Lights Out, Fort Worth!
Spring 2024 Final Report

Take Action. Protect Wildlife.
Texas Conservation Alliance

We have officially concluded the spring 2024 survey season, signifying the end of our third season of *Lights Out, Fort Worth!* surveys.

On behalf of our entire team, THANK YOU to all of our partners and supporting organizations, many of which include dedicated teams and individuals who make our work possible each season. Since the beginning of the *Lights Out, Fort Worth!* surveys last spring, we cannot thank everyone enough for their continuous support of our work in downtown Fort Worth, in our surrounding communities, and across Texas.

As we bid farewell to spring and prepare for the warm summer ahead, we would like to share this season's highlights and observations with you.

Collision Survey Results

A total of 42 bird-building collisions were documented from March 11th to June 1st, which includes 33 mortalities, 3 rescued birds, and 6 stunned birds that hit windows and flew away, as seen in Fig. 1.

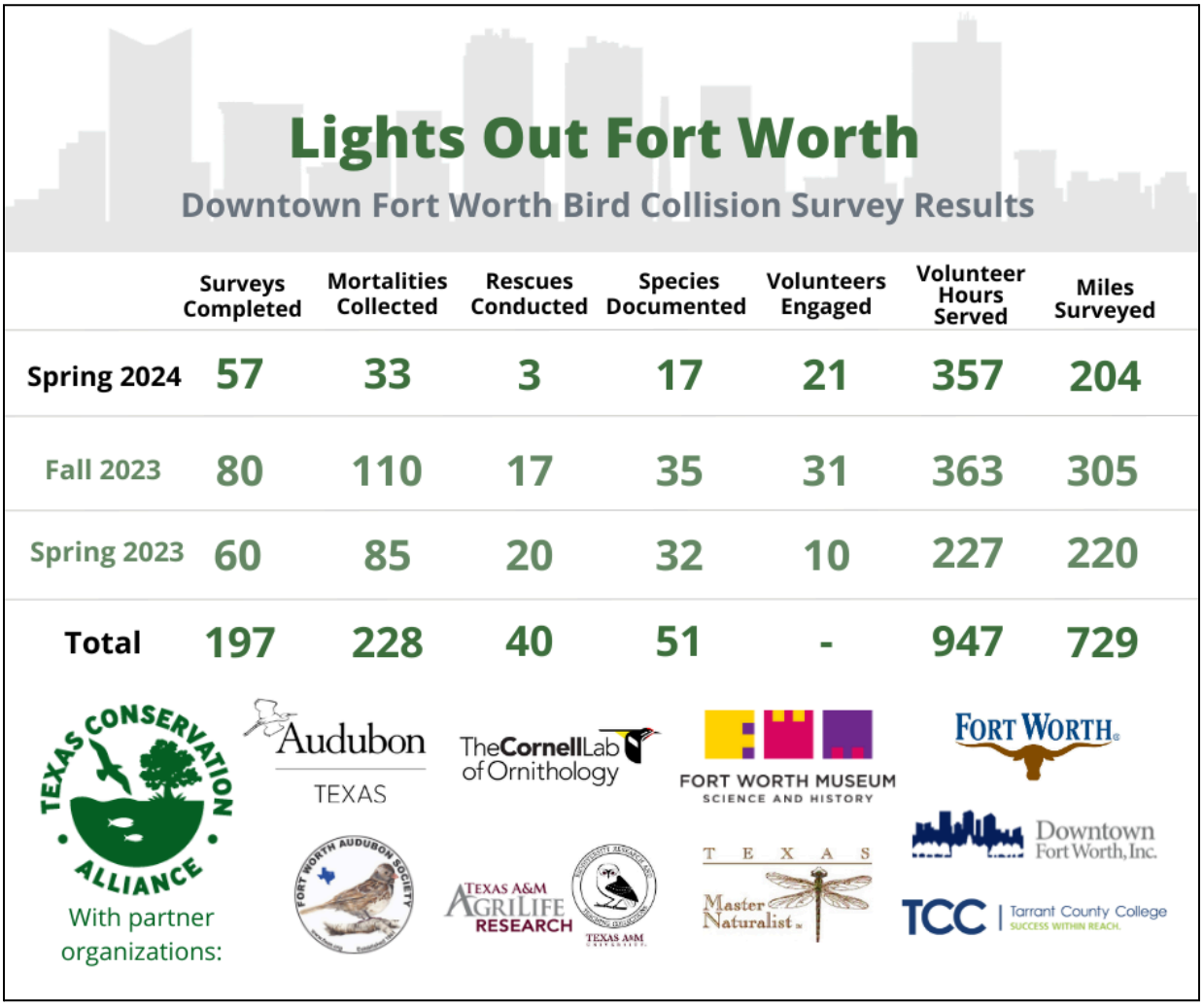

Figure 1. *Lights Out, Fort Worth!* survey results, Spring 2023 – Spring 2024.

New Species for *Lights Out, Fort Worth!*:

Building collision mortalities were documented in two new species this spring (Fig. 2), bringing the total number of species documented by *Lights Out, Fort Worth!* to 51. The new species are the Blackburnian Warbler (*Setophaga fusca*) and the Cliff Swallow (*Petrochilodon pyrrhonota*), as seen in the photo collage below. Blackburnian Warblers, with its beautiful orange and black coloration, are Neotropical migrants, migrating through Fort Worth from South America to reach its breeding grounds up north. The Cliff Swallows breed in North Texas, migrating from South America to Fort Worth, where they nest underneath buildings and other human-made structures. The salvage partnership with the Texas A&M Biodiversity Research and Teaching Collections ensures that these bird specimens will not go to waste, supporting research projects at Texas A&M and beyond.

