

## Handling Guidelines for Old World Fruit Bats

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Old World fruit bats are capable of delivering a rapid and powerful bite when restrained (Heard, 1998). The thumbs and feet will scratch an unprotected handler while the bat attempts to escape. They are also strong fliers, and need be captured before doing undue harm to themselves while fleeing. The wings are prone to fractures and can be broken during restraint. Other common injuries include abrasions to the rostrum, fractured toes and broken nails from pulling the bats off the wire mesh instead of gently release the locking grip of the feet.

In large free-flight exhibits, bats can be trained to come into a smaller enclosure or trap for ease of feeding, cleaning and capture (Fascione, 1995). The “trap” is the initial isolation area and bats are gradually let out on exhibit. The animals become habituated to finding food in the trap and set up feeding territories. The process of developing a roosting territory on exhibit and flying to a feeding ground is a basic behavior to Old World fruit bats and is quickly learned. This process has been put on cue at Disney’s Animal Kingdom where bats will enter a tunnel to gain access to the isolation area.

In smaller enclosures with high ceilings, bats can be contained into a smaller area by cutting flight paths with commercial bed sheets. Two bat handlers will then have to use two or more ladders to gain access to bats (George, 1990). Circular flight cages with a ceiling of 6.5’ (2 m) ceiling have been utilized with excellent results at the Lube Foundation, Inc. with a wide variety of Old World fruit bats. This allows the capture of fruit bats without a ladder, and provides for better keeper observations since the bats are at eye level.

Three methods of capturing Old World fruit bats are utilized routinely: 1) Capturing flying foxes directly with leather gloves, 2) capturing bats with a towel and 3) capturing smaller fast flying bats with a net and leather gloves. Bat workers should be vaccinated for rabies and wear long sleeved shirts, long pants, thick leather welding gloves and eye protection. Smaller species, which are more fragile such as Wahlberg’s epauletted fruit bats (*Epomophorous wahlbergi*), may be restrained with thinner leather gloves that only cover the hands since these gloves allow the handlers greater dexterity.

Flying foxes can be captured directly with long-sleeved leather gloves (Carpenter, 1986). Bat handlers should approach the bat from the rear and pin the back of the bat to the ceiling. The other hand will grab one foot at a time, pushing the foot up and unhooking each toe from the wire mesh or perch. Once the bat handler is in control of the feet, the other hand can unhook each of the thumbs. Once the bat is removed from the roosting substrate, that bat can be restrained by swinging the bat while supporting both the tibias and ankles in one hand. Pressure should be minimized to keep the bat as comfortable as possible, and swinging will keep the bat off balanced. When further restraint is needed to

present the bat to a vet or for band checks, the second hand is utilized to grasp the bat behind the head. The back of the bat is rested along the forearm for support, and the head is restrained with the thumb and middle finger below the lower jaws of the bat and the index finger on top of the bat's head. The wings are pressed towards the body of the bat to immobilize the wings in order to minimize injuries (Carpenter, 1986; Fascione, 1995).

Old World fruit bats can also be wrapped quickly and firmly in a towel. This technique is appropriate for bats that have injuries that could be further damaged if the bat attempts to fly during capture. The towel has greater surface area to hold the wings and head while the bat handler firmly grabs the feet and removes the bat from the roosting substrate (George, 1990; Snell, 1994; Heard, 1998). A towel can also be utilized after recovering a bat from anesthesia. The bat is wrapped in a towel to minimize a partly recovered bat from injuring itself. Once the bat is fully awake, the bat is able to free itself from the towel.

Fast flying Old World fruit bats like Rodrigues fruit bats (*Pteropus rodricensis*) and straw-colored fruit bats (*Eidolon helvum*) may require a net for capture. Nets should have a heavy medium mesh and be wider than the bat's wingspan (Fascione, 1995). When using nets, the net is used to block the bat flight or capture the bat on the walls of the enclosure. The bats are then captured on the front of the net with leather gloves.

During capture and handling, special care should be taken when removing the feet of Old World fruit bats from their roosting substrate. Pulling a bat down can cause injuries to the tibia, feet, and nails. Do not hold any bat by the wing tips during restraint and always fold the wings close to the body (Fascione, 1995). Special care should also be given to not hyperextend the joints since this can cause pain and damage. Bats should also be handled in a manner that they are the most comfortable, which means holding them in a head down position. Bats should be restrained with the least amount of pressure, and in a manner that doesn't interfere with respiration. Excessive pressure will only cause a bat to only fight the bat handler with further tenacity.

Large flying foxes have a long reach, and should be handled in a manner that they are not restrained on their back. This creates a situation in which the natural instinct on the bat is to get vertical, and in the process if a bat worker's head is above the bat, the end result is a bat reaching for your face. These bats should be restrained at an angle away from your body to keep them off balanced.

Captive bats should be handled routinely so they become habituated to this process. This will allow both bat workers and bats to gain experience. Positive reinforcement techniques like offering fruit juice at the end of a restraint procedure can be utilized to minimize the stress of handling. Restraint time should be minimized to prevent hyperthermia and stress (Heard, 1998).

**Reference:**

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