

The effects of landscape characteristics, such as distance from the forest edge and distance from neighboring nesting boxes, on nest-box selection by tree swallows, *Tachycineta bicolor*

BBO Summer 2013

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Abstract

Tachycineta bicolor is a small passerine that is an obligate, secondary cavity nester and feeds mainly on flying insects. They are easy to catch and manipulate, readily breed in nesting boxes and can be disturbed on a regular basis without abandoning their young. I examined the influence of landscape characteristics on nest-site selection by tree swallows at a spiral nest box grid near the Beaverhill Bird Observatory (BBO) outside Tofield, Alberta. This grid (the “old grid”) was located within the natural area enclosed by primarily aspen forest to the east and south and open meadow to the north and west. Nest boxes were grouped based on distance from the forest edge into four categories, less than 30 m, within 30-60 m, within 60-80 m and greater than 80 m. The distance of each nesting box from its nearest neighbor was also determined and separated into two groups, less than 10 m or greater than 10 m from its nearest neighbor. Recorded settlement dates, based on the presence of at least one egg, were used to determine if there was a tree swallow preference for a nest-site location within this grid. My hypothesis was that *T. bicolor* would display a preference for nest boxes located farthest from the forest edge and at least 10 meters from its nearest neighbor, determined by earliest settlement, and only nest in the least desirable nesting boxes once the preferred boxes are occupied. Results show that there was no strong relationship between settlement date and distance from the forest edge, however the majority of boxes nested in were greater than 60 m from the forest edge and were not within 10 m of a neighboring box. This data indicates that tree swallows do have a preferred nesting location based on landscape characteristics and minimizing competition when selecting nesting boxes.

Introduction

Tree swallows are typically found in meadows and wetland habitats and have shown declining populations over the last 10-15 years in Canada with a 2.8% decline annually from 1989-2009 across Canada (Canadian Wildlife Service, 2011). The population decline is a concern and has prompted studies to determine possible causes and ways to prevent further decline. The

introduction of an invasive species in the 1850s to the US from Europe, the house sparrow, and the rapid spread of its range in North America has been investigated as one possible cause. The house sparrow is a non-migrant species which confers an advantage over a migrant species in regard to habitat selection through precedence of occupation. Robillard, Garant & Belisle (2013) found that occupancy of nest boxes by tree swallows peaked when numbers of house sparrows were low and nest boxes were located far from buildings suggesting interspecific competition between the species. My study does not investigate the influence of house sparrows because the location of the nesting grid excludes their preferred nesting site which is within towns and near buildings.

Another possible cause of decreasing tree swallow numbers investigated by Robillard, Garant & Belisle (2013) was the expansion of industrial agriculture. The declines of aerial insectivores have generally been attributed to lack of food due to increased pesticide use or scarcity of nesting sites due to destruction of marginal habitats for maximal land use (Robillard, Garant & Belisle, 2013). Direct effects of agricultural intensification on tree swallows may include exposure to pesticides through drinking water or skin absorption while indirect effects include depletion of food resources and nesting site availability and quality. The nesting grid I investigated was within a natural area away from any agriculturally developed land.

Tree swallows are aerial foragers that prefer to nest in open areas and avoid nesting near forest margins to limit competition, particularly with house wrens which were present at this nesting site. Tree swallows also compete aggressively for nest sites with conspecifics and prefer to nest as far from conspecifics as possible. Both sexes defend a small area, within a 10-15 m radius, around a nesting cavity from intruders and forage for flying insects with conspecifics in the surrounding undefended air space (Hussel, 2012). Ghilain & Belisle (2008) found that nest-box occupancy was higher when the amount of open space within one meter of the nest-box increased. In this study I investigated the influence of distance from the forest edge and distance from adjacent neighboring nesting boxes on the preference of nest-box selection. Determining preferred landscape characteristics can aid in establishing the most successful nesting box grids to encourage selection by tree swallows and restore population numbers.

My hypothesis is that *T. bicolor* will display a preference for nest boxes located farthest from the forest edge, determined by earliest settlement, and only nest in the least desirable nesting boxes, those closer to the forest edge and within 10 m of neighboring nesting boxes, once the more preferred boxes are filled. Monitoring the nesting grid will reveal if this is the case based on settlement dates and will indicate if tree swallows use landscape characteristics when selecting nesting boxes.

Study Area and Methods

Data were collected from mid-May through the end of July 2013. The model species is the tree swallow, an obligate secondary cavity nester that readily breeds in nesting boxes and feeds mostly on flying insects. They can be disturbed on a regular basis without abandoning their nests. I monitored the breeding activities of tree swallows in a 48 nest-box grid (n=48) at the Beaverhill Bird Observatory near Tofield, Alberta. The grid area is characterized by grasslands to the north and west and aspen forest to the south and east. The grid is located within the natural area which is enclosed by a fence and surrounded by small scale farms (hayfields, pasture and crop fields) to the west and by non-agricultural habitats (wetlands, grasslands and forest patches) on the north, south and east. North of the grid is primarily wetlands in the spring and grasslands in the summer. South of the grid is a deciduous forest primarily consisting of aspen. The extended area consists of two other tree swallow nesting box grids and the forest area houses nesting box grids for house wrens as well.

Nest boxes were mounted on metal poles and arranged in a spiral throughout the field at varying distances from each other with the nearest box being 3.5 meters from its neighbor and the farthest being more than 30 meters. All boxes and entrances were standard size with the floor measuring 5x5 inches and an entrance 1.5 inches in diameter centered 6 inches above the floor of the box. Nesting material from the previous breeding season was removed.

Nest boxes were visited weekly or twice weekly to determine occupancy (ie. nest building), settlement (laying of >1 egg), clutch size, brood size at hatching and number of chicks fledged. Settlement date was determined by the presence of the first egg and calculated when this wasn't observed directly based on the fact that tree swallows usually lay one egg/day (Hussell,

2012). Nest material, dead nestlings and feces was removed from the nest boxes following the breeding season. Distances from each nesting box to the forest edge and all adjacent neighbors was measured manually with a measuring tape and compared to the measurements using the scale on the aerial grid map (Figure 1). Forest edge was mapped manually on the grid map, which originally did not include any landscape characteristics but did include accurate distances between nesting boxes. Nesting boxes were grouped into categories based on distance from the forest edge and on distance from neighboring nesting boxes (Table 1).

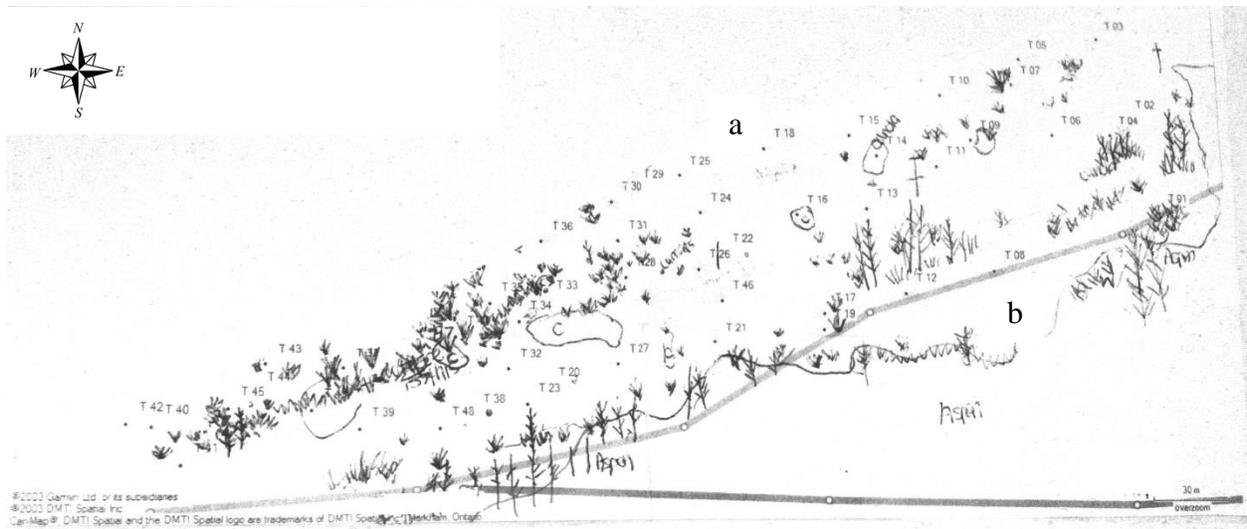


Figure 1. Scale diagram of spiral nesting grid (old grid) showing arrangement of boxes within the grid, boxes at the grid edge (a), and forest edge (b). The location of each nesting box is indicated with a black dot and labeled with the box number, T1-T48. Habitat characteristics added include the location of willows and lone-standing aspen. South of the drawn in forest edge line (b) is thick aspen forest (characteristics are not to scale). The light gray line is a walking trail and the dark grey line is a vehicle road, scale is in lower right corner.

