

MIST NETTING GUIDELINES

RATIONALE

Following these guidelines will standardize procedures for mist netting. It will help maximize the potential for capture of Indiana bats at a minimum acceptable level of effort. Although the capture of bats confirms their presence, failure to catch bats does not absolutely confirm their absence. There are many instances in which the netting effort was as extensive as outlined below and Indiana bats were caught only with additional effort.

A typical mist net survey provides insufficient data to determine population size or structure. It is an attempt to determine presence or probable absence of the species.

NETTING SEASON

May 15 - August 15

These dates define acceptable limits for documenting the presence of summer populations of Indiana bats. Netting efforts outside these dates rely far more heavily upon positive results (*i.e.*, captures) than negative results (*i.e.*, failure to catch bats). If Indiana bats are not caught, it is unlikely that one can conclude that the bats do not use the area during the summer. Even when bats are caught, capture should be carefully interpreted. If only a single bat is captured, it may be a transient or migratory individual. Several captures, including adult females and young of the year, indicate that a summer nursery colony is active in the area. At the very least it indicates that the site is an important habitat for transient bats.

EQUIPMENT

Mist nets - Use the finest, lowest visibility mesh commercially available:

1. In the past, this was 1 ply, 40 denier monofilament - denoted 40/1.
2. Currently, monofilament is not available and the finest on the market is 2 ply, 50 denier nylon - denoted 50/2.
3. Mesh of approximately 1 ½ (1 ¼ - 1 ¾) inch.

Hardware - No specific hardware is required. There are many suitable systems of ropes and/or poles to hold the nets. See NET PLACEMENT below for minimum net heights, habitats, and other netting requirements that affect the choice of hardware. The system of Gardner, et al. (1989) has met the test of time.

NET PLACEMENT

Potential travel corridors, such as streams or logging trails, typically are the most effective places to net. Place the nets approximately perpendicular across the corridor. Nets should fill the corridor from side to side and from stream (or ground) level up to the canopy. A typical set is 7 meters high (3 nets "stacked" on top one another) and up to 20 meters long. Occasionally it may

be desirable to net where there is no good corridor. Take caution to get the nets up into the canopy. The typical equipment described in the section above may be inadequate for some situations, requiring innovation on the part of the surveyors.

LEVEL OF EFFORT

Stream corridors - 1 net site per km of stream.

Non-corridor land tracts - 2 net sites per square km (247 acres) of forested habitat.

Netting at each site should consist of:

At least 4 net nights (unless bats are caught sooner) (1 net set for 1 night = 1 net night)

A minimum of 2 net locations at each site (preferably no closer than 30 meters)

A minimum of 2 nights of netting

Sample Period:

Begin at sunset; net for at least 5 hours

Each net should be checked approximately every 20 minutes

No disturbance near the nets, other than to check nets and remove bats

WEATHER CONDITIONS

Severe weather adversely affects capture of bats. If Indiana bats are caught during weather extremes, it is probably because they are at the site and active despite inclement weather. In contrast, if bats are not caught, it may be that there are no bats at the site or they may be inactive to avoid the weather. Negative results combined with any of the following weather conditions throughout all or most of a sampling period are likely to require additional netting:

Precipitation

Temperatures below 10°C

Strong winds (Use good judgment: moving nets are more likely to be detected by bats.)

MOONLIGHT

There is some evidence that small myotine bats avoid brightly lit areas, perhaps as predator avoidance. It is typically best to set nets under the canopy where they are out of the moon light, particularly when the moon is ½-full or greater.

REFERENCES

Gardner, J.E., J.D. Garner, and J.E. Hofmann. 1989. A portable mist netting system for capturing bats with emphasis on *Myotis sodalis* (Indiana bat). *Bat Research News* 30(1):1-8.

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