

USFWS Indiana Field Office

GUIDELINES FOR RETENTION OF BAT CARCASSES and COLLECTION OF WING TISSUE, AND HAIR SAMPLES from BATS KILLED AT WIND TURBINES

1. All Myotis, tri-colored bats, evening bats, and hoary bats should be submitted whole to INFO. Samples do not have to be taken, just submit whole carcasses.
2. Submit hair and tissue samples from all bats except for those submitted as whole carcasses.
3. In addition to samples from non-listed bats, a subset of whole bats should be submitted to INFO and a subset can be retained, if needed (for carcass persistence trials, searcher efficiency trials, etc...), as follows:

For eastern red bats, silver-haired bats, and big brown bats, three carcasses per week that are in good condition (least degraded) should be saved (frozen) to submit to INFO. (These carcasses are needed for research and museum specimens; the better the condition of the carcass the more valuable for these purposes). All other carcasses of these species can be retained by the facility if needed. (If fewer than three carcasses of a species are found in a week, save any that are found to submit to INFO. You do not need to supplement in subsequent weeks if three are not found in a given week).

Whole bats saved for INFO should be placed in individual sandwich-sized plastic “zipper” bags that are labelled with the sample id number and frozen as soon as possible. A unique Sample Identifier number should be used to label each bat. (Use the same Sample Identifier on tissue and hair samples from that bat – see PROTOCOL FOR COLLECTION OF WING TISSUE and HAIR SAMPLES).

4. Submit carcasses and samples to INFO at the end of each monitoring season.

PROTOCOL FOR COLLECTION OF WING TISSUE and HAIR SAMPLES

1) Supplies needed:

- a. 2.0 ml polyethylene microvials with gasket seal.
- b. Forceps or tweezers
- c. 95-100% ethanol for storing tissue and for cleaning equipment. Alcohol prep pads can be used for cleaning equipment.
- d. Small dissecting scissors
- e. Permanent marker – preferably archival, fine point “Sharpie” will work.
- f. Latex, vinyl or nitrile gloves.
- g. Vial storage boxes for microvials.
- h. Chemical resistant labels (such as “micro-tube tough tags”) to label microvials.

2) Prior to taking sample and between each individual:

- a. Clean scissors and forceps thoroughly with alcohol or alcohol prep pad. Also clean or change gloves between individuals if you touched any tissue.
- b. Fill the vial at least half full of 95-100% ethanol. Label the vial with Sample Identifier (write number on label and attach to the vial, or alternatively write directly on the vial; make sure the number is legible). Be sure vial is dry prior to attaching label. Be careful not to get ethanol on the outside of the tube once it is labeled because it will smear the ink. If sample number becomes unreadable, be sure to relabel.

3) Collecting Wing Tissue and Hair Samples from dead bats:

- a. Wearing a glove to hold the bat, clip a section of tissue from one of the wings. Tail membrane tissue can be clipped if that is all that is available. Tissue sample should at least 5 mm² total area but the shape of the tissue sample does not need to be square. (These can be much larger than the samples collected from live bats -- 2 mm biopsy punches -- because we do not need to be concerned about injury to the bat).
- b. With sterile forceps or the tip of the scissors (sterilize with alcohol between each bat), pick up wing tissue and place in pre-filled vial. Seal the vial and place the upright in the storage box. Put the storage box in refrigerator or freezer when done processing samples for the day.
- c. When tissue sample is complete, collect a hair sample (keep on the gloves used for tissue sampling of the same bat). Clip a small amount of fur (1 cm x 1 cm area) from the area between the scapulae using scissors. Get as much of the length of the hair as possible, but you do not necessarily have to cut down to the base. Avoid collecting wet hair if possible, especially if it is wet with blood or bodily fluids. Store the hair (dry, no preservative) in [paper coin envelopes](#) (this link is provided as example but any brand can be used). Label the envelope with the Sample Identifier that was used to label the tissue sample from that same bat. Turn down envelope flap but you do not have to seal. Hair samples can be stored at room temperature. Clean scissors with alcohol (and change or clean gloves if necessary) between bats to avoid cross-contamination.