

**From:** [Niver, Robyn](#)  
**To:** [Lennon, Tiernan](#)  
**Subject:** Re: Indiana Bat Question  
**Date:** Thursday, April 20, 2017 12:03:05 PM  
**Attachments:** [image.png](#)

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On Thu, Apr 20, 2017 at 9:26 AM, Lennon, Tiernan <[tiernan\\_lennon@fws.gov](mailto:tiernan_lennon@fws.gov)> wrote:

Hey Robyn - The excerpt below is from the BA we discussed yesterday (effects analysis for the Indiana bat):

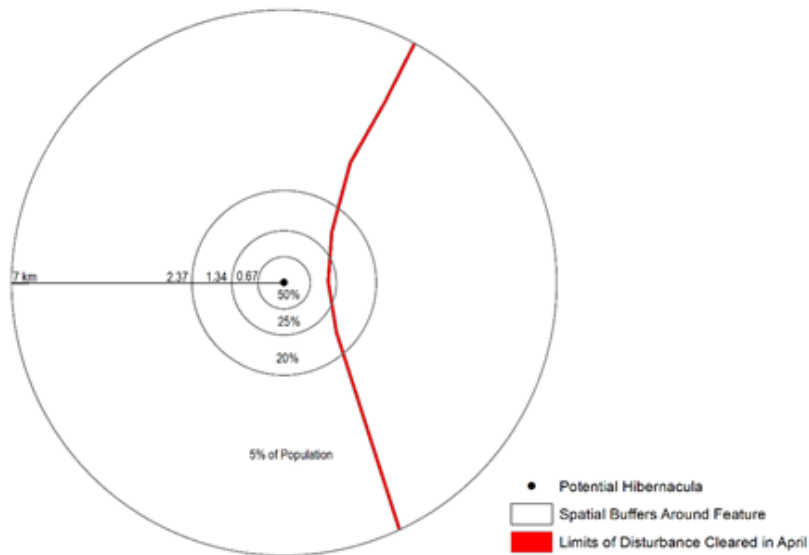
**Bat Activity During Spring Staging.** To estimate impacts to individuals during spring staging, information on the temporal and spatial attributes of bat activity during spring was derived from available literature on the species. Based on information provided in Cope and Humphrey (1977), nearly all individuals remain in hibernation before March 14; however, a few individuals may remain active throughout the winter. The study also demonstrated that beginning in late March to early April individuals begin to emerge, and by mid-April, 95 percent of individuals captured within the spring had emerged with the remainder emerging by April 23. Based on this information, the majority of bats within a winter habitat likely emerge and participate in staging during April.

Everything in the first section is rationale. Lots of more recent information supporting various activity periods but this is fine.

In addition to the temporal aspects of staging, the spatial configuration of roost tree use during spring and autumn was derived from Gumbert et al. (2002) and used to create concentric bins surrounding known or potentially occupied portal features. Based on this information, it is expected that 50 percent of the population is found within 0.67 kilometer (0.416 mi) of the hibernacula, 25 percent between 0.67 (0.416 mi) and 1.34 kilometers (0.833 mi), 20 percent between 1.34 (0.833 mi) and 2.37 kilometers (1.473 mi), and 5 percent between 2.37 and 7 kilometers (1.473 and 4.35 mi, respectively; Figure 28).

This seems far too precise to support. Also, I reread that paper and don't understand how they used it to derive these zones. The paper discusses core activity areas (spring/summer/fall) within 4.75 km of hib. I could find nothing about 2.37, 1.24, 0.67 km.

They could just buffer potential hib by 4.75 km if they wanted to use this paper and suggest that areas outside of that distance may not have frequent spring or fall activity?



Does this sound logical to you? They've based a large chunk of their take assessment off of this assumption so I wanted to get an expert opinion on it =). Feel free to give me a call if you would like to discuss or if you need more information. Thanks!

-Tiernan

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*"Let us have faith that right makes might, and in that faith, let us to the end, dare to do our duty as we understand it." - Abraham Lincoln*

