

Beaverhill Bird Observatory Study:
Tree Swallows along the Mountain Bluebird Trail

By: Sara Friske

*If ever you've looked into a beautiful Albertan summer sky,
you have likely seen a tree swallow (*Tachycineta bicolor*),*



Figure 1. Tree Swallows (S. Friske)

- a) Adult tree swallow in nest box, incubating young eggs underneath. Note greenish-blue coloring, and white underside.
- b) Adult tree swallow on wire fence near nest boxes monitored by BBO interns

gliding along effortlessly and peacefully.

Tree swallows, the first swallow species to return in spring, are small metallic blue-green birds, with white bellies (Audubon). They nest in North America during summer, returning to their winter grounds in south America come fall migration (Audubon). As many birds do, tree swallows prefer nest sites near some source of water, which also likely aids in increasing the abundance of insects, their main food preference. Tree swallows have two choices in nesting, either to nest in tree holes, likely made from other species, or to nest in man-made nest boxes, such as those used at the Beaverhill Bird Observatory.



Figure 2. Tree Swallow Eggs. Note white color, and nest structure. (C. Gates).

The Beaverhill Bird Observatory runs a nest box program for many species of birds, including tree swallows, house wrens and mountain bluebirds. Every summer, interns and volunteers return to the bird observatory to aid in this program. This summer, I worked as a Mountain Bluebird Intern, which begs the question, why so much about tree swallows? Well, while monitoring the mountain bluebird trail only two mountain bluebirds nested in our nest boxes, otherwise it was tree swallows, house wrens or house sparrows. Tree swallows utilized the most nest boxes of the grid, 39 of the total 122 boxes of the trail; house wrens used only about a quarter of that, and house

birds, including tree swallows, house wrens and mountain bluebirds. Every summer, interns and volunteers return to the bird observatory to aid in this program. This summer, I worked as a Mountain Bluebird Intern, which begs the question, why so



Figure 3. Newly hatched (day 1) tree swallow chick (C. Gates).

sparrows are opportunistic nesters and therefore are found in many nest boxes, even previously used ones.

This summer on the mountain bluebird trail monitored by Beaverhill Bird Observatory interns, 100 nest boxes were utilized, with 39 of these being used for breeding tree swallows. In the nest boxes occupied by tree swallows, a nest is found made of grasses with a feather-lined cup to lay eggs into (Audubon). On our trail tree swallow nesting began in the beginning of May, around May 4, with the first laid eggs near the middle of May, about May 19. According to the National Audubon Society of Birds (2014), tree swallows have a clutch size between four and six white-colored eggs; on the mountain bluebird trail surveyed,



Figure 4. Tree Swallow Chicks, about age 6 days. Cute little beaks in a pile of feathers (S. Friske)!



