



Community-Based Research (CBR) Project Proposal Form

U-Links Administration Only

Project Number (automatically generated by CBR database): 5029

Recommended Courses and/or Disciplines (i.e. GEOG4030Y, FRSC4890Y, IDST3700Y/3710H/3720H, ERSC3160H, PSYCH or Alternatives):

Recommended Faculty Advisors:

PROJECT TITLE:

Delineating the Velocity of Climate Change in the Haliburton Highlands for the HHLT

A – CONTACT INFORMATION

Date: November 27, 2022

Contact person: Ralph Baehre

Phone: 613-334-5865(C); 705-448-9168 (H)

Email: ralpcoll93@gmail.com

B – COMMUNITY ORGANIZATION

a) Organization's name and address:

Haliburton Highlands Land Trust
739 Mountain Street
P.O. Box 1478
Haliburton, ON K0M 1S0
Telephone: 705-457-3700

b) Briefly state the organization's purpose and the products or services offered:

The Haliburton Highlands Land Trust (HHLT) is a not-for-profit, non-governmental organization and registered charity dedicated to conserving the natural environment and enhancing quality of life in the Haliburton Highlands.

Our conservation efforts include:

- Acquisition of ecologically or historically significant lands or wetlands*
- Establishing interests in lands such as a conservation easement*

Engaging the community in support as volunteers to maintain and protect the properties in perpetuity.

We envision a future where the Haliburton Highlands is characterized by natural spaces and connections that support healthy and representative ecosystems and landscapes.

c) Has an immediate supervisor or board approved this application?

Yes.

C - PROJECT SCOPE

a) Full year undergraduate CBR projects are allotted 220 hours total, per 1-2 students on a single project. The condensed hours are similar to six weeks of full-time work. Full term students would be working on this project from September to April as part of a course, while balancing work from other courses as well. Does the scope of your project fit within this timeframe?

Yes • No • Comments:

b) Select the theme(s) for your project:

• Cultural • Economic • **Environmental** • Social • Other:

c) Based on the timeframe and complexity of your project, please indicate the potential project scale:

• **Single year project**

• Multi-year project (requiring follow up or several parts)

• **Ideal for undergraduate students**

• **Ideal for graduate students (requires specialized knowledge/in-depth consideration of theory)**

d) Is your project appropriate for a single student or a group?

Single student or small group

e) Describe the purpose of the project:

The Haliburton Highlands Land Trust has as its mandate "to conserve plants, wildlife and clean water of Haliburton County to ensure a legacy of forests, fields and wetlands, and the species they nurture." To achieve this goal the HHLT is acquiring lands of ecological and cultural significance for conservation purposes. Informed and science-based decision-making is necessary to acquire and manage these landscapes in perpetuity as is the main responsibility of HHLT. Analytical landscape evaluation processes and tools are seen to be key to HHLT decision-making for new acquisitions, land management, monitoring and stewardship endeavors.

This project has as one its purposes to critically review one method available for estimating the velocity of climate change in the Haliburton Highlands region. A second purpose is to recommend how this method can be applied by the HHLT for achieving its mandate of landscape conservation.

f) How will the project benefit your organization and/or clients?

The value to HHLT of estimating the landscape impacts is multifold, for example: integrating environmental change with landscape and habitat preservation, and so enhancing understanding about biodiversity and conservation strategies for specific areas in response to climate change; helping to identify cascading ecological effects with respect to time-based scenarios; supplementing mitigation efforts to respond to environmental events such as climate change. Recommending a possible framework for the HHLT to estimate the velocity of climate change will give it the chance to respond more effectively and quickly whether reactively or proactively to landscape conservation demands.

g) How will the results of this project benefit Haliburton County?

The project outcome and its future impact is intended to assist the HHLT to acquire and manage its properties for conservation in the wider context of climate change effects in the Haliburton Highlands region, and so Haliburton County. The expectation is that better integration of land conservation in the County should be possible.

D – RESEARCH DESIGN

a) What are the proposed research questions to be answered?

There are several proposed research questions associated with this project:

- a. The Ontario MNRF implemented a framework to analyze the velocity of climate change for purposes of protected areas planning and biodiversity conservation in Ontario**. What is included in this framework? Why was this framework seen relevant for Ontario?*
- b. What were the results of implementing this framework for the Bancroft District?*
- c. How are these results useful for interpreting climate change effects for the HHLT properties and the Haliburton Highlands?*
- d. How can HHLT implement a framework similar to the one mentioned? Would it be possible to prototype the framework for the Haliburton Highlands? What are the benefits? What would be an operations workflow to do so?*

**L.F.G. Gutowsky and C. Chu. 2019. "Velocity of climate change can inform protected areas planning and biodiversity conservation in Ontario." Science and Research Branch, Ontario Ministry of Natural Resources and Forestry.*

***L.F.G. Gutowsky, D. Smith and C. Chu. 2019. "Calculating the velocity of climate change for Ontario. Version 2" Science and Research Technical Manual TM-08. Science and Research Branch, Ontario Ministry of Natural Resources and Forestry.*

b) What are your ideas on how these questions might be answered (i.e. survey, literature review, field work etc.)?

