

Project Title: Connecting Costa Rican and Canadian kids through the Motus Wildlife Tracking System and our shared migratory birds.

Project Manager: Lilly Briggs, PhD, Founder & Director of [Finca Cántaros Environmental Association](http://www.fincacantaros.org) / Email: lilly.briggs@fincacantaros.org /WhatsApp: +506.8455.3271

Lilly Briggs holds a PhD in environmental education and the human dimensions of conservation from the Department of Natural Resources at Cornell University, Ithaca, NY. Throughout her graduate studies and postdoctoral years (which include a Masters of Environmental Studies from York University in Toronto, ON, as well as a postdoctoral associate position at the Cornell Lab of Ornithology), Briggs led the development and implementation of an environmental education curriculum focused on birds, conservation and citizen science in Latin America on behalf of the Cornell Lab. Her years of experience in the environmental education field, particularly working in different Latin American contexts, allow her to successfully execute projects of this nature.

Implementing institution: Finca Cántaros Environmental Association (FCEA) is a non-profit organization legally established in British Columbia, Canada and physically based in San Vito, Coto Brus, Costa Rica (www.fincacantaros.org; Finca Cántaros de Linda Vista, San Vito de Coto Brus, Costa Rica). We are about to acquire legal status as an association here in Costa Rica.

Purpose:

The purpose of our project is to use our on-site Motus Receiver (part of the Motus Wildlife Tracking System, described below), in combination with hands-on environmental education and science activities available in Spanish, to create a pilot educational program connecting kids in Costa Rica with those in Canada through our shared migratory birds. Among the desired outcomes of our project, we seek funding from CCBC to realize outcome number two:

1. To develop, as well as adapt and translate, then pilot, hands-on environmental education and science resources in Spanish to teach Costa Rican youth about: the Motus network and the meaning of the citizen or community science it represents, migratory birds, why we should appreciate migrant species and take responsibility for their protection, and how Motus contributes to our understanding of them. FCEA is developing resources independently, and will collaboratively adapt and translate English resources with academic/nonprofit partners, for piloting with local youth between the ages 10-14.
2. **To arrange field trips for local youth in San Vito, Costa Rica to visit FCEA's Motus Receiver in order to learn in-person how one works and why it is important.**
3. To arrange virtual exchanges via Zoom for youth in Costa Rica and Canada to discuss their shared experiences with Motus activities and migratory birds.
4. To implement pre- and post-test surveys to evaluate how the above activities impact participant knowledge about Motus, citizen/community science, migratory birds, migration, and more, as well as attitudes toward migrant species and their conservation.
5. To organize educator trainings to build capacity for others beyond those involved in this pilot to implement the resources we develop/adapt, and thus extend our reach and impact.

6. To use this pilot as the foundation for establishing a sustainable continuation of the program over the long-term which would involve an increased number of participants of more diverse ages, as well as expanding our portfolio of curricular resources. The long-term program would also aim to engage participants in hands-on action, like tree-planting.

Description and Methods:

Background

The successful protection of migrant birds requires the strategic application of efforts and resources throughout the Western Hemisphere, given that the seasonal breeding, non-breeding and migratory stopover territories of these species cover multiple countries. The Motus Wildlife Tracking System (WTS) contributes important data to these efforts. Led by the organization Birds Canada, it is an international collaborative initiative representing researchers, educators, organizations, and individual citizens who set up receiver stations all over the world in the name of science, conservation and education. The network is called *Motus* for the Latin meaning of this word—movement—given that these receivers use “automated radio telemetry” to track the *movements* of hundreds of individuals of birds, bats, and insects to better understand their migration ecology as well as their conservation needs throughout their life cycles. Additionally, the Motus WTF creates meaningful environmental education opportunities that highlight connectivity and thus the need for shared appreciation of and responsibility for migrants in places that may seem distant and unconnected, particularly to youth audiences.

FCEA worked with Birds Canada, who provided the Motus Receiver equipment, as well as Costa Rican collaborators from the organization Proyecto Cerulea, trained in Motus Receiver installation and now coordinators of the Central American Motus Working Group, to set up what was only the second Motus Receiver in all of Costa Rica at the time. Our Motus receiver has already detected seven Swainson’s Thrushes (SWTH), some of which breed in British Columbia, and many use Costa Rica (and the Finca Cántaros property) as one of their stopover spots.

Three of the SWTH that the FCEA Motus Receiver detected were captured and tagged in BC by academic researchers who are not only using the Motus network as part of their scientific research, but have developed Motus and SWTH-focused educational science resources that they will work with FCEA to adapt, translate and field-test in the Costa Rican context where FCEA is based. FCEA staff is also exploring opportunities to help adapt and translate resources developed by Birds Canada. Finally, FCEA is developing its own original Motus environmental education resources. All curricular resources will use the connectivity between Costa Rica and Canada created by migrants like SWTH—and the real-life data collected by Motus about the movements of these species between the two territories—as a central theme to engage students in science learning, and to promote appreciation for and conservation action on behalf of these shared birds. Environmental education is widely considered one of the most important tools in the conservation toolkit, particularly environmental education targeted at youth audiences.

