

COVER PAGE

PROJECT INFORMATION

Please complete the fields below with information regarding your project.

Project Title Phase 2: Dairy Cow Pasture

Brief Description The objective is to follow up on the Dairy Cow Pasture project by planting new wind breaks and implementing a simple irrigation system to increase productivity of drought prone pastures.

Total Estimated Project Budget \$44,000 **Amount Requested from SPF** \$40,000

Campus(es) Impacted Downtown Macdonald Gault Nature Reserve Other _____

CONTACT INFORMATION

Project Leader

This person must be a current McGill University student, administrative staff, or academic staff.

Name	<u>Paul Meldrum</u>	Affiliation	<u>Administrative Staff</u>
Phone	<u>514-714-7989</u>	Faculty/Unit/Organization	<u>Agriculture</u>
Email	<u>paul.meldrum@mcgill.ca</u>	Campus	<u>Macdonald</u>

Project Team Members

The SPF encourages you to be inclusive, collaborative (especially between staff and students), diverse, and interdisciplinary when possible. To list more members, please complete a second cover page. You may e-mail it to [SPF Staff](#) to include with your application.

Name	<u>Maxime Leduc</u>	Affiliation	<u>Postgraduate</u>
Email	<u>maximeleduc@gmail.com</u>	Faculty/Unit/Organization	<u>Alumni</u>
Name	<u>Nancy Lavigne</u>	Affiliation	<u>Administrative Staff</u>
Email	<u>nancy.lavigne1@mcgill.ca</u>	Faculty/Unit/Organization	<u>Agriculture</u>
Name	_____	Affiliation	<u>Choose one.</u>
Email	_____	Faculty/Unit/Organization	_____
Name	_____	Affiliation	<u>Choose one.</u>
Email	_____	Faculty/Unit/Organization	_____
Name	_____	Affiliation	<u>Choose one.</u>
Email	_____	Faculty/Unit/Organization	_____

SUBMISSION INFORMATION

In line with the [SPF Eligibility Criteria](#), our team certifies that this project takes place at [McGill University](#), is sustainability focused, is requesting seed funding, and is action oriented. Yes No

Our team has read the [SPF Terms & Conditions](#) and agrees to respect them. Yes No

Our team understands that this application is not confidential and consents to have its contents shared with relevant stakeholders during the review process and, if approved, on the SPF website. Yes No

Our team agrees to have [their contact information](#) included in the complete and shared application. Yes No

PROJECT OVERVIEW

Instructions: Please answer the questions below as clearly and concisely as possible. You will be able to detail your project further in Part 2 of the Over \$5,000 application process, the Project Plan, as well as submit relevant appendices. Once you have completed this Project Overview, save it and submit it online. SPF Staff will respond with feedback on your application within 2 weeks and send you Part 2. Once all sections are complete, the combined application will be provided to the SPF Governance Council for their review and decision. As a reminder, all SPF applications are assessed using the [SPF Eligibility & Evaluation Criteria](#):

ELIGIBILITY CRITERIA		EVALUATION CRITERIA		
AT MCGILL	SