strongly discourage the use of bands on insectivorous bats.

Euthanasia

Euthanasia is defined as the act of inducing humane death. Ideally, the method used to administer painless death to an animal should cause minimal stress throughout the procedure. It should result in rapid unconsciousness, followed by cardiac or respiratory arrest, and ultimately, loss of brain function. The current preferred methods of euthanasia for insectivorous bats are by inhalant anesthetics such as isoflurane and halothane, or the injectable tranquilizer Xylazine. Xylazine has been used when isoflurane was not available, and may be preferable for euthanizing bats suffering from respiratory distress. Carbon dioxide, T61, ketamine, telazol, and diazepam are NOT acceptable means of euthanasia for insectivorous bats. Euthanasia methods can be found in *Diagnostic and Treatment Update for the Rehabilitation of Insectivorous Bats* (available online at batworld.org).