



Species Prevalence Similar to Fall 2023 and Fall 2022

Species prevalence this fall was similar to the past two falls when accounting for the reduced number of surveys conducted this year (Fig. 1). Half of the top collision species this season were New World Sparrows (Passerellidae), with the top three species representing 35% of all collisions ($n = 223$). Those three species are Lincoln’s Sparrow (*Melospiza lincolnii*), White-throated Sparrow (*Zonotrichia albicollis*), and Grasshopper Sparrow (*Ammodramus savannarum*).

Despite overall species prevalence being similar to the past two falls, some noticeable differences exist. White-winged Dove (*Zenaida asiatica*) and Dark-eyed Junco (*Junco hyemalis*) were not in the top collision species in 2023 or 2022 but were the fourth and ninth most prevalent species this season, respectively. Similarly, more Song Sparrow (*Melospiza melodia*) and Black-and-white Warbler (*Mniotilta varia*) collisions were found this season than in the past two falls relative to the number of surveys conducted. Northern House Wren (*Troglodytes aedon*) dropped off the top collision list this season, with significantly fewer collisions found this season ($n = 3$) compared to the last two falls ($n = 14, 10$). These differences may be an artifact of decreased surveys this season rather than a representation of true trends, as many collision casualties likely occurred on non-survey days and were discarded before we could collect them.



Figure 1. Top bird—building collision species found in Dallas this fall compared to the last two falls

Composition of Survey Results Changes Throughout Season

As in past fall seasons, New World Sparrows (*Passerellidae*) were the most frequently recorded bird—building collisions this fall ($n = 113$). The first Sparrow collision was found in Week 3; their numbers then increased dramatically, peaking in Week 7, and finally decreasing over Weeks 11–12. New World Warblers (*Parulidae*) ranked second ($n = 34$), first appearing in Week 1 and remaining the top collision family until Week 5, when Sparrows started moving through in large numbers. Following this, warblers were found in low numbers through Week 10. Pigeons and Doves (*Columbidae*) ranked third ($n = 19$), first appearing in Week 1 and continuing in low numbers through Week 9. Wrens (*Troglodytidae*) ranked fourth ($n = 10$), first appearing in Week 3 and continuing in low numbers through Week 9. Sandpipers and Allies (*Scolopacidae*) ranked fifth ($n = 9$), represented by a single species: the American Woodcock (*Scolopax minor*). All woodcock collisions occurred during Weeks 10–11.

The graph below (Fig. 2) depicts these changes in survey composition throughout the season. Together, these five families represent 83% of all bird—building collisions documented this fall ($n = 223$), with New World Sparrows alone constituting 51% of all collisions. Furthermore, New World Sparrows and Warblers together represented an average of 66% of collision totals each week throughout the season (range = 33% – 86%).

