

Cross-watershed Tree Swallow Box Program



A Proud Partnership Between:



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Project Overview

The Cross-watershed Tree Swallow Box Program is a partnership between Trout River Environmental Committee, South Shore Watershed Association, Wheatley River Improvement Group, Kensington North Watersheds Association and Hunter-Clyde Watershed Group. This program aims to establish a standardized tree swallow monitoring program across the Queens County region with the intention of banding tree swallows and monitoring nesting success.

Tree swallows are cavity nesting birds but are unable to excavate their own holes. As such, providing habitat with tree swallow nesting boxes goes a long way in providing a safe space to nest and raise their young.

This program involves building, installing and monitoring standardized tree swallow nesting boxes across our five watersheds. Monitoring nesting boxes and tracking their success provides useful information, guiding the conservation of the species. Maintaining box integrity and providing optimal nesting conditions improves nesting success.

This booklet will provide information on tree swallows, nesting, box construction, and maintenance.

We are incredibly grateful to the Wildlife Conservation Fund for financially supporting this important project that will benefit tree swallows for many years to come.

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PRINCE EDWARD ISLAND
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CONSERVATION FUND



TROUT RIVER
Environmental Committee



TREE SWALLOW

Tachycineta bicolor

OVERVIEW

The tree swallow is a small songbird known for its aerial acrobatics. Tree swallow populations have demonstrated long-term declines due to the loss of nesting habitat from human activities such as land development and intensive agriculture. Exposure to pollutants, especially insecticides, is an additional concern. They have also shown sensitivity to climate change.

IDENTIFICATION

Adult tree swallows have pure white throats and bellies with black flight feathers, eye masks, and notched tails. Their upper body and head vary: males are shiny, iridescent blue-green, females are a duller black-brown with hints of blue (top photo), and juveniles are sooty grey. Weight: 16-25g; Length: 12-15cm; Wingspan: 30-35cm.

HABITAT & FOOD

Tree swallows prefer open areas in or near wetlands, where aerial insects are found. They can often be seen chasing prey while flying above grassland, pastures, and shorelines. During the breeding season, they eat calcium-rich items like fishbones and mollusk shells. They migrate along the Atlantic Coast to their wintering grounds in Florida and Central America.



NESTING

Nest Description

Tree Swallows do not excavate their own cavities, instead relying on old woodpecker holes, natural tree hollows, and building eaves. The female builds the nest with grass, pine needles, moss, feathers, and hair. They readily accept nesting boxes.

Nest Facts

Clutch Size:	4-7 eggs
Number of Broods:	1-2
Egg Length:	1.7-2 cm
Egg Width:	1.3-1.4 cm
Incubation Period:	11-20 days
Nestling Period:	15-25 days

Egg Description

Pale pink, turning to pure white within 4 days.

Condition at Hatching

Helpless, with closed eyes and pink skin sparsely covered with down.



TIMELINE

March

Clean out the nest box and ensure it is in good condition.

April

Tree swallows return from their overwintering grounds. Keep an eye out for breeding pairs around your nest box! If you're lucky, you might see a female bringing nesting material to your box.

May to Mid-July

This is the nesting time for most tree swallows! Your box can be checked biweekly, when the parents are absent, until you find eggs. Once eggs are present, monitor the box from a distance to avoid disturbing the nest. Check the box once, 11-20 days after observing the eggs, to determine hatching success and then again 28-31 days later to confirm fledging. Once the young have fledged, clean out the box. If done early enough, they might produce a second brood or another bird species, such as the Eastern bluebird, might use the box.



ADDITIONAL INFORMATION

Information Sources

All About Birds, the Cornell Lab of Ornithology, the Salmon Creek Tree Swallow Project, and the National Audubon Society

Funding

Prince Edward Island Wildlife Conservation Fund



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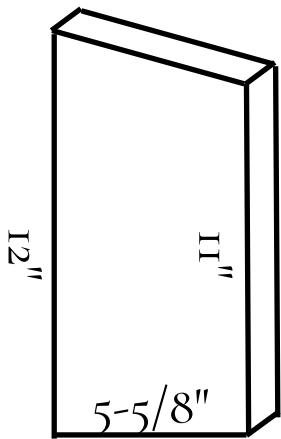
Swallow Box Construction Plans