Table 1. Data obtained May 19-June 4, 2013 for each individual nest box in the old grid by order of date of settlement by tree swallows

Nest Box #	Date of settlement	Distance from forest edge (m)	Distance from nearest nest box (m)	Nearest nest box occupied if <10m (Y/N)
41	May-19	>80	>10	
10	May-20	>80	>10	
1	May-21	<30	>10	
9	May-21	60-80	<10	N
13	May-21	30-60	>10	
30	May-22	>80	<10	N
19	May-22	<30	<10	Y (HOWR)
2	May-23	30-60	<10	N
28	May-23	60-80	>10	
12	May-24	<30	>10	
16	May-24	30-60	>10	
25	May-24	>80	>10	
18	May-25	>80	>10	
5	May-25	>80	<10	Y (TRES)
45	May-27	>80	<10	Y (HOWR)
34	May-27	30-60	<10	Y (HOWR)
6	May-27	30-60	>10	
27	May-27	<30	>10	
8	May-28	<30	>10	
24	May-29	60-80	>10	
15	May-29	>80	<10	N
7	May-30	60-80	<10	Y (TRES)
23	May-30	<30	<10	N
22	May-30	30-60	>10	
26	May-30	30-60	>10	
36	May-30	>80	>10	
35	May-30	60-80	<10	N
39	May-31	60-80	>10	
38	May-31	60-80	<10	N
3	Jun-01	>80	>10	
40	Jun-02	>80	<10	Y (MOBL)
32	Jun-02	30-60	>10	
21	Jun-02	<30	>10	
37	Jun-04	60-80	>10	

Results

The percentage of nest boxes occupied was 81.25% (n=48). The two main competitors in the area, house wrens and mountain bluebirds, occupied only 8.33% and 2.08% respectively meaning total occupancy by tree swallows was 70.83% and represents the majority of nesting boxes. Average tree swallow clutch size was 6.5 +/- 0.8 (n=34) with a maximum clutch size of 8 and a minimum clutch size of 5. The average number of hatchlings that fledged was 6.2 +/- 1.7 (n=34) with a minimum of 3 and a maximum of 8. Five hatchlings did not survive and five eggs were infertile and did not hatch. All values are given as means \pm SD.

Tree swallows occupied the greatest number of nesting boxes at greater than 80 m from the forest edge (11/15=73%) but they also occupied the majority of boxes at all other distances from the forest edge (Figure 2). Overall the majority settled was greater than 60 m from the forest edge (19/34=56%). Based on the distribution of the boxes this does represent a preference when compared to random selection ($\chi^2=7.144$, df=1, p-value=0.008) while the selection of boxes at <60 m is not different from random selection ($\chi^2=2.134$, df=1, p-value=0.079). Overall the selection of boxes by tree swallows was non-random ($\chi^2=9.278$, df=3, p-value=0.025). The only mountain bluebird pair nested in a box that was also greater than 80 m from the forest edge and was on the outermost edge of the nesting box grid. House wrens were observed to nest closer to the forest edge or, if at distances greater than 60 m, right within a patch of willows (<2m).

Comparison of settlement date and distance from the forest edge did not result in a significant correlation (r=0.03) and no relationship was observed between the two variables using linear regression ($R^2=0.0007$, p-value=0.882, Figure 3). Intraspecific competition did appear to play a role because only in one case were two boxes settled that were less than 10 meters from one another (4%), all other boxes that were less than 10 meters from another box were left empty (32%) or occupied by another bird species that settled at a later date, house wrens (12%) and mountain bluebird (4%, Table 1).

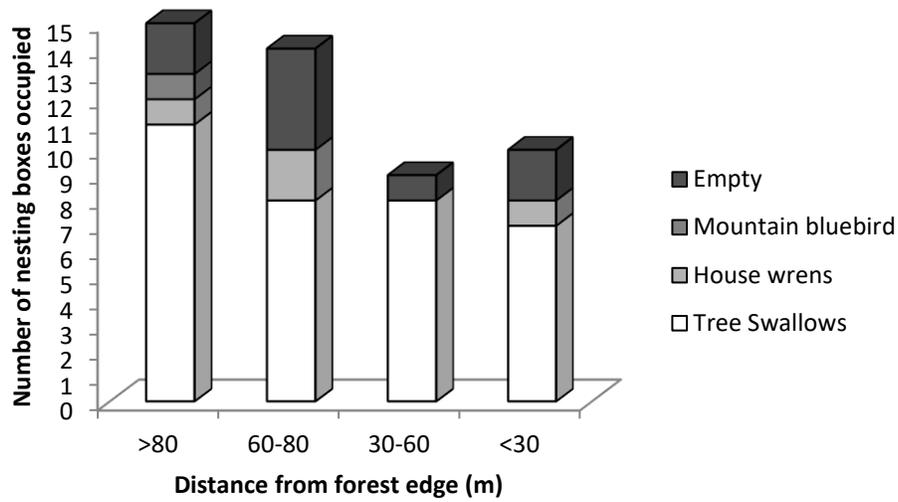


Figure 2. Distribution of nesting boxes occupied by tree swallows, house wrens, mountain bluebirds, and those unoccupied, relative to the distance from the forest edge (n=48).

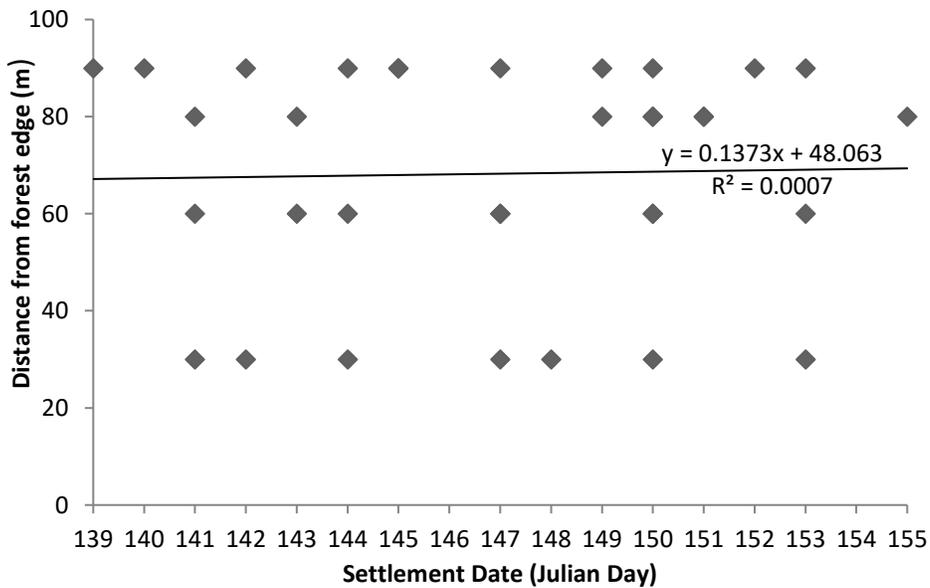


Figure 3. Plots of settlement date (Julian day 139=May 19) at nest sites and distance from the forest edge for tree swallows at the old grid, May 19-June 4, 2013.