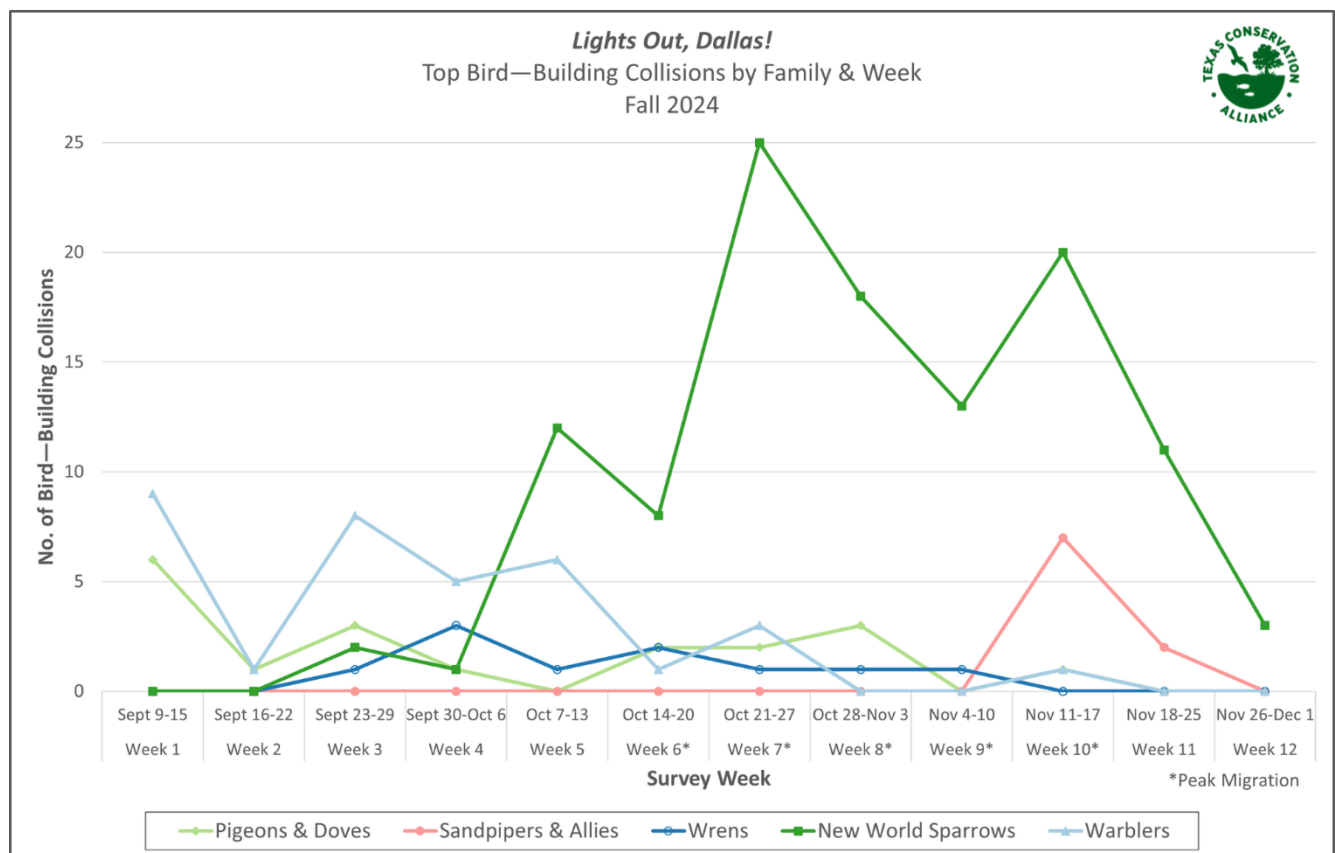


Figure 2. Changes in prevalence of the five most frequently found collision families in downtown Dallas throughout fall migration this year

Continued Collisions for Species of Conservation Concern

Since *Lights Out, Dallas!* surveys began in Fall 2020, building collisions have been documented in 18 avian species listed as Species of Greatest Conservation Need (SGCN) by the Texas Parks & Wildlife Department. This fall, collisions were recorded in 10 of these species, including Sedge Wren (*Cistothorus stellaris*) and Field Sparrow (*Spizella pusilla*) (Fig. 3). Sedge Wrens overwinter throughout the southern US and breed in northern North America, whereas Field Sparrows are partially migratory, meaning some populations are year-round residents and others migrate between the southern US and northern North America.



Figure 3. Just a few of the Sedge Wrens and Field Sparrows that have collided with buildings in downtown Dallas

In Dallas, we find substantially more New World Sparrow (Passerellidae) and Wren (Troglodytidae) collisions in fall than in spring. This pattern is demonstrated by Sedge Wrens and Field Sparrows, as seen in Fig. 4, and is likely due to differences in migratory paths in fall versus spring and the number of inexperienced juvenile birds undergoing their first migration in fall.