Figure 2. *Lights Out, Fort Worth!* new species documented in Spring 2024. Left: Blackburnian Warbler; Right: Cliff Swallow.

Increased Public Awareness

This spring, the *Lights Out, Fort Worth!* initiative has garnered broader public support through local community outreach events in addition to increased media coverage, highlighting the importance of bird conservation and amplifying the program's impact on a wider scale.

The Fort Worth Museum of Science and History (FWMSH) continues to be a key partner for *Lights Out, Fort Worth!* by inviting us to their Earth Day Celebration tabling event, sharing *Lights Out!* messaging, and being part of the salvage partnership with the Texas A&M Biodiversity Research and Teaching Collections (BRTC). Visitors at Lewisville Lake Environmental Learning Area (LLELA) on World Migratory Bird Day also had a chance to see a brand-new bird specimen display (Fig. 3), seeing the impact that volunteers have by helping us document bird—building collisions in downtown Fort Worth.

In addition to local community outreach events, *Lights Out, Fort Worth!* also received publicity through news coverage, enhancing the visibility of our work beyond the circle of community partners. At the beginning of the season, the City of Fort Worth and Mayor Mattie Parker shared information with the public about the continued *Lights Out!* efforts in the city. Then during peak migration, NBC-5 DFW published two articles about *Lights Out, Fort Worth!* (Fig. 3) describing how all Texan residents and businesses can participate and volunteer with us downtown. These articles play a crucial role in raising public awareness about the program's efforts, increasing interest and support from those who were previously unaware of the initiative.

