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# Observations on a Six-year Nesting History of a Female Eastern Phoebe

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**ABSTRACT**

*A female Eastern Phoebe* (Sayornis phoebe) *which I banded 5 Jul 1996, band number 2090-31005, at Jenny Lake near Corinth, NY, was observed to use the same nesting ledge for six consecutive years, 1996-2001. During that time she produced seven clutches totaling 33 eggs (double clutch/brood in 1998) resulting in 28 banded nestlings. When last captured in 2001, she was at least seven years old.*

*Her identity was confirmed each year by reading her band after hand capturing or mist netting her at the nest. In three of those years (1998, 1999 and 2001), I succeeded in mist netting and banding her mate, each one a different bird. None of her banded mates or offspring was ever recaptured.*

*In 2002 a new female used the nest site, while none used it in 2003 and 2004. In 2005 it was used by yet another female, a bird then at least six years old, previously banded nearby as an adult in 2000. The nest site has been vacant in 2006-2010.*

## INTRODUCTION

I have operated since 1970 a feeding/banding station at Jenny Lake, 7 km west of Corinth, Saratoga County, NY, at coordinates 431-0735. The lake is at 377 m (1236 ft) elevation, and the banding area adjoining the lake is at about 387 m (1270 ft) elevation at a summer camp in a forest clearing surrounded by primarily mature white pine (*Pinus strobis)*, eastern hemlock (*Tsuga canadensis*), maple (*Acer spp.*) and oak (*Quercus spp.*). The area is atop the Kayaderosseras Range, a range of Adirondack foothills in the southeast corner of the Adirondack State Park.

About 70 m (230 ft) from my banding operation is situated a community house, used by members of a local campers' association for meetings and activities. The beams and ledges under the roof inside the three-sided open porch of this community house have served at various times in the past as nesting sites for Eastern Phoebes (*Sayornis phoebe*), American Robins (*Turdus migratorius*) and Barn Swallows (*Hirundo rustica*). Here I describe the use of a nesting ledge by a female Eastern Phoebe for six consecutive years, 1996-2001, and summarize some of the climatic conditions faced by these nesting phoebes when they first arrived on this breeding territory.

## METHODS

Birds of numerous species were captured for banding near three sunflower seed feeders and a water drip in the clearing near the camp using four 12-m and one 6-m mist nets. Occasionally, as in the case of this phoebe, birds other than seed eaters were mist netted and banded near these feeders.

The community house porch, measuring 3 m by 12 m, is open on three sides with a roof height of 2.2 m above the floor at the front and 2.9 m at the back where it is connected to the house. In two places under the porch roof (one on the south half, another similarly on the north half), light fixtures had been installed by nailing a 2x6-in (43x140 mm) board between two roof rafters under which the light hung and above which was a concealed ledge. The south ledge used by this phoebe was 2.5 m above the floor, was 58 cm long between the rafters and had head clearance to the roof of 7 to11 cm.

At times, this female phoebe was captured by hand by reaching up as she incubated on the nest. At other times, when she and her mates fed young in the nest, they were captured by erecting 6-m mist nets at the two open sides of the porch, waiting from a distance for the adult to come to the nest via the open front of the porch, then walking toward the porch, flushing the bird from the nest toward one of the mist nets. At the completion of the nesting season, any used nest was removed, offering a clean ledge for the following nesting season.

## RESULTS

As indicated above, this female phoebe was mist netted and banded (band number 2090-31005, referred to hereafter as "005") on 5 Jul 1996. In Table 1 I summarize 1996-2001 data on clutch size, number of nestlings banded, date of banding, and wing chord length of young at time of banding. I indicate also the dates of a first phoebe seen or heard at or near the community house as well as certain observations on disappearance of snow and lake ice based on my visits to the site at approximately weekly intervals.

Below, I list by year certain other pertinent data for the period 1996 to 2007 related to this nest site, including observations on snow depth and presence of lake ice which potentially impacted insect food availability for these newly arrived phoebes.