Produced by: Kensington North Watersheds Association



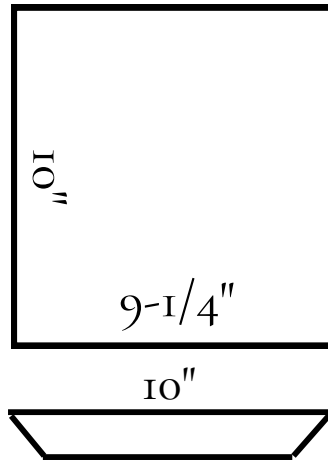
Blueprint

Sides x2



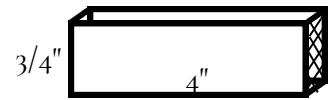
Cut at an 11 degree angle

Top

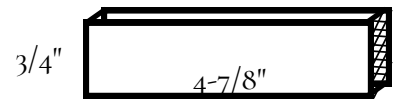


9-1/4" sides are bevelled

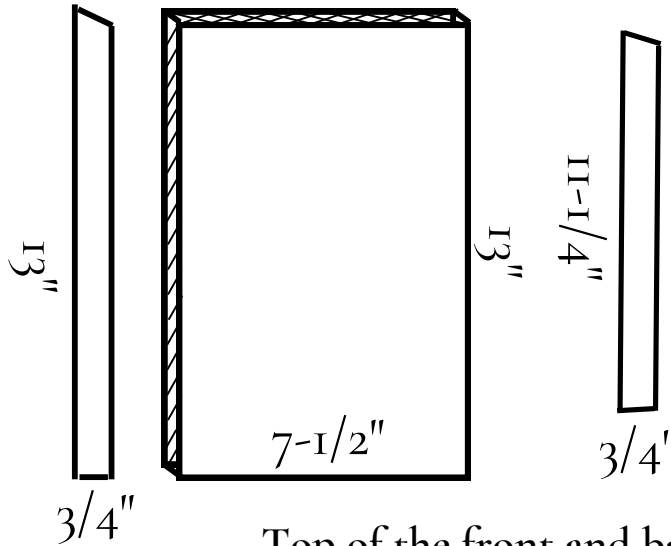
Side Cleats x2



Back Cleat

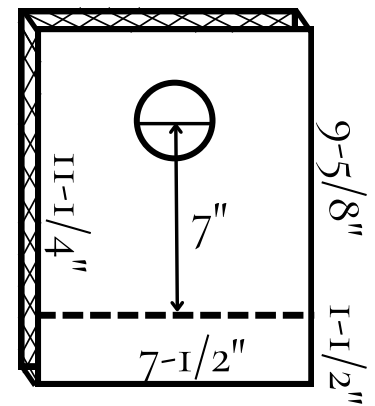


Back

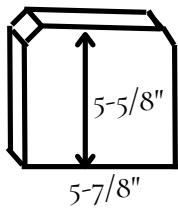


Top of the front and back are bevelled

Front



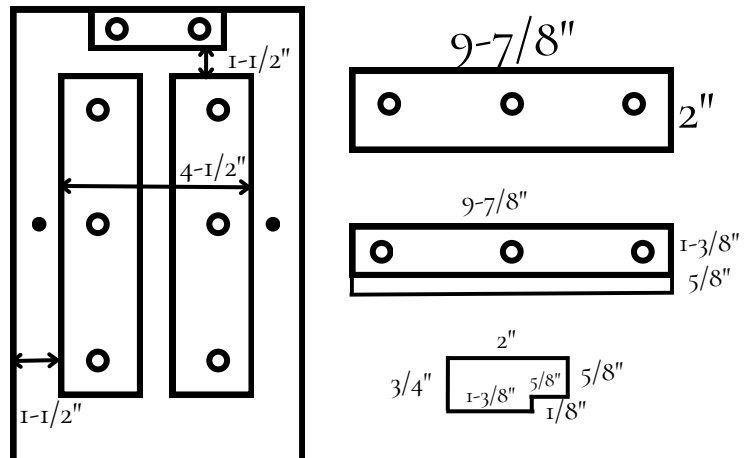
Floor



Materials

- 4" hinge
- Wood glue
- Sandpaper
- 1-1/2" hole saw
- Two 10" wooden BBQ skewers
- 1" by 10" by 4' knotty pine shelving
- 1" by 6" by 4' knotty pine shelving
- Sixteen 1-1/2" galvanized finish nails
- Six 1-1/4" galvanized finish nails
- Four 3/4" #6 wood screws

Optional Back: T-post installation



Cutting Options

All options are cut from knotty pine shelving.

