Releasing Bats to the Wild

First and foremost, bats must demonstrate prefect flight ability before being released. Bats that do not demonstrate perfect flight are not likely to survive in the wild. Bats depend on flight for feeding, avoiding predators, etc. Wing injuries will render a bat non-releasable. Tooth loss, back or leg injuries (i.e. fractures of the leg bones), and some complications associated with pregnancy will also render a bat non-releasable (see Infections of the Gums and Teeth, Back and Leg Injuries, and Caring for Pregnant and Lactating Females sections).

RELEASING HAND-RAISED ORPHANS

Questions have long been raised regarding the wisdom of releasing insectivorous bat orphans raised in captivity. Research suggests that young bats need time to acquire the skills necessary to successfully capture flying insects (Davis and Hitchcock, 1965). It is further suggested that young may learn these techniques by spending a considerable amount of time foraging with their mothers when they are young (Brigham and Brigham, 1989).

The author has recaptured several tattooed hand-raised Brazilian free-tailed (*T. brasiliensis*) bats after they were rescued as orphans ranging from a few hours to a few weeks old. These bats were subsequently hand-raised and released back to the wild after they were determined to be able to survive on their own. Microscopic examination of a fecal sample from a juvenile recaptured two days after release revealed insect parts (Lollar, 2008). Another juvenile was recaptured 11 days following release and three were recaptured three, five and seven days after release. In 2006, a tattooed adult female was found approximately 400 miles away five years after release, and in 2015, a tattooed adult female *T. brasiliensis* was found 13 years after release.

Additionally, the recapture of a hand-raised evening bat (*N. humeralis*) was reported 16 days following release (Laura Finn, pers. comm.), and the recapture of a hand-raised pallid bat (*A. pallidus*) was reported approximately seven months after release (Christine Scott, pers. comm.). Orphaned red bats (*L. borealis*) and yellow bats (*L. intermedius*) have learned to forage on their own and also exhibited predator avoidance behavior by darting into small trees when an owl flew over their flight enclosure (French, pers. comm.) Microscopic examination of feces of red bat orphans (*L. borealis*) indicates that orphans begin feeding preferentially on available prey when placed in large outdoor flight enclosures (French and Whitaker, 2000). Kelly, et al, demonstrated that hand-reared pipistrelle bats are capable of independent survival (at least in the short-term), although it was unclear whether the bats were able to choose appropriate roosting sites or integrate into existing colonies (Kelly, 2008). On June 17th, 2003 an orphaned big brown pup (*E. fuscus*) weighing 2.9 grams was rescued with eight other orphaned big browns. This female was released on August 24th, 2003 and recaptured one month later on Sept. 24th, 2003. The bat was in excellent physical condition with a recorded weight of 17.0 grams (Barbosa, 2003). Most significant, however, involved a report of a small colony of seven year-old big brown bats (*E. fuscus*) which had remained in captivity since infancy. These bats had never been exposed to live prey, but were fully flighted. At age seven, the bats were moved into an outdoor flight enclosure, and a bucket light trap containing live flighted insects was emptied into their enclosure. Although the bats were provided with their normal ration of mealworms, they began to prey on the insects the very same night, as evidenced by insect wing parts on the flight enclosure floor the next morning. The following evening insects were again introduced into the flight area, and the next morning the flight enclosure floor was again littered in insect wings. A number of these wings were subsequently identified as belonging to the following families:12 *Arcttidae* wings; 25 *Nocturidae* wings; 5 *Nymphalidae* wings; 1 *Torticidae* wing; and 5 *Saturnidae* wings. Four unknown wings were also found. These bats remained in the outdoor flight enclosure for approximately one month where they continued to feed on flying insects, and were eventually released into a maternity colony of *E. fuscus* (Barbosa, 2005). These reports demonstrate beyond doubt that hand-raised pups can survive after release, despite the fact that they did not have any opportunity to spend a considerable amount of time foraging with their mothers beforehand.

