

Avian Mortality at Communications Towers

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Communication towers, avian mortality, and research needs

J. Michael Meyers, Ph.D., USGS Patuxent Wildlife Research Center

Warnell School of Forest Resources, The University of Georgia, Athens, GA 30602-2152

Phone - (706) 542-1882 E-mail - Joe_Meyers@usgs.gov

Al Manville's introduction of the thirteenth speaker, Joe Meyers.

You probably remember not too many years ago that the research arm of several of our agencies – including the Fish and Wildlife Service and the National Park Service – was within one department but had separate research responsibilities. This was the National Biological Survey. That has changed a bit from the NBS and is now the Biological Resources Division of the U.S. Geological Survey. Our next speaker is station leader for the USGS Patuxent Wildlife Research Center in Athens, Georgia. He is an Adjunct Assistant Professor and graduate faculty member of the University of Georgia as well. His research interest includes Nearctic-Neotropical migratory birds, wetland and forest ecology, forest management, bird habitats, and endangered species. He holds a Ph.D. in ecology from the University of Georgia and he is a Certified Wildlife Biologist. Joe Meyers is going to be talking this afternoon about the issue of communications towers, avian mortality and research needs: recommendations from the USGS Biological Resources Division. Joe.

Joe Meyers

I haven't done research on this topic as you might have noticed in my abstract, but quite sometime ago, when I was a student, I opened a large chest freezer at The University of Georgia – it was about 1976, I believe. That entire chest was filled with tower-killed birds from the Tallahassee study. I believe there were two chests full of dead birds, and that made a pretty significant impression on me and led me to look up every article I could find on that subject. Since I knew Bobby Crawford from Tall Timbers [Research Station], I read his papers. That, however, was the end of the subject for some time. While it was a good topic to read and research because when your major professor has that many birds in freezers, one might assume there to be a question on your orals, it never, however, came up again until about 18 months ago when I was called and e-mailed with what seemed to be a crisis atmosphere at FWS. Biologists wanted to know all kinds of information on the subject and it led me to this meeting. Ever since then, I've been talking with the biologists. I'm mostly a listener; that's my job to listen to my partners and see what their needs are, and they said they're having to make a lot of decisions without information. So, this presentation is based on those discussions and listening sessions and also on some of my ideas.

Foremost, we need to be studying the high towers, especially if we are going to be building a lot more of them for digital TV. These towers have the greatest potential to cause large mortalities for migrating birds. The tower lighting, guy wires, height, and tower location are important in this research, we know that.

These studies have to be done using well designed statistical methods that provide information for the entire United States and they must have the power to test for differences, because if they don't, we will have lots of samples with large confidence intervals or with lots of zeros that provide us with no information.

The other things we need to look at, and it's something I started looking for in newspapers, is the problem that a FWS biologist told me about concerning the permitting and building of cell towers. Biologists need information; they don't know what to recommend for cell tower permits. I asked myself, where are they building these towers? I started looking along the highways when I traveled to my field work the last two summers and I noticed there are a lot of towers on the interstate highways. This didn't seem to be much of a problem for migrating birds, but then I started thinking that there are interstate highway corridors along ridges for long distances north and south. There is one right near here (in Ithaca, New York). I-81 and I-77 go through the Shenandoah Valley and Appalachian Mountains for more than 1,000 miles. So, those areas may be important future research topics, because the towers on those ridges may be significant mortality factors for raptors and other avian species, especially if they are lighted. I didn't even realize until I came to this meeting that 200-foot towers are lighted now.

Another topic I believe is important, based on my discussions in the last 18 months, is to determine minimum sample sizes we need to standardize all the studies that we do; we'll have to work together with our partners and with industry. I do believe very strongly that pure science should be done on this problem and there should be a lot of research done on what is causing the birds' behaviors in regard to tower mortalities. But in the near future, the biologists need an answer, and we should give them research information as soon as we can get it to them. It might be an approach that we call adaptive management in the FWS and USGS, where we do studies based on information over time and then modify the hypotheses as new information becomes available. I believe that would be an important approach. What are the tower effects on bird nesting colonies? Right now I don't believe, except for eagles, that there is really good research information on how high and how far away from a bird nesting colony you can place these towers, for example, for a Wood Stork nesting colony – a Federally listed endangered species. This issue is coming up along I-95 right now in Georgia. Towers are being built. There are Wood Stork nesting colonies nearby. We have no information on the effects of those towers and how far they should be from nesting colonies. I've done a lot of flying with Wood Storks, observing them from small aircraft. They do get rather low at times while gliding; they also soar and may collide with a tower, but we don't have the research necessary to make decisions for safe tower placement for Wood Stork nesting colonies.

Lastly, we should determine the potential mechanisms of bird migration and navigation and that's where some of the pure science can help. This isn't easy. I heard a lot of statements here today about hypotheses, hypotheses, hypotheses. I recently read a book by Dr. Carl Sagan and his wife. They mentioned hypothesis generation and also mentioned the distant cousin of Charles Darwin, who was great at developing hypotheses, but wasn't great at the tedious work and effort needed to test them. And I think the communication tower and bird mortality problem is going to involve a lot of tedious work, so be prepared.

As the USGS Biological Research representative, I'll tell you that we are available and have the expertise at Patuxent and other centers to collaborate, participate, and cooperate with our partners and with industry on this problem, but we also are subject to the availability of funds and other resources.

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