When choosing wood, choose pieces with minimal large knots to avoid waste.

Cutting order can be re-arranged if there are unavoidable defects in the wood.

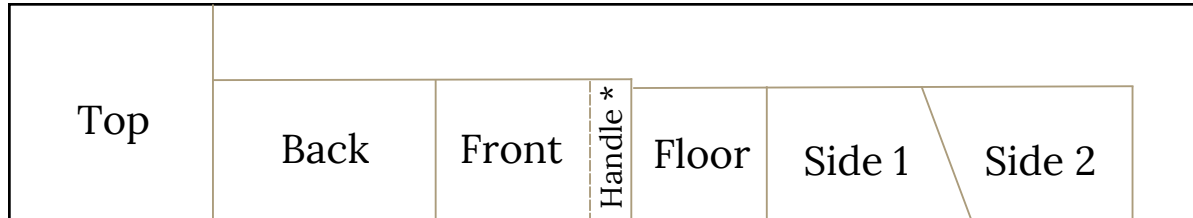
Side and back cleats are cut from any leftover/waste wood.

Before construction, an entrance hole is cut in the front piece using a 1-1/2" hole saw.

The middle of the hole should be 7" from the bottom and 3-3/4" from the side.

Option 1:

1" x 10" x 6'

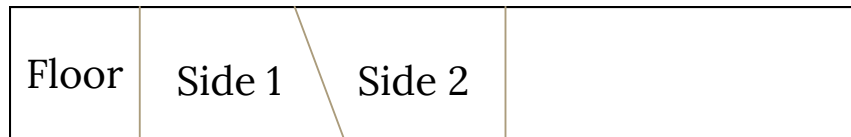


Option 2:

1" x 10" x 4'



1" x 6" x 4'



Option 3:

We used this option due to the amount of birdhouses we built.

1" x 10" x 6'



*handle is cut as an extension piece from the front for aesthetic purposes

1" x 12" x 6' *



*split in two to make a 1" x 6" x 6' board

*sides are cut at an 11 degree angle

Instructions

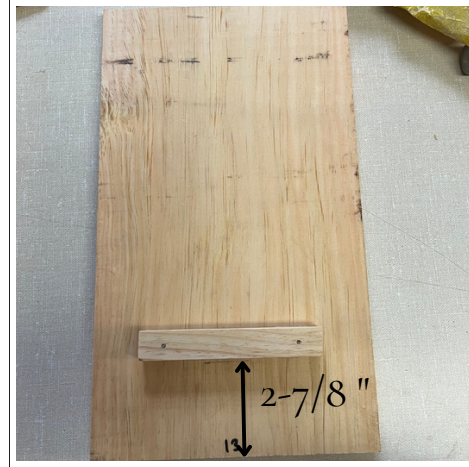
Step 1

Side cleats are glued and nailed in using the 1-1/4" nails. Each side cleat gets two nails.



Step 2

The back cleat is glued and nailed in using two of the 1-1/4" nails. It is positioned approximately 2-7/8" from the end.



Step 3

Sides are then glued and nailed into the back piece using the 1-1/2" nails. Each side is nailed in using four nails. Ensure that the sides are aligned with the bevel on the back.



Step 4

Three cleats are then glued onto the back of the front piece to provide a ladder for baby birds to reach the entrance hole. We used 10" wooden bbq skewers, cut to approximately 4". The skewers are placed 7/8" apart, starting 3/8" below the entrance hole.



Instructions

Step 5

The front piece is glued and nailed in using the 1-1/2" nails, using three nails per side. Ensure the front piece is aligned with bevel on the sides.



Step 6

The floor is glued and nailed to the extension front piece, using two 1-1/2" nails. This creates a handle for the floor to slide in and out. Ensure that any curve in the floor is down before nailing.



Step 7

The roof is then connected using the 4" hinge and four wood screws.



Step 8

To ensure the floor doesn't slide out, we've installed a door latch using two 1-3/8" square bend hooks.



Instructions

Step 9

After construction, we painted our logo on the side of the box. This allows for people to know who to contact if the box is in need of maintenance. If you wish to paint the entire box, use a darker colour! We used acrylic paint with an over coat of varathane. The inside of the birdhouse should not be painted!

