

Rangewide Indiana Bat Summer Survey Guidance

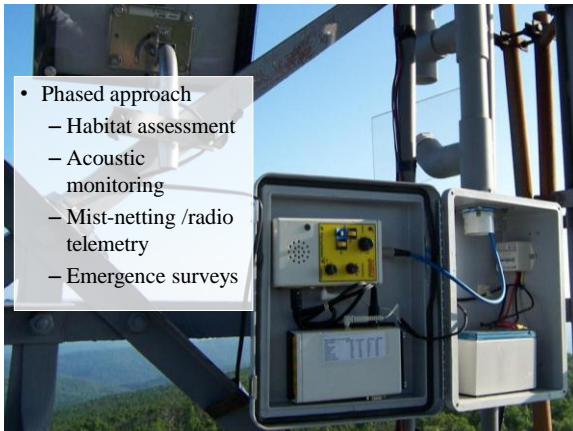


Lott 12/10/2012

Purpose/need

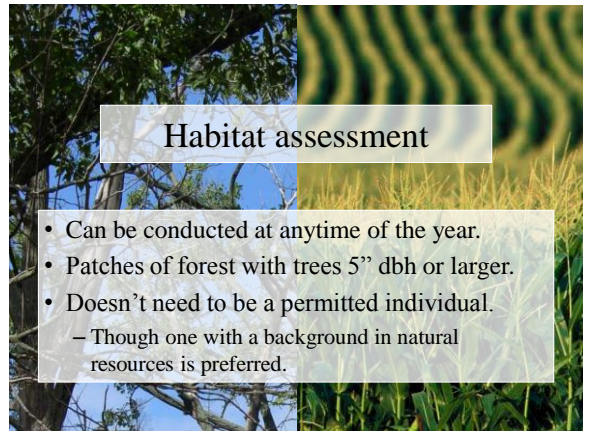
- Determine presence or probable absence of Indiana bats (may also be used for other list-species where they occur, not Virginia big-eared bats).
- Need for change
 - Nets can't be deployed in all habitats that Indiana bats use
 - Bats avoid nets
 - White-nose syndrome

- Phased approach
 - Habitat assessment
 - Acoustic monitoring
 - Mist-netting /radio telemetry
 - Emergence surveys



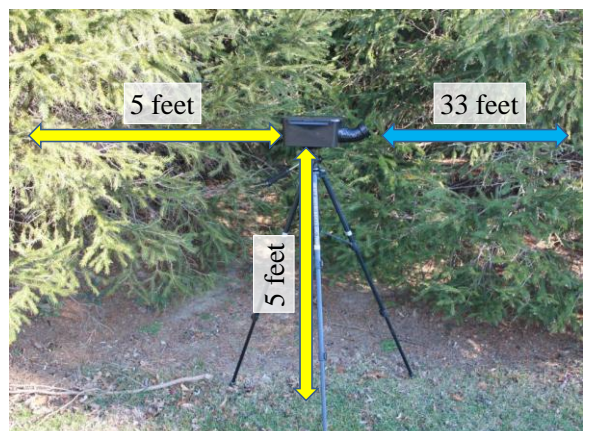
Habitat assessment

- Can be conducted at anytime of the year.
- Patches of forest with trees 5" dbh or larger.
- Doesn't need to be a permitted individual.
 - Though one with a background in natural resources is preferred.



Level of effort for acoustic monitoring (assuming suitable habitat exists)

- 2007 Guidelines
 - 2 sites/km² of suitable habitat
 - Each site consisted of ≥2 mist net locations
 - 1 site per km for linear projects
 - 2 nights at each site
- 2011 Guidelines
 - non-linear projects 1 site/30 acres of suitable habitat
 - linear projects 1 site/km of project corridor that has suitable habitat
 - Up to 328 ft (100 meters)
 - to be monitored for at least 6 nights
 - Additional detectors can be added to reduce the number of survey nights
 - minimum of 2 sites (spaced at least 200 m apart)

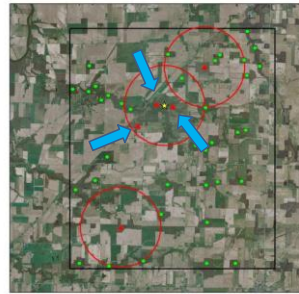
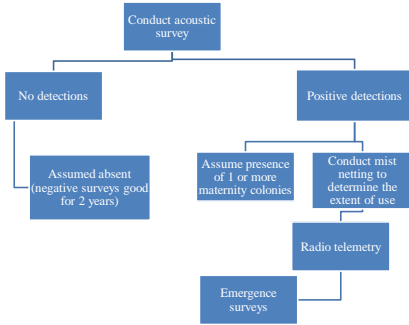