We will pursue the following methodological approaches to our project, with prior awareness that we must be flexible and adapt as needed over the course of implementing our activities:

1. To develop, as well as adapt and translate, then pilot, hands-on environmental education and science resources in Spanish:
 - Together with Motus partners who have previously expressed a commitment to this educational collaboration, we will identify existing Motus-oriented curricular materials that we would like to adapt, translate and field-test. The adaptation process will take into account the cultural context and language. FCEA staff with experience in curriculum adaptation and implementation will work on the materials, apply them with local kids by inviting them to the FCEA property for activity sessions on three separate occasions, and later modify activities based on our analysis of what does and does not work.
 - We will establish the educator(s) in British Columbia who will simultaneously carry out the same activities, including the field trip to visit a local Motus Receiver, so that after the three activity sessions we can collectively culminate in a Zoom session.
2. **To arrange field trips for local youth in San Vito, Costa Rica to visit FCEA's Motus Receiver in order to learn in-person how one works and why it is important.**
 - We seek funding through CCBC to secure transportation for youth in the area to visit the Motus Receiver located on the FCEA property.
 - We also seeking funding to cover snacks for participating (essential in any activity in Costa Rica as learned through prior experience) as well as the basic cleaning costs.
 - We will reach out to several of the local schools with whom we have a prior relationship through the Children's Forest of Coto Brus project, with the goal of enlisting three schools to bring 10 students to FCEA three times. Given the family-oriented culture in Costa Rica, we will allow one parent or family member to accompany each student, plus 2 teachers/administrators from each school, with flexibility for an additional 3 individuals (student, parent, teacher or administrator) to participate, capping the number of people at 25.
3. To arrange virtual exchanges via Zoom for youth in Costa Rica and Canada to discuss their shared experiences with Motus activities and migratory birds:
 - As part of the curricular activities we conduct at FCEA, we will dedicate 1 hour to a virtual exchange with a partner school in British Columbia as a culmination of the pilot.
4. To implement pre- and post-test surveys to evaluate how the above activities impact participant knowledge about Motus, citizen/community science, migratory birds, migration, and more, as well as attitudes toward migrant bird and their conservation:
 - These surveys will be basic and for internal use only at this stage, and not for academic publications at this stage. The questions will be designed to directly mirror the activities.
5. To organize educator trainings to build capacity for others beyond those involved in this pilot to implement the resources we develop/adapt, and thus extend our reach and impact:
 - We will work with local and regional partners to identify educators interested in applying our curricular resources in their specific educational contexts.
6. To use this pilot as the foundation for establishing a sustainable continuation of the program over the long-term which would involve an increased number of participants of more diverse ages, as well as expanding our portfolio of curricular resources. The long-term program would also aim to engage participants in hands-on action, like tree-planting:

- This component of the project will involve an analysis of our survey results, focus group discussions of those involved in the pilot, and several planning sessions to reflect on all the data and experience gained in order to organize next steps.

Timetable:

January-August 2022

- Work with partners to identify the educational resources FCEA will adapt and translate.
- FCEA will continue to create its own environmental education resources.
- Reach out to the 8 local schools in order to coordinate visits of three different groups to FCEA starting in September (to coincide with the return of the migrants).
- Coordinate with partners in BC to facilitate (roughly) the same activities simultaneously, in order for youth to be able to share experiences during a culminating Zoom session.

September-December 2022

- Receive the 3 different groups of 10 youth at FCEA three times, during which we will show them the Motus receiver, implement the activities, and conduct the virtual exchange.
- Document the experience and collect data through the pre- and post-tests.
- Collect feedback from parents and teachers.
- Organize focus groups and strategic planning sessions between FCEA staff and partners to reflect on all the data collected, experiences, and lessons learned.
- Develop a strategic plan for modifying and implementing the program again in 2023.

Budget:

1. Bus transportation for each of the 3 groups to come to FCEA 3 times: $9 \times \$60 = \540
2. Snack costs for 25 participants: $9 \times \$30 = \270
3. Cleaning costs for using the “Rancho Grande” educational space on the Finca Cántaros property: 9 visits x 2 hours of cleaning (1 hour prior and 1 hour after) x $\$3/\text{hr} = \54

Total: \$864

Matching funds or resources: FCEA is able to designate \$2500 of its 2022 budget for this project; we are applying for funding from other sources found in the Terra Viva Grants Directory to increase our probabilities of acquiring additional funds; our academic partner has written us into one of their submitted grant proposals for 2022 funding; and we have already secured the commitment of a private donor who will fill in the funding needs for 2022 that we are unable to acquire (if we demonstrate our best efforts to secure funding from other sources).

Continuity: The goal of this pilot is to establish the groundwork for continuing the project beyond the expiration of the grant, at the very least throughout 2023. To that end we are working with academic and non-profit partners, as well as a private donor, to secure funding.