

# Lights Out, Fort Worth!

## Spring 2024 Observations



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### Bird—Building Collision Species Found

A total of 42 bird—building collisions were documented this season, encompassing 17 individual species and 11 families (Fig. 1). All birds were documented and uploaded into the statewide iNaturalist monitoring project. The following survey observations summarizes the collision monitoring results and diversity of birds recorded throughout the season.



Figure 1. Lights Out, Fort Worth! Bird—Building Collision Species Found, Spring 2024.

### Bird—Building Collisions by Family & Week in Spring 2024

A total of 17 unique species encompassing 11 families were recorded throughout the spring season. Doves and pigeons (Family *Columbidae*) made up 28% of our total documented bird—building collisions. Non-migratory and resident species such as Great-tailed Grackles, Carolina Chickadees, House Finches, and European Starlings (an invasive species) made up 24% of documented bird—building collisions. The remaining 48% of documented bird—building collisions were migratory species, with the most common being Ovenbirds and Nashville Warblers (Family *Parulidae*). Last spring, our methodology included documenting bird deaths and injuries that considered collisions as a comorbidity, an example being stunned birds post-collision that succumb to threats such as getting run over by traffic or predation<sup>1</sup>. This spring, we included observations that were definitively collision-related, excluding comorbidities as a factor to consider when examining bird deaths and injuries.

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This change in our methodology increases our data accuracy on the ground. However, even with these changes and reduction in survey days, we observed less migratory species diversity this spring (10 migratory species in 6 families) in comparison to last spring (21 migratory species in 11 families).

