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## Professor takes birds under his wing

He researched impact of avian deaths from crashing into windows, found ultraviolet film can help prevent them.



By Christopher Baxter  
OF THE MORNING CALL  
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For a roomful of birds, the museum at Muhlenberg College's Acopian Center for Ornithology is eerily reminiscent of a morgue, hushed and still, perhaps proper for the final resting place of hundreds of bodies no loved ones will claim and for which no justice will be served.

Dozens of mounted birds stare silently from glass cabinets, a whiteboard on the wall keeps a running tally of the latest deaths, and on a rectangular table at the center of the room lie eight white-throated sparrows, each with a string carefully tied around its legs and a numbered tag dangling from its body.

These are the victims of an indiscriminate killer, says Daniel Klem, a soft-spoken professor of ornithology perhaps better described as a bird crusader. After 35 years of research, Klem remains determined to expose a transparent killer most fail to see as dangerous: the window.

"Wherever birds and glass occur, you can have a victim," said Klem, sitting in his office recently as a bird wall clock chirped 2 p.m. "Some places are far more dramatically harmful than others."

Daniel Klem, a professor of ornithology at Muhlenberg College, talks about little changes people can make to save birds, like moving bird feeders away from windows. (Jennifer Cecil/The Morning Call / August 5, 2009)

Klem's latest research, published in the June edition of The Wilson Journal of Ornithology, has excited birders in the Lehigh Valley and across the country for its finding that a new ultraviolet film for windows deters birds but appears clear to people.

The discovery may help Klem and other ornithologists overcome the primary social reality that, to date, has prevented most other types of bird warnings from sticking: People's love for birds is only as strong as their windows are clear.

"They don't want to hear it, quite honestly," said Arlene Koch, president of the Pennsylvania Society for Ornithology. "In fact, there are a lot of birders who don't do it, who won't do anything about this problem because the best way to handle this might affect their windows."

Window collisions kill perhaps 100 million birds each year in the United States -- more than 330 times the number killed in the Exxon Valdez oil spill -- cutting down on their role of consuming leaf-eating insects, dispersing seeds and signaling greater environmental problems.



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Collision deaths, second only to habitat loss, have contributed to significant declines among Pennsylvania bird populations during the past 40 years. Of the state's 132 most prevalent birds, one-third show declines since the 1960s, according to the North American Breeding Bird Survey. One-third of the nation's 800 species are endangered, threatened or in decline.

"Development hits birds twice," Koch said. "It takes up their habitat and erects more windows in their paths."

Though people can recognize the presence of windows by surrounding clues, such as a window frame or sill, birds only see either the natural environment behind windows or the false world being reflected. Unknowingly, they fly full speed and thud! they make impact.

The magnitude of the problem -- greater than deaths by cats, wind turbines and cell towers combined -- is dwarfed by the persistent and widespread ignorance of the public, said Klem, himself a skeptic when he first began studying the issue as part of his doctorate work at Southern Illinois University Carbondale.

"A professor suggested the topic, and I thought, 'OK, maybe some birds die here and there, but this doesn't seem to be a big deal,'" Klem said. "A few days later, I was outside sitting on a bench at 5 a.m., and a dove came soaring through the trees and smashed into a window in front of me."

Despite his realization, Klem said, most people's responses remain predictable. They laugh. They shrug. They say good riddance. But Klem hopes his latest finding will begin to sway both public opinion and the commercial market.

He partnered with CPFilms in [Martinsville, Va.](#), to create and test the adhesive film, patterned to alternately reflect and absorb ultraviolet light, which is visible to birds but invisible to people. The material could be used to retrofit anything from living room windows to skyscrapers.

Even with the results and a letter from the U.S. Fish and Wildlife Service supporting development of the technology, the company remains unconvinced that there is a market for the prototype, Klem said. But his three decades of research and outreach have begun to pay dividends.

Audubon chapters in New York and Chicago have launched monitoring programs to document the problem and save injured birds. Officials in Chicago and Toronto have developed bird-safe building guidelines to educate builders on how to make environmentally friendly and bird-safe structures.

Dead birds are common on Temple University's main campus in [Philadelphia](#), where a team of students and staff have partnered with Audubon Pennsylvania to study building collisions. University officials hope there will soon be a low-cost, practical option to deter birds from their buildings.

At Swarthmore College in [Delaware County](#), the glass facades of the science center have been outfitted with bird-friendly "fritted" glass, a method also used on a few windows on Muhlenberg's science building. A pattern of eighth-inch frosted dots spaced closely together appears relatively clear to people but effectively deters birds.

"You feel like you're looking out of a slightly tinted or filmy window," said E. Carr Everbach, the professor of engineering at Swarthmore who spearheaded the bird-saving window installation. "Only when you pull your vision back to look at the glass do you see the dots themselves."

The fritted glass cost Swarthmore an additional \$20,000 compared with traditional windows, Everbach said. But the frosty panes also block some sunlight from entering the building, which has saved the college more than \$48,000 in air conditioning costs since the installation in 2004.

No birds have been documented colliding with the college's fritted glass, Everbach said. Previously, an estimated 100 birds died annually at the panes of the science building, and 200 birds annually across the college, Everbach said. One year, all 18 of the campus' hummingbirds died after crashing into windows.

Still, the steps toward a bird-friendly urban and suburban future are small. Without consumer demand for products, which inevitably cost more than traditional windows, builders and architects are not likely to take collisions into account, said Scott Elliott, spokesman for the Pennsylvania Builders Association.

"In my personal experience, people will build something and then have to do some sort of retrofit," Elliott said. "Usually it tends to be a reaction rather than a proactive approach."

Klem fears that may lead to a future when many birds in decline today may only be visible to future generations in museums, as stuffed birds encased in glass or preserved bodies lying stiff and motionless. That, he said, would be ironic, considering many people want windows to watch the very same birds flutter around the feeder or nest in the back yard.

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