Discussion

In this study I examined the effects of nesting box distance from the forest edge and distance from the nearest neighbor box on the settlement order of tree swallows. The grid I studied had a high occupancy rate of 81.25% with total occupancy of tree swallows being 70.83% (n=48). There were two other species in the area, house wrens and mountain bluebirds, which occupied only 8.33% and 2.08% respectively. Clutch size, hatchling number, fledgling number and survival rate represented good success at this nesting site. Ghilain & Belisle (2008) found that landscape variables have no significant effect on hatching and fledging probabilities, however, nest-box occupancy and breeding success were influenced by landscape structure.

Tree swallows occupied the greatest number of nesting boxes at greater than 80 m from the forest edge at 73% but they also occupied the majority of boxes at all other distances because there was very little interspecific competition in the area at the time of settlement. Both species that did settle in the area settled later than the tree swallows so the early tree swallows had already chosen their preferred nesting boxes. Overall the majority settled were at greater than 60 m from the forest edge (56%). Based on the distribution of the boxes there was a definite preference for this region when compared to random selection. The only mountain bluebird pair nested in a box that was also greater than 80 m from the forest edge and was on the outermost edge of the nest-box grid, presumably to decrease competition. This was also the closest box to the surrounding fence so the bluebird pair had a nearby fence from which to perch and defend its nest, which it aggressively did whenever I was nearby. House wrens were observed to nest closer to the forest edge or, if at distances greater than 60 m, right within a patch of willows, seeming to prefer a nest within vegetative protection unlike the tree swallow. House wrens were never observed sitting on a nest, unlike tree swallows and mountain bluebirds, they always exited and took cover in the nearby vegetation when I approached. Both competitive species did settle in nesting boxes that were within 10 meters of an already settled tree swallow box and it is interesting to note that the majority of non-surviving tree swallow hatchlings were in boxes adjacent to one of these species. One fatality was found in the box closest to the mountain bluebird and three fatalities were observed in the box closest to a neighboring house wren. These fatalities could be due to interference with feeding of young

hatchlings by interspecific competition. The other random fatality occurred in a nest box that was significantly disturbed shortly after hatching (this box fell apart and the nest was transferred into a new box placed at the same location).

Robillard, Garant & Belisle (2013) found that landscape structure affects habitat selection, species distribution and abundance, and interactions among species at the community level, with limited cavities leading to competition among secondary cavity nesters like tree swallows. Comparison of my data of settlement date and distance from the forest edge did not result in any correlation and no relationship was observed between the two variables using linear regression which did not agree with the hypothesis. Therefore intraspecific competition appears to have played the greatest role in nesting box settlement because only in one case was two boxes settled that were less than 10 meters from one another which does support part of my hypothesis. All other boxes that were less than 10 meters from another box were left empty or were occupied by either house wrens or the mountain bluebird and were settled at a later date indicating that interspecific competition was not a great influencing factor in the tree swallows nesting box preference.

It is possible to examine territory characteristics with the manipulation of nest-box spacing so this would be better observed in an evenly spaced grid than in the spiral grid that was monitored in this study. Territory is estimated based on the response to conspecifics and visibility of adjacent boxes can affect occupancy rates and Hussell (2012) found that nest boxes evenly spaced 24 m apart had high occupancy (75+%) while those spaced 3 m apart was only 28+%, resulting from competitive pressure for nest boxes. Competition for nest boxes starts as soon as swallows return north to breed, in this study that appeared to be early-mid May, and is weather dependent early in the season becoming more intense as the height of nest building approaches. Defense continues intensely throughout egg laying and incubation stages and wanes once the young are hatched when both adults are occupied with feeding nestlings. Tree swallows defend their nest over food resources because nest sites are limited and more important for successful breeding than is exclusive access to a food source that is ephemeral, with defense providing no assurance of long term access to it (Hussell, 2012). There are always floating populations ready to move into available nesting sites. Hussell (2012) also found that

tree swallows will nest closer together if there is high food abundance or high population pressure due to food abundance or quality of sites. He concluded that at high food sites the cost of fighting to exclude swallows from nearby nest sites is greater than the benefits, conversely the benefits of claiming a closely spaced nest-box at a high food site must be greater than the costs of defending it and more time is spent foraging than defending territory. He determined that early occupants are returnees that bred successfully at the site in previous years and their behavior may provide cues to new arrivals about habitat quality carried over from earlier years.

Concerning the influence of landscape characteristics, Lawlor and Edwards (2002) found that the structure and composition of vegetation provide birds with the proximate cues for the ultimate factors that influence fitness (ie. predation, environmental stressors and competition). They concluded that tree swallows chose nesting habitat closely associated with meadow edges and riparian areas, especially meadow-aspen edges with positive associations with open areas and, to a lesser degree, willows. This accurately describes the habitat of the nesting grid that I monitored in this study so it represents an ideal habitat for tree swallow nesting.

Robillard, Garant and Belisle (2013) found that tree swallows prospect for nest sites post breeding and are highly philopatric, likely using their own breeding success and their neighbors success when prospecting for nest sites. They found that a given nest-box is more likely to be occupied if nestlings fledged from the box in a previous year, if the distance separating the nest-box from the next closest nest-box was high and if the number of other species were low. Some nest boxes remain empty every year or are used at low frequencies by other bird species like mountain bluebirds and house wrens and longitudinal data would be useful in determining if this plays a role in nest-box selection. They concluded that a combination of landscape variables, such as previous year occupancy, fledgling success, availability of water and nearby intensive agriculture or livestock density, and competition factors, such as distance between nest boxes and the nearest shelter, total perimeter and competitor abundance, best explains nest-box occupancy by tree swallows. It is difficult to conclusively establish the occurrence of competition because the presence of competing species is often correlated with other factors and competition is not necessarily observable on all scales.

It is a less current study that more confidently concluded a negative correlation between settlement dates and distance from the forest edge with tree swallows settling first at nest boxes farthest from the forest edge. This previous study used nest-box grids in uniform habitats at evenly spaced distances from 3-100 m from the forest edge located in Chaffey's Lock, Ontario and did daily monitoring between March-August in 1986-89 (n=77 boxes). This study was carried out by Rendell and Robertson (1990) and they also observed competitive interference by house wrens and found that the likelihood of a tree swallow nest being destroyed by a house wren decreases as distance from the forest edge increases. A high presence and aggressiveness of house wrens in the area may have influenced their data and results. Closer observation of their grid site also reveals that the outer edge of the grid is completely surrounded by forest making the center of the grid the farthest point from any forest edge, which was not the case in the grid I observed. If I had excluded the grids outer edge, which in my grid was the farthest from the forest edge, I may have observed a correlation between the center of the grid and settlement date. Rendell and Robertson (1990) observed that females settled first with males situated near the center of the population so the preference may be away from both the forest edge and the outer grid edge. Since nest site availability is limited, late arriving birds are forced to nest in less preferred sites. Rendell and Robertson (1990) also stated that their results contradicted previous research in spiral grids, such as the one I studied, where conclusions were that tree swallows settled at boxes in a spiral independently of its location in a field and this conclusion was based on data using the settlement date as the date of the first egg, which is what I also used here. They state that it has been shown that this is not the case and they instead used nest building as the determinant for settlement date. I did not use this as the determinant because I observed nest abandonment in at least three cases where the boxes were ultimately left unoccupied even though nest building had been initiated. Rendell and Robertson (1990) concluded that nesting away from the forest edge decreases competition with house wrens and eastern bluebirds and allows clear paths for foraging in the vicinity of the nest site, they also speculated that there may be an advantage to nesting centrally within breeding pairs to reduce predation from terrestrial animals and make them less susceptible to attacks from accipiters. This would

represent a preference for the center of a grid rather than specifically farthest from the forest edge and their experimental design does not rule this out.

