# BRITE INTERNSHIP ADVERTISEMENT FORM

## Project

**Title:** Barn Swallow Conservation in the Little Campbell River Watershed  

**Location:** South Surrey, South Langley, White Rock, BC  

**Term:** 6-8 weeks  

**Funding Requested from BRITE**

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<th><strong>SPONSOR</strong></th>
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| **NAME:** Michelle Jackson  
**ORGANIZATION:** A Rocha Canada  
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**EMAIL:** michelle.jackson@arocha.ca  
**PHONE:** 604-542-9006 (office) or 604-802-1675 (mobile) | **BRANCH / SECTION:**  
**TITLE:** Conservation Research Biologist | **FAX:** |

## Topic or Research Question

Briefly describe the research question being addressed through this project.  

**Barn Swallow nest success and habitat augmentation**

## Keywords

List key words to describe the field of study and project.  

- Ornithology  
- Barn Swallows  
- Species at Risk  
- Nest success / monitoring  
- Insect surveys

## Project Description & Relevance

Provide an overview of the context for the internship and why it is important. Describe the project, its tangible, intended outcomes and the role of the student.  

**Overview:**  

A Rocha is an international nature conservation organization that is committed to environmental action through community-based conservation projects, promoting the stewardship of species and their habitats. A Rocha’s approach to conservation includes three elements: (1) scientific research, (2) community-based conservation, and (3) environmental education. A Rocha delivers stewardship projects in 19 countries on six continents and is partnered with the International Union for the Conservation of Nature (IUCN).  

A Rocha Canada, established in 2000, has been actively involved in habitat stewardship in the Little Campbell River watershed since 2003. Our work in the watershed includes species inventories and habitat assessments, habitat stewardship and restoration (often working in partnership with other organizations and private landowners), and environmental education (focused on school and community groups). We are actively engaged with over 20 partner organizations. Brooksdale Environmental Centre functions as a hub for research, community agriculture, sustainable living, and environmental education.  

Swallows have been declining disproportionately to other bird species in North America for several decades, likely due to loss of nesting and foraging habitat, declines in prey (insect) abundance, and climate change. In particular, Barn Swallow populations have declined by 4.73 percent per year from 1970 to 2015 in British Columbia and were federally listed as threatened in Canada in 2017. In an effort to better understand the causes of swallow decline and their status locally, A Rocha began monitoring Barn Swallow nests within the Little Campbell River watershed in 2014. We have continued this monitoring each year, and in 2019 we monitored 41 active nests in 28 buildings throughout the watershed. Over time we have been growing a citizen science component to this project through encouraging landowners to monitor their own Barn Swallow nests. In 2020, we collected insect samples from two swallow foraging fields to determine availability of swallow prey. This data was collected as part of a larger project examining diversity and biomass of swallow prey across North America, and will be ongoing.

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Interns on this project will have the opportunity to contribute to A Rocha’s on-going swallow monitoring program along with developing their own research that will further swallow conservation in BC. This project will contribute to general knowledge about Barn Swallow ecology and the causes of their decline in BC while taking a local-scale approach to species conservation and habitat protection. A Rocha focuses its conservation work at the watershed-level as a way to meaningfully assess ecological relationships on a landscape scale, as they extend across jurisdictional boundaries. Interns will thus be expected to focus a substantial portion of their projects within the Little Campbell River watershed. However, swallows are clearly not limited by watershed boundaries, and the intern may also explore the causes and implications for swallow decline and conservation at a broader scale.

## Project Details

Nests at existing Barn Swallow nesting sites will be monitored at least weekly using a live-feed camera on an extendable pole. Nest sites are located primarily on private property with permission from land-owners, as well as in public spaces (e.g., Campbell Valley Park and the Semiahmoo Fish and Game Club). New sites may be targeted using aerial imagery, mailing letters and in-person visits to land-owners, and distributing posters in public spaces. We will also distribute monitoring equipment and provide training to volunteer land-owners who are willing to monitor Barn Swallow nests on their properties, thus increasing the number of nests monitored.

Interns will have some flexibility to design their own research questions based on their background, degree of experience and specific interests. Using data from past Barn Swallow monitoring along with additional data collected in 2021, potential research questions include:

1. How is Barn Swallow nest success affected by ambient temperature?  
2. How is nesting density of Barn Swallows affected by surrounding land cover and agricultural practices?  
3. Several landowners report no longer having nesting Barn Swallows, despite having them in the past. What are the causes of this loss of nesting activity?  
4. What is the availability of swallow prey (mainly insects) in the Little Campbell River watershed; how is swallow prey affected by surrounding land cover?  
5. How often do swallows reuse nests, and does this affect productivity?  
6. What are the characteristics of Barn Swallow nests and/or building structure that most influence nest success?  
7. What habitat augmentation practices can be used to attract Barn Swallows to sites (e.g., artificial nest structures, wooden platforms or cups, farmland ponds, hedgerows)?
Interns may also have the opportunity to design and/or contribute to nest habitat augmentation (including the construction of artificial nesting structures) for breeding populations of Barn Swallows at two sites within the Little Campbell Watershed, including A Rocha’s Brooksdale Environmental Centre.

The intern will work directly under the supervision of A Rocha Canada’s Conservation Research Biologist, Michelle Jackson and A Rocha’s Conservation Science Director, Christy Juteau. Depending on the nature of the project and the intern’s interest, the intern may work remotely and communicate regularly with his/her supervisor. Opportunities available for the intern include conducting regular nest surveys, helping to design and conduct insect surveys, using GIS to map land cover and the distribution of swallow nest locations, and conducting literature reviews and statistical analyses. The project might involve spending a considerable amount of time in the field, while computer work will take place in an office at A Rocha’s Brooksdale site or remotely. The final outcome of the project will be a written report and formal presentation of the results at a symposium held at Brooksdale.

Skills required:

Some familiarity with ornithology and bird sampling techniques is required. Experience monitoring bird populations, including nest surveys, and GIS would be ideal, but the project can be refined to fit the experience and interests of the intern.

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**EXPECTED DELIVERABLES:**

Written report and oral presentation of project results
Statistical analysis of data
Digital copies of data and analysis

Revised April 2009