

Avian Mortality at Communications Towers

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Introduction Number 2

Avian mortality at communications towers: background and overview

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Bill Evans, Workshop Co-chair, Introductory Remarks

I remember first hearing about bird mortality at communications towers as a teenager in southern Minnesota back in the mid-1970s. One of our local television stations had its transmitter on a 1000-foot tower south of town. I was an avid birdwatcher at the time and I remember one of the local birders telling me that people had picked up dead warblers by the pail full under that tower on foggy nights. But it wasn't until 1996 that I became compelled to action on this problem of bird mortality at communication towers. At that time I was in north-central Nebraska and I had been contracted by a power company to study nocturnal bird migration at a proposed wind turbine site. These structures were to be 200 to 300 feet tall with a single light on top, and the power company wanted to know what species were migrating over at night that might be affected by the turbines.

In North America, most of the bird migration happens at night, and many species give calls when they migrate, apparently to keep in contact with one another. Monitoring the night flight calling of migrating birds is the only means to get species information of birds in active migration over a region at night. The technique I've been working on for the last 15 years uses microphones to monitor the calls of night migrating birds to get information on the species that are flying over and to make inferences about relative abundance. So, in 1996 when I arrived at the proposed wind turbine site in Nebraska, I found a 317-ft. [97 m] guyed communication tower and prairie as far as the eye could see. I decided to put one of my acoustic monitoring stations under the tower, aim it at the sky, and see what the recordings revealed. I tape recorded 8 hours of sound coming down from the sky every night for the fall migration period of 1996 and the spring migration period of 1997. I analyzed the tapes back in Ithaca, NY, where I live and this consisted of simply listening to all the tapes to see what bird calls, and how many, were recorded.

It was then that I was very surprised to discover that I had recorded some bird collisions with the tower. There were a number of incidents on quiet nights when you could actually hear the wing beats of ducks as they approached the tower, then a collision sound, and in one case, a thud on the ground near the microphone as a bird apparently hit the ground. A Blue-winged Teal was found dead under the tower near the microphone. What surprised me even more when I listened back to these tapes was the number of incidents of alarm calls of various species of ducks. I would be listening back to one of these tapes and suddenly I would hear vocalizations from ducks, but they didn't sound like vocalizations I had recorded in the past 15 years from other regions of the country. These were alarm calls, and on some evenings dozens of such incidents were recorded. I came to the conclusion after sitting and listening to hundreds of hours of tape that these birds were flying along at night in the dark and they just didn't see the tower until they were right upon it. Many apparently became aware of the tower right at the last minute and gave alarm calls as they attempted to swerve - sometimes it was evident from the recordings that the birds would collide with one another. This made a great impression on me. I thought, wow, even these relatively short communication towers are dangerous for migrating birds.

I hadn't really considered the hazard from shorter towers.

Shortly after analyzing the Nebraska data, in July 1997, the new issue of *Smithsonian* magazine came out with an article that mentioned the new digital television system soon to be implemented across the continent. The article quoted estimates that a 1,000 new towers 1,000 feet tall or higher might be needed across the continent to accommodate the new digital antennas. About this time I looked around the hillsides here in New York State and saw the evidence of all the new cell towers going up, and I very quickly became tuned to the great proliferation of towers occurring on the continent today. This realization, combined with concern over declines in the populations of many species of birds generated by the results of the USFWS's Breeding Bird Survey compiled in the 1980s, catalyzed my interest in this issue. In late 1997, a number of organizations – the National Audubon Society, the American Bird Conservancy, and the U.S. Fish and Wildlife Service – started to network on this issue and the momentum for addressing the problem started to grow. The large kill of Lapland Longspurs in western Kansas in January of 1998 ignited the effort.

We have a different climate now than we had back in the 1950s and '60s when these tower kills were first noted. We now have a situation of concern about declining populations for many species of songbirds and we have a deluge of new tower construction. These developments have amplified the fact that we have very little research on this issue. But a key ingredient now moving this issue forward is a concept that this problem might have a simple solution. When I looked around back in 1997 to see if there had been any mitigation research on this problem, I found very little out there. However, the research I did find was very suggestive of a solution, in particular, the now classic work of Dick Graber and Bill Cochran back in a late 1950s. Graber and Cochran waited for a night when the weather conditions caused birds to fly about in the lighted area around a tall television tower. Then, they simply turned the lights off on the tower. Within a minute or two the birds left the vicinity of the tower. By simply turning off the lights they eliminated the major mechanism for mortality at towers (Avery *et al.* confirmed these findings in the 1970s). So, the major motivating forces for getting this meeting together today are, first, that there really hasn't ever been any mitigation research or any concerted effort to address this problem – a problem that is getting greater every year as towers over 199 ft. [61 m] are now increasing in the U.S. by more than 5,000 per year. Second, the scant research that is out there is very suggestive that a mere small change in the length of the dark phase of the blinking aviation warning lights on these towers could prevent the bulk of the avian mortality at towers in North America every year.

There are other sources of bird mortality that likely are larger than that incurred by towers. Mortality from cats, windows, and automobiles are undoubtedly larger. But the difference with this initiative toward reducing tower mortality is that we have solid ground for believing that a simple solution may exist for greatly reducing it. So, we thank you for coming here this afternoon to help us address this problem and make our broadcast and communication technology as harmonious as possible with nature.

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