**1996** - It was a late spring with 38-41 cm of old snow still present on 16 Mar, 0-25 cm on 23 Mar. The first phoebe was heard 20 Apr (late) with five percent of the ground still covered with 5-8 cm of old snow; snow gone by 28 Apr. I discovered on 11 Jul the nest at the community house of the female phoebe I banded 5 Jul, and banded her four nestlings.

**1997** - Old snow, 66 cm, on 15 Mar was reduced to 55 cm by 28 Mar. On 13 Apr, there was some bare ground with scattered old snow up to 33 cm deep in sun-sheltered areas when a pair of phoebes was first seen at the community house. Snow was reduced to 20 cm on 26 Apr, gone by 3 May; a late, cool spring. A newly completed nest, no eggs, was present on 11May. Return female 005 incubating five eggs on 26 May, captured her on the nest 30 May still with five eggs. I banded four nestlings 15 Jun; empty nest 21 Jun.

**Table 1. Nesting Summary of a female Eastern Phoebe, band number 2090-31005, at Jenny Lake, NY.**

| Date | Date 1st Phoebe Heard/Seen | Date Lake Ice Out | Date Last Snow Melted | Clutch Size, no. of eggs[1] | Nestlings Banded | Date Banded | Wing Chord of Young mm |
|---|---|---|---|---|---|---|---|
| 1996 | 20 Apr | 5 Apr | 28 Apr | 4 | 4 | 11 Jul | 37 - 46 |
| 1997 | 13 Apr | <23 Apr | 3 May | 5 | 4 | 15 Jun | 47 - 50 |
| 1998 | 3 Apr | 10 Apr | >10 Apr | 5 | 4 | 23 May | 37 - 41 |
| | | | | 5 | 5 | 3 Jul | 25 - 29 |
| 1999 | 9 Apr | 10 Apr | >25 Apr | 5 | 5 | 29 May | 10 - 14 |
| 2000 | 1 Apr | 1 Apr | 25 Apr | 4 | 2 | 9 Jun | 33 - 37 |
| 2001 | 17 Apr | 25 Apr | 6 May | 5 | 4 | 6 Jun | 44 - 49 |

[1] Assumed clutch size based on number of nestlings and lack of unhatched eggs.

**1998** - Old snow, 33 cm, remained on 21 Mar followed by record warmth 27-31 Mar with an all-time March record of 89° F on 31 Mar at Schenectady, 58 km south of Jenny Lake. The first call was heard 3 Apr while very limited remnants of old snow up to 13 cm were still present in sheltered areas. Lake ice went out by 10 Apr with a small area of ground with 3-10 cm of old snow still present. A female with band was incubating five eggs on 1 May, return female 005 mist netted at nest on 3 May.

There were five warm eggs on 7 May with an unbanded male calling nearby; four new nestlings too small to band on 16 May were banded 23 May. Four nestlings were still in the nest on 29 May, two fledged 30 May; mist netted and banded a male, band number 1990-04322, 31 May at the nest. A second clutch of five warm eggs was in the same nest on 13 Jun, banded five nestlings on 3 Jul, still in nest on 12 Jul, fledged thereafter.

**1999** - There was old snow of 46 cm on 13 Mar, 35 cm on 20 Mar and 32 cm on 1 Apr. The first phoebe call was heard 9 Apr, while 3-18 cm of old snow still covered about 30 percent of the ground. Lake ice was nearly out on 10 Apr. Two males were competing at the community house on 19 Apr, victor unbanded. There was very little remaining snow by 25 Apr. Two phoebes were present on 26 Apr, one carrying nesting material. A completed nest, no eggs, was present on 2 May. A female was incubating five eggs on 11 and 21 May. Return female 005 was mist netted at nest on 29 May along with a new second-year male, banded 1990-31158, and nestlings were also banded. Nestlings were still in the nest 2 and 9 Jun, three fledged as I approached on 11 Jun, empty nest on 18 Jun.

