

## FWG NEST BOX CLEANING - SEPTEMBER 2007

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by Christine Hanrahan



**General comments:** 2007 proved to be a sad year for Tree Swallow (*Tachycineta bicolor*) nesting at the Fletcher Wildlife Garden. Although a reasonable number of swallows returned in early spring and eventually chose nest boxes, only a small number actually nested. In evaluating the situation, I concluded that at least 4 factors *may* be responsible, although there are undoubtedly others of which I am unaware. At any rate, I am quite sure that the poor nesting rate is attributable to a combination of factors, although in subsequent years, if swallow populations continue to decline, we may find that we have fewer birds coming to the garden which will certainly have a noticeable impact. Of note, also, is the reduction in nesting House Sparrows (*Passer domesticus*) at FWG as evidenced by finding only two House Sparrow nests in the nest boxes.

**Discussion:** The following may be at least partly responsible for the poor nesting success of Tree Swallows at FWG in 2007.

- 1) The overall decline in all swallow populations in eastern North America may be a contributing factor. Although many swallows did return to FWG in 2007, the numbers were not as high as they have been in the past. Reduced nesting success and fewer swallows overall at FWG were also noted in 2006.
- 2) Human disturbance, such as people standing in front of the nest boxes trying to obtain photographs (and preventing the swallows from entering or exiting). There was also minor vandalism (nest boxes disturbed or the roof taken off). Although this species is relatively tolerant of human presence, there is a point at which the presence becomes detrimental, such as when it is prolonged and intrusive (standing in front of the nest box for long periods).
- 3) The poor condition of some of the nest boxes (we now have new ones which will be erected in October, 2007), as well as forgetting to clean a mouse nest out of one box prior to swallow arrival in spring.
- 4) Poor location. As the trees in the prime swallow nesting area above the pond, have grown, they have begun to block the nest boxes preventing the clear access that swallows need. We will move most of these boxes where feasible, but there is limited scope for placing them in more favourable locations. However, see below under 'Plans for 2008'.

I don't see competition with other species, birds, mammals or insects, as having been a factor in the nesting results. Nor was weather a primary factor as it has been in some years, because the temperatures during the critical nesting time, May-June, were quite warm and precipitation was not heavy.

**Tree Swallows at FWG:** Male Tree Swallows arrive in eastern Ontario in early spring. We usually see them at the FWG before mid-April. Females follow about a week later, after which pair formation takes place and territories begin to be vigorously defended. However, it is not until about mid-May that nests are completed and eggs laid. At this point, a bout of very cold weather resulting in a decrease or absence of food (insects) can lead to nest abandonment as adults search further afield for food. Warmer

temperatures encourage a resumption of nesting. Once eggs are laid, however, the adults will not abandon even with a return to colder weather. A long, cold period in late spring can delay nesting and/or incubation.

Eggs generally hatch within about 15 days and the young fledge in about 16 to 24 days. Once the young leave the nest they are able to fly well and feed themselves. Soon after fledging, the swallows leave their breeding area, in this case, the FWG, and congregate elsewhere in large mixed flocks where food is abundant. This year, 2007, I noticed that the swallows left the garden early, and by the first week in July few, if any, remained.

**Other occupants in nest boxes:** Last year I found Bumblebees (*Bombus* sp.), wasps (*Polistes* sp.), Red Squirrels (*Tamiasciurus hudsonicus*), Gray Treefrogs (*Hyla versicolor*), and Mice (*Peromyscus* sp.) in the nest boxes. The bees, wasps, Red Squirrels and mice, were using the nest boxes, preventing swallow usage, but the tree frog was merely taking temporary shelter. This year, there was no sign of any insect use, and only a couple of boxes were used by Red Squirrels (in addition to the now permanent squirrel boxes). The tree frogs were using the boxes only as temporary roosts, but I didn't see any signs of this in 2007. The use by *Peromyscus* mice in 2007 was greater than in previous years, but only two had nests which had clearly been there for some months, meaning that they boxes were unavailable for swallow use. The rest of the mouse nests were recently built on top of the swallow nests, long after the swallows had gone.



**Nest box I-A** seems to be permanent Red Squirrel accommodation as it has been used for the last half dozen years by this species. It is a perfect location, right next to a walnut tree! **Box 138-01** is well-hidden by a Manitoba Maple and has been used by Red Squirrels in the past, although was unused by anything this year. It is a good idea to leave some of the boxes now hidden by trees *in situ* for squirrels so that they won't take over other boxes that could be used by swallows.