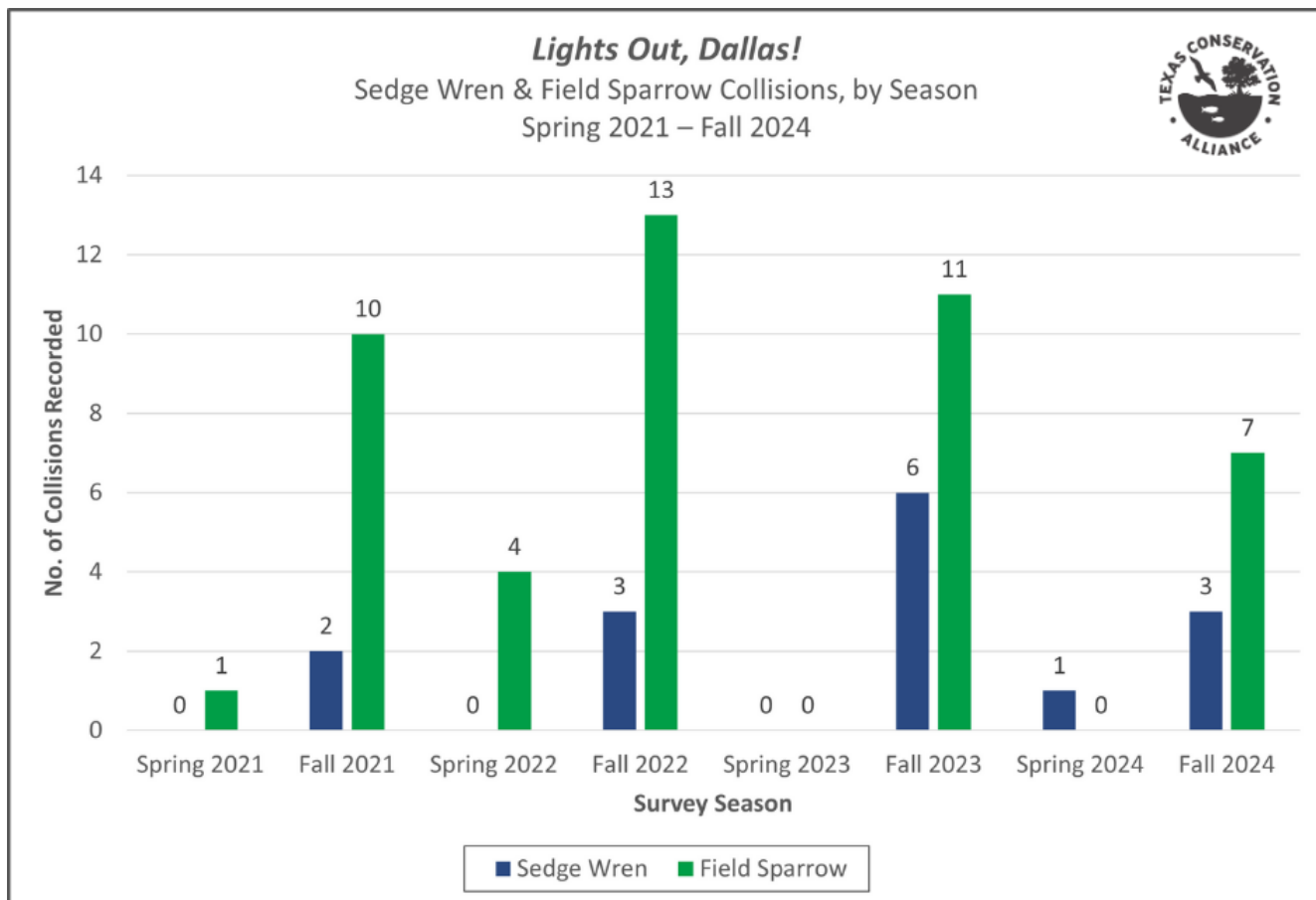


Figure 4. Differences in the number of Sedge Wren and Field Sparrow collisions documented in downtown Dallas, by season

Habitat loss and degradation are the top conservation threats for Sedge Wrens and Field Sparrows, as they have specific habitat requirements and do not nest in urbanized areas²³. During migration, building collisions act as an additional stressor for their populations, but *together*, we can change that by turning off non-essential lights at night and treating building glass with bird-friendly products.