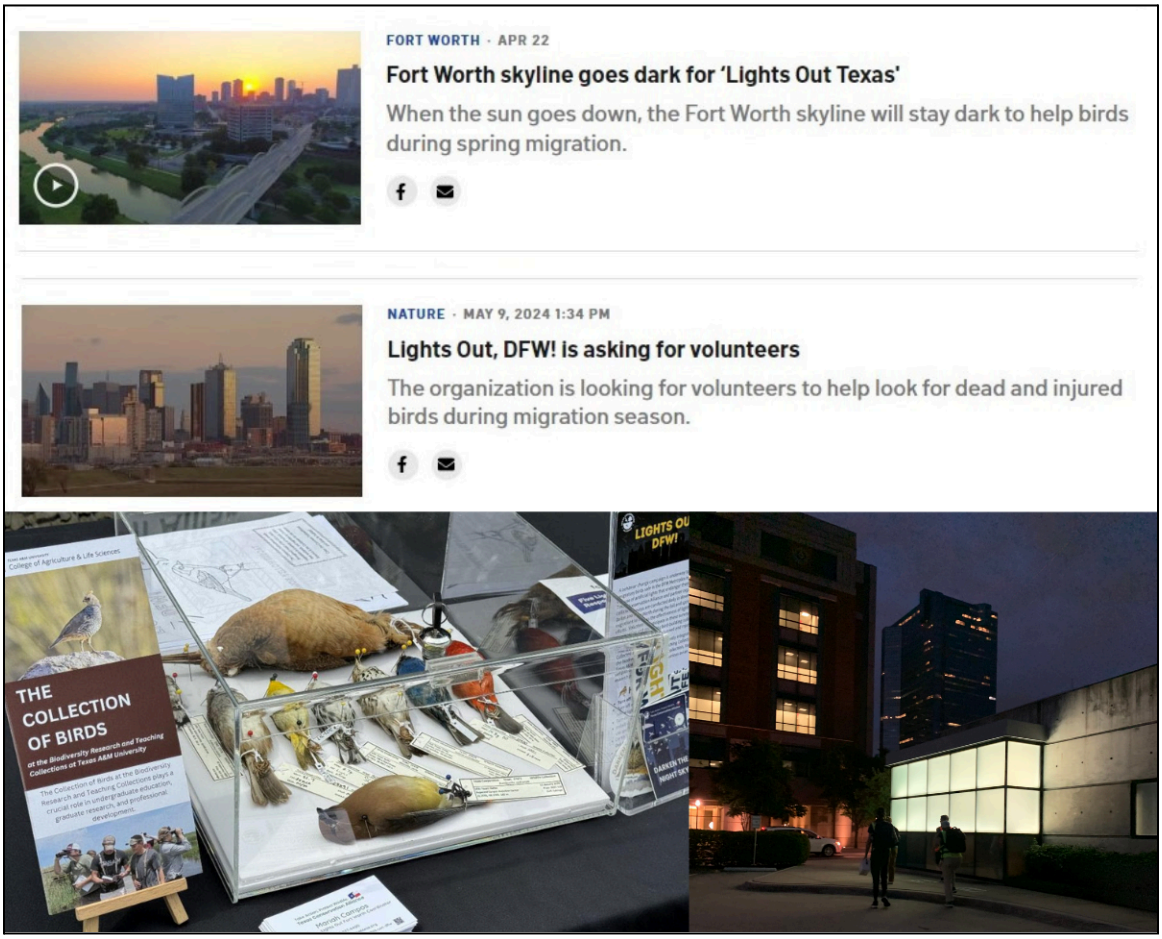

Figure 3. Top: NBC-5 DFW news headlines; Bottom left: Bird specimen display at LLELA's World Migratory Bird Day; Bottom right: *Lights Out, Fort Worth!* volunteer survey leaders start their survey walk in downtown Fort Worth.

New and Returning Volunteers

This spring, we welcomed 21 volunteers to the *Lights Out, Fort Worth!* surveys, bringing the total number of volunteers engaged since the beginning of the program to 43. Of the 21 volunteers engaged this spring, 12 were returning from previous seasons and 9 were new. Many of our volunteers come from our partner organizations and supporters including Cross Timbers Master Naturalists, Fort Worth Audubon Society, Fort Worth Museum of Science and History, and the University of North Texas Society for Ecological Restoration. We call upon the community to help share this volunteer opportunity with others as new volunteers often hear about our work through word of mouth. We hope to see even more new and returning volunteers in the Fall 2024 season!

Figure 4. *Lights Out, Fort Worth!* volunteers, survey leaders, and coordinators on June 1st, 2024.

Bird—Building Collision Species Found

A total of 42 bird—building collisions were documented this season, encompassing 17 individual species and 11 families (Fig. 5). 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 5. *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[1]. This spring, we included observations that were definitively collision-related, excluding comorbidities as a factor to consider when examining bird deaths and injuries. 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).

