Swallow Nest Box Program 2018

If you take a walk in Stanley Park, along the Lost Lagoon trail in spring or summer, you may notice wooden boxes perched above the lake. Are you noticing any birds using these boxes? If so, we would like to know!

Figure 1. Tree swallow. Photo credit: Milva DeSiena

The nest boxes provide breeding sites for tree swallows (*Tachycineta bicolor*) and violet-green swallows (*Tachycineta thalassina*). These birds are cavity nesters and create their nests in hollowed out spaces, usually found in old-growth trees created by other animals such as woodpeckers. With reduced old-growth trees and intense competition with other cavity-nesters, nest boxes are an effective method for supplementary nesting locations in Stanley Park (Ryder 2015). Since the 1980’s there has been a continent-wide decline of tree swallows, and conservation efforts like providing nest boxes could provide some relief in areas where they struggle. In areas where nest boxes are used for tree swallows, clutch size (the amount of eggs laid) and success of offspring increase dramatically compared to natural cavities if nest boxes are protected from predators and entrance holes aren’t too big thus introducing competition from larger cavity nesters (Robertson and Rendell 1990).
Tree swallows are insectivorous (insect-eating) birds that like to nest in open areas like the edges of ponds and lakes. Vancouver is near the southern portions of tree swallows’ nesting range and protected bodies of water, like those found in Stanley Park, are great places for the birds to build their nests. This citizen science project includes monitoring done by volunteers. Citizen science is work that is completed by interested members of the public, just like you! The purpose of the nest box program is: to increase nesting site availability for swallows, to determine the effectiveness of nest boxes, and to provide a valuable opportunity to volunteer.

Before the 2018 swallow breeding season, volunteers and donors joined SPES to build 8 new swallow nest boxes. These new nest boxes (14.0 cm x 15.2 cm floors) are larger than the older boxes we have (12.7 cm x 12.7 cm floors), which provide more space for nestlings to spread out and exercise for fledging. This “Long Point Box” model was taken from the website www.treeswallowprojects.com.

Methods

Fifteen swallow nest boxes were installed around Lost Lagoon for the 2018 breeding season, including the 8 new larger boxes and 7 older (still in good condition) nest boxes. Figure 2 is a map of the 2018 nest box locations. In 2017, 8 nest boxes of the older model were installed.

Figure 2. Map of 2018 nest box site locations. Almost all 2017 sites were reused at some of these locations in 2018.

Monitoring is carried out during the nesting season from April to early August. Once a week, committed volunteers visit each nest box to determine if there is any swallow activity. The volunteers spend 5 minutes in an area where the nest box can be seen from a distance so that the birds are disturbed as little as possible. Observations are easiest in the morning or afternoon on calm days. Volunteers are not required to commit to doing surveys for the entire season and may only carry out a survey on one day by visiting the Nature House and picking up a clipboard, datasheet, and binoculars any weekend in the
spring and any day except for Mondays during the summer. Volunteers are always welcome to be more involved if they choose.

To conduct the survey, the volunteers use binoculars, the map of the nest box locations, a swallow identification key, and a data collection sheet. At each nest box, they note the date, time, location, weather, time spent, if there was any bird activity, species observed, and if there were any young seen.

At the end of the season, the nest boxes are taken down and examined. During the surveys, we might observe bird activity at the nest boxes, but it doesn’t always mean that it was occupied with a nest. When we take down the nest boxes, we can see if a nest was built or not inside each of them. We also see if there was any nestling mortality. The boxes are then cleaned and stored for use in the next year.

Figure 3. Volunteers installing nest box in Lost Lagoon. Photo credit: Ariane Comeau/SPES
Results

In 2017, seven of the eight nest boxes had sightings of activity and four of those had a nest. In 2018 two types of boxes were installed: the older smaller boxes (12.7 cm x 12.7 cm floors) and new larger ones (14.0 cm x 15.2 cm floors). The larger boxes had eight out of eight with signs of activity and seven with nests. The smaller boxes only had three of seven boxes with activity sightings and two with a nest (Figure 4).

Two nests in 2017 had dead young (6 birds total). In 2018, the old boxes had one nest with a dead adult and 4 unhatched eggs, and another nest with 5 dead young. The new boxes had two nests with unhatched eggs (3 eggs total).

The new, larger boxes were much more effective than the smaller boxes in both activity and less mortality. This is likely due to the design being more suited to the swallows and could also tie in with the findings of Norris et al. (2018) in the interior, where tree swallows preferred nest boxes, that had more floor space on average, than natural cavities. Nest boxes were less likely to be used on the west side but this could be because all of the boxes were the older, smaller models.

Keep an eye out for this year’s nest boxes and share any observations if you like. Nest boxes will follow similar placements and arrangements as 2018, with some potential shifts in location.

If you are looking for more information or would like to help with this or any other project, please contact SPES Conservation Technician Meghan Cooling at technician@stanleyparkecoogy.ca or come
visit us at the Nature House down by Lost Lagoon [http://stanleyparkecology.ca/education/nature-house/]

Figure 5. Volunteers and donors that built new swallow nest boxes in November 2017. Photo credit: Kathleen Stormont/SPES

References


About the author

Alex Ritz is a volunteer for SPES. He has a Master of Science in Forestry and is a Biologist in Training with the ASPB. He came to SPES through Ocean Bridge, a Canada Service Corps and you can find more info here: http://bridge.ocean.org/