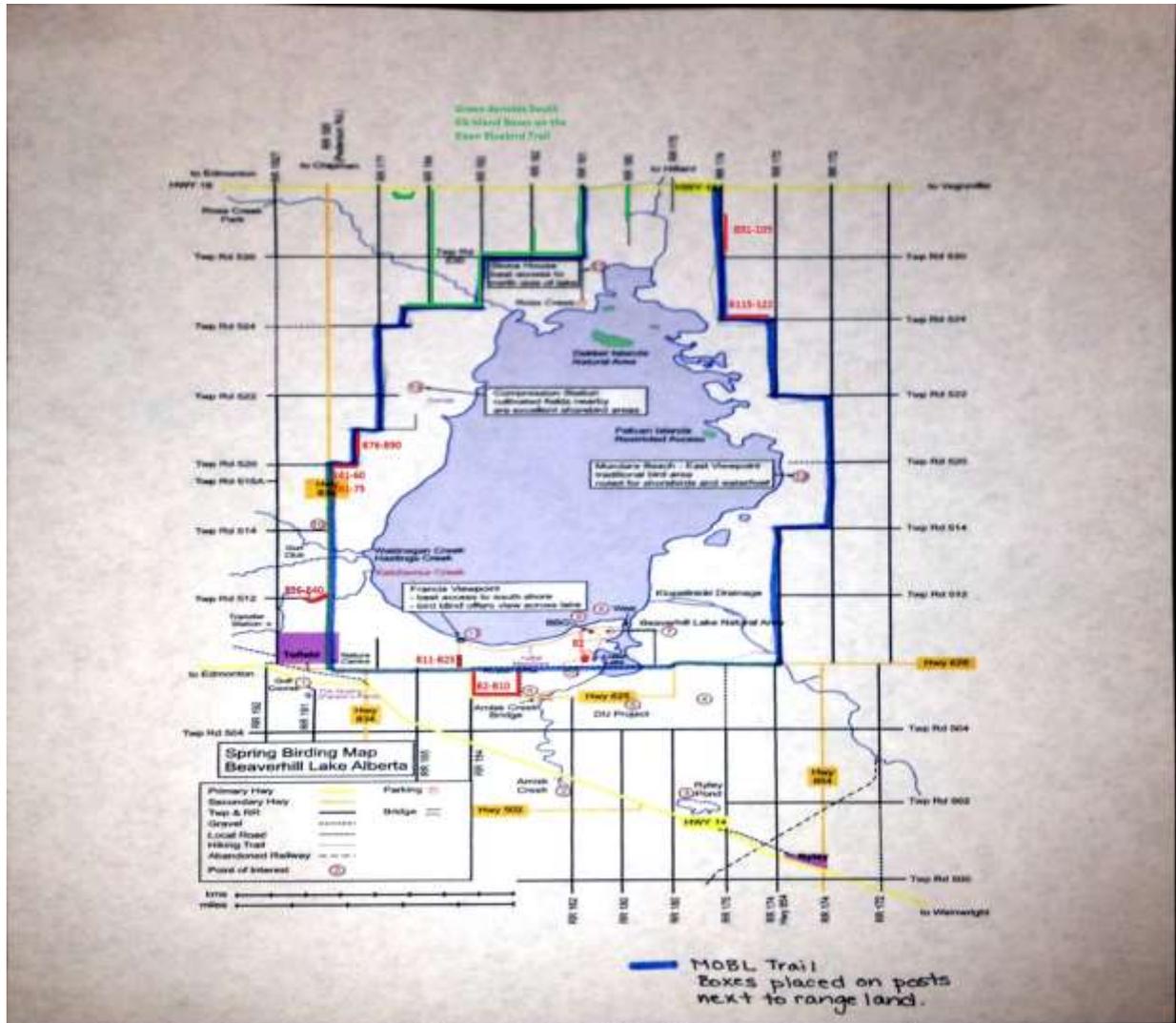
Figure 5. Tree Swallow Chicks, about 10 days. Almost ready to fledge, soon enough (S. Friske)

the average clutch size of tree swallows was six, with a range from three to nine eggs laid (figure 2). The female tree swallow incubates these eggs for around three weeks, at which time young tree swallows hatch. When born tree swallows have pink skin without feathers, which gradually turns to purplish skin, and then feathers begin to form on their bodies (C. Gates) (see figure 3,4,5). At day four to ten, eyes will begin to open so the chicks can begin to see (C. Gates). After about ten to fourteen days the young fledge (leave the

nest) before which the bird observatory bands the chicks, usually by about day 10-12. On the mountain bluebird trail, there were a total of 235 eggs laid by tree swallows, and of these 206 chicks survived to fledge. This reproductive success (calculated as chicks fledged/eggs laid x100%) of 88% is reasonable, as according to Armstrong and colleagues (2005), mortality of tree swallows in the first year is usually highest at about 79%. It can be inferred that the mortality in chicks, as well as adults, could be due to predation, weather or highway proximity. Predation by other birds would explain some of the chick mortality, especially those eggs that were cracked, or boxes that were found open with scratches on them. At some points in the monitoring of tree swallow boxes there were periods of many days of rain, which can cause difficulties for tree swallows leaving their nests to find food or other resources, and therefore not having enough energy to survive. As this mountain bluebird trail is also near to many highways (see appendix figure 1), tree swallow parents may die and therefore be unable to return to nests to care for young, and as such young do not survive. Although there was some mortality, the amount of successful offspring from these 39 nests in my opinion is outstanding!

Appendix

Figure 1. Mountain Bluebird Trail monitored. The line in blue shows the location of the mountain bluebird trail monitored by Beaverhill Bird Observatory Interns, where tree swallow nesting occurred with 88% reproductive success.



References

1. Armstrong, A., E.C. Mendoza, and D. Winkler. 2005. Tree Swallow (*Tachycineta bicolor*). In *The Riparian Bird Conservation Plan: a strategy for reversing the decline of riparian-associated birds in California*. California Partners in Flight. http://www.prbo.org/calpif/htmldocs/riparian_v-2.html
2. *Tree Swallow Tachycineta bicolor*. National Audubon Society of Birds, 2014. Web. 27 September 2014. <http://birds.audubon.org/birds/tree-swallow>
3. Chris Gates. *How to Create and manage tree swallow nest box projects*. Tree Swallow Nest box Projects. Web. 27 September 2014. <http://www.treeswallowprojects.com/index.html>