Downtown Dallas Collision Hotspots

Over the past four years, bird collision monitoring in downtown Dallas has identified key collision hotspots and demonstrated the combined impact of building glass and light pollution on birds. From 2021 to 2024, our surveys documented 3,052 bird—building collisions across 128 locations in the area. Notably, nearly 60% of these collisions occurred at just six buildings, each responsible for over 125 collisions (Fig. 5). These buildings share common features, such as glass facades and lighting practices that contribute significantly to light pollution, such as bright uplighting used to illuminate their exteriors.

Among these six major collision sites, the Kay Bailey Hutchison Convention Center currently sees the highest number of bird collisions along the survey route, accounting for 30% of all incidents, with an average of 116 collisions each spring and fall. Fortunately, the upcoming renovations to the Convention Center present an exciting opportunity to transform this iconic building into a leader in bird-friendly design. By incorporating bird-friendly glass and better lighting practices into the renovation plans, the Convention Center could become a shining example of how our city supports wildlife and sustainable innovation. We encourage the City to seize this opportunity to create a safer and more environmentally conscious landmark.

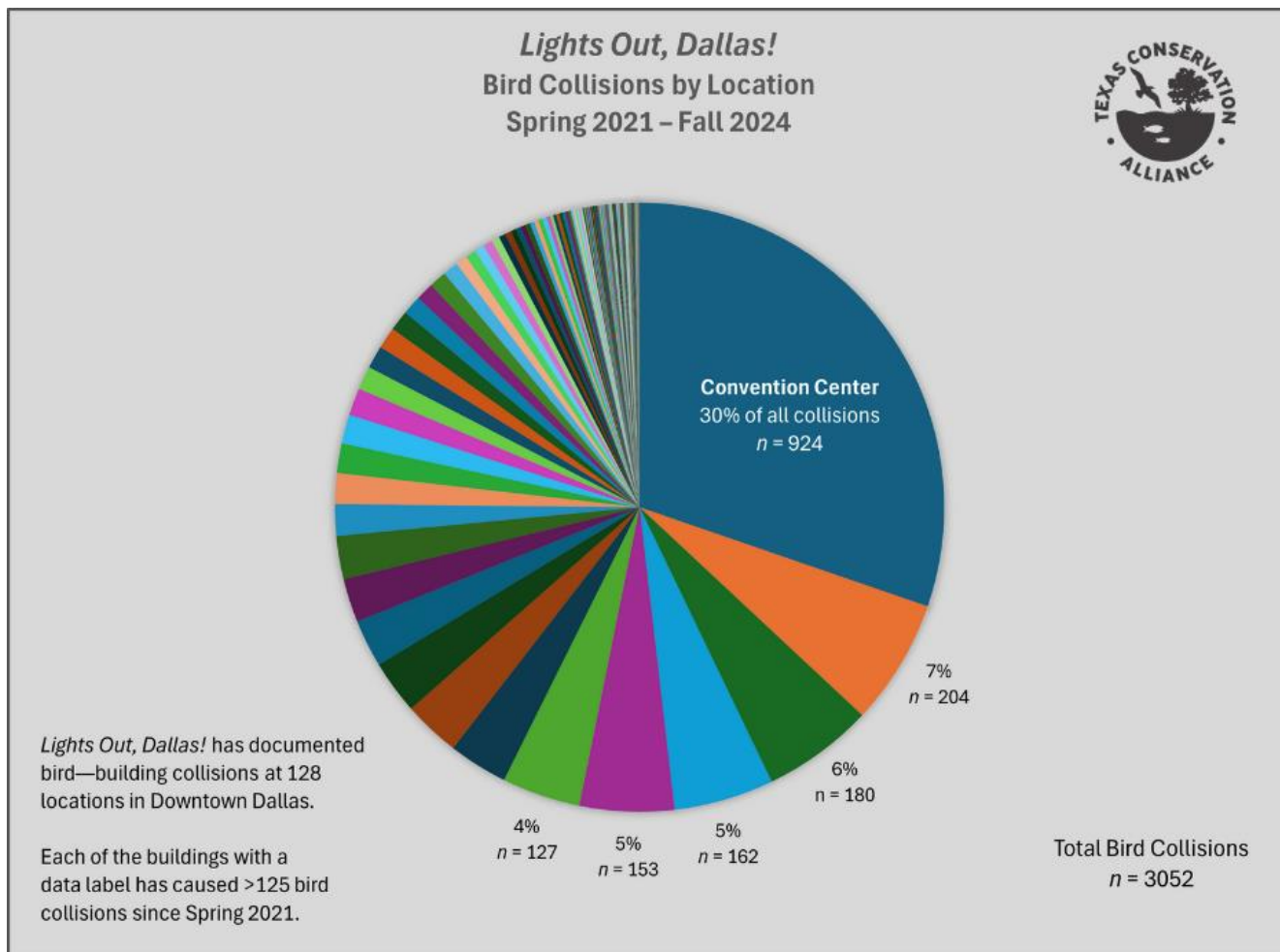


Figure 5. Downtown Dallas bird—building collisions by location, with numbers reported for the top six most dangerous locations

While migrating birds are drawn into urban areas by light pollution, building glass is the ultimate cause of bird collisions. Birds do not see glass as we do; they perceive reflective glass as a continuation of habitat (sky, trees, etc.) and clear glass as an open passageway^{4,5}. Treating glass with bird-friendly products, such as decals applied in tight grid patterns, allows birds to recognize glass as a solid barrier and mitigates collisions.

To explore documented collisions in downtown Dallas over the past four years, use the interactive heat map linked below. The map highlights collision hotspots with color coding, with red representing areas with the highest number of collisions. Each collision is also marked by a gray dot. Clicking on a dot reveals details, including bird species, collision date, and a link to the observation on iNaturalist.