Places to avoid

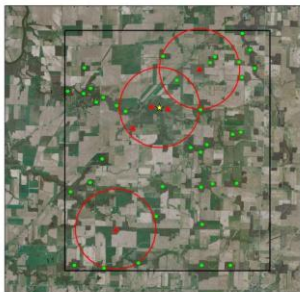
- Anything that emits high frequency sound, such as:
 - Power lines
 - Wind turbines
 - Radio antennas
 - Weather stations
 - Computers
- Places where you may get atypical bat calls
 - Cave or mine entrances
 - Known maternity colonies
 - Lights
 - Directly over water sources

Acoustic monitoring results



- Identify whether multiple acoustic hits occur within 1-mile of each other.
- If so, find the mid-point of the closest 2 points (indicating the focal point of the activity).
- Buffer the mid-point and any individual points by 1-mile. Mist-netting efforts should (but don't have to) focus within these regions.

Acoustic sampling site
 ● No Indiana bat detections
 ▲ Positive Indiana bat detections
 ☆ Midpoint of the 2 closest positive detections within 1-mile of each other
 ○ 1-mile buffer of single detectors or midpoint for multiple detections
 □ Project boundary



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Mist-netting effort

- 1 positive acoustic site / circle = 10 net nights
- 2 / circle = 14 net nights
- 3 / circle = 18 net nights
- ≥ 4 / circle = 20 net nights

If you capture Indiana bats, radio-tracking must be conducted.

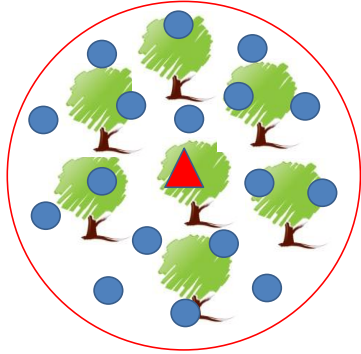
If you don't capture any Indiana bats the Service assumes the presence of 1 or more maternity colonies.



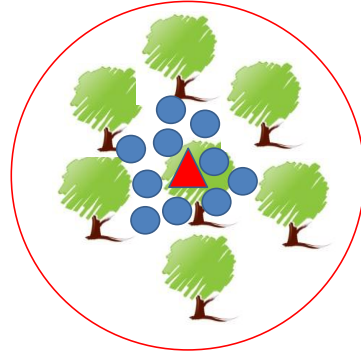
Comparison of 2007 and 2011 mist-netting effort

3.14 miles² or 8.13 km² of forest area

	Number of sites	Number of nights	Number of nets	Total effort (net nights)
2007	17	2	2	68
2011	?	?	?	10



● Mist-net site (n=17)



● Mist-net site (n=10)

Radio-tracking

- ≥ 7 days, with the goal of locating roost trees
 - Establishes minimum levels of effort
 - 4 hours on ground per tagged bat
 - 1 hour from the air per tagged bat.
 - Multiple bats from the same site may be tracked simultaneously.
- Foraging data is not included.



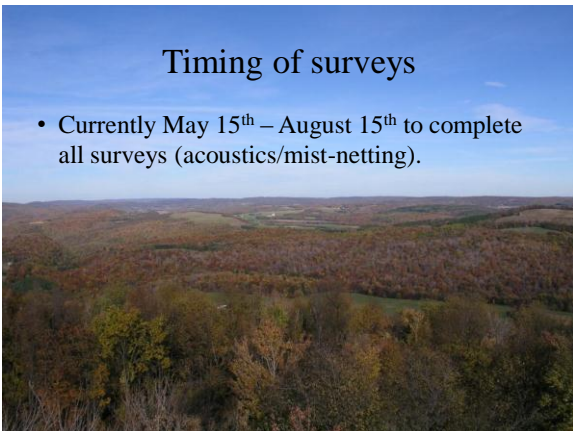
Emergence surveys

- Two nights per identified roost tree.
- One half hour before sunset until one half hour after sunset or until it's too dark to see.
- If there are multiple trees simultaneous counts are encouraged.



Timing of surveys

- Currently May 15th – August 15th to complete all surveys (acoustics/mist-netting).



Qualifications

- Habitat Assessment
 - Doesn't need to be a permitted individual.
 - Though one with a background in natural resources is preferred.
- Acoustic monitoring
 - Must have working knowledge of acoustic equipment and be able to identify appropriate detector placement (No Federal permit).
 - A training course will most likely be developed in the near future.
- Mist-netting
 - Each mist-net site must have a permitted individual. A single permitted person may monitor multiple nets, as long as they are within walking distance.

Providing Comments

- Federal Register notice between mid-late December.
- Guidelines are to go into effect this coming field season (summer 2013).

