Golden's Tree Swallow Nesting Box Project – 2026



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Executive Summary

The Golden Tree Swallow Nest Box Project was initiated in 2025 to provide supplemental breeding habitat for Tree Swallows (*Tachycineta bicolor*) in the Golden area. In 2026, the project expanded from 20 to 38 nest boxes at four sites: Edelweiss Slough, Golden Airport, Reflection Lake, and Donald. The project also continued to engage community volunteers in monitoring and conservation of Tree Swallows.

All 38 nest boxes were used to some degree by Tree Swallows during the 2026 breeding season, with 33 boxes containing eggs and 31 producing fledglings. A total of 196 eggs were laid, 170–171 hatched, and an estimated 162–163 young fledged from the boxes. This represents a substantial increase from the 43 fledglings produced from 20 boxes during the first year of the project.

Monitoring took place from April 27 to August 3, 2026, and required regular visits throughout the nesting season. During the most active period, monitoring requirements extended across almost every day for approximately six weeks. The 2026 season provided useful information for improving nest box construction, maintenance, monitoring, and future project budgeting.

Key Results of 2026:

- 38 of 38 nest boxes were used to some degree by Tree Swallows.
- 33 boxes contained eggs and 31 boxes produced fledglings.
- 196 eggs were laid, with 87% hatching.
- 162–163 Tree Swallows fledged from the boxes.
- 95% of hatched nestlings fledged.
- Fledgling production increased from 43 in 2025 (from 20 boxes) to162–163 in 2026 (from 38 boxes).

Recommendations: Continue monitoring and maintaining the existing nest box network, and consider targeted expansion where suitable habitat and monitoring capacity are available. Future budgets should better account for the construction labour and staff coordination required to support the project, and guidance could be developed for private landowners interested in building and installing their own boxes. Promoting insect-friendly habitat management and bird-friendly gardens would also provide additional opportunities for community members to support Tree Swallows and other insectivorous birds.

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1.0 Introduction

Tree Swallows are small migratory songbirds that are widely distributed across North America. They are insectivorous birds that feed primarily on flying insects and are commonly associated with open habitats near wetlands, lakes, rivers, and other productive insect-foraging areas (Winkler et al. 2020; Ryder 2015). Their association with these habitats makes them a useful species for local conservation and community-based monitoring.

Although Tree Swallows remain relatively common in many areas, their populations have declined in British Columbia and elsewhere in North America. Aerial insectivores as a group—including swallows, swifts, nightjars, and flycatchers—have experienced widespread declines associated with multiple factors, including changes in insect prey, habitat loss, and challenges during migration (Spiller & Dettmers 2019). These broad population trends highlight the importance of maintaining and enhancing suitable habitat for insectivorous birds.

Tree Swallows typically nest in cavities in trees or other structures. The availability of suitable natural cavities can be limited where standing dead trees and other cavity-bearing features have been removed through development and land management. Nest boxes can provide supplemental nesting opportunities where suitable natural cavities are limited (Ryder 2015; Winkler et al. 2020).

The Golden Tree Swallow Nest Box Project was initiated in 2025 to increase the availability of nesting habitat for Tree Swallows in the Golden area (Darvill 2025). The first year demonstrated that Tree Swallows readily used the boxes, with 17 of 20 boxes showing some level of use and 43 fledglings produced (Darvill 2025). The 2025 results supported expanding the project and continuing to monitor its effectiveness.

Tree Swallows consume a wide variety of flying insects, including flies, beetles, dragonflies and damselflies, mayflies, caddisflies, and mosquitoes (Winkler et al. 2020). Mosquitoes are not generally a primary food source, but they are among the insects consumed by Tree Swallows. Supporting populations of insectivorous birds therefore contributes to natural food-web processes while also providing an opportunity for people to engage directly in local bird conservation.

The 2026 season was the second year of the project and included a substantial expansion of the nest box network, continued monitoring, and increased community participation. This report summarizes the results of the 2026 breeding season and evaluates nest box use and reproductive success. It also identifies practical lessons and recommendations to guide future monitoring, maintenance, and potential expansion of the project in the region.

2.0 Methods

2.1 Nest Box Design and Installation

In 2026, the project included 38 Tree Swallow nest boxes distributed among four sites in Golden: Edelweiss Slough, Golden Airport, Reflection Lake, and Donald (Moberly Marsh). The boxes were located in open habitats near wetlands or other water bodies where Tree Swallows have access to

suitable foraging habitat. The project added 18 new nest boxes to the 20 boxes installed during the first year of the project.

The nest boxes followed the general design used in 2025, including rough-cut plywood construction, drainage and ventilation, appropriately sized entrance holes, and predator guards mounted on smooth metal poles. The 18 new boxes constructed for the 2026 season were built with hinged doors and heat shields on all sides and the top of the box. Construction of the new boxes was completed with volunteer labour provided by Rick Hoar and the Lake Windermere District Rod and Gun Club.