In conclusion, this experiment was successful in demonstrating the effects of intraspecific competition on the settlement of tree swallows and their choice of nesting box because nesting boxes selected were all greater than 10 m from other occupied boxes and boxes left unoccupied were all within 10 m of an already occupied nest-box (there was only one exception observed in each case). However, it was not successful in finding a statistically significant correlation between nesting box preference and distance from the forest edge, which has been previously concluded by other researchers. Other factors may be influential in nest-box preference such as social and historical factors like the success of breeding in the nest-box in previous years that can override the influence of distance from the forest edge. The information obtained from this data may not be applicable to natural populations where settlement data is impossible to obtain. Further research is necessary in a more controlled nest-box environment to determine the exact effects of distance from the forest edge on nest-box preference by tree swallows. Clearly it is apparent that nest-box selection by tree swallows is a complex decision influenced by multiple variables some of which may still be unknown.

Acknowledgments

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Literature Citation

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APPENDIX I

Statistical Analysis Summary

<u>Clutch size</u>	<u>Fledglings</u>	<u>Clutch size</u>	<u>Fledglings</u>	
5	4	7	6	
7	6	7	7	
5	4	6	6	
7	6	8	8	
6	6	6	6	
6	6	7	7	
7	7	6	6	
6	5	7	7	
7	7	6	6	
6	6	6	6	
8	8	7	7	
7	7	8	8	
6	6	6	3	
5	5	7	7	
7	7	6.473684	6.210526	Mean
7	6	0.796507	1.069425	SD
6	6			
7	7			
5	5			
6	6			
6	6			
7	7			
6	6			

Distance from
forest edge (m):

	<u>>80</u>	<u>60-80</u>	<u>30-60</u>	<u><30</u>
	42	24	32	23
	40	14	34	20
	41	11	26	27
	45	9	22	21
	44	7	16	46
	43	39	13	17
	36	37	6	19
	30	48	4	12
	29	47	2	8
	25	38		1
	18	33		
	15	28		
	10	35		
	5	31		
	3			
TRES	11	8	8	7
HOWR	1	2	0	1
MOBL	1	0	0	0
EMPTY	2	4	1	2
total	15	14	9	10
expected	31.25	29	18.75	21
observed	23	17	17	14.5
Chi ² p-value	0.007524		0.07858431	0.02534

Correlation Coefficient (r)

	<i>distance</i>	<i>day</i>
<i>distance</i>	1	
<i>day</i>	0.026352	1

Regression Statistics

Multiple R	0.026352
R Square	0.000694
Adjusted R Square	-0.03053
Standard Error	4.435105
Observation	34

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance</i>
Regression	1	0.4374	0.437	0.0222	0.882393
Residual	32	629.44	19.67		
Total	33	629.88			

	<i>Coefficient</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	146.596	2.4364	60.16	1.7E-34	141.6331	151.5	141.6	151.55
<i>distance</i>	0.005058	0.0339	0.149	0.8823	-0.06404	0.074	0.064	0.0741

APPENDIX II

Raw Data

Date:11/05/2013 Time: 15:30

<u>Box#</u>	<u>Nest Present</u>	<u>Eggs Present</u>	<u>Eggs warm/cold</u>	<u>Young Present</u>	<u>Adult Present</u>	<u>Band Present/#</u>	<u>Notes</u>
41	Partial	N		N	N		Grass present
42	N	N		N	N		Empty
40	N	N		N	N		Empty
45	N	N		N	N		Empty, replaced wire
44	N	N		N	N		Empty
43	N	N		N	N		Empty
37	N	N		N	N		Empty, old feather inside
39	N	N		N	N		Empty
48	Partial	N		N	N		Grass present
38	Partial	N		N	N		Grass present
23	N	N		N	N		Empty, Check wire on R
20	N	N		N	N		Needs # repainted
32	N	N		N	Y		Dead bird present possibly starvation within 24-48 hrs
47	N	N		N	N		Sticks present, top was detached-reattached
35	N	N		N	N		Top was missing-found and reattached
34	N	N		N	Y		Feather inside, swooping adult
33	N	N		N	N		Needs # repainted
36	Partial	N		N	Y		Needs # repainted, adult flew out grass/feather inside
30	Partial	N		N	N		Needs # repainted, grass/2 feathers inside
29	N	N		N	N		Needs # repainted
31	N	N		N	N		Needs # repainted, check wire, seeds inside
28	Partial	N		N	N		Grass present
27	N	N		N	N		Box is missing, Am found and will put it up
21	N	N		N	N		Feather inside, replaced missing wire
46	N	N		N	N		check wire

26	N	N	N	N	box was detached and on ground-reattached
22	N	N	N	N	wire replaced
24	N	N	N	N	empty
25	N	N	N	N	empty
18	Partial	N	N	N	Grass present
16	N	N	N	N	Grass present, 2 feathers, wire is short but ok
17	N	N	N	N	3 small feathers
19	Partial	N	N	N	grass/2 feathers
12	Partial	N	N	N	grass blades present
13	N	N	N	N	Empty
14	Partial	N	N	N	grass/feather inside, wire replaced
15	N	N	N	N	Top off-reattached and wire replaced
10	Partial	N	N	N	grass/feather inside
9	Partial	N	N	N	grass blade/feather inside
11	N	N	N	N	Top was off-reattached
8	N	N	N	N	Empty
6	N	N	N	N	Empty
7	N	N	N	N	Top was off-reattached and wire replaced
5	N	N	N	N	Empty
3	N	N	N	N	Top was off-reattached, scat inside-removed
2	N	N	N	N	Wire short on L
4	N	N	N	N	Empty
1	Partial	N	N	N	grass inside

16/05/2013 18:00

<u>Box#</u>	<u>Nest Present</u>	<u>Eggs Present</u>	<u>Eggs warm/cold</u>	<u>Young Present</u>	<u>Adult Present</u>	<u>Band Present/#</u>	<u>Notes</u>
41	Full	N		N	N		nest, swooping adult
42	Partial	N		N	N		Grass/Feathers
40	Partial	N		N	N		Grass
45	Partial	N		N	Y		Grass, M adult inside
44	N	N		N	N		Empty
43	N	N		N	N		Empty
37	Full	N		N	N		Nest
39	N	N		N	N		Empty
48	Partial	N		N	Y		Bird inside-flew out
38	N	N		N	N		Empty
23	N	N		N	N		Empty, top was off
20	N	N		N	Y		Dead bird present, F possible cause of death-starvation
32	N	N		N	Y		Dead bird present, M possible cause of death-starvation
47	N	N		N	N		Empty
35	N	N		N	N		Empty
34	Partial	N		N	N		Lots of grass
33	N	N		N	N		Empty
36	Partial	N		N	N		Grass
30	Partial	N		N	N		Lots of grass
29	N	N		N	N		Empty
31	N	N		N	N		Empty
28	Partial	N		N	N		Grass present
27	N	N		N	N		Feather inside
21	N	N		N	N		Feather inside
46	N	N		N	N		check wire
26	N	N		N	N		2 Feathers