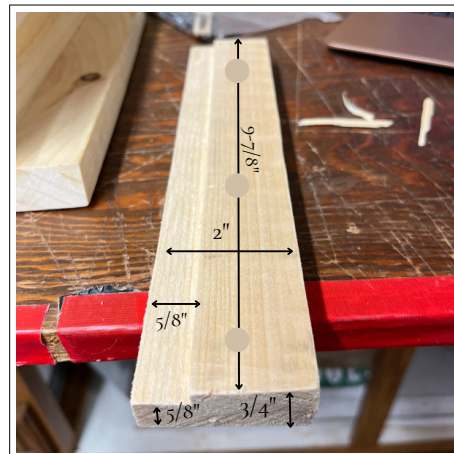


Step 10

The entrance to the box should be a least 5 ft from the ground and installed at least 50 ft apart. If bluebirds or other cavity nesting species are prevalent in your area, boxes can be placed as close as 25 ft apart. Swallow boxes should be installed facing east and overlooking a pond or wetland. You can also instal them in a naturalized field.

Option 1- Wooden post

A wooden post can be used to instal the birdhouses. Securing them with two screws; one through the front opening and one at the bottom.



Option 2- 7ft Steel T-post

T-post install design:

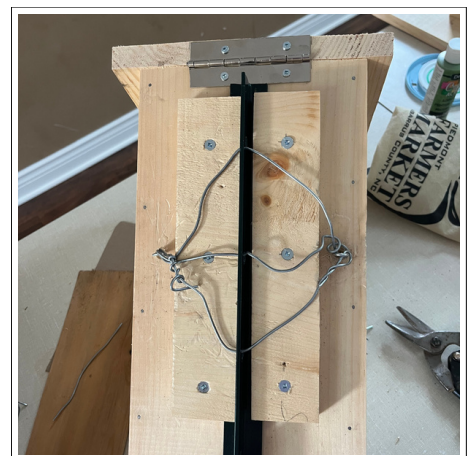
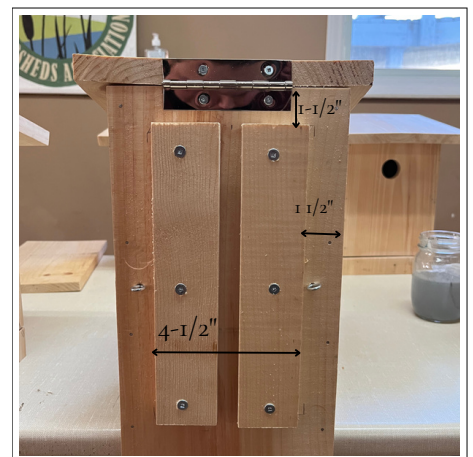
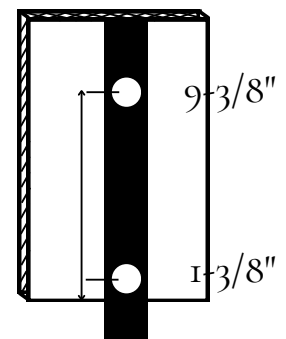
- Two wooden brackets- dimensions shown in picture
- Six #10 1-1/4" wood screws
- Two 1-1/8" screw eyes
- Approximately 40" of wire -a metal coat hanger can be used

Screw holes are pre-drilled using a 9/64" drill bit. A 5/16" drill bit is used to make an indent in the wood to allow the screws to lay flat. The two wooden brackets are glued and screwed in 1-1/2" from the top and 1-1/2" from each side.

Screw eyes are placed along the side of the wooden brackets.

The birdhouse is wired onto the T-post using the screw eyes and T-post holes. Wire is cut into three pieces; one 11-3/8" for the middle and two 14" for the top and bottom.

Back



Notes

- All nail holes are pre drilled using a 1/16" drill bit
- This swallow box design opens from the top and has a sliding bottom for easy cleaning
- The back edges of the floor are cut to allow for drainage
- Remember to sand all the wood, especially the entrance hole!
- We used a 1-1/2" entrance hole due to the bluebird population on PEI and their likelihood to use the boxes. If you only have tree swallows, you can drill a 1-1/4" entrance hole.
- Swallow boxes should be installed in late winter to allow optimal time for swallows to take to the boxes; we are installing our boxes in late March and early April.
- Maintenance is important to ensure nesting boxes are able to be used for multiple nesting seasons. At the end of nesting season, boxes should be cleaned out and properly sanitized to reduce ectoparasites.