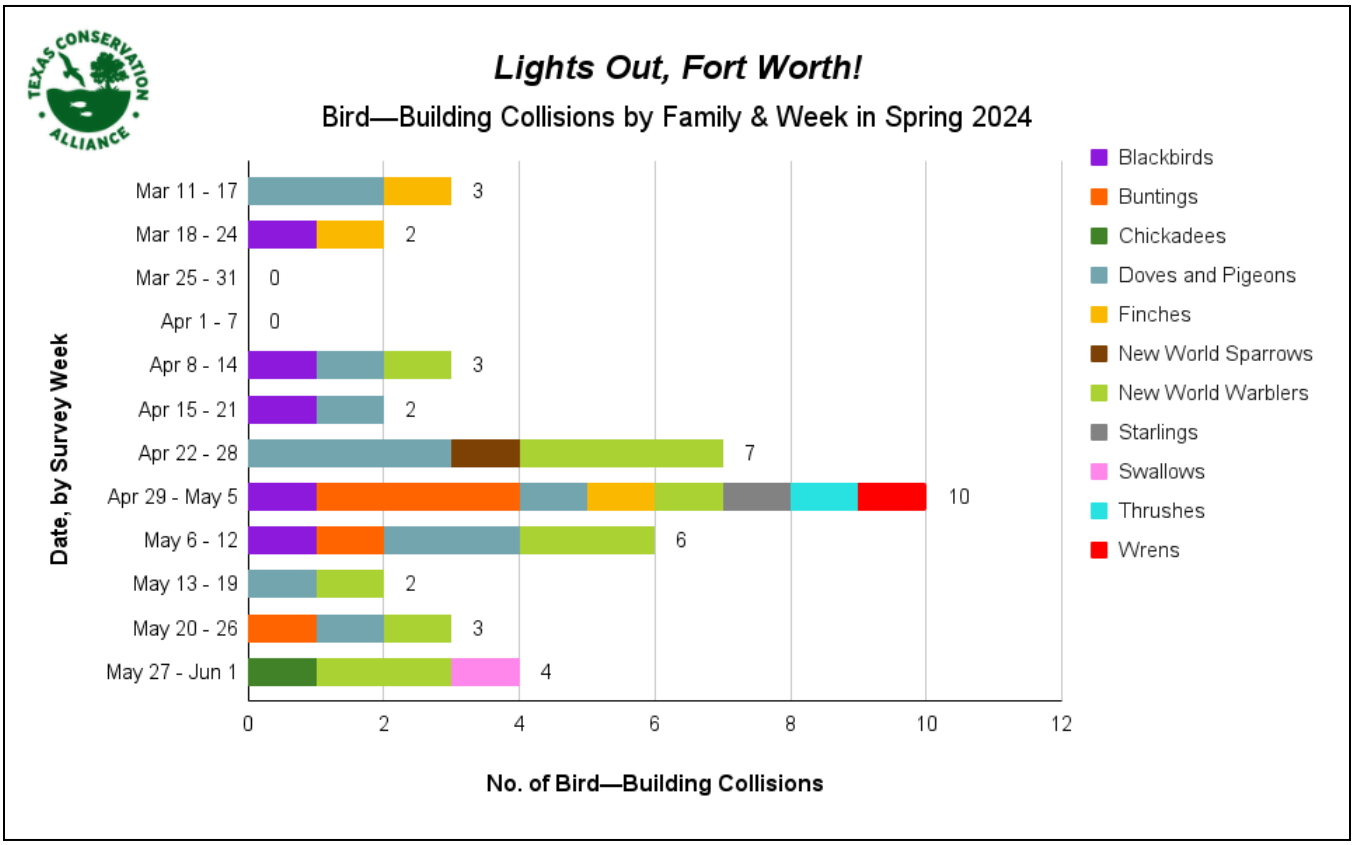

Figure 6. *Lights Out, Fort Worth!* Bird—Building Collisions by Family & Week in Spring 2024.

New Species for *Lights Out, Texas!*

A Cliff Swallow (*Petrochilodon pyrrhonota*) building collision mortality was documented this spring in downtown Fort Worth[2], 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[3]. 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. 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 7. 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. 8 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[4], 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. 8.

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.

