

## Veterinary Evaluation

Samantha E. J. Gibbs, DVM PhD  
Avian Disease Coordinator  
Division of Migratory Bird Management  
U.S. Fish and Wildlife Service  
4401 North Fairfax Drive, Mail Stop 4107  
Arlington, VA 22203-1610, USA  
571-216-5776  
[samantha\\_gibbs@fws.gov](mailto:samantha_gibbs@fws.gov)  
March 27, 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,

The following comments concerning the Virginia Big-Eared Bat propagation project are based on the provided files (pathology reports, MOU, permit, VBEB plan) and conversations with yourself and Luis Padilla (Staff Veterinarian of the National Zoological Park Conservation and Research Center).

1. Based on conversations with Dr. Padilla and the provided necropsy reports, extensive efforts seem to have been made by the SNZP in providing thorough veterinary care and diagnosis during the project.
  - a. Several factors, however, may have decreased the success of veterinary treatment including:
    - i. Unknown health status of the bats prior to accession at the CRC
    - ii. The timing of capture within the annual biological cycle of the bats
    - iii. Management problems such as feeding difficulties and surfaces causing abrasions necessitating frequent and prolonged handling and disturbance for feeding and treatment.
    - iv. This last item is particularly important, as veterinary care was then “behind the curve” and reacting to health crises in succession rather than preventing health problems through management.
  - b. Detailed necropsies with associated reports were performed on each animal.
    - i. Necropsy findings do not indicate capture myopathy or broken bones.

- ii. Cause of death in most cases appears to be systemic bacterial infection. This may be associated with the underlying problems of dermatitis and/or abrasions.
  - iii. Specific questions from the group:
    - 1. *Feedback loops of stress and treatment?* Yes, the need for frequent treatment probably exacerbated an already stressful transition to captivity.
    - 2. *Crawling on hard surfaces to feed creating a problem?* Yes, the unusual feeding behaviors required to feed were probably associated with the abrasions on the digits and carpus.
    - 3. *Ambient sounds stressful?* Yes, any disturbance such as loud or constant sounds, acoustics of the room, or human presence in the enclosure would increase stress levels.
    - 4. *Incubator temperatures?* The incubator used for warming bats was maintained at 2°F above room temperature.
    - 5. *What happened to the two bats that were moved to the new facility?* Both bats were severely dehydrated. This, in combination with the stress of moving to the new facility and underlying health problems most likely lead to the mortalities.
2. *Remaining bats:* Stability of the colony health is not apparent at this time and transport of the remaining bats to other facilities may not be advisable. This would submit the remaining bats to further stress through movement and adaptation to another new environment.
  3. *Future efforts:* Future attempts at captive propagation may suffer difficulties similar to the current project and should not be pursued without a very critical examination of the management and health problems experienced during this project.
    - a. Treatment methodologies were altered frequently to adapt to the individual health needs of each bat and to the changing health status of each bat over time. While adaptation of treatment protocols is appropriate based on response to treatment and antibiotic susceptibility testing, the variability makes evaluation and analysis of the success or failure of each management and treatment protocol problematic.
    - b. Further reduction of stress during capture, transport, captivity, and veterinary treatment may not be possible.
    - c. In response to the "Project Risks" section of the MOU, it does not appear that best husbandry and health guidelines have been established for this species through this project.
  4. The MOU between FWS, WVDNR, and the Smithsonian National Zoological Park contains language pertinent to this discussion. The actions of the SNZP appear to be consistent with this agreement. (see below)

(iv) Health Intervention

1. Medical treatments and therapeutic or diagnostic interventions will be at the professional discretion of SNZP animal care team.
2. SNZP will inform the WVDNR and USFWS prior to euthanasia of any bats, except in the event of an acute emergency where animal suffering must be immediately terminated.

(v) Necropsy Protocol

1. SNZP will conduct full post-mortem examinations on all bats that die or are euthanized.
2. Preliminary and final post-mortem reports will be completed by SNZP, and copies of these reports will be provided to WVDNR and USFWS.
3. Tissue and specimen samples taken during necropsy will belong to SNZP. Any tissues or remaining parts of the carcass not needed for the postmortem diagnostics and not considered to have high potential for disease transmission belong to WVDNR and will be transferred to a third party under the advice of WVDNR and USFWS.

(vi) Project Risks

Although the goal of this project is to have minimal VBEB mortality, the Cooperators acknowledge that this project carries substantial risks and that significant bat mortality may occur. The project will be considered successful as long as new information and knowledge are generated regarding best husbandry and health guidelines for insectivorous bats in captivity, regardless of mortality events.

I hope these comments help. Please feel free to contact me if I can be of any further assistance.

Kind regards,

Samantha Gibbs