**Nest Construction:** As was the case in 2006, many of the swallow nests were poorly made. Tree Swallow nests are generally well constructed platforms of grass, hollowed out at the centre or the side, and thickly lined with many feathers which provide excellent insulation. Based on the amount of fecal matter in the nest boxes, it would appear that once again, many of the nest boxes had been used for roosting by species other than Tree Swallows. Tree Swallows are known for their cleanliness, depositing fecal sacs of their young, away from the nest site. Yet most of the boxes with nests, either partial or complete, had an accumulation of fecal matter. House Sparrow numbers at FWG during breeding season are always relatively low and in 2007 were lower than normal, so it does not appear to be usage by this species. It is possible that Starlings (*Sturnus vulgaris*) roosted in the nest boxes, but again, this species is seen only infrequently around the garden during summer, although it is fairly common on the Experimental Farm west of Prince of Wales Dr. Another mystery.

Two tree swallow nests, one unsuccessful and one partly successful, contained various insects. One had several dead Vespid wasps inside, while the other contained a dead Long-legged Fly (Dolichopodidae), the thorax of an Odonate species, and several unidentified insects; an orb weaving spider was underneath the box.

The two House Sparrow nests were, as always, remarkable for the variety of material contained therein. The nests are big, bulky affairs, that fill the nest box, with a hollowed out section or chamber somewhere

in the midst. Materials used included several species of grass, grape vine bark, whole stems of Shepherd's Purse (*Capsella bursa-pastoris*), Lepidium flower heads, DSV (*Cynanchum rossicum*) pods, stem fibre and fluff, other unidentified plants, lots of feathers, kleenex, cigarette butts, plastic twine, strips of plastic, short bits of rope, and polyester fibre.

The nests constructed by the *Peromyscus* mice were also interesting. One was made entirely of milkweed fluff (*Asclepias syriaca*). Another was approximately 90% cattail (*Typha*) fibre, some grass, DSV seeds and fluff, and plastic twine. Most of the others were a mix of grass and the fluff of milkweed and DSV, with feathers in a few of them.

**Nest box numbering:** The original nest boxes use a five-digit number. The boxes I erected use a number for the box and the year they were put up. For example, boxes placed in 2005 would be numbered 1-05, 2-05, etc. The new boxes will use the final two digits of 2007. This means that next year, the numbering system will not coincide with that below.



**Plans for 2008:** As noted above, new nest boxes will replace many of the existing ones that are now nearly 10 years old. The new ones are made of cedar and should offer better insulation and wear well. Thanks are due to the woodworking class of Tony Gilchrist at Glebe Collegiate for making these boxes for us.

Tree Swallows, although not strictly speaking, a colonial species, can be found nesting in fairly close proximity to each other, as at FWG. A distance of about 12-15 metres between nest sites seems to be enough to alleviate territorial aggression. Given the limited open space at the garden, we will need to erect the boxes closer together than they are at present in order to get the boxes away from tree cover. This will be somewhat of an experiment. Either the swallows will accept being closer to their neighbours or we'll find a lot of empty boxes. However, there were unused boxes this year too, and none of these were close to another.

I'm not sure how to alleviate the vandalism and human disturbance. If it accelerates in 2008 we may need to re-evaluate whether it is fair to the birds to attract them in, even if only in small numbers, only to subject them to problems.

### NEST BOX CLEANING - RESULTS

My definition of successful is any nest that was completely built and obviously used and which contained no dead birds but might contain one or two unhatched eggs. The presence of a dead juvenile doesn't mean a nest was unsuccessful, but neither was it a complete success. I note these as partial successes.

#### **Of the 37 nest boxes checked:**

- a) 8 were successfully used by tree swallows.
- b) 4 tree swallow nests were partly successful (each nest contained one or two dead young, one contained a dead adult female)
- c) 5 contained incomplete tree swallow nests
- d) 10 were unused (although mice had recently (September 2007) built winter nests in a few of them)

- e) 1 contained a poorly built nest and it was difficult to determine if it was used, but I think not.
- f) 2 were unsuccessful nesting attempts (complete nests but 1 contained 3 unhatched eggs and 1 broken egg, and the other contained 3 broken eggs).
- g) 1 could not be checked (too difficult to reach but will try to check in winter).
- h) 2 contained successful house sparrow nests
- i) 2 contained red squirrels.
- j) 1 contained an old mouse nest which was built in winter, 2006 and not cleaned in spring 2007.
- k) 1 contained an old mouse nest, still in use.

