



Project No. 12-25
Students For Swifts: Engaging Students in Chimney Swift Stewardship

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Project Rationale and Goals

The goal of the project is to empower students and educators to take direct conservation action and promote Chimney Swift awareness in Nova Scotia Communities. With funding from NS HCF, we worked with New Glasgow Junior High School (previously Temperance Street School) as well as Middleton Regional High School, to develop and implement a program that involved students in activities that promote conservation of Chimney Swift habitat at their school and in their communities.

2012-13 Activities and Results

Activity	Result(s)
Install cameras at schools	Surveillance cameras set up, and maintenance of cameras and recording devices coordinated, at New Glasgow Junior Highschool (previously Temperance Street) and Middleton Regional Highschool during Chimney Swift spring and fall migrations in 2012. Middleton School posted link to live camera on school's website. Cameras removed over the winter and will be re-installed for this spring's migration 2013. Footage from cameras used in presentations to students and teachers and posted on YouTube (www.youtube.com/watch?v=oiGJUYPSLw). Key Results: - One school actively promoting Chimney Swifts and increasing awareness amongst Students and Teachers - Two schools actively participating in project. - Maintenance staff (that assisted with camera installation at both schools) aware of the presence of Chimney Swifts in their school chimneys - 100+ students see footage and aware of Chimney Swifts in their school chimneys and communities - 1,024 views on YouTube of Chimney Swifts leaving their roost (May 14, 2012) at Middleton
Plan and develop workshops	September 2013 - initial discussions with principal of Middleton Highschool regarding plans for project; Result: Principal "buy-in" for project secured October 2013 - prepared presentation and materials to introduce teachers to School Swiftwatch Program October 2013- presented School SwiftWatch to 40 teachers (grades 6 - 12) at Middleton Regional Highschool; Results: 40 teachers made aware of Chimney Swifts and the importance of their school to swifts, Teacher "buy-in" secured for linking school swiftwatch to the curriculum and for working with students and teachers to create an interpretative panel for the spring

	<p>November 2013 - presented School Swiftwatch to 6 teachers (grades 7 - 9) at New Glasgow Junior Highschool</p> <p>Key Results:</p> <ul style="list-style-type: none"> - 46 teachers made aware of Chimney Swifts, threats to swifts and the importance of their school and communities to swifts - 46 teachers made aware of potential conservation activities for Chimney Swifts - "Buy-in" from schools and teachers secured for Swiftwatch Program - 5 linkages identified between "Swiftwatch" program and science curriculum and used in planning presentations for students (e.g., Grade 7 science curriculum includes: Threatened Species, Ecosystems and Habitats) - Information used to develop workshops/presentations for students and education kit (guide) for subsequent activities (see below)
Develop take-home materials for students	<p>Take home materials ("How to be a Good Swift Landlord" and Chimney Swift Fact Sheet) developed and provided to students</p> <ul style="list-style-type: none"> - 190 students given materials to take home (Figure 1) - Estimate that approximately 20% of parents were made aware of Chimney Swifts and the importance of the school in providing additional habitat for swifts (effectiveness of the activity will be evaluated at subsequent school visit)
Run workshops; students create artwork	<p>March 2013 - 8 class presentations on Chimney Swifts to Grade 6 and 7 classes at Middleton Regional High School and New Glasgow Junior High School</p> <p>Key Results:</p> <ul style="list-style-type: none"> - 190 students made aware of Chimney Swifts, threats to their habitat, and that their school and community is important to the recovery of swifts - 100% of participants able to identify Chimney Swifts (assessed through survey) - 100% of participants know threats to Chimney Swifts (assessed through survey) - 100% of participants know ways to mitigate threats to Chimney Swifts (assessed through group activity) - 190 students participated in brainstorming ways to increase awareness of Chimney Swifts in their communities at "Swift Night Out" - Students developed 10+ reasons of why Chimney Swifts are important and 20 ideas of how to increase awareness of/appreciation for Chimney Swifts in their communities (Figures 2 and 3). - Smaller group of 24 students (approximately 4 per class) are interested in creating art for interpretative panels; principals have confirmed that students will be creating artwork for interpretative panel and school's participation in Swift Night Out - Students and teachers planning skits/presentations (students' idea) to present at Swift Night Out event
Plan, develop, and distribute education kits for teachers	<p>"School Swiftwatch: Chimney Swift Resource and Education Guide" has been drafted with input from Chimney Swift experts and BSC-Ontario Species At Risk and Education staff.</p> <p>Key Results:</p> <ul style="list-style-type: none"> - 2 schools (and 46 teachers) with the capacity to lead School Swiftwatch Program <p>Expected longer-term: 8+ teachers use materials to lead School Swiftwatch, increasing awareness amongst ~190 students in the 2013-14 school year</p>
Provide schools and school board with one-pager describing how chimneys	<p>English and French brochures designed, provided to schools and teachers (as well as other property owners, Swiftwatch volunteers and partners). Teachers, principals and maintenance staff also provided with one-pager</p>

