Indiana Bat, FW3 <indiana_bat@fws.gov>

Comments: Indiana Bat Summer Survey Guidlines

Robbins, Lynn W <LynnRobbins@missouristate.edu> Fri, Mar 8, 2013 at 1:02 PM
To: "indiana_bat@fws.gov" <indiana_bat@fws.gov>

Attached are my comments Indiana Bat Summer Survey Guidelines as published in the Federal Register. Thank you for this opportunity. Lynn Robbins

SummerSurvey-LWRcomments.docx
35K

Summer Surveys **L. W. Robbins**

I applaud the effort of the USFWS to modify and enhance the Summer Survey Guidelines in a way that will not only increase our ability to determine presence of Indiana bats but will also increase our ability to determine the probability of absence. Each of these reduces the likelihood of incidental Take.

Habitat Suitability: If habitat suitability is to remain so all inclusive, and deciduous forest = Indiana bat presence, then a GIS desk-top assessment is adequate to trigger the next phase. However, an acoustic identification of MYSO should not lead to the assumption of maternity colony presence if there are no historical data that would indicate the possibility or probability of maternity colonies (in the state, county, or a specific distance). In addition, there is sufficient scientific literature that describes occupied maternity colony habitat near and within 2.5 miles of the colony. If this habitat is not present, it should not be assumed that a maternity colony is present without any additional data. Likewise, the capture of pregnant or lactating females, or the presence of young juveniles strongly suggests the presence of maternity colonies within 5 miles, capture of juveniles between late July and mid-August may not. The Draft recovery plan and my data show that juveniles and post-lactating females can arrive in the vicinity of hibernacula during this period, with no indication of maternity colonies ever having been present within 5 miles. I recommend that the USFWS provide the latest information to permit holders that indicates the state, county, approximate location of maternity colonies and capture records of reproductively active female Indiana bats. Knowledge of these data plus the presence of suitable foraging and maternity colony habitat are the best predictors of the presence of Indiana bats during the most vulnerable portion of their summer life history.

Acoustics: The requirement for accuracy of any model is its ability to determine presence or assumed absence of Indiana bats with a specific degree of accuracy is critically important and to my knowledge, very idealistic. Anyone who has published and/or presented on the accuracy of their identification models is basing this accuracy on their ability to identify sequences in their own call library and have developed and modified their models to increase that accuracy. Again, this is using their own call library. To my knowledge, there have been no tests of these models on call sequences that were not a part of the construction of the model. The accuracy of any model cannot be determined unless they are tested against a library of calls that have been collected under the same conditions required by the guidelines for acoustic surveys. The accuracies required by the guidelines should be based on this library, which has not and should not be available to those that are developing identification models. Without this test, no model should be approved. To present the results of a Maximum Likelihood Test to determine the probability of presence or absence based on a personal call library is also not supported. If this test is to be required, and I believe it should be if it is based on the identifications and misidentifications of a testable independent call library. The methods to be required should be defined and documented.

Netting: One of my biggest concerns about the validity of previous netting guidelines is the lack of scientific evidence that two nets for two nights, especially consecutive nights, at a location is sufficient effort to determine probable absence of Indiana bats. This protocol has been successfully used by project proponents to limit the effort of permitted bat biologists to a specific number, type, and placement of nets. I believe that one of the concerns that the new survey guidelines has successfully addressed is the problem of false negative results because a minimum effort has been enforced. The

increased netting effort allows for the knowledge of the bat biologists to determine type and placement of nets in order to decrease the likelihood of false negative results. Leaving nets in the exact same location for two (or more) consecutive nights, again, is definitely not supported by the best available science. The goal should be to maximize the probability of catching bats, not to just set out nets in the most cost effective method. The original protocol that called for one net site equaling two nets set for two nights, consisting of a typical set consisting of nets stacked three high, had no scientific support and should not be perpetuated, any more that using detectors to 'confirm' presence without any other information should be part of a new protocol without scientific support. If acoustics support netting or additional netting, and time is of concern, move the nets (no captures) to new locations each night. It has been suggested that if the two nets are set in the best locations, placing additional nets or moving them to lesser locations makes no sense. If there are only two 'best' sites within the 2-mile diameter circle, then I suggest following the new guidelines, i.e. 2 nets for 5 nights = 10 net nights. However, the 'best' sites are only determined after the fact, so I also suggest that if you suspect the potential presence of Indiana bats by acoustics or historic records, follow the minimum netting effort to the level suggested in the guidelines. Because I strongly support concurrent acoustic and netting efforts, the netting effort per site should conform to the acoustic effort, with a minimum of 3 nights for 4 detectors and a minimum of 3 nights for 10 net nights. However, minimum effort should not be the goal.

The Romeling et al, 2012 paper cited for increasing the acoustic effort was based on surveys in N. Missouri. The netting effort that accompanied the acoustic survey had nets placed in areas more suitable for capture. Over the five years of these surveys, 82 Indiana bats were captured over 349 net nights. These are all first night captures, or captures in the same areas separated by a minimum of 5 days. At the 0.05 level, it would take a minimum of 11 net nights without a capture to establish probable absence. This number would have been much higher if nets were left at the same spot the next night. In Robbins et al, 2008, 12 MYSO from 18 first-night net nights vs 1 MYSO from 18 second-night net nights indicates the inefficiency of netting for two consecutive nights in the same location.

The described acoustic protocol requires detectors to be placed in locations that would allow for the best call recordings, not in the places that Indiana bats are most likely to utilize. The netting protocol guidelines have nets being placed in areas where Indiana bats are more likely to be travelling and foraging. Because the goal is to determine presence or probable absence, logic and science strongly support the use of both methods.

The implementation of the Contingency Plan for the 2013 season was necessary because of the absence of an acceptable Automated Acoustic Program. My concerns with the Guidelines (above) can be substituted here as well. However, I have some additional concerns with Steps 3 and 4 dealing with Acoustics. Step 3 states that if you detect high frequency calls at 35kHz or greater, and no further analyses, i.e. species specific analyses, are conducted, assume presence of MYSO. 35kHz or greater includes LABO, NYHU, and PESU as well as all other *Myotis* species. Step 5 then encourages the use of unaccepted methods for the identification of MYSO before making the next decision.

My recommendation is, as long as the Contingency Plan is in effect, consultation with and approval of a proposal submitted to the F.O. is required. The approval of the proposal should be based on the best available science as it relates to the probability of MYSO occurrence using historical and current records,

coupled with the presence of suitable landscape and forest characteristics. Netting and acoustic methods should conform to the Guidelines (also see above), but until an identification model is approved, acoustic results should only be used to identify the possibility of presence of MYSO and to determine netting locations or the necessity of further netting efforts. Capture results can be the only positive determination of presence, and capture results coupled with radio-telemetry should be the only positive determination of the presence or likely absence of maternity colonies.

Although handling of Indiana bats after capture did not seem to be an issue, I believe that the most disturbing aspect to the handling of captured Indiana bats and other species is the practice of putting them in paper bags. Their distress is obvious. It may be the easy way, and the cheapest way, but using cloth bags for individual bats gives them more support, and they are reusable and easy to decontaminate.

I have also been working with Virgil Brack to develop a consensus by committee. Some of my comments and concerns may also be in that document, but we also disagree on a number of points, for example netting efforts.