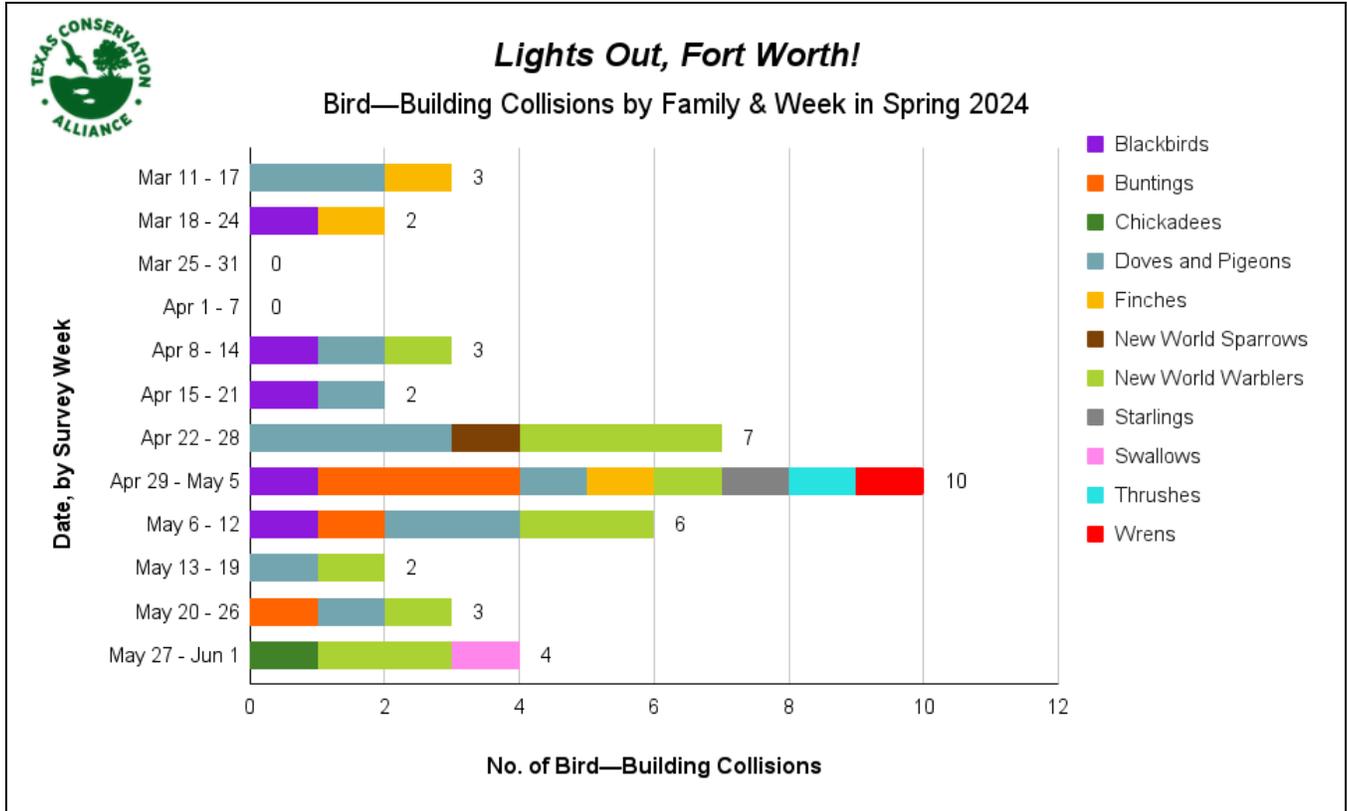


Figure 2. *Lights Out, Fort Worth!* Bird—Building Collisions by Family & Week in Spring 2024.

### New Species for *Lights Out, Texas!*

A Cliff Swallow (*Petrochelidon pyrrhonota*) building collision mortality was documented this spring in downtown Fort Worth<sup>2</sup>, becoming a new species recorded for the *Lights Out, Fort Worth!* program. After reviewing observations in the statewide iNaturalist monitoring project, we have determined that the Cliff Swallow building collision mortality is a new species for *Lights Out, Texas!* Although Barn Swallows, which belong to the same family as Cliff Swallows (Family *Hirundinidae*) have been recorded for *Lights Out, Texas!* before, this is the first time a Cliff Swallow building collision mortality has been documented in the statewide iNaturalist monitoring project. Cliff Swallows breed in Fort Worth, arriving in Texas starting in early March. The Cliff Swallow documented was a juvenile, inexperienced with navigating the dangers of the city<sup>3</sup>. The Cliff Swallow was located at one of the 10 buildings on our survey route that provides many eaves and bridges for adequate nesting sites. Cliff Swallows historically have nested in sheltered cliffs, feeding on insects in the air in wide-open areas near water.

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Due to the development of large urban areas, especially those like Fort Worth, which lies on the Trinity River in historic prairie land, Cliff Swallows have had a noticeable increase in their breeding range in North America. The salvage partnership with the Texas A&M Biodiversity Research and Teaching Collections ensures that this bird specimen will not go to waste, supporting research projects at Texas A&M and beyond.



**Figure 3.** A *Lights Out, Fort Worth!* volunteer shines a flashlight on the Cliff Swallow mortality documented on May 29th in downtown Fort Worth.

### Stark Difference in Dallas vs. Fort Worth Collisions

This Spring, there was a stark difference in the number of bird—building collisions found in Dallas ( $n = 346$ ) versus Fort Worth ( $n = 42$ ), as seen in Fig. 4 below. In both cities, surveys were conducted four days per week before and after peak migration (April 22 – May 12) and seven days a week during peak migration, with 58 Dallas surveys and 57 Fort Worth surveys. One possible explanation for the difference in collisions is differences in the number of birds migrating through each city. However, Cornell's BirdCast analysis<sup>4</sup>, which estimates the number of birds that flew over a given county each night during migration, is strongly correlated for Dallas County and Tarrant County ( $r = 0.9469$ ), which is evident in Fig. 4.