Please note:

- Some pinpoint locations may not perfectly match where the birds were found, as the map is based on data downloaded from iNaturalist. *Lights Out, Dallas!* relies on the efforts of dedicated volunteers to document collisions, and slight inaccuracies in locations may occur.
- Bird collisions are a widespread issue and the second greatest source of human-caused fatalities in birds in North America⁶. The purpose of this survey is to identify collision-prone locations and explore opportunities for improvement.

Lights Out, Dallas!

Fall 2024 Observations



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This grassroots effort aims to provide valuable data to building managers, fostering collaboration to address this challenge and reduce bird collisions. We explore opportunities to work with building managers toward practical solutions that benefit both birds and the community.

Heat Map: http://rpubs.com/H_Bullock/LightsOutDallas2021-2024

References:

- ¹ Texas Parks & Wildlife. 2020. Species of Greatest Conservation Need. Texas Parks & Wildlife Department, Austin, Texas. https://tpwd.texas.gov/huntwild/wild/wildlife_diversity/nongame/tcap/sgcn.phtm
- ² Herkert, J. R., D. E. Kroodsma, and J. P. Gibbs (2021). Sedge Wren (*Cistothorus stellaris*), version 1.0. In Birds of the World (A. F. Poole and F. B. Gill, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bow.sedwre1.01>
- ³ Carey, M., D. E. Burhans, and D. A. Nelson (2020). Field Sparrow (*Spizella pusilla*), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bow.fiespa.01>
- ⁴ Klem, D., Jr. (1979). Biology of Collisions Between Birds and Windows. Ph.D. dissertation. Southern Illinois University, Carbondale, IL, USA.
- ⁵ Bullock, H. E., C. T. Panter, and T. A. Miller (2024). Conservation Letter: Raptor Collisions in Built Environments. *Journal of Raptor Research* 58(3):396–406. <http://dx.doi.org/10.3356/jrr248>
- ⁶ Loss, S. R., T. Will, and P. P. Marra (2015). Direct Mortality of Birds from Anthropogenic Causes. *Annual Review of Ecology, Evolution, and Systematics* 46:99–120. <https://doi.org/10.1146/annurev-ecolsys-112414-054133>

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