22	N	N	N	Y	M bird inside
24	N	N	N	N	Grass inside
25	N	N	N	N	Grass inside
18	Partial	N	N	N	Lots of grass
16	Partial	N	N	N	Lots of grass
17	N	N	N	N	Empty
19	Partial	N	N	N	Lots of grass
12	Partial	N	N	N	Grass/Feathers
13	Partial	N	N	N	Lots of grass
14	Partial	N	N	N	Grass inside
15	Full	N	N	N	Nest and M bird inside
10	Partial	N	N	N	Grass
9	Partial	N	N	N	Lots of grass
11	Partial	N	N	N	Grass
8	Partial	N	N	N	Grass inside
6	Partial	N	N	N	Grass inside
7	N	N	N	N	Empty
5	N	N	N	N	Empty
3	Partial	N	N	N	Grass inside
2	Partial	N	N	N	Grass inside
4	N	N	N	N	Empty
1	Partial	N	N	N	Lots of grass

20/05/2013 13:30

<u>Box#</u>	<u>Nest Present</u>	<u>Eggs Present</u>	<u>Eggs warm/cold</u>	<u>Young Present</u>	<u>Adult Present</u>	<u>Band Present/#</u>	<u>Notes</u>
42	Full	N		N	N		
40	Full	N		N	N		
45	Full	N		N	N		
44	N	N		N	N		Empty
43	N	N		N	N		Empty
37	Full	N		N	Y		Bird inside
39	N	N		N	N		Empty
48	Partial	N		N	Y		M bird inside
38	N	N		N	N		Empty
32	N	N		N	N		Empty
47	Partial	N		N	N		Grass inside
35	Partial	N		N	N		Grass inside
34	Full	N		N	N		Nest/Feather
33	N	N		N	N		Empty
36	Partial	N		N	Y		Bird inside
30	Full	N		N	N		
29	N	N		N	N		Empty
31	N	N		N	Y		Bird inside
26	Full	N		N	N		Nest
22	Partial	N		N	N		Grass inside
24	Full	N		N	N		
25	N	N		N	Y		Bird inside
18	Full	N		N	N		Nest
14	Partial	N		N	N		Grass inside
15	Full	N		N	N		Nest

10	Partial	N	N	N	Grass
6	Partial	N	N	N	Grass inside
7	Partial	N	N	N	Grass inside
5	Partial	N	N	N	Grass inside
3	Partial	N	N	N	Grass inside
2	Partial	N	N	N	Grass inside
4	N	N	N	N	Empty
1	Partial	N	N	N	Lots of grass
23	N	N	N	N	empty
20	N	N	N	Y	2 feathers
28	Partial	N	N	N	Grass present
27	N	N	N	N	Empty
21	Partial	N	N	N	Grass inside
46	N	N	N	N	Empty
16	Partial	N	N	N	Lots of grass
17	N	N	N	N	Sticks inside
19	Partial	N	N	N	Lots of grass
12	Partial	N	N	N	Grass/Feathers
13	Full	N	N	N	Lots of grass
9	Full	N	N	N	Lots of grass
11	N	N	N	N	Empty
8	Partial	N	N	N	Grass inside

25/05/2013 18:00

<u>Box#</u>	<u>Nest Present</u>	<u>Eggs Present</u>	<u>Eggs warm/cold</u>	<u>Young Present</u>	<u>Adult Present</u>	<u>Band Present/#</u>	<u>Notes</u>
42	Full	2	cold	N	N		blue eggs bluebird
40	Full	N		N	N		nest, lots of feathers
45	Full	N		N	N		nest
44	N	N		N	N		Empty
43	N	N		N	N		Empty
37	Full	N		N	N		nest, bee inside
39	Partial	N		N	N		grass/feathers
48	N	N		N	N		empty
38	Partial	N		N	N		grass
32	N	N		N	N		Empty
47	Partial	N		N	N		Grass inside
35	Partial	N		N	N		Grass inside
34	Full	N		N	N		Nest/Feather
33	N	N		N	N		Empty
36	Partial	N		N	N		grass
30	Full	3	cold	N	N		
29	N	N		N	N		Empty
31	N	N		N	Y		dead bird
26	Full	N		N	Y		bird inside
22	Partial	N		N	N		lots of grass
24	Partial	N		N	N		grass
25	Full	1	cold	N	N		
18	Full	1	warm	N	Y		bird inside
14	Partial	N		N	N		Grass inside
15	Partial	N		N	N		grass

10	Full	5	cold	N	N	swooping bird
6	Full	N		N	N	nest
7	Partial	N		N	N	Grass inside
5	Partial	N		N	N	Grass inside
3	Full	N		N	N	nest
2	Full	2	cold	N	N	
4	N	N		N	N	Empty
1	Full	4	warm	N	N	
23	N	N		N	N	empty, top off
20	N	N		N	N	grass
28	Full	2	cold	N	N	1 broken
27	Full	N		N	N	nest
21	Partial	N		N	N	Grass inside
46	N	N		N	N	Empty
16	Full	1	cold	N	N	
17	N	N		N	N	Sticks inside
19	Full	3	cold	N	N	
12	Full	1	cold	N	N	
13	Full	4	cold	N	N	
9	Full	4	cold	N	N	
11	N	N		N	N	Empty
8	Partial	N		N	N	Grass inside

01/06/2013 12:00

<u>Box#</u>	<u>Nest Present</u>	<u>Eggs Present</u>	<u>Eggs warm/cold</u>	<u>Young Present</u>	<u>Adult Present</u>	<u>Band Present/#</u>	<u>Notes</u>
42	Full	5	warm	N	N		2 mountain bluebirds swooping
40	Full	Y	warm	N	Y		adult sitting on eggs
45	Full	5	cold	N	N		
44	Y	N		N	N		Sticks inside, holes pecked in box
43	N	N		N	N		Empty
37	Full	N		N	Y		adult inside
39	Full	1	cold	N	Y		female flew out
48	Partial	N		N	N		empty
38	Full	1	cold	N	N		
32	Full	N		N	N		
47	Partial	N		N	N		Grass inside
35	Full	2	cold	N	N		swooping adult
34	Full	5	cold	N	N		swooping adult
33	Y	N		N	N		pile of sticks
36	Full	2	cold	N	N		
30	Full	7	warm	N	N		
29	N	N		N	N		Empty
31	Partial	N		N	N		grass/feathers
26	Full	2	cold	N	N		
22	Full	2	warm	N	Y		M flew out
24	Full	3	cold	N	N		
25	Full	6	warm	N	Y		M flew out
18	Full	7	warm	N	Y		M flew out
14	N	N		N	N		Empty
15	Full	3	warm	N	Y		swooping bird
10	Full	6	warm	N	Y		swooping bird

6	Full	5	warm	N	N		
7	Full	2	warm	N	N		
5	Full	6	warm	N	Y		Bird inside
3	Full	Y	warm	N	Y		Bird inside
2	Full	7	warm	N	Y	Y	banded bird inside
4	N	N		N	N		Empty
1	Full	7	cold	N	N		
23	Full	2	cold	N	N		
20	Full	N		N	N		
28	Full	2	cold	N	N		
27	Full	5	cold	N	N		
21	Full	N		N	Y		Bird inside
46	N	N		N	N		Empty
16	Full	Y	warm	N	Y		Bird inside
17	Y	N		N	N		Sticks inside
19	Full	6	warm	N	N		
12	Full	Y	warm	N	Y		Bird inside and on top
13	Full	6	warm	N	N		
9	Full	7	warm	N	N		
11	N	N		N	N		Empty
8	Full	4	cold	N	N		

