

MANITOBA CHIMNEY SWIFT INITIATIVE (MCSI) - ST ADOLPHE 2008

Chimney Swift activity was monitored throughout the 2008 season in St Adolphe. Considerable community interest in MCSI activities was apparent with many passersby stopping to watch the chimney tops. A. and S. Leclerc, and Fr G. Michaud deserve special mention as valued ongoing participants. Thanks to A. Lagasse and MCSI committee members for their regular observer contributions. Also, the RM of Ritchot provided much appreciated support for the construction of the Ferry Site tower. This new site was monitored but no flyover activity or entry into the Ferry Site tower was observed after construction. Four St Adolphe chimneys were used by Chimney Swifts and observed. Information regarding typical seasonal patterns of nest-chimney use and observation highlights of 2008 follow based on 122+ hours of observation.

Table 1. Chimney Swift use of 4 St. Adolphe chimneys in 2008: chimney usage is interpreted from the season's observations; Max. no. swifts is the maximum number of swifts known to be in the chimney at one time.

Chimney	First roosted	Last roosted	Chimney usage	Max. no. swifts	No. of Day obs.	No. of Roosting obs.	No. of Incidental obs.
Church	May 18, 2 swifts	Aug. 28, 4 residents Sept. 2 last roost - 2 migrants**	Fledged approx. 2 juveniles; roost for pre- & migratory swifts	8*	36	30	4
Club Amical NE	May 17, 2 swifts	July 13, 1 swift; July 14 0 swifts	Failed nest after storm July 11/12; move to SE	2	10	13	0
Club Amical SE	July 13, 1 swift ; July 14, 2 swifts	Aug. 13, 1 swift – other at church?	Roost here only after failed nest attempt	2 from NE	10	13	0
Main St. residence	May 18, 1 swift; June 17, 1 new arrival = 2 roosting	July 31, 1 swift – other at church?	Stopped tending nest July 22 Failed nest	2	12	9	8

* The maximum of 8 Chimney Swifts at the Church likely represents 2 adults from each of Club Amical and Main St, plus the Church's nesting pair of adults and their 2 juveniles, congregating prior to migration.

** 0 birds on Aug 29, 2 on Aug 30-31, 0 on Sept 1 and Sept 3-4

St Adolphe is a nursery community for Chimney Swifts. Three buildings – the Church, Club Amical, and a private Main St. residence, have old brick chimneys with characteristics suitable for nesting. These chimneys were observed to be occupied by Chimney Swifts in 2007 and again in 2008, and were monitored throughout the 2008 season. Although there was a small congregation of Chimney Swifts in the Church prior to migration, no major, season-long roosting chimney has been found in St Adolphe.

Observations followed the same protocol whether made during the day, at the roosting hour, or incidental to other activities/visits to St Adolphe. Recording the entry or exit time of a Chimney Swift yields two intervals: a) between-visit interval (exit to entry) and b) duration in the chimney (entry to exit), also known as the turnaround time. New observations recorded in 2008 included: direction of flight toward/away from the chimney; characteristics of entry: speed, orientation, number of attempts required to enter; whether the Chimney Swifts were vocal or quiet; and the group size of approaching or departing Chimney Swifts. Trailing wing edges were observed on some (rare!) occasions and notches/discontinuities indicated moulting in adults; juvenile swifts had complete/continuous wing edges. This information collectively allowed for some new understandings of Chimney Swift behaviour. The individual identification of some birds was possible e.g., the June-arriving Chimney Swift at the Main St. chimney had a halting, fluttery orientation during entry. Two juveniles grouped together to enter/exit the Church chimney during August.

A typical seasonal pattern of use for a nest-chimney involves a shift of when the Chimney Swifts enter the chimney, how many enter/exit together, amount of time spent in the chimney, and what activities occur within the chimney.

- **Arrival in mid-May:** Chimney Swifts arrived in St Adolphe around May 17th to 18th. Chimney Swifts typically entered the chimney in pairs during the roosting hour ($\frac{1}{2}$ hour before sunset to $\frac{1}{2}$ hour after sunset) to rest for the night.
- **Late May to early June:** pairs of Chimney Swifts may enter/exit the chimney slightly ahead of the roosting hour, when they enter together for the night. Nest building is underway and the Chimney Swifts are using their sticky saliva to “glue” small twigs onto the rough brick surface to build a small cup shaped nest. A nest recovered from the Main St. chimney weighed ~15 g or $\frac{1}{2}$ ounce.
- **Mid-June to late June:** Chimney Swifts are now entering the chimney individually, but consecutively, during the daytime and these entries can be separated by several minutes. The duration in the chimney can be long e.g., 30 minutes. The pair leaves the chimney together or within minutes of each other. Nest building is ongoing, then mating, and egg-laying takes place. Based on the Kyle’s work in Texas, it takes 18-20 days for eggs to hatch and both adults take turns incubating the 2-7 eggs. At this stage, a Chimney Swift entering the chimney to take a turn tending the eggs, changes up with its partner very quickly – turnaround times are often less than 30 seconds. One attending adult is in the chimney at most times or there are short unattended absences.
- **Early to late July:** Once the eggs have hatched, entry and exits become more frequent as the adult Chimney Swifts feed their young. Two entries and two exits within an hour; quick turnarounds < 1 min.; 30 min. between visits are typical in early

July. By late July, there can be 8 entries and 8 exits in an hour, with stays of several minutes in the chimney. The between-visit intervals can be variable e.g., 1 to 15 min., as the Chimney Swifts may use the chimney in bursts separated by lulls.

- **Late July to early August:** The Kyle's determined that it takes 28-30 days for a hatched chick to grow enough to fledge from the chimney. The young Chimney Swifts have grown rapidly and exercised their wings on local trips within the chimney. Drawn by their parents to the top of the chimney a first flight occurs – the juvenile is fledged. The number of Chimney Swifts seen together in the airspace is at the maximum around the time of fledging and they are very vocal.
- **Early to mid August:** It becomes extremely confusing trying to track the individual swifts once fledging has occurred! Chimney Swift behaviour is now dynamic and use of the chimney is variable. Local Chimney Swifts interact in the airspace; group sizes in the airspace are reduced at times as the birds range farther away from the nest-chimney to feed; adults may change the location of their roosts; juveniles are racing about practicing flying skills and enter into the chimney to rest. Numbers of roosting birds may not provide the total picture of how many swifts are about – it is difficult to know if the chimney is empty at the start of an observation period; adults may not be the only birds entering; a variety of change ups may occur e.g., adult-adult; juvenile-adult; adult-juvenile; juvenile-juvenile.
- **Mid to late August:** a crossover occurs again when the juveniles have grown sufficiently and mastered their flight skills enough so they can be on the wing during most of the day. Chimney Swifts enter the chimney as single birds or in small groups, during the roosting hour, or slightly before, to roost for the night. The exception is when extremely high winds (> 50 kph) and thunderstorms occurred. Under those conditions Chimney Swifts entered the chimney for rests (up to ½ hour stretches or more) or for protection (until the storm broke). A small, community roosting group may assemble at a chimney while other nest sites are abandoned for the year. Migration then starts and dispersal of the Chimney Swifts is reflected in the decline of roosting birds in a chimney. An absence of roosting birds followed by a roosting pair for one night was interpreted as departure of the resident birds and overnight use by a migrating pair.

Summary: Observing in the early part of the season to enumerate roosting birds requires a shift to daytime counts for the best assessment of the stage of nesting. Then, a shift back to roosting hour observations is necessary for pre- and migratory monitoring of Chimney Swifts. Simultaneous observations of all chimneys in a local area are required to track birds moving between nesting and roosting sites.

The specific dates for the seasonal events described above is highly variable between years of study (2007 and 2008) and among the three nest chimneys in St Adolphe in any year. This variation likely is based on factors such as the winter survivorship of adults, age/experience of nesting adults, weather factors that influence the abundance of insects (aerial plankton) that the Chimney Swifts feed on, and the growth rate of juveniles to reach a body size suitable for migration.

Highlights of the MCSI 2008 St Adolphe season include documenting:

- **Recruitment of partner after presumed adult mortality.** Although occupied by a pair in 2007, the Main St chimney had only one Chimney Swift return on May 18th. Daytime entry/exit data suggested nest building was continuing in the absence of a mate. A second Chimney Swift arrived June 17th and seemed to partner in a typical nesting sequence. This second bird was identified easily by its tentative approach and entry into the chimney.
- **Nest failures.** A) The abandonment of the **Club Amical NE** chimney occurred on Sunday, July 13th after two days of extreme rain, hail, and high winds. Only one bird entered/exited the NE chimney while one bird used the SE chimney for the first time this season. Roosting hour observations on July 14th recorded 0 in the NE chimney and 2 Chimney Swifts in the SE chimney. The nest may have fallen from the wall or the juveniles may have starved due to prolonged lack of feeding. B) Chimney Swifts stopped using the **Main St. chimney** during the day on July 22nd and only 1 bird roosted for the night. The following night, 0 Chimney Swifts roosted but 2 came in for the night on July 24th. Thereafter, only 1 bird roosted until the chimney was abandoned for the season around Aug. 14th. The late arrival of a mate is the probable reason for cessation of nesting – with at least 50 days required to lay eggs and fledge young before migration, the birds likely ran out of time and did not progress to egg laying (visual inspection in September showed a new, empty nest on the east wall/no egg shells in the cleanout trap).
- **Non-parental adult use of chimney (visitors - helpers?):** Two adult Chimney Swifts were using each of the 3 chimneys until the nest failures occurred. Then some new patterns of chimney use appeared. The maximum number of Chimney Swifts using the Church chimney increased to 4 on July 24th. New adult Chimney Swifts were entering/exiting the Church – a group of 3 fast flying, entry-proficient birds flew in and after 30 sec., flew rapidly out. These entry/exits were not similar to slower flying, tentative entries identified with younger swifts. Also, two quick exits from the Church near the end of the roosting hour coincided with the observed entry of 2 swifts at the Main St. chimney, indicating the two had entered the Church then relocated to the Main St Chimney to roost. Such shifts in activity can only be established with simultaneous observations at chimneys.
- **Rest in chimney by juveniles/adults.** After the transition to predominantly roosting-only observations at the end of the season, there were occasions when Chimney Swifts would enter/exit the Church chimney well before the roosting hour. Birds had been in the chimney prior to the start of observations when winds > 50 kph and took refuge when severe thunderstorms were in progress.
- **Entry/exit past pigeons and starlings.** Entries were made past pigeons and starlings resting on the chimney rim; pigeons also delayed entries of Chimney Swifts – they were seen to fly around until the pigeon left. No Chimney Swift was seen to exit past a bird on the rim of the chimney. Some exits were made at a considerable time after the resting birds departed.
- **Communal roost at Church prior to migration.** Although 4 swifts roosted in the Church starting on July 31st, the numbers of roosting birds varied between 1 and 4 thereafter. On Aug. 15th, 5 swifts roosted and then a daily increase of 1 swift raised the roosting total to 8 on Aug. 18th. Roosting numbers changed again on Aug. 26th

when 7 swifts roosted; 4 swifts roosted on Aug. 28th; then 0 swifts on Aug. 29th, likely the day when St Adolphe community swifts left the area.

- **Migrant Chimney Swifts roost at Church.** On Aug. 30th, 2 Chimney Swifts came to roost, in unusual fashion, shortly before sunset. They made 4-5 attempts at entering, characterized by veering off and looping back, before successfully roosting for the night. These appear to be migrant swifts entering the chimney for short term use; 2 roosted again on Aug. 31st and had good first attempt entries. No swifts roosted on Sept. 1st. Finally, 2 swifts used the Church chimney for the last roost of the season on Sept. 2nd - quick entries an hour before a rainstorm started at the end of the roosting hour.
- **Main St. chimney case study:** A major chimney fire occurred 13 years ago and it is assumed that all contents were incinerated. In early May 2008, a nest plus eggshells, feathers etc. were recovered from the cleanout trap. Also, during a visual inspection, 0 nests were adhered to the inside of the chimney. In mid-September 2008, a nest was observed on the east wall ~13.5' down from the chimney top. It appears that in 12 nesting seasons subsequent to the fire, there was 1 year with successful nesting (no measure available) and 1 failed nest attempt this current year. If the chimney was in fact not used for nesting for about 10 years after the fire, it does not seem to reflect habitat as a limiting factor to Chimney Swift population growth in St Adolphe. However, this may reflect an expansion of a previous, small population into another local chimney.
- **The Ferry Site tower:** construction was finished on June 7th. The tower was watched during Main St. observations and no flyovers or attempted entries were noted. Thermal probes were installed in the chimney and ongoing measurements were taken by S. Leclerc. Early indications are that a suitable temperature profile exists for Chimney Swifts to nest successfully in the tower.

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