**2000** - On 26 Mar, the ground was 95 percent bare, lake still iced; no phoebe was seen or heard. A banded phoebe was near the community house on 1 Apr, lake ice out. It was 76°F at Schenectady on 8 Apr, then on 9 Apr at Jenny Lake 38 cm of new snow fell, 25°F. Snow, 28 cm, was still present on 11 Apr, nearly gone 19 Apr and totally gone by 25 Apr. Two phoebes were seen and heard 19 Apr, while on 25 Apr there was a shallow mossy rim of the beginning of a new nest on the ledge; completed empty nest on 6 May. Female flushed from nest 7 May, no eggs; first egg on 9 May, three cold eggs on 12 May, four warm eggs on 24 May. Return female 005 was mist netted at nest 9 Jun when I banded her nestlings; two of four banded nestlings fledged 16 Jun, empty nest 21 Jun.

**2001** - Old snow, 99 cm, was present on 10 Mar. New snow of 30 cm fell on 23 Mar, another 36 cm on 31 Mar, resulting in up to 112 cm of old snow by 2 Apr, reduced to 76 cm by 8 Apr. The first phoebe call was heard on 17 Apr, lake still frozen and 33-66 cm of old snow blanketed the ground. Two phoebes were at the community house 23 Apr, one wearing a band was picking moss from my nearby stone fence. The outer rim of a moss nest was in place on the ledge. The lake was still frozen with 0-61 cm of old snow still on the ground. It was 77°F at Schenectady on 23 Apr and 82° F on 24 Apr, lake ice went out on 25 Apr. There was a completed empty nest on 28, 30 Apr and 2 May.

On 4 May, it was 85° F at Jenny Lake, one egg in nest, two on 5 May, three on 6 May, last of old snow finally gone. Five warm eggs were present on 10 and 22 May; five newly hatched nestlings on 25 May. Mist netted return female 005 at the nest and banded a new male, band number 1990-33089, along with four nestlings on 6 Jun. Nest was empty on 15 Jun.

**2002** - Lake ice went out 19 Mar, 13 cm of new snowfall on ground. There was a severe ice storm on 26 Mar. The first phoebe call was heard on 1 Apr, while 13-15 cm old snow remained in sheltered places, open ground bare. There were two phoebes interacting at community house 14 Apr, one not banded, status of other unknown. Unusual warmth occurred 16-17 Apr in upper 80s at Schenectady, while New York City recorded 96° F.

There was a completed smaller nest (not as high as the nests of the previous six years) with one cold egg on 27 Apr, three cold eggs 30 Apr and four warm eggs on 3, 4 and 17 May. A record late snow

fall of 8 cm fell 18 May at Jenny Lake. There were four very newly hatched nestlings on 22 May; the nest was empty on 24 May, while two adults were still present on 27 May. A new nest one-third completed was under construction at the north ledge; the prior nest on south ledge was still empty on 30 May.

The completed new north nest was empty on 10 Jun, had five eggs on 16 and 19 Jun. I mist netted a new female on the north nest on 29 Jun and banded her, band number 1990-34702 (hereafter "702"), as well as her five young (wing chords 16-24 mm). There was extreme heat on 4 Jul; one young fell out, died on the porch floor, another fell out 6 Jul; two young fledged 10 Jul, one dead in the nest 12 Jul. During the heat wave, the young apparently attempted to avoid one another's body heat by seeking refuge at the edge of the nest and fell off.

**2003** - The first phoebe call was heard on 14 Apr when about 25 percent of the ground was bare; the other ground was covered with 15-45 cm of old snow. Lake ice was out by 21 Apr, 90 percent of ground bare, but no phoebe was seen or heard and no nest was present from 21 Apr to 31 May. A phoebe was heard near the community house 14 Jul, but no nesting occurred on the porch this year.

**2004** - Old snow was 44 cm on 23 Mar; and the lake was still frozen. The ground was 90 percent bare on 1 Apr; lake still frozen. The first phoebe call was heard on 4 Apr, the lake ice went out by 14 Apr, the last snow was gone by 20 Apr. No further calls were heard nor nest seen from 4 Apr through 2 May; the nest site was unused.

**2005** - Old snow was 43 cm on 21 Mar, 32 cm on 28 Mar; only five percent snow cover on 9 Apr; lake still frozen. The first call was heard near the community house on 6 Apr; the lake ice went out 16 Apr. No calls were heard and no nest was present 21 Apr through 18 May.