2.2 Monitoring Protocol

Monitoring was conducted from April 27 to August 3, 2026 to document nest box occupancy and Tree Swallow reproductive success. The monitoring protocol was adapted from the Tree Swallow Nest Box Monitoring Protocol developed by the Alaska Swallow Monitoring Network (2017), with minor modifications to suit the Golden Tree Swallow Nest Box Project. The protocol was designed to document key stages of the nesting cycle while minimizing disturbance to breeding birds.

Monitoring began after Tree Swallows had returned to the area and included regular checks of all nest boxes for nest building and subsequent nesting activity. Early in the season, boxes were generally checked every 3–5 days, with more frequent checks as clutch initiation approached. Once eggs were present, monitoring focused on documenting clutch initiation, clutch completion, incubation, hatch dates, nestling numbers, and fledging outcomes. When a clutch was discovered after laying had already begun, the clutch initiation date was estimated using the protocol assumption of one egg laid per day.

Once incubation began, nest checks were reduced to minimize disturbance, and nests were not checked for at least seven days. As the predicted hatch date approached, boxes were checked daily beginning on the earliest predicted hatch date to determine when the first chick hatched and how many eggs hatched in total. Following hatching, nestlings were counted every 2–3 days until day 12, after which boxes were not opened to reduce the risk of premature fledging.

Beginning on approximately day 16 after hatching, fledging was assessed primarily through observations from a distance. Monitors watched for adult activity, food deliveries, or nestlings appearing at the entrance, and approached the box only after ten minutes of viewing from afar to determine whether chicks remained inside. Care was taken not to disturb nestlings at the entrance, as any disturbance could increase the risk of premature fledging.

Volunteers received training in the field on April 30, 2026, including instruction on nest box monitoring and methods to minimize disturbance. Monitoring was also carried out by project contractors Rachel Darvill and Verena Shaw. Field observations were recorded on standardized monitoring forms and included nesting stage, egg and nestling counts, hatch and fledge information, weather conditions, observer information, and other relevant observations, consistent with the approach used during the 2025 season.

2.3 End-of-Season Box Cleaning

All 38 nest boxes were cleaned out on August 11, 2026, following completion of the breeding season. All nesting material and other contents were removed from each box, and the contents

were examined and recorded, including observations of unhatched eggs, dead nestlings or fledglings, and other evidence of nesting activity or mortality. Cleaning the boxes at the end of each season removes old nesting material and provides an opportunity to document observations that may not have been detected during regular monitoring.

3.0 Results

The 2026 season showed strong use of the expanded nest box network. All 38 nest boxes were used to some degree by Tree Swallows, with 33 boxes containing eggs and 31 boxes producing fledglings. A total of 196 eggs were laid during the season, of which 170–171 hatched, resulting in an estimated hatching rate of 87%.

The first egg was recorded on May 15 and the last egg on June 28. Clutch size averaged five eggs and ranged from one to seven eggs. The first hatch was recorded on June 8 and the last on July 12, with an average hatch date of June 13; brood size at hatch averaged five nestlings and ranged from one to six. An estimated 162–163 Tree Swallows fledged from 31 nest boxes, representing approximately 95% of the nestlings that hatched. Approximately 83% of all eggs laid ultimately resulted in fledglings.

Fledglings were produced at all four project sites. Edelweiss Slough produced 56 fledglings from 11 boxes with eggs, Golden Airport produced 61 fledglings from 13 boxes with eggs, Reflection Lake produced 35 fledglings from seven boxes with eggs, and Donald produced 10–11 fledglings from two boxes with eggs.

Monitoring effort was substantial throughout the breeding season. A total of 149 site-visit records were entered in the monitoring database, although this does not represent the complete number of field visits because not all visits were recorded consistently, particularly at the Donald site. Approximately 89 hours of field and site-visit effort were recorded after assigning 15 minutes to visits where volunteer time was not entered, and this total includes the April 30 volunteer training and effort by both volunteers and project contractors.

During the most active period, monitoring requirements extended across almost every day for approximately six weeks. The intensity of monitoring was driven by the large number of active boxes and the need to track asynchronous nesting activity and reproductive outcomes. The 2026 season therefore required substantially more monitoring and coordination effort than the first year of the project.

Table 1. Summary of data from Golden's Tree Swallow Nest Box Project in 2026.

Site	**Nest boxes available**	**Boxes with eggs**	**# of fledglings**
Edelweiss Slough	11	11	56
Golden Airport	14	13	61
Reflection Lake	11	7	35
Donald	2	2	10–11
Total	**38**	**33**	**162–163**

4.0 Discussion and Recommendations

4.1 Project Success and Monitoring Effort

The 2026 results demonstrate strong use of the expanded nest box network during the second year of the project. The number of boxes increased from 20 in 2025 to 38 in 2026, and use increased from 17 boxes showing some level of Tree Swallow activity to all 38 boxes. Fledgling production increased from 43 in 2025 to 162–163 in 2026, with 31 of the 38 boxes producing fledglings.

