

Rehabilitation Notes for the Silver-haired Bat

By Marlene Ehresman and Sarah Hart

Before considering rehabilitating bats, you must, of course, be a licensed wildlife rehabilitator. We also strongly encourage people to attend wildlife rehabilitation training workshops and find a network of other bat rehabilitators to exchange information. There are at least annual opportunities for state, regional and national conferences and the National Wildlife Rehabilitators Association (<http://www.nrawildlife.org>) is one national organization that makes an effort to post such opportunities. In Iowa, the leading bat rehabilitator is Vera Blevins of Bat World Heartland (http://www.batworld.org/batworld_centers/heartland.html) and she has given Marlene great advice over the years. Finally, purchase good reference books, such as *Captive Care and Medical Reference for the Rehabilitation of Insectivorous Bats* by Amanda Lollar and Barbara Schmidt-French, ISBN-10: 096382483X . The book is currently out of print and the authors are due to release a third printing in the near future. There are some used books on-line, but waiting for the updated version would be wisest. Watch Bat World Sanctuary's website for more information. If you purchase the out-of-print book, it has an updated companion manual (available for download only at <http://www.batworld.org/worldbatline/worldbatline.html>), which should be acquired.

Initial Exam and Forms

An admission form is always necessary for any animal that comes in for rehabilitation. The link below provides an admission form specifically for bats. This form is important since it includes a public waiver as well as two sections for important records - Physical Exam/ Treatment and Disposition. http://www.batworld.org/worldbatline/pdf_files/batadmission-waiver.pdf

First, note the body posture and general condition of the bat. Look for symmetry of the legs, hands and thumbs. Know the clinical signs of rabies and remember that even if a bat does not exhibit the obvious signs of rabies, the bat can still be incubating the virus. Always use caution when handling a bat.

Dehydration and Fluid Replacement

During the examination, note the condition of the wing membranes - they should have a smooth, glossy appearance, not dull and wrinkled. The eyes should be bright, not sunken and dull. When you tent the skin on the back of the neck, it should quickly flatten to a normal state, not remain tented. Nearly all bats will be thirsty, but those that are severely dehydrated will require either oral or subcutaneous injections.

Decision to induce hibernation or keep them at room temperature

The silver-haired bat is considered by some to be a non-hibernating long-distance migratory species, but we know that they do hibernate (enter a state of torpor) when necessary. The decision to induce hibernation of a silver-haired bat in captivity depends on the health and condition that the bat is in and can also depend on the sex as well. Only bats that are sufficient

in fat reserves should go into hibernation. If the bat is not hibernated then daily feedings must occur. It is important to note that female mate with males in autumn as the typically solitary species congregate for migration, and fertilization is delayed until spring. Births occur after a 50-60 day gestation period. Females kept at the average house temperature through winter and that do not hibernate while in captivity can be at risk for giving birth early as ambient conditions and ample food supply may cause their reproduction cycle to be out-of-sync with the bats of their species in the wild.

Another reason to hibernate.

If a rehabilitator is very busy and needs more time to attend to other animals, choosing to hibernate a bat can significantly reduce the time needed to care for that bat while allowing the rehabilitator more time to care for other animals that demand more attention.

A reason not to hibernate.

An exception for hibernating a bat is if the bat is sick or injured. A bat must be healthy and in good shape to be a candidate for artificial hibernation. Otherwise, a sick or injured bat may not have enough fat reserves and is unlikely to survive. If a bat does not fall in the upper end of the weight range for that specific species, then it should not be hibernated.



Of course you would never want to hibernate a non-hibernating species, so it is very important to understand the behavior of the bat species in order to make this decision as well as how the hibernation process will be conducted.

Hibernating bats.

Temperatures for hibernating bats depend entirely on the species preference for hibernation. Silver-haired bats hibernate during the winter in temperatures below 50°F (10°C). An unheated basement in Iowa often has temperatures in the mid-40s to mid-50s range, with some corners colder than others. Within a species, there can also be variations in the temperature preference base off of the geographical area. **Never** hibernate bats at temperatures that are identified as "critical levels" in scientific literature. If the temperature gets out of the hibernating range, the hibernation will become disrupted and this will cause an increase in the metabolic activity which will use up stored fat needed to survive the hibernation. If this happens, a bat must be rehydrated and fed for at least two days before being placed back into hibernation.

Feeding Time

At first, bats will need to be hand-fed and most will need to be taught to self-feed. Soft leather gloves, a good pair of blunt tweezers and an eye-dropper for providing water, and sometimes persistence, are needed. Once the bats have learned to self-feed, a small shallow dish that can't be tipped over and that mealworms can't escape from will be necessary. Note that unless equipment is sterilized between uses, no equipment should be shared between bats, especially not within the first four weeks. This can be considered a quarantine period for new bats.

Food

The silver-haired bat's diet can consist of moths, bugs, beetles, flies and caddisflies. In captivity, mealworms make an excellent substitute, but take care of those larvae! The nutritional value of the mealworms is determined by the food you feed them. Bat World has a very good recipe for a mealworm medium. See

http://www.batworld.org/worldbatline/pdf_files/tartar%20control%20diet.pdf

Mealworms can be purchased in small, medium and large quantities through commercial distributors at a much lower price than if purchased from a pet store. Purchasing all three sizes and raising them yourself will provide you with a consistent supply as the small and medium larvae quickly grow into large mealworms when given the right temperature, light and diet.



Water

Provide plenty of fresh water in a shallow container, such as a baby food jar lid or a thick glass votive candle holder. Film canisters or prescription bottles cut down to about ½-1 inch in height work fine, too. Bats have been known to drown in larger containers.

Shelter

Silver-haired Bats are typically solitary animals, so keeping them in their own cage, separate even from others of their own species, is a logical way to house them. Butterfly cages work great for bat housing (<http://www.lmf.livemonarch.com/store.php>). As this species is considered a tree, or foliage, species, you can place branches in the cage to make it less stressful and more appealing to the bat. Line the bottom of the cage with several layers of newspaper and place towels or tee-shirt rags over the cage to make it more secluded.

Humidity

Humidity plays a large role in hibernation. Bats in the wild sometimes arouse from hibernation to find water from condensation and replenish their body with fluids. Providing an environment with high humidity allows for condensation to form in droplets on the bat's fur, but this may be beyond the means of a rehabilitator. A humidifier can be added to the room the bats are in, potted plants can be added to the décor of the room or open containers of water can be placed around the room (assuming bats are not going to be free-flying!). Placing bats in a refrigerator used to be considered a good way to hibernate bats, but the new frost-free refrigerators dehydrate the bats. Hibernation in a refrigerator is NO LONGER RECCOMENDED!

Laubach, C., Bowles, J., & Laubach, R. (1994). *A Guide to the bats of Iowa*. Des Moines, IA: Iowa DNR.

Silver-haired Bat. (2009). *Texas parks and wildlife*. Retrieved (2010, January 21) from <http://www.tpwd.state.tx.us/huntwild/wild/species/silverhair/>

Lollar, A. and Schmidt-French, B. (2002). *Captive Care and Medical References for the Rehabilitation of Insectivorous Bats*. Mineral Wells, TX: Bat World Publication.

Naumann, R. 1999. "Lasionycteris noctivagans" (On-line), Animal Diversity Web. Accessed February 10, 2010 at http://animaldiversity.ummz.umich.edu/site/accounts/information/Lasionycteris_noctivagans.html