Supplemental feedings of mealworms or the soft food diet is recommended for orphaned bats while in a pre-release flight enclosure. Milk formula appropriate for the species may also be offered to these bats. Juvenile bats must maintain appropriate weights before being released. Additionally, these bats must exhibit significant flight abilities before release in order to successfully forage and avoid predators in the wild.

RELEASING ADULT BATS

Bats that have been in captivity for more than a few days should be given daily flight exercise before being released. As a rule of thumb, the bat should be given one night of flight exercise in a flight enclosure for every in captivity. Alternately, a bat can be exercised in a room, with careful monitoring. The bat should be given 10 to 20 minutes of flight exercise per day in captivity. Wait at least 10 minutes after feeding before flight exercise.

Hold the bat in your hand over your head while inside a flight enclosure or a room that is closed off from other rooms. Release your fingers so that the bat is not confined in your grip, but merely sitting in the palm of your hand. The bat will typically stretch its wings once or twice before taking flight. If the bat has sufficiently recovered from injuries, and it has a proper flight area, it will generally attempt to maintain flight for a period of time. Bats must be able to sustain flight for 5 to 10 minutes, and must land and roost appropriately on the ceiling or upper portion of the enclosure. A bat that seems to fly well but continually lands on the floor is not ready for release.

Bats are creatures of habit and have a strong affinity for day and night roosting sites, as well as established feeding grounds. It is always best when possible to release a rehabilitated bat in the general area from which it originated, and even back into its original colony if this information is available. Solitary bats, of course, such as red bats (*L. borealis*), may simply be released in the area from which they came. When this information is not available, attempt to release in areas that provide known roosting and feeding requirements for the species. For example, red bats *(L. borealis*) roost in tree foliage, particularly along fence rows surrounding agricultural crops. These bats should not be released in bat houses or other structures used by crevice-dwelling species. Big brown bats (*E. fuscus*), on the other hand, are crevice-dwellers and need to be released in areas with known colonies of this species where natural (or man-made) crevices exist. When the location of roosts or colonies of the species is not known, bats (including solitary tree bats) should simply be released in areas that provide appropriate habitat for the species.

On numerous occasions the author has witnessed wild free-tail bats (*T. brasiliensis*) coming to investigate other bats being released, including red bats (*L. borealis)*. The bats often swoop by in very close proximity to a bat being held overhead for release. During one instance, two dozen *T. brasiliensis* had been rescued from a building and overwintered together in a flight enclosure. The bats were released the following spring. They were released in small groups of two to four, held overhead in the hand. As each small group was set free, they began to circle back, swooping close to the next group of bats being held overhead. The amount of bats circling in the air continued to increase as more bats were set free. This behavior continued until there were no bats left to release.

Always release bats at nightfall (never at dusk when predators can easily locate the bat) and always take a spotlight along for hand releases to retrieve the bat if necessary. Always hold your hand over your head for release to release the bat. Use a ladder, if necessary, to provide bats at least a 7’ to 8’ drop. Use the flashlight to make sure the bat remained airborne and flew away safely.

Never release a bat by placing it on a tree trunk or the side of a building as it may be eaten by predators before it is able to fly away. Female tree bats with pups are the only exception to this rule. However, they should also not be placed on the trunk of a tree. Instead, carefully placed them on the branches of a tree (with a clear drop below) in the early afternoon and at least 10 feet off the ground. There should be several branches with foliage surrounding the mother and her pups to help conceal them from possible predators. Do not hang the mother from a single branch. It is best to place her in a forked branch within a clump of leaves so she has better support and is somewhat hidden from view. If not disturbed before being placed in the tree, she will hang quietly with the pups until dark. Females that become stressed during this move will fly off and may not return for the young. Although the female may hang the pups in the tree after dark and then fly off to feed, she may return for one or more of the pups before dawn. The tree must be checked again in the early morning to determine if any pups were abandoned. A red bat will frequently abandon one or more of the young; these pups must be retrieved and hand-raised.