A nest with one egg was found on 4 Jun, two eggs on 5 Jun; five newly hatched nestlings on 24 Jun. I banded five nestlings on 27 Jun (wing chords 11-15 mm) and mist netted at the nest yet another new female, a return bird I had previously banded, band number 1990-32126, on 29 May 2000 near my seed feeders as an AHY female, now at least six years old. There were four dead banded nestlings in the nest on 3 Jul, possibly due to disturbance from an all-day work party at the community house on 2 Jul in preparation for an annual meeting/picnic of the association, causing the adults not to be able to feed young most of that day.

**2006** - It was a low snow winter. About ten percent of the ground had 2 cm of new snow on 19 Mar; otherwise the ground was mostly bare and the lake still frozen on 27 Mar. Lake ice went out by 31 Mar. The first phoebe was heard on 2 Apr; two on 14 Apr. A new phoebe that I banded, band number 2260-23370, was at my feeders on 5 May, was recaptured with a brood patch on 20 May and was seen with a calling male at an alternate nesting site near the community house but there was no nesting at the community house.

**2007** - Old snow cover of up to 38 cm was present on 27 Mar; 30 cm on 3 and 18 Apr. The first phoebe call was heard on 23 Apr (late) with 40 percent of the ground bare; up to 30 cm of old snow was in sheltered areas, lake frozen. Lake ice went out by 30 Apr. Last remnants of old snow was still present on 5 May. There was no nesting at the community house.

Certain beams or rafters under the porch roof bore mud stains of prior nestings of Barn Swallows predating 1970 when I began to surveil the porch annually for nesting activity. No swallows nested there during the 1996-2010 period. American Robins nested on a beam within 2.4 m (8 ft) of the phoebe ledge in 1997, 1999, 2003, 2007, 2008 and 2010, raising 17 young, which I banded.

## DISCUSSION

The Eastern Phoebe is a common, widespread nesting bird in New York state, except in the highest elevation spruce-fir forests of the Adirondack and

Catskill mountains. In the 1980-1985 *Breeding Bird Atlas* (Eaton 1988) it was recorded in 80 percent of the 5-km blocks (n=4283) and confirmed in 64 percent of them. In the 2000-2005 Atlas (McGowan 2008) it was recorded in 87 percent of the blocks (n= 4666) and confirmed in 66 percent.

The location of the nest of phoebe 005 on a protected ledge close to overhead cover is consistent with that described by Weeks (1994). She produced five clutches of five eggs each and two of four eggs each. Bent (1942) indicated clutch sizes of three to eight with five the usual set, similar to Bull (1974) who noted in 21 clutches: seven clutches of four eggs, 11 of five eggs, and three of six eggs. Her average clutch size of 4.7 is in keeping with data cited by Weeks (1994). For New York phoebes, Bull (1974) indicated egg dates of 20 Apr to 4 Aug, nestlings 13 May to 10 Aug, and fledgling dates of 9 Jun to 24 Aug. Some but not all of her nesting behavior matched previously reported findings.

What appears unique about her nesting behavior is her extraordinary nest site fidelity over a six-year period to the exact same nesting ledge. Also, her mating with a different male in three of the six years (1998, 1999 and 2001) appears to be previously unreported. Her mate(s) in the other years was (were) not captured.

None of phoebe 005's 28 banded offspring and three banded mates was ever recaptured either at the porch nesting site or at my nearby mist-netting operation, where she was originally captured and banded in 1996. Starting in 1997 when her first offspring of 1996 could have possibly returned, and subsequently through 2010, I caught and banded four phoebes at the community house and mist netted another 14 at my feeders, none of whom were her banded mates or young.

Weeks (1994) states that this species is "[T]ypically double-brooded throughout most of its range." This female was definitely double-brooded in 1998, and based on data in Table 1, may have been also in 1996. The wing chord lengths of the 1998 second brood on 3 Jul are consistent with the wing chords of the 1996 brood on 11 Jul. Since I did not discover the 1996 nest until 11 Jul (after the banding of 005 in breeding condition on 5 Jul), I could well have missed her first brood in that nest. Otherwise, she was not double-brooded in other years, perhaps due to nesting delays caused by late snow or ice conditions.

