



**Augustana College**  
**Rock Island, Illinois**  
**Habitat Restoration - Bird mortality at windows**

**SCHOOL**

Augustana College, private, 4-year, 2,500 students, Rock Island, IL, 61201

**ABSTRACT**

In 2002-2006, bird mortality by window strikes was monitored at five buildings at Augustana College and Principia College (Elsah, IL). We documented 357 fatalities by window strikes and roughly 40 birds died per building per year. This figure is more than 4 times higher than current estimates (1-10 dead/building/year) and about 70 of 150 known species were affected at the campuses. We found that 95 percent of the mortality occurred during the spring (March-May) and fall (2nd half Aug-Nov) seasons. Thus bird mortality during summer and winter was significantly lower. Moreover, 94 percent of the species were North American (short distance; includes White-throated Sparrow) and neo-tropical (long distance; includes Ovenbird) migrants rather than the more common permanent resident species, such as the Black-capped Chickadee and House Sparrow. Several window-killed species are declining, e.g., Wood Thrush and Prothonotary Warbler, according to the 2007 Audubon Watchlist (<http://web1.audubon.org/science/species/watchlist/>). Annual bird mortality at Augustana is estimated at 79-790 [using current estimates of bird mortality at windows and the number of existing buildings ( $N = 79$ ) on campus]. We are currently assessing how the incidence of window mortality varies with the density of birds living in the immediate vicinity of buildings on campus.

**GOALS AND OUTCOMES**

**Goals**

Our objectives were to: (1) document the abundance and richness of birds killed by buildings, and (2) assess the relationship between season and migratory class of birds killed by windows, and between window area and mortality within sections of a building and among buildings. We hoped to understand more about this human-related threat to survival. We also hoped to raise awareness to the college campus so that future development projects will consider this documented hazard to biodiversity.

For the next few years we are expanding this work to assess bird-window collisions on a landscape scale. We are proposing to examine the relationship in an urban landscape between the incidence of window-strike mortality and (1) bird density (richness and abundance) of living birds, (2) cover type, (3) habitat variables (e.g., % vegetation cover), and (4) season.

**Accomplishments / Outcomes**

The results of our work demonstrated that bird mortality was high. We calculated a mortality rate of 55 dead birds/building/year at Augustana (northwestern Illinois), which is roughly twice as high as Principia in southwestern Illinois (24 birds/building/year) and relative to an office park (29 birds/building/year) in Richmond, Virginia. There was a significant positive correlation between bird mortality and window area at buildings. Species richness of bird mortality was higher at Augustana ( $n = 48$ ) than at Principia ( $n = 37$ ) and in Virginia ( $n = 40$ ). Differences among sites may be a consequence of factors related to behavior,

environment, and window area. We found that about 12 new species died each year at both Augustana and Principia. Thus, multiyear studies may observe a larger range of species dying from collisions with windows than monitoring projects of relatively short duration.

Mortality at both campuses was high for the Ruby-throated Hummingbird, American Robin, White-throated Sparrow, and Ovenbird. Swainson's Thrush, Northern Cardinal, and Dark-eyed Junco also suffered at high mortality rates at Augustana. Window strike mortality in Ruby-throated Hummingbirds at Principia was more than twice as high as other species and about half of these deaths occurred in September, which includes the peak of fall migration in this region.

Unfortunately, not one policy was developed at Augustana as a result of this work. We attempted to engage every relevant constituency on campus (ranged from individual students, faculty, and administrators to the campus news paper and college sustainability committee) so that policy could be at least discussed. As we continue this work, we are hopeful that the college will take it more seriously.

### **Challenges and Responses**

The major challenge was (and still is) asking folks to consider this issue in environmental planning. One reason for this is that the entire campus is myopic about environmental issues and focuses solely on recycling, reducing our carbon footprint, etc. Indeed, these are important, too! But successful implementation of these activities only indirectly benefits biodiversity in the very long term. Conversely, our work is aimed at directly and quickly assessing the college's environmental impacts and using this information to preserve (or at least reducing our impacts upon) biodiversity in the short term.

Again, we are hopeful that the college will take it more seriously.

### **Campus Climate Action: Your School's Carbon Footprint**

It did not address reducing climate change at all. Rather, our focus was to examine the direct effects of the college on local biodiversity.

### **Commentary and Reflection**

Despite the college's commitment to environmental issues, we have experienced an attitude (whether intentional or not) that is at best indifferent about preserving biodiversity. We will continue this work in hopes that it's findings are "contagiously inspiring". We are also attempting to approach this from a different angle by engaging the college in celebrating the campus's biodiversity. Past activities this year were conducted in association with the Augustana Darwin Club (<https://sites.google.com/a/augustana.edu/darwin-club>). One event occurred during World Migratory Bird Day in April 2009 (<http://www.worldmigratorybirdday.org/2009/>).

## **ENGAGEMENT AND SUPPORT**

### **Leaders and Supporters**

Again, this work was conducted by a professor, collaborator, and two students. Virtually no other group on campus, except for the Augustana Darwin Club, was interested in the work nor in its implications for biodiversity.

### **Funding and Resources**

The main expense (\$800) was from publication costs of the paper that summarized the results of the work, which was published in a prominent scientific journal. We were fortunate to receive funding from the Augustana Faculty Research Grant to pay for this expense.

### **Education and Community Outreach**

In the last several years, this research has been presented at various on-campus events, local community outreach meetings (Master Naturalist Program, University of Illinois, Extension, Singing Bird Nature Center, Black Hawk State Park, Rock Island, Illinois) and at regional (workshop on Avian-Human Interactions, Midwest Birding Symposium, Moline, Illinois) and national scientific meetings (Joint Meeting of the Wilson Ornithological Society and Association of Field Ornithologists, Mobile, Alabama). The local community has shown limited interest and included the talk cited above and a newspaper article in the local paper.

## **CONTACT INFORMATION**

### **Contacts (and case study submitted by)**

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## **MORE ABOUT YOUR SCHOOL**

### **Campus Sustainability History**

“Augustana College is striving towards sustainability through its academic programs and institutional policies. In 2007, the Augustana College Board of Trustees approved a broad and ambitious action plan in an effort to reduce the college's environmental footprint. A central point of this plan was the establishment of the Campus Sustainability Committee, composed of students and members of the faculty and staff. This committee oversees and helps facilitate numerous activities on campus, including recommendations of institutional policies. In addition, Global Affect, a long-standing student organization, supports numerous environmental activities on campus.” (<http://www.augustana.edu/x11531.xml>)