The high level of use indicates that the nest boxes are providing suitable supplemental nesting opportunities for Tree Swallows in the Golden area. Fledglings were produced at all four project sites, demonstrating that the boxes supported successful reproduction across the project area rather than being concentrated at a single location. These results support continuing to maintain the existing nest box network and monitoring its use over time.

The 2026 season also demonstrated the substantial effort required to obtain detailed reproductive information from the nest box network. The monitoring protocol was designed to document key stages of the nesting cycle, including clutch initiation, hatch dates, nestling development, and fledging, while minimizing disturbance during sensitive periods (Alaska Swallow Monitoring Network 2017). This provides considerably more information than a less intensive approach based primarily on occupancy or a small number of seasonal visits, but it requires frequent monitoring during a relatively short period.

During the most active period, monitoring requirements extended across almost every day for approximately six weeks. In addition to field visits, considerable time was required to coordinate volunteers, including scheduling and communication on weekends, and to review monitoring information and fill gaps when volunteers were unavailable. The success of this level of monitoring therefore depends on retaining trained volunteers who can make a substantial time commitment, as well as sufficient contractor time for coordination and data management.

There is a clear trade-off between monitoring intensity and the amount of information that can be collected. A less intensive protocol could reduce the workload for volunteers and project staff and may be more practical as the number of boxes increases, but it would also provide less detailed information about nesting and reproductive outcomes. Future monitoring should therefore be designed to effectively evaluate whether the nest boxes are effectively increasing available nesting habitat, while balancing the value of detailed reproductive information with the capacity of volunteers and staff to maintain the required monitoring schedule.

4.2 Nest Box Design and Maintenance

The 2026 season provided several practical lessons for future nest box construction. The newer boxes had top-hinged doors, but the older bottom-hinged design was easier to open for monitoring and maintenance, so a more accessible design should be considered for future boxes. The interior surface below the entrance hole should also be checked during construction to ensure that it is sufficiently rough or grooved to provide adequate footing for Tree Swallows exiting the box.

All 18 new boxes constructed in 2026 included heat shields. Some of the boxes installed in 2025 do not have heat shields, providing an opportunity to compare temperatures between the two designs under similar conditions. Installing temperature loggers in boxes with and without heat shields would help determine whether the shields produce meaningful differences in internal box temperature, particularly during periods of hot weather, but resources have not yet been available to undertake this monitoring.

4.3 Community Participation and Habitat

Interest received from private landowners in installing Tree Swallow nest boxes provides an opportunity to expand the project beyond the existing sites. Rather than providing boxes directly, a future community component could provide interested landowners with guidance on constructing and installing boxes, selecting appropriate locations, and monitoring and maintaining them. This would allow additional people to participate in the project while helping ensure that new boxes provide suitable nesting habitat and are adequately maintained.

The nest box project can also be complemented by habitat management that supports the insects on which Tree Swallows and other aerial insectivores depend. Insect-friendly landscaping, including diverse flowering plants, native vegetation, and reduced use of pesticides, can support insect communities while creating more bird-friendly residential and community spaces. Tree Swallows do consume mosquitoes, although mosquitoes are not generally a primary food source, making the project a useful complement to mosquito management efforts by supporting habitat for insectivorous birds that naturally consume mosquitoes and other flying insects.

5.0 Recommendations

Based on the 2026 results and experience, the following recommendations are proposed for future years:

- **Continue monitoring and maintaining the existing 38-box network** to determine whether high levels of use and reproductive success are sustained over time.
- **Consider targeted installation of additional boxes** where suitable habitat is available and there is sufficient capacity to monitor and maintain them.
- **Ensure future budgets reflect the full workload of the project**, including field monitoring, volunteer coordination, data management, and construction labour. The 18 boxes added in 2026 were constructed using volunteer labour.
- **Continue to use an easy-to-maintain box design** and ensure adequate footing (ladders) for Tree Swallows below the entrance hole during construction.
- **Maintain a strong volunteer base and consider whether a less intensive monitoring protocol would be appropriate** if the number of boxes increases, recognizing that reduced monitoring would provide less detailed reproductive information.
- **Install temperature loggers in a sample of boxes with and without heat shields** when resources permit, to evaluate differences in internal box temperatures.

- **Develop a community resource or workshop for private landowners** interested in constructing and installing nest boxes, and promote insect-friendly landscaping and bird-friendly gardens as complementary conservation actions.

Overall, the 2026 season demonstrated strong early success for a project that only began in 2025. The expansion to 38 boxes resulted in widespread use across all four sites and substantially increased fledgling production, while also demonstrating the level of volunteer coordination, and field effort required to collect detailed reproductive information. Continued monitoring and careful attention to project capacity will help ensure that the investment in nest boxes continues to increase available breeding habitat for Tree Swallows in the Golden area.

6.0 Acknowledgments

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