The climatic conditions that she and her mates encountered upon return to this site were quite variable. Dates of first sighting or calling varied from 1 to 20 Apr, while dates of last disappearance of snow varied from shortly after 10 Apr to 6 May, and dates for ice out on the lake varied from 19 Mar to 25 Apr. It appears that these birds arrive right at the sometimes dangerous edge of transition from the winter season to spring. The year she double brooded, 1998, ice went out by 10 Apr, not particularly early, and the last snow melted a little after 10 Apr on the early side. The 1998 first-brood young were as well grown when banded on 23 May (wing chords 37-41 mm) as her 2000 brood (wing chords 33-37 mm) was on 9 Jun, 17 days later than in 1998. In 2000, ice was out on 1 Apr, when the first phoebe of the season was spotted with a band, earlier than in 1998, but a snowfall of 38 cm on 9 Apr 2000 appeared to have set back that year's breeding effort.

Once phoebe 005 no longer returned to this site to nest as of 2002 and a new phoebe 702 took over the site, there were again some adverse weather conditions that apparently this time led to a breeding failure. The season started with an extraordinarily early ice out by 19 Mar coupled with 13 cm of newly fallen snow, then a severe ice storm 26 Mar followed by the first phoebe heard on 1 Apr, followed by an all-time record late snowfall on 18 May (see Yunick, 2007, for details on this storm and its impact on newly arrived Ruby-throated Hummingbirds, *Archilochus colubris*).

Prior to that record late snowfall, phoebe 702 had four warm eggs in her nest as of 3 May until 17 May. The 18 May storm was followed by three nights of below freezing temperatures and cold NW wind; she had four very newly hatched nestlings on 22

May, but an empty nest on 24 May. There was no evidence of predation and quite possibly the young died of hypothermia as the parents were stressed to find insect life to sustain themselves during this period of extreme cold.

Within six days, 702 had a new nest about one-third complete as she renested on the other unoccupied ledge on the porch.

That renesting led to a new clutch of five eggs, five banded nestlings on 29 Jun, and ironically another weather event, this time extreme heat on 4 Jul, which led to the demise of three of her young.


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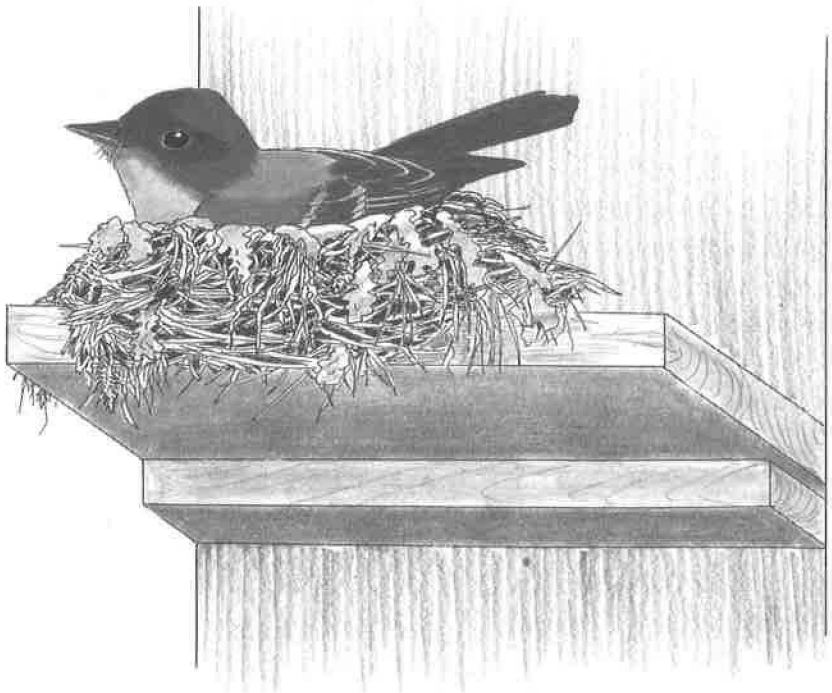

**Nesting Eastern Phoebe**
**by George West**