

Awaiting The Return Of Barney and Betty: The Swallows of Beaverhill

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Monitoring the productivity of bird populations is one of the ongoing operations of the Beaverhill Bird Observatory (BBO). However, there is one pair of birds that has received special attention from the members of the BBO for the last 5 years; a pair of barn swallows (*Hirundo rustica*).

Barn swallows build a cup-nest out of mud on horizontal surfaces. This species has adapted very well to human disturbance, and will build nests on the walls and trusses of man made structures. Barn swallows breed as a single pair or in colonies of variable size, ranging from 2 to 40 nests (Bent 1942). The number of swallows in an area depends on environmental pressures such as food resources or suitable nest site availability (Holroyd 1975, Snapp 1976). Fifty-five kilometres east of Edmonton, within the Beaverhill Lake Natural Area, only the BBO laboratory and bunkhouse provide suitable nesting structures for the swallows. Thus, it is not surprising that very few barn swallows are seen in the area during the breeding season. The trusses over the laboratory veranda, built in 1986, have had been used by at least one pair of nesting barn swallows since 1987 (BBO banding records).

In 1992, Kevin Hento and myself were hired to run the observatory for the summer. With us that season was a single pair of barn swallows attempting to build a nest on one of the lab's trusses. We caught the male on May 29 and found that the male had been previously banded in 1989 at the BBO as an after-hatch-year bird, meaning that he was at least one year old at the time of banding. The female, which was unbanded, was banded in 1992 as an after-hatch-year bird as well. Coloured, plastic bands were also applied to the legs of each of the swallows. The female received an orange band and the male a yellow band. Thus began the known record of the breeding history of the pair of barn swallows which have become affectionately known as, "Barney and Betty, the Barn Swallows".

While the male was at least 4 years old in 1992, the actual ages of either bird are unknown. The female's behaviour in 1992 suggested that she was young and was attempting to breed for the first time. Twice they began nests only to have their small clumps of mud fall off the truss. On their third attempt the nest was successfully completed. Unfortunately, Betty did not seem to know how to care for her first clutch. On June 11, the eggs were knocked out of the nest and broke on the floor below. The pair started to build yet another nest on June 12. The laying date of the second clutch was back-dated to around June 18 (using 6.4 days to complete a nest, Samuel 1971). The pair successfully fledged three chicks on August 12.

Monogamy is the rule for barn swallows, and they have also been found to prefer the mate of the previous year if they both survive the winter (Shields 1984). Although breeding site fidelity by mated swallows is very high from year to year (Samuel 1970, Shields 1984), the odds of both Barney and Betty returning were against them, as there is an estimated 50-70% mortality rate for migrating adults (Samuel 1971, Shields 1984). As well, Samuel (1970) indicated that coloured bands are not easily seen on flying or perched swallows. Therefore, expectations were not as high as the hopes that Barney and Betty would return or be detected the following year. The anticipation ended on May 10, 1993 when both an orange and a yellow band were sighted on swallows at the observatory. Barney and Betty had returned to nest for another year.

In 1992, Barney and Betty had a single brood which took over two months to successfully fledge three nestlings from the time of the first attempt to build a nest in May. Due to the lack of nest checks during the breeding season, it was not known how many nest failures the pair had during the unusually long brooding period (Samuel 1971, Ehrlich et al. 1988). In 1993 and 1994 the pair was able to produce two broods each year. At the time of the first nest check on June 8, 1993, there were already 5 chicks in the nest. This brood went on to fledge on June 29. By July 12 there was a new nest built on another truss which had 4 unhatched eggs on July 28. All four eggs hatched and the young fledged over the weekend of August 21-22.

On June 21, 1994 the first nest check discovered 4 nestlings. The fledging date of the first brood was not recorded, however Betty was preparing a new nest by July 9. By July 29, two out of five eggs had hatched, dating the time of laying around July 14 (Samuel 1971). Again, the fledging date of the second brood is unknown, but juveniles were recorded flying, being caught, and being banded on August 14, 16, and 19. The latter brood seems to have been produced in a relatively short period of time compared to the previous broods that went from laying to fledging in the normal five to six week period (Samuel 1971, Ehrlich et al. 1988).

Barney and Betty were noticed to be adding new material to an old nest on June 2, 1995. On June 16, they had a clutch of 5 eggs. By July 5, all the of the nestlings had hatched and were banded, but the fledging date was not recorded. The unexplained disappearance of both Barney and Betty after producing their first brood in 1995 raised some concerns on whether or not they would return the following spring.



All concerns were eased when they returned on May 17, 1996 for the fifth straight year. By June 5, their first clutch of five eggs had been laid. They were hatching on June 21, when three nestlings were found with two eggs. Eight days later, all five eggs had hatched successfully, with all nestlings receiving shiny new bands the very next day. All five nestlings were preparing to fledge on July 9. Nesting activity of Barney and Betty continued as their fledglings flew about the compound, and a nest check on July 25 found another clutch of five new eggs. While there were no fledge dates recorded, all nestlings were healthy when banded on August 18 and there were no subsequent signs of a failed nest. This marked the first year that Barney and Betty produced two complete clutches of 5 eggs since the beginning of their recorded history. The addition of 10 more offspring in 1996 meant that over the past five seasons the couple have produced 36 new barn swallows, for an overall production of 7.2 young a year. Strong pair fidelity was demonstrated when Betty was courted by one other male

in 1996, but still chose her reigning mate.

Other banded barn swallow pairs have occupied one other nest on another truss of the observatory around 1.5 metres from Barney and Betty's in each of 1994, 1995 and 1996. The capture of some these swallows showed that it was never the same pair twice. While it has been hoped that some of the individuals were the offspring of Barney and Betty, yearlings usually disperse to other areas with only the mating pair returning to the place they bred the previous summer (Medvin et al. 1987). The recapture of some of the other swallows supports this theory, as none have been the offspring of Barney and Betty.

The arrival of barn swallows each spring in the observatory area has been between May 2 and May 12 (BBO data). One can only hope that the most successful breeding season by the pair thus far will encourage yet another return. All we can do now is hope they had a safe journey to South America, and await the return of the "Swallows of Beaverhill" in May.

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