08/06/2013 12:00

<u>Box#</u>	<u>Nest Present</u>	<u>Eggs Present</u>	<u>Eggs warm/cold</u>	<u>Young Present</u>	<u>Adult Present</u>	<u>Band Present/#</u>	<u>Notes</u>
42	Full	5	warm	N	Y		
40	Full	6	warm	N	Y		adult sitting on eggs
45	Full	7	warm	N	N		
44	Y	N		N	N		Sticks inside
43	N	N		N	N		Empty
37	Full	4	warm	N	Y		adult inside
39	Full	7	warm	N	N		
48	Partial	N		N	N		
38	Full	2	warm	N	Y		
32	Full	6	warm	N	N		
47	Partial	N		N	N		empty
35	Full	7	warm	N	N		swooping adult
34	Full	6	warm	N	N		swooping adult
33	Y	1		N	N		pile of sticks
36	Full	3	warm	N	Y		
30	Full	8	warm	N	N		
29	N	N		N	N		Empty
31	Partial	1	cold	N	N		sticks inside
26	Full	5	warm	N	Y		
22	Full	7	warm	N	N		
24	Full	7	warm	N	Y		
25	Full	6	warm	N	Y		
18	Full	7	warm	N	Y		
14	N	N		N	N		Empty
15	Full	3	warm	N	Y		swooping bird
10	Full	6	warm	N	N		swooping bird
6	Full	7	warm	N	N		

7	Full	6	warm	N	N		
5	Full	7	warm	N	Y		
3	Full	7	warm	N	Y		
2	Full	7	warm	N	Y	Y	
4	N	N		N	N		Empty
1	Full	8	warm	N	N		
23	Full	6	warm	N	N		
20	Full	N		N	N		
28	Full	6	warm	N	N		
27	Full	7	warm	N	N		
21	Full	6	warm	N	N		
46	N	N		N	N		Empty
16	Full	7	warm	N	N		
17	Y	7	warm	N	N		Sticks inside
19	Full	6	warm	N	N		
12	Full	Y	warm	N	Y		
13	Full	6	warm	N	N		
9	Full	7	warm	N	N		
11	N	N		N	N		Empty
8	Full	4	warm	N	Y		
		200					

13/06/2013 16:00

<u>Box#</u>	<u>Nest Present</u>	<u>Eggs Present</u>	<u>Eggs warm/cold</u>	<u>Young Present</u>	<u>Adult Present</u>	<u>Band Present/#</u>	<u>Notes</u>
42	Full	1	warm	4	N		2 mountain bluebirds swooping
40	Full	Y	warm	N	Y		adult sitting on eggs
45	Full	7	warm	N	N		swooping
44	Y	N		N	N		Sticks inside, house wren
43	N	N		N	2		Empty
37	Full	5	warm	N	N		swooping
39	Full	7	warm	N	N		swooping
48	Full	3	cold	N	N		
38	Full	1	warm	N	Y		adult inside
32	Full	6	warm	N	N		
47	Partial	N		N	N		sticks
35	Full	6	warm	N	N		swooping adult
34	Full	6	warm	N	N		swooping adult
33	Y	6	cold	N	N		pile of sticks
36	Full	5	warm	N	N		
30	Full	8	warm	N	N		
29	N	N		N	N		Empty
31	Partial	1	cold	N	N		changed wire
26	Full	4	warm	N	N		swooping
22	Full	7	warm	N	Y		swooping
24	Full	7	warm	N	N		
25	Full	N		5	N		
18	Full	N		6	N		
14	N	N		N	N		Empty
15	Full	3	warm	N	Y		swooping bird
10	Full	N		7	N		

6	Full	7	warm	N	N		swooping
7	Full	6	warm	N	N		swooping
5	Full	7	warm	N	Y		swooping
3	Full	Y	warm	N	Y		Bird inside
2	Full	1	warm	4	Y	Y	swooping
4	N	N		N	N		Empty
1	Full	7	warm	N	Y		
23	Full	2	warm	N	Y		
20	Partial	N		N	N		
28	Full	5	warm	N	Y		swooping
27	Full	7	warm	N	N		swooping
21	Full	Y	warm	N	Y		Bird inside
46	N	N		N	N		Empty
16	Full	7	warm	N	N		swooping
17	Y	8	warm	N	N		Sticks inside
19	Full	N		6	N		
12	Full	1	warm	6	N		swooping
13	Full	N		6	N		
9	Full	1	warm	7	N		swooping
11	N	N		N	N		Empty
8	Full	6	warm	N	N		

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16/06/2013 18:00

<u>Box#</u>	<u>Nest Present</u>	<u>Eggs Present</u>	<u>Eggs warm/cold</u>	<u>Young Present</u>	<u>Adult Present</u>	<u>Band Present/#</u>	<u>Notes</u>
42	Full	1	warm	4	N		
40	Full	N		7	Y	N	adult sitting on eggs
45	Full	2	warm	5	Y		M flew out
44	Y	N		N	N		Sticks inside, HOWR
43	N	N		N	N		Empty
37	Full	N		5	Y	N	
39	Full	7	warm	N	N		
48	Full	5	warm	N	Y	N	
38	Full	7	warm	N	N		
32	Full	6	warm	N	Y	N	
47	Partial	N		N	N		sticks
35	Full	6	warm	N	N		
34	Full	1	warm	5	N		
33	Y	7	warm	N	N		pile of sticks
36	Full	5	warm	N	N		
30	Full	1	warm	5	Y		bird flew out
29	N	N		N	N		Empty
31	N	N		N	N		2 birds on top
26	Full	4	warm	N	N		
22	Full	7	warm	N	Y	N	
24	Full	7	warm	N	Y	Y	
25	Full	N		6	Y		bird flew out
18	Full	N		6	Y		bird flew out
14	N	N		N	N		Empty
15	Full	1	warm	5	Y		swooping bird
10	Full	N		7	N		getting feathers
6	Full	4	warm	3	Y	Y	on top

7	Full	6	warm	N	Y		bird flew out
5	Full	N		7	Y		bird flew out
3	Full	N		5	Y	N	
2	Full	N		4	N		
4	N	N		N	N		Empty
1	Full	1	warm	7	N		
23	Full	6	warm	N	Y		bird flew out
20	Partial	N		N	N		
28	Full	5	warm	N	N		
27	Full	4	warm	3	Y		bird flew out
21	Full	6	warm	N	Y	N	Bird inside
46	N	N		N	N		Empty
16	Full	N		6	N		
17	Y	8	warm	N	N		Sticks inside
19	Full	N		6	N		
12	Full	N		6	N		
13	Full	N		6	N		
9	Full	N		7	N		getting feathers
11	N	N		N	N		Empty
8	Full	3	warm	3	Y		bird flew out

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21/06/2013 20:00

<u>Box#</u>	<u>Nest Present</u>	<u>Eggs Present</u>	<u>Eggs warm/cold</u>	<u>Young Present</u>	<u>Adult Present</u>	<u>Band Present/#</u>	<u>Notes</u>
42	Full	N		4	Y	N	changed wire
40	Full	N		6	N	N	
45	Full	N		5	N		
44	Full	Y	warm	N	Y		house wren
43	N	N		N	N		Empty
37	Full	N		4	Y	N	
39	Full	N		6	Y	Y	
48	Full	5	warm	N	Y	N	
38	Full	N		6	Y		
32	Full	6	warm	N	Y	N	
47	Partial	N		N	N		sticks
35	Full	N		6	Y		flew out
34	Full	1	warm	5	N		
33	Y	7	warm	N	Y		house wren flew out
36	Full	3	warm	3	Y	N	
30	Full	N		6	N		feathers
29	N	N		N	N		Empty
31	N	N		N	N		
26	Full	N		4	N		
22	Full	N		6	Y	N	
24	Full	N		6	N	Y	
25	Full	N		6	Y		
18	Full	N		6	N		feathers
14	N	N		N	N		Empty
15	Full	N		6	Y		swooping bird
10	Full	N		6	Y		feathers
6	Full	N		6	N	Y	
7	Full	N		6	N		

5	Full	N		7	N		
3	Full	N		5	Y	N	
2	Full	N		4	Y		swooping bird
4	N	N		N	N		Empty
1	Full	N		6	N		
23	Full	N		6	Y	Y	
20	Partial	N		N	N		
28	Full	N		5	Y	Y	
27	Full	N		4	Y		
21	Full	1	warm	4	Y	N	Bird inside
46	N	N		N	N		Empty
16	Full	N		6	N		
17	Y	8	warm	N	N		House wren flew out
19	Full	N		6	N		
12	Full	N		6	Y		feathers
13	Full	N		6	Y		feathers
9	Full	N		6	N		feathers
11	N	N		N	N		Empty
8	Full	N		6	Y		