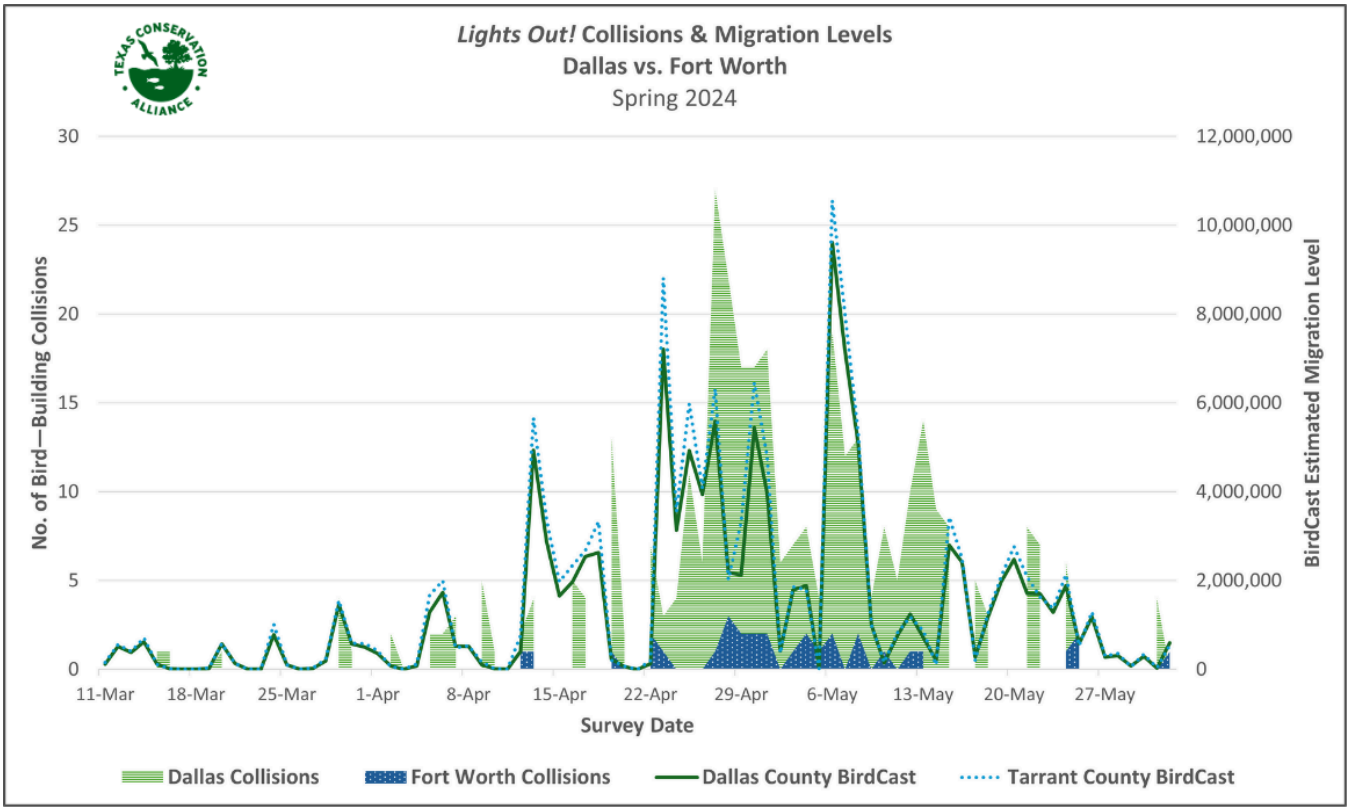

Figure 8. Bird—building collisions and bird migration intensity in Dallas vs. Fort Worth this spring.

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.

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.

"This being the only living world we are ever likely to know, let us join to make the most of it."
- Edward O. Wilson

References:

[1] 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
[2] Mariahc97. (2024, May 29). *Cliff Swallow (Petrochelidon pyrrhonota)*. iNaturalist. https://www.inaturalist.org/observations/219552179
[3] 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
[4] Cornell Lab of Ornithology (2024). BirdCast: Migration Dashboard. https://birdcast.info/migration-tools/migration-dashboard/

Report written by *Lights Out, Fort Worth!* Coordinators & *Lights Out, Dallas!* Assistant Coordinator:
Mariah Campos mariah@tcatexas.org
John Morrow john.w.morrow12@gmail.com
Heather Bullock HeatherBullock@my.unt.edu