Online review of the main literature pieces and some of the background research. Possibly having direct contact with the specific researchers or others doing similar studies.

Access and review of real time data for the Bancroft District generated by the OMNRF during its studies would be most useful.

During the project, trends documentation would be ideal but will be limited by the data available for sure. Weather data is likely the best choice for this. The technique suggested for this project does have some specific requirements. These should probably be reviewed initially and hopefully the government contacts mentioned will be helpful that way as well.

The 'granularity' of the analysis and the possibility of developing a prototype for Haliburton Highlands likely will depend on the data available, its scale and how it can be managed, e.g., analytical tools required. A regional view of the HHLT's area of concern is the expected outcome. An example HHLT property could be detailed more as a proof-of-concept for applying the methodology to the other properties in the future.

****Note:** the student should have a skill set in statistics, R coding and GIS.

- c) Do you have knowledge of or expertise with these types of research methods?

The HHLT has a volunteer GIS support person who can provide guidance and oversight for the project. There are also other volunteer members of the HHLT that can provide further guidance.

E - SCREENING AND/OR TRAINING

- a) Do the students require any specific screening or training? (e.g. police checks, confidentiality agreements, CPR, WHMIS):

No

EXAMPLES: Projects involving vulnerable populations may require police checks. Some types of field work may involve WHMIS or other safety related training. Students and hosts working on boats need to understand and follow the U-Links Boat Safety Guidelines.

F – RESEARCH ETHICS

- a) Does the research involve human subjects? (i.e. surveys, interviews)

Yes • **No** •

NOTE: If yes, the students may be required to submit an application for ethical review of the research. This process may take several weeks and will need to be taken into consideration when creating project timelines.

- b) If your project involves collecting human subject data (i.e. interview transcripts), would you like access to that “raw” data at the end of the project, in addition to receiving the “summary” of data in the final report?

Yes • No •

- c) Does the organization/employer have policies about research ethics approval?

Yes • No •

If yes, please explain:

G – PROJECT TASKS AND TIMELINE *(This section should be completed by the final draft)*

- a) Please outline the major tasks and timelines involved in completing the project.

These tasks include important information to be gathered, key stakeholders who should be involved, relevant dates for your organization, and critical meetings for the student to attend. Your Coordinator can help you complete this section.

Task: Meet with hosts

Objective: Familiarize students with projects

Date:

Task: Complete detailed project outline/project agreement

Objective: Finalize project details, responsibilities, logistics, etc.

Date:

Task: Initial literature review and delineation of VoCC framework.

Objective: To scope what further data and tools maybe required.

Date:

Task: Final literature review and confirmation as to how the VoCC framework to be implemented.

Objective: Set as endpoint to proceed to next phase, actual data review.

Date:

Task: Project check in and review.

Objective: To set as endpoint to review progress.

Date:

Task: Initial review of framework implementation.

Objective: To set as endpoint for the framework implementation phase.

Date:

Task: Final review of recommendation phase.

Objective: Delineate what minor requirements need to be met yet and how a concluding recommendation is being developed.

Date:

Task: Final presentation of deliverables.

Objective: Closure to the project with presentations and/or workshop.

Date:

b) Indicate important start and end dates for the project, if applicable:

See above.

H – RESOURCES

NOTE: All known and needed resources should be listed in this section (e.g. for project coordination, data collection and analysis, software, hardware, photocopying, office supplies, workspace, travel expenses, food and refreshments, training, etc.). Students' travel expenses are reimbursed by U-Links at the end of the term.

a) What resources are needed to support the research – financial or otherwise? Please indicate what, if any, resources your organization might be able to provide.

The student should have access to wifi and GIS software such as Esri ArcPro/ArcGIS or QGIS. HHLT will support any GIS activity with informed advice and suggestions. HHLT will provide hard disc storage for larger data sets such as raster files and imagery if required.

- b) Do you anticipate needing funding or other types of resources? If so, please explain (including any ideas on where resourcing may be obtained):

N/A

I – KNOWLEDGE SHARING

NOTE: Please note the researcher(s) will own the copyright for all work completed as part of his/her involvement, but the lead organization/group/employer may use all project outputs in whole or in part, as it sees fit as long as the researcher(s) is duly credited as the author. If work is completed collaboratively, copyright will be decided by all project participants.

- a) How are the project results to be circulated and made useful to the broader community? Please indicate all that applies from the list below:

- Academic article
- Conference/forum
- **Report / Manual**
- Marketing, promotional, newsletter, outreach materials
- Policy brief
- Roundtable
- Video
- Workshop

- b) If there are special circumstances where results might not be made public, please explain:

J - ACKNOWLEDGEMENT

- a) Are you able to credit U-Links when utilizing project results for the development of new programs, funding applications, policy, and other community endeavors? (Suggestions: cite U-Links and display our logo in your organization's printed matter and on your website, credit U-Links when speaking about your project in public and in the press, social media etc.)

Yes

- b) Following successful completion of the research project, with results beneficial to the goals of your organization, would you consider a financial contribution to U-Links? Yes No **Possibly**

c) Can we highlight your project on our website and in social media? Yes No

K – PROJECT PROMOTION

Please “insert” an image below to help promote your project proposal.