**Above Pond/New Woods:**

<b>Box Number</b>	<b>2007</b>	<b>2006</b>
5-98	tree swallow - partly successful, one dead newly hatched bird	tree swallow - successful, but poorly built nest
6-98	tree swallow - incomplete nest.	tree swallow-partly built nest, unused
7-98	unused - Peromyscus mouse nest in the process of being built.	tree swallow - successful
13-98	tree swallow nest, but poorly feathered and difficult to determine if used.	tree swallow - successful; late nester
14-98	tree swallow nest - - unsuccessful, poorly feathered, 3 broken eggs	tree swallow - difficult to determine if successful; poorly made nest, few feathers, lot of feces, one eggshell with yolk.
15-98	tree swallow - partly successful, one dead adult female; well-feathered nest.	tree swallow - partly built nest, not used; used by house sparrows for roosting.
16-98	tree swallow - successful	tree swallow - successful
17-98	tree swallow - successful, exceptionally well-feathered nest. Built over another nest with a dead fledged young tree swallow, from an earlier nesting attempt	tree swallow- partly built nest, unused; dead adult
123-01	tree swallow - partly successful, poorly feathered nest, one eggshell	house sparrow - successful
138-01	mouse nest	active bees nest - did not clean

138-02	too high to clean, but saw no evidence of any nesting by any species during breeding season.	too high to clean, but saw house sparrows nesting (carrying food to young)
140-01	red squirrel nest, used early in the season, several young were seen in box.	bees in box, did not open
147-01	house sparrow - successful	house sparrow - successful
2-02	tree swallow - incomplete nest.	house sparrow - successful; built on top of a partly constructed Bumblebee nest. 4 freshly dead bees on top of nest.
3-02	tree swallow - incomplete nest.	tree swallow - partly successful, 2 dead young, not quite feathered. Poorly built nest.
4-05	mouse nest - forgot to clean out this nest in spring 2007, so was unused by either mice or birds.	tree swallow - successful; now occupied by white-footed mouse and young
5-05	house sparrow - successful	house sparrow - successful
6-05	tree swallow - successful	tree swallow - partial success, 1 dead nearly fledged young inside.
<b>Peterson bluebird boxes.</b> P-1	Unused	tree swallow - nest only partly built
P-2	tree swallow - incomplete nest.	tree swallow - successful
1-A (start of hedgerow)	red squirrel nest	red squirrel nest
1-98	tree swallow - partly successful - one dead fledged young. Freshly built mouse nest on top of swallow nest.	used by wasps, did not check

#### Old Field

Box Number	2007	2006
1-03	nest box removed in spring - had been damaged. Will relocate in fall.	mystery nest. Constructed of shredded very fine fibres, mostly grass, some DSV and grapevine. Unlined and appeared not to have been used. Possibly the beginning of a Black-capped Chickadee nest.

2-03	tree swallow- successful; freshly built mouse nest on top.	tree swallow- successful
3-03	unused - contained an abandoned mouse nest.	black-capped chickadee nest, not sure if successful
4-03	tree swallow - unsuccessful - well built nest, but 3 unhatched eggs, and 1 broken egg. Now being used by a mouse. Top of box had been removed and an unsuccessful attempt made to put back on properly.	tree swallow - successful; very flimsy nest, one of the late nesters
5-03	tree swallow - successful.	tree swallow- successful; late nester, saw adults carrying food to nest; very poorly constructed nest, few feathers, caked with feces. Top was removed by someone in late June but I put it back on though not well (birds were just beginning to nest). Need to re-attach.
6-03	tree swallow - successful. Recently built mouse nest on top of swallow nest.	tree swallow- successful; one of the late nesters. Saw adults frequently carrying food to nest. Very flimsy nest, few feathers, much fecal matter.
4-98	unused - mouse nest had been built but was not being used.	tree swallow- successful
8-98	tree swallow - incomplete nest	nest occupied by several young red squirrels and one adult gray treefrog. Will check later in the year to see if anything else nested in the box before the squirrels took over (they were not there in July).
18-98	unused - recently built mouse nest with 3 mice	tree swallow - successful; one of the late nesters - young fledged by 6 Aug. Nest had more grass than some others but few feathers. A layer of solidified fecal matter. Bottom of nest contained bee larvae.
19-98	unable to access it - will check in winter when access is easier.	wild raspberry has so surrounded this nest that it is invisible unless one knows where it is. Will check in winter when it is easier to access.

**By Interpretive Centre/BYG**

<b>Box Number</b>	<b>2007</b>	<b>2006</b>
1-02	unused - recently built mouse nest	house sparrow nest; not sure if successful because I didn't examine it since it had something nesting inside, most likely a mouse, although I didn't see it, just felt it.
133-01	unused - recently built mouse nest.	tree swallow -successful; tiny mud dauber nest in the nest, as if it fell from roof of nest box.
1-05	unused	tree swallow -successful
2-05	tree swallow - successful	unused
3-05	tree swallow - successful	unused
7-05	unused	unused