26/06/2013 20:00

<u>Box#</u>	<u>Nest Present</u>	<u>Eggs Present</u>	<u>Eggs warm/cold</u>	<u>Young Present</u>	<u>Adult Present</u>	<u>Band Present/#</u>	<u>Notes</u>
42	Full	1	warm	4	Y	N	
40	Full	N		7	Y	N	
45	Full	N		6	N		
44	Full	5	warm	N	Y		house wren
43	N	N		N	N		Empty
37	Full	N		5	Y	N	banded
39	Full	N		7	Y	Y	
48	Full	5	warm	N	Y	Y	
38	Full	N		7	Y		
32	Full	N		6	Y	N	
47	Partial	N		N	N		sticks
35	Full	N		6	Y		
34	Full	N		5	N		banded
33	Y	7	warm	N	N		
36	Full	2	warm	3	Y	N	
30	Full	N		6	N		banded
29	N	N		N	N		Empty
31	N	N		N	N		
26	Full	N		5	N		
22	Full	N		6	Y	N	
24	Full	N		6	N	Y	
25	Full	N		6	Y		banded
18	Full	N		6	N		banded
14	N	N		N	N		Empty
15	Full	N		6	Y		banded
10	Full	N		6	Y		near fledging
6	Full	N		7	N	Y	

7	Full	N		6	N		feathers
5	Full	N		7	N		banded
3	Full	N		5	Y	N	banded
2	Full	1	warm	4	Y		banded
4	N	N		N	N		Empty
1	Full	N		7	N		banded
23	Full	N		6	Y	Y	
20	Partial	N		N	N		
28	Full	N		5	Y	Y	
27	Full	N		6	Y		banded
21	Full	N		5	Y	N	
46	N	N		N	N		Empty
16	Full	N		6	N		banded
17	Y	N		7	N		House wren
19	Full	N		6	N		banded
12	Full	N		7	Y		banded
13	Full	N		6	Y		banded
9	Full	N		6	N		banded
11	N	N		N	N		Empty
8	Full	N		6	Y		banded

30/06/2013 17:00

<u>Box#</u>	<u>Nest Present</u>	<u>Eggs Present</u>	<u>Eggs warm/cold</u>	<u>Young Present</u>	<u>Adult Present</u>	<u>Band Present/#</u>	<u>Notes</u>
42	Full	1	warm	N	N	N	Fledged
40	Full	N		7	N	N	banded
45	Full	N		5	N		banded
44	Full	5	warm	N	N		house wren
43	N	N		N	N		Empty
37	Full	N		5	N	N	banded
39	Full	N		7	N	Y	Pinned feathers
48	Full	N		5	N	Y	very young
38	Full	N		7	N		Pinned feathers
32	Full	N		6	N	N	Pinned feathers
47	Partial	N		N	N		sticks
35	Full	N		6	N		
34	Full	N		5	N		banded
33	Y	N		6	N		HOWR
36	Full	2	warm	3	N	N	Pinned feathers
30	Full	N		6	N		banded
29	N	N		N	N		Empty
31	N	N		N	N		
26	Full	N		4	N		
22	Full	N		6	N	N	Pinned feathers
24	Full	N		6	N	Y	
25	Full	N		6	N		banded
18	Full	N		6	N		banded
14	N	N		N	N		Empty
15	Full	N		5	N		banded
10	Full	N		N	N		Fledged
6	Full	N		7	N	Y	

7	Full	N	5	N		feathers
5	Full	N	7	N		banded
3	Full	N	5	N	N	banded
2	Full	N	3	N		banded
4	N	N	N	N		Empty
1	Full	N	6	N		banded
23	Full	N	6	N	Y	
20	Partial	N	N	N		
28	Full	N	6	N	Y	
27	Full	N	6	N		banded
21	Full	N	4	N	N	
46	N	N	N	N		Empty
16	Full	N	6	N		banded
17	Y	N	8	N		House wren
19	Full	N	4	N		banded
12	Full	N	7	N		banded
13	Full	N	N	N		banded
9	Full	N	N	N		banded
11	N	N	N	N		Empty
8	Full	N	6	N		banded

02/07/2013 17:00

<u>Box#</u>	<u>Nest Present</u>	<u>Eggs Present</u>	<u>Eggs warm/cold</u>	<u>Young Present</u>	<u>Adult Present</u>	<u>Band Present/#</u>	<u>Notes</u>
42	Full	1		N	N	N	Fledged
40	Full	N		7	N	N	banded
45	Full	N		6	N		banded
44	Full	7	warm	N	N		house wren
43	N	N		N	N		Empty
37	Full	N		4	N	N	banded
39	Full	N		7	N	Y	Pinned feathers
48	Full	N		5	N	Y	very young
38	Full	N		7	N		Pinned feathers
32	Full	N		4	N	N	Pinned feathers
47	Partial	N		N	N		sticks
35	Full	N		6	N		
34	Full	N		3	N		banded
33	Y	N		5	N		HOWR
36	Full	2	warm	3	N	N	Pinned feathers
30	Full	N		6	N		banded
29	N	N		N	N		Empty
31	N	N		N	N		
26	Full	N		4	N		
22	Full	N		5	N	N	Pinned feathers
24	Full	N		6	N	Y	
25	Full	N		N	N		banded
18	Full	N		N	N		banded
14	N	N		N	N		Empty
15	Full	N		5	N		banded
10	Full	N		N	N		Fledged
6	Full	N		7	N	Y	

7	Full	N	5	N		feathers
5	Full	N	6	N		banded
3	Full	N	4	N	N	banded
2	Full	N	N	N		banded
4	N	N	N	N		Empty
1	Full	N	5	N		banded
23	Full	N	6	N	Y	
20	Partial	N	N	N		
28	Full	N	5	N	Y	
27	Full	N	7	N		banded
21	Full	N	4	N	N	
46	N	N	N	N		Empty
16	Full	N	6	N		banded
17	Y	N	8	N		House wren
19	Full	N	3	N		banded
12	Full	N	2	N		banded
13	Full	N	N	N		banded
9	Full	N	N	N		banded
11	N	N	N	N		Empty
8	Full	N	5	N		banded

06/07/2013 14:00

<u>Box#</u>	<u>Nest Present</u>	<u>Eggs Present</u>	<u>Eggs warm/cold</u>	<u>Young Present</u>	<u>Adult Present</u>	<u>Band Present/#</u>	<u>Notes</u>
42	Full	1		N	N	Y	Fledged
40	Full	N		1	N	Y	Fledged
45	Full	1		N	N	Y	Fledged
44	Full	N		6	N		house wren
43	Y	N		N	N		house wren
37	Full	N		N	N	Y	Fledged
39	Full	N		7	N	Y	
48	Full	N		5	N	Y	
38	Full	N		7	N	Y	
32	Full	N		5	N	Y	
47	Partial	N		N	N		house wren
35	Full	N		6	N	Y	
34	Full	1		N	N	Y	Fledged
33	Full	N		5	N		HOWR
36	Full	1		3	N	Y	
30	Full	N		N	N	Y	Fledged
29	N	N		N	N		
31	N	N		N	N		
26	Full	N		3	N	Y	
22	Full	N		7	N	Y	
24	Full	N		3	N	Y	1 dead
25	Full	N		N	N	Y	Fledged
18	Full	N		N	N	Y	Fledged
14	N	N		N	N		
15	Full	N		N	N	Y	Fledged
10	Full	N		N	N	Y	Fledged
6	Full	N		N	N	Y	Fledged