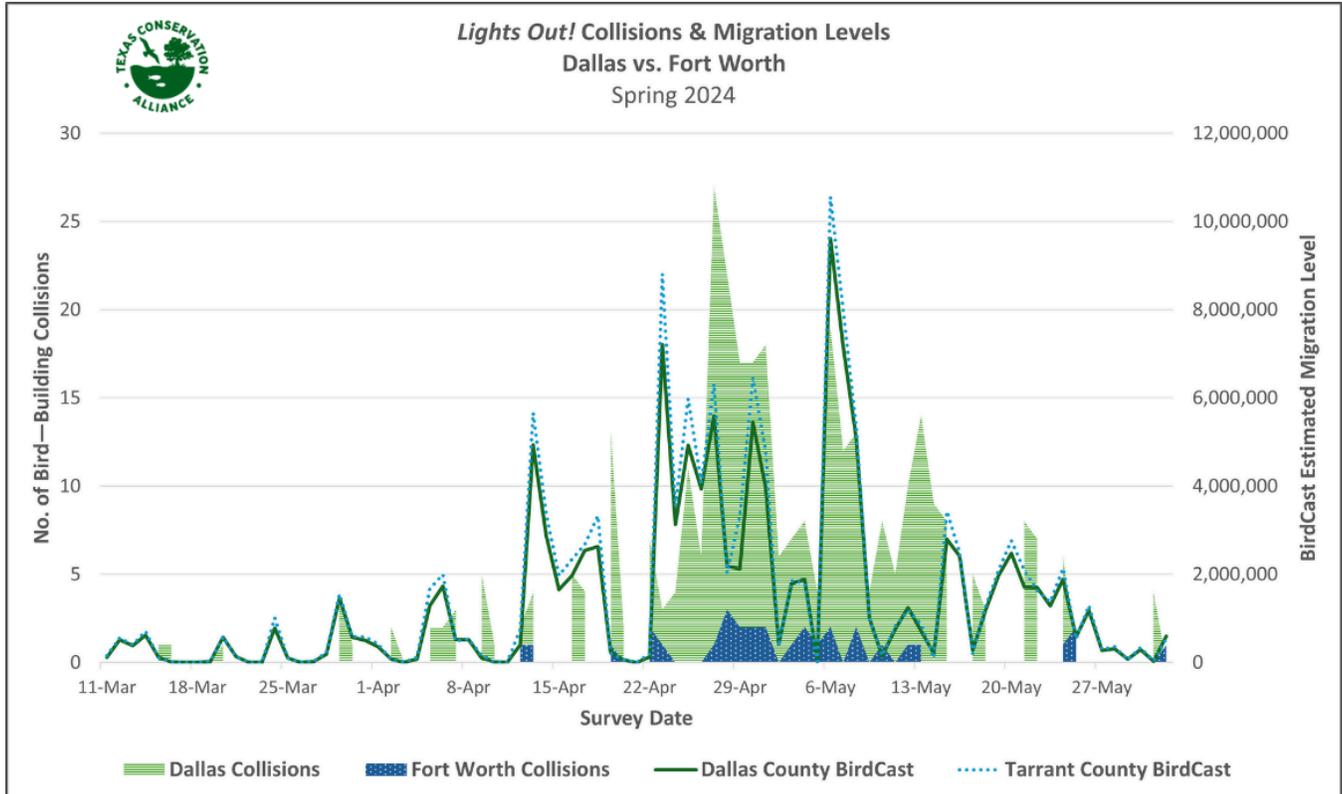
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Furthermore, BirdCast estimates that 15,272,100 more birds traveled through Tarrant County compared to Dallas County during this survey season (March 11 – June 1). This indicates that other factors resulted in this drastic difference in collision numbers.



**Figure 4.** Bird—building collisions and bird migration intensity in Dallas vs. Fort Worth this spring.

The most obvious difference between the two cities this spring was how dark downtown Fort Worth was compared to the brightly lit downtown Dallas. All buildings in downtown Fort Worth participated in *Lights Out!* by reducing non-essential lights at night during spring migration. While some buildings in downtown Dallas, such as Reunion Tower, participated in *Lights Out!* this spring, light levels in Dallas were still dangerously high throughout the migration season.

We acknowledge that correlation does not equal causation and that other factors likely contributed to the difference in collisions between the two cities, such as survey route length (Dallas = 7 mi, Fort Worth = 3.5 mi), building density and height, and local weather conditions. However, the difference in the mean collision rate for Dallas (5.97 bird collisions/survey) versus Fort Worth (0.74 bird collisions/survey) is too great to ignore.

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*Despite having fewer surveys than the past two springs, more collisions were recorded per survey day in Dallas this spring than any other spring since surveys began in Fall 2020.*

**Texas Conservation Alliance, along with our partner organizations, urges the municipal and business leaders of Dallas to join us in protecting migratory wildlife and setting an example for the entire community by reducing non-essential lights at night during the spring and fall migration seasons!**

While light pollution is not the sole factor behind bird—building collisions, reducing light levels should decrease the number of birds that become disoriented during migration and keep them flying high above the glass-covered buildings that put them at great risk of collision.

### References:

<sup>1</sup> Parkins, K. L., Elbin, S. B., & Barnes, E. (2015). Light, glass, and bird—building collisions in an urban park. *Northeastern Naturalist*, 22(1), 84–94. <https://doi.org/10.1656/045.022.0113>

<sup>2</sup> Mariahc97. (2024, May 29). *Cliff Swallow (Petrochelidon pyrrhonota)*. iNaturalist. <https://www.inaturalist.org/observations/219552179>

<sup>3</sup> Byholm, P., Beal, M., Isaksson, N., Lötberg, U., & Åkesson, S. (2022). Paternal transmission of migration knowledge in a long-distance bird migrant. *Nature communications*, 13(1), 1566. <https://doi.org/10.1038/s41467-022-29300-w>

<sup>4</sup> Cornell Lab of Ornithology (2024). BirdCast: Migration Dashboard. <https://birdcast.info/migration-tools/migration-dashboard/>

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