

Evaluation of Bird-Window Collisions on the UPEI Campus

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Introduction

Bird-window collisions are one of the leading anthropogenic causes of death among wild birds. An estimated 25 million birds die annually from window collisions in Canada.¹ Birds often fail to recognize windows as barriers due to their transparency and reflections of natural habitats.² Collision risk is influenced by window characteristics, surrounding vegetation, species' migratory behaviour, and seasonal timing.³

Prince Edward Island (PEI) lies within the Atlantic Flyway, a major migratory corridor linking breeding and wintering habitats.⁴ Bird-window collisions increase during peak migration seasons when birds navigate unfamiliar structures, often at night and lower altitudes.³ The University of Prince Edward Island (UPEI) campus, located in the largest city on PEI, has undergone recent expansion featuring extensive glass facades surrounded by natural habitats, including a protected wetland. The campus's combination of modern glass-heavy buildings and older architecture, interspersed with fragmented natural habitats, provides an ideal setting for studying bird-window collisions on PEI. However, comprehensive monitoring of collision events across a large campus requires significant resources. Citizen science approaches can provide valuable complementary data by engaging community members who regularly utilize campus facilities and may observe incidents outside of formal monitoring periods.⁵

Aims

This study aimed to identify high-risk buildings on campus, establish baseline collision monitoring through daily patrols, and engage the community through citizen science reporting.

Materials and Methods

This was a prospective, descriptive study. A comprehensive literature review identified key factors that increase bird-window collision risks, including window size, cleanliness, mirror coatings, and nearby vegetation.^{6,7} All thirty-nine UPEI campus buildings were assessed based on these factors.

High-risk buildings were monitored daily by the same individual (ML) between 6:00 and 8:30 p.m., focusing on large window facades. Patrols involved close examination of windows and the surrounding 1.5 meters for signs of bird-window collisions. Deceased birds were collected and submitted to the Atlantic Division of the Canadian Wildlife Health Cooperative (CWHC) for post-mortem examination.

Social media accounts (Bird Safe UPEI on Instagram @BirdSafe.UPEI and Facebook) and physical flyers were created to promote community engagement. Community members were asked to report collisions via social media, including photos, locations, and dates when possible.

Ways collisions were identified:

- Directly witnessed collisions
- Window imprints
- Injured birds
- Dead birds



Social media accounts
f @ BirdSafe.UPEI

Results

Building Assessment

Eight of thirty-nine campus buildings were identified as high-risk for bird-window collisions (Table 1).

Table 1. High-risk buildings on UPEI campus.

Building	Large Glass	New/Clean	Mirror Coating	Nearby Vegetation	Year Built/Renovated
K.C. Irving Chemistry Centre	✓		✓	✓	1996
Bell Aliant Centre	✓	✓		✓	2003
Duffy Science Centre	✓		✓	✓	2006
Atlantic Veterinary College	✓		✓	✓	2006
Regis and Joan Duffy Research Centre	✓	✓	✓	✓	2006
Faculty of Sustainable Design Engineering Building	✓	✓		✓	2016
Performing Arts Centre and Residence	✓	✓		✓	2023
Medical Building	✓	✓		✓	2025

Daily Monitoring

Fifteen patrols of high-risk buildings were completed starting on July 14th. On July 29th at 7:00 p.m., one dead juvenile European Starling was found within one meter of the Bell Aliant Centre's large north-facing facade (Figure 1). Based on the proximity of the bird to the window and strong sky/tree reflections, window collision was the presumed cause of death. Post-mortem results are pending.

Citizen Science Reporting

From July 17th to August 7th, Bird Safe UPEI social media accounts reached a total of eighty-one followers and received eight messages (Table 2).

Two incident reports provided valuable data:



Figure 2. Community-reported collision at Dalton Hall (left) and the building's standard-sized windows (right).

2. Ongoing observations at

Regis and Joan Duffy Research Centre:

A community member reported observing 15-20 annual collisions at the large south-facing facade reflecting the sky (Figure 3). The individual who reported the incidents noted that crows had been observed preying on deceased birds.



Figure 1. Dead juvenile European Starling (top) found near the Bell Aliant Centre facade (bottom).

Table 2. Social media engagement summary.

Message Type	Count
Incident reports	2
Media coverage / Outreach inquiries	3
Home observation sharing	2
Mitigation inquiries	1

1. June 6th collision at Dalton Hall:

A juvenile European Starling was witnessed colliding with a window in a building not classified as high-risk (Figure 2). The bird was reported to be “stunned” but eventually flew away.



Figure 3. The large glass facade at Regis and Joan Duffy Research Centre.

Conclusion & Discussion

Despite less than one month of data collection, we documented several bird-window collision incidents, confirming the need for ongoing research on the UPEI campus.

Study limitations include likely under-recognition of bird-window collisions. Most collisions leave no window marks, and deceased birds are often removed by scavengers before detection.⁷ Resource and access constraints further limited monitoring to a subset of buildings. The collision at a building with standard-sized windows confirms that any campus window can pose risks, emphasizing the value of citizen science to fill monitoring gaps.³

Both detailed collision reports involved juvenile European Starlings, consistent with previous findings that young birds are more vulnerable due to unfamiliarity with artificial structures.⁸ Given that collision risks increase during migration periods, continued monitoring through fall migration and subsequent breeding seasons will provide comprehensive baseline data across different high-risk periods.

Ongoing Research

Data collection will continue through the peak fall bird migration season (mid-August to mid-October). UPEI community members are encouraged to utilize the UPEI Bird Safe Instagram and Facebook accounts to report collisions, injured and deceased birds.

Scan to sign up for monitoring program!



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