7	Full	N	1	N	Y	1 Fledged
5	Full	N	N	N	Y	Fledged
3	Full	1	N	N	Y	Fledged
2	Full	N	N	N	Y	Fledged
4	N	N	N	N		Empty
1	Full	N	N	N	Y	Fledged
23	Full	N	6	N	Y	2 fledged
20	N	N	N	N		
28	Full	N	6	N	Y	1 Fledged
27	Full	N	7	N		banded
21	Full	N	N	N	Y	Fledged
46	N	N	N	N		
16	Full	N	N	N	Y	fledged
17	Y	N	N	N		Fledged
19	Full	N	3	N	Y	3 dead
12	Full	N	N	N	Y	Fledged
13	Full	N	N	N	Y	Fledged
9	Full	N	N	N	Y	Fledged
11	N	N	N	N		Empty
8	Full	N	N	N	Y	Fledged

13/07/2013 14:00

<u>Box#</u>	<u>Nest Present</u>	<u>Eggs Present</u>	<u>Eggs warm/cold</u>	<u>Young Present</u>	<u>Adult Present</u>	<u>Band Present/#</u>	<u>Notes</u>
42	Full	N		N	N	Y	Fledged
40	Full	N		N	N	Y	Fledged
45	Full	N		N	N	Y	Fledged
44	Full	N		6	N		house wren
43	Y	N		N	N		house wren
37	Full	N		N	N	Y	Fledged
39	Full	N		N	N	Y	Fledged
48	Full	N		N	N	Y	Fledged
38	Full	N		N	N	Y	Fledged
32	Full	N		4	N	Y	1 Fledged
47	Partial	N		N	N		house wren
35	Full	N		N	N	Y	Fledged
34	Full	N		N	N	Y	Fledged
33	Full	N		N	N		Fledged
36	Full	N		N	N	Y	Fledged
30	Full	N		N	N	Y	Fledged
29	N	N		N	N		
31	N	N		N	N		
26	Full	N		N	N	Y	Fledged
22	Full	N		N	N	Y	Fledged
24	Full	N		N	N	Y	Fledged
25	Full	N		N	N	Y	Fledged
18	Full	N		N	N	Y	Fledged
14	N	N		N	N		
15	Full	N		N	N	Y	Fledged
10	Full	N		N	N	Y	Fledged
6	Full	N		N	N	Y	Fledged

7	Full	N	N	N	Y	Fledged
5	Full	N	N	N	Y	Fledged
3	Full	N	N	N	Y	Fledged
2	Full	N	N	N	Y	Fledged
4	N	N	N	N		Empty
1	Full	N	N	N	Y	Fledged
23	Full	N	N	N	Y	Fledged
20	N	N	N	N		
28	Full	N	N	N	Y	Fledged
27	Full	N	N	N		Fledged
21	Full	N	N	N	Y	Fledged
46	N	N	N	N		
16	Full	N	N	N	Y	fledged
17	Y	N	N	N		Fledged
19	Full	N	N	N	Y	Fledged
12	Full	N	N	N	Y	Fledged
13	Full	N	N	N	Y	Fledged
9	Full	N	N	N	Y	Fledged
11	N	N	N	N		Empty
8	Full	N	N	N	Y	Fledged

20/07/2013 16:00

<u>Box#</u>	<u>Nest Present</u>	<u>Eggs Present</u>	<u>Eggs warm/cold</u>	<u>Young Present</u>	<u>Adult Present</u>	<u>Band Present/#</u>	<u>Notes</u>
42	Full	N		N	N	Y	Fledged
40	Full	N		N	N	Y	Fledged
45	Full	N		N	N	Y	Fledged
44	Full	N		6	N		HOWR
43	Y	N		N	N		
37	Full	N		N	N	Y	Fledged
39	Full	N		N	N	Y	Fledged
48	Full	N		N	N	Y	Fledged
38	Full	N		N	N	Y	Fledged
32	Full	N		N	N	Y	Fledged
47	Partial	N		N	N		
35	Full	N		N	N	Y	Fledged
34	Full	N		N	N	Y	Fledged
33	Full	N		N	N		Fledged
36	Full	N		N	N	Y	Fledged
30	Full	N		N	N	Y	Fledged
29	N	N		N	N		
31	N	N		N	N		
26	Full	N		N	N	Y	Fledged
22	Full	N		N	N	Y	Fledged
24	Full	N		N	N	Y	Fledged
25	Full	N		N	N	Y	Fledged
18	Full	N		N	N	Y	Fledged
14	N	N		N	N		
15	Full	N		N	N	Y	Fledged
10	Full	N		N	N	Y	Fledged
6	Full	N		N	N	Y	Fledged

7	Full	N	N	N	Y	Fledged
5	Full	N	N	N	Y	Fledged
3	Full	N	N	N	Y	Fledged
2	Full	N	N	N	Y	Fledged
4	N	N	N	N		Empty
1	Full	N	N	N	Y	Fledged
23	Full	N	N	N	Y	Fledged
20	N	N	N	N		
28	Full	N	N	N	Y	Fledged
27	Full	N	N	N		Fledged
21	Full	N	N	N	Y	Fledged
46	N	N	N	N		
16	Full	N	N	N	Y	fledged
17	Y	N	N	N		Fledged
19	Full	N	N	N	Y	Fledged
12	Full	N	N	N	Y	Fledged
13	Full	N	N	N	Y	Fledged
9	Full	N	N	N	Y	Fledged
11	N	N	N	N		
8	Full	N	N	N	Y	Fledged

Emptied all
nest boxes

28/07/2013 13:00

<u>Box#</u>	<u>Nest Present</u>	<u>Eggs Present</u>	<u>Eggs warm/cold</u>	<u>Young Present</u>	<u>Adult Present</u>	<u>Band Present/#</u>	<u>Notes</u>
42	Full	N		N	N	Y	Fledged
40	Full	N		N	N	Y	Fledged
45	Full	N		N	N	Y	Fledged
44	Full	N		N	N		Fledged
43	Y	N		N	N		
37	Full	N		N	N	Y	Fledged
39	Full	N		N	N	Y	Fledged
48	Full	N		N	N	Y	Fledged
38	Full	N		N	N	Y	Fledged
32	Full	N		N	N	Y	Fledged
47	Partial	N		N	N		
35	Full	N		N	N	Y	Fledged
34	Full	N		N	N	Y	Fledged
33	Full	N		N	N		Fledged
36	Full	N		N	N	Y	Fledged
30	Full	N		N	N	Y	Fledged
29	N	N		N	N		
31	N	N		N	N		
26	Full	N		N	N	Y	Fledged
22	Full	N		N	N	Y	Fledged
24	Full	N		N	N	Y	Fledged
25	Full	N		N	N	Y	Fledged
18	Full	N		N	N	Y	Fledged
14	N	N		N	N		
15	Full	N		N	N	Y	Fledged
10	Full	N		N	N	Y	Fledged

6	Full	N	N	N	Y	Fledged
7	Full	N	N	N	Y	Fledged
5	Full	N	N	N	Y	Fledged
3	Full	N	N	N	Y	Fledged
2	Full	N	N	N	Y	Fledged
4	N	N	N	N		Empty
1	Full	N	N	N	Y	Fledged
23	Full	N	N	N	Y	Fledged
20	N	N	N	N		
28	Full	N	N	N	Y	Fledged
27	Full	N	N	N		Fledged
21	Full	N	N	N	Y	Fledged
46	N	N	N	N		
16	Full	N	N	N	Y	fledged
17	Y	N	N	N		Fledged
19	Full	N	N	N	Y	Fledged
12	Full	N	N	N	Y	Fledged
13	Full	N	N	N	Y	Fledged
9	Full	N	N	N	Y	Fledged
11	N	N	N	N		
8	Full	N	N	N	Y	Fledged