<p>can be maintained in ways that benefit the schools and swifts</p>	<p>on "How to be a Good Swift Landlord". Key Result: - 46 teachers plus maintenance staff and principals provided with information related to Chimney Swift habitat maintenance.</p>
<p>Interpretative panels erected (ready for spring migration)</p>	<p>Buy-in for erecting interpretative panels confirmed, students currently producing artwork and project on-track to erect interpretative panels this spring.</p>
<p>Additional communication materials created for community using student's artwork (ready for spring migration)</p>	<p>Students had several ideas for how to communicate to the greater community and Project Coordinator will be working with schools and students to implement their ideas in time for the Swift Night Out. For example, students felt their school and potentially the town website would be the right venue to communicate and increase awareness about Chimney Swifts. Students' artwork will likely be included here as well as links to webcams, photos from a Swift Night Out and messages crafted by students themselves.</p>
<p>A Swift Night Out organized at each of the schools during height of swift migration</p>	<p>Swift Night Out planned for both schools for May 2013 during height of Chimney Swift Spring migration. Students plan to give presentations and/or skits to parents and other community members at these events.</p>
<p>Press release to local newspapers promoting swift night out and student's stewardship and outreach activities related to swifts</p>	<p>Press release will be sent out shortly before Swift Night Out and will highlight students' and schools' participation in stewardship for Chimney Swifts. However, in the interim other communications were produced to promote the project. School SwiftWatch and footage from chimney camera were featured at a booth at the North American Ornithologists Conference in August 2012. School SwiftWatch has been further promoted through Twitter, Facebook, and BSC communications (e.g., Latest News, Annual Report). Article written on recent visits to schools and will appear in mid-April Latest News. Key Results: - ~1,000 researchers saw footage and made aware of SwiftWatch Program - Scientific community introduced to the concept of engaging schools and students in research - 87 followers of Students4Swifts on Twitter and 30 tweets related to School SwiftWatch; 700+ individuals aware of program, highlights and successes as well as aware of Chimney Swifts and conservation actions that can be taken by communities - Results of students' brainstorming session on how to conserve swifts posted on Maritimes SwiftWatch Facebook page and viewed by 372 individuals; individuals aware that Chimney Swifts are at risk - 50,000 individuals (Latest News distribution) aware of program, successes and highlights</p>
<p>Follow-up surveys with educators, maintenance staff and school boards</p>	<p>Followed-up with maintenance staff regarding cameras installed and during spring and fall migration 2012, cameras were maintained and there was no disturbance (maintenance or cleaning of chimney to Swifts) Key Results: - Two key roost sites and habitat left undisturbed during Chimney Swift roosting and nesting seasons - 2,579 Chimney Swifts protected during nesting and roosting (total no. of swifts counted at both chimneys by volunteers over 8 nights; maximum count at both chimneys in a single night 652) Longer term: BSC will continue to follow up with schools in 2013-14</p>

Fact Sheet: The Chimney Swift

What's in a name?

- Chimney Swifts are named for their habit of using urban structures, especially chimneys, as roost and nest sites.
- Their scientific name, *Chaetura pelagica*, is derived from the Greek words *chaire*, a "stiff hair, bristle or spine" and *oura*, a "tail". The name refers to the birds' specialized tail feathers, which are spiky on the ends and which help swifts cling to vertical surfaces such as brick chimneys.
- Swifts are unrelated to swallows, although they look similar. Swifts are most closely related to hummingbirds!

What do they look like?

- Superficially resemble swallows in flight but swift wings are longer, more pointed and wing beats are stiff and jerky, unlike swallows' smooth gliding wing beats.
- Wingspan 30 cm; Body length 11-14 cm; Weight 17-30 g.
- Dark, sooty grey-brown body with paler grey throat and streak above eye.
- Very short tail and plump body, giving impression of a "cigar with wings".
- "Song" is a rapid stream of high chattering notes given constantly while in flight.

Why do Chimney Swifts use chimneys?

- Historically, Chimney Swifts built their nests in large, hollow tree trunks, dead snags and possibly caves.
- Swifts also used these as resting places (roosts) at night or during cold and wet days while on migration. Anywhere from one pair to thousands of swifts might share a roost site, but only one pair will occupy a nest chimney.
- Early settlers cleared large tracts of forest, removing natural roost and nest sites. Chimney Swifts found the dark, sheltered environment of brick and stone chimneys and other man-made structures (even abandoned wells, silos, and barns) to be a suitable replacement for hollow trees.
- Both chimneys and hollow trees provide swifts with relatively stable temperatures, shelter from rain, wind, and direct sun, and protection from predators.

Breeding and Nesting

- Pairs mate for life and usually return to nest in the same chimney for many years.
- Builds nest by breaking off dead twigs from branches, gluing first twigs to inside wall of chimney with special sticky saliva, and weaving rest of twigs together, cementing with saliva.
- Nest is approximately 10 cm wide by 3 cm deep, posing no fire risk to chimneys. Nests often detach from wall after breeding season.
- Clutch size ranges from 2-7 eggs, which both parents incubate.
- Chicks hatch after 20 days, leave the nest bowl after 14 days, remaining inside the chimney while learning to fly. After 30 days, chicks are ready to leave the chimney.

Diet

- Chimney Swifts are *aerial insectivores*, which means that they prey upon flying insects such as mosquitoes, flies, midges, caddisflies, etc. Other aerial insectivore birds include flycatchers, nighthawks, and swallows.

Global Range and Migration

- Chimney Swifts breed from eastern-central Saskatchewan to Nova Scotia, and south to Texas and Florida. In Atlantic Canada, swifts are known to breed in Nova Scotia and New Brunswick. Swifts have been observed on Prince Edward Island and in Newfoundland, albeit without breeding evidence.
- Swifts arrive in the Maritimes in early to mid-May and congregate in communal roosting groups before pairing up and dispersing to nest sites. In late summer, after breeding, swifts congregate again and usually leave the Maritimes by mid-September.
- Chimney Swifts spend the non breeding, or "wintering" months in the upper Amazon River basin region encompassing Peru, northwestern Brazil and northern Chile.
- The swifts' wintering grounds were discovered in 1943 after an explorer in Peru came across indigenous people in possession of tiny metal bird bands. The bands were traced back to swifts banded across North America including Tennessee, Ohio, and Ontario.

Population Status and Protection in Canada

- The Canadian Chimney Swift population has declined by 95% since 1968, according to the Breeding Bird Survey, and is currently estimated at 11,820 breeding individuals, or 25% of the global population.
- Chimney Swifts were designated as Threatened in 2007 by the *Committee on the Status of Endangered Wildlife in Canada* (COSEWIC). The designation indicates that Chimney Swifts are likely to become Endangered if the factors causing the swifts' decline are not reversed.
- In 2009 Chimney Swifts were listed as nationally Threatened under the *federal Species at Risk Act*. The act makes it an offence to disturb or destroy Chimney Swifts and their residences. Swifts are also protected by law under the *Migratory Birds Convention Act* (1994).
- Chimney Swifts are listed as Endangered by the Provinces of Nova Scotia and Ontario.

Threats to Survival

- Loss of habitat, especially loss of chimneys suitable for roosting and nesting. Given the current rate of chimney conversion and demolition, it is estimated that within 30 years virtually all suitable swift habitat in Canada will be gone.
- Decline in abundance and diversity of insect prey. Insects also face habitat loss and are the target of eradication programs to prevent the spread of diseases like West Nile Virus. Pesticide use in agriculture also has a heavy impact.
- Weather events: In 2005, Hurricane Wilma displaced thousands of migrating swifts. Approximately 1,500 swifts were found dead in the Maritimes alone.
- Chimney sweeping during the breeding season (mid-May to mid-September) displaces roosting and nesting swifts and destroys their nests. Renovations can also disrupt nesting or roosting swifts.

For more information and to find out how you can help protect this Threatened species, contact Maritimes SwiftWatch

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Project Partners: Blomidon Naturalists Society, Environment Canada, Kennebecasis Naturalist Society, Mersey Tobacac Research Institute, Nature NB, Nova Scotia Bird Society, Pictou County Naturalists Club.

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Figure 1. Chimney Swift Fact Sheet provided to teachers, students and parents.

Are Chimney Swifts important?

- They eat creepy crawlies that crawl in your ear.
- They are endangered
- They are cute
- Yes
- They make us more aware of ~~our~~ environment
- They are..... AMAZING!

Figure 2. Example from student brainstorming exercise of "Why Swifts Are Important".

Tell Your Parents
Put it on a billboard
Put it in the Newspaper
put it on the News
Make a play
Video on Youtube

Figure 3. Example of student brainstorming exercise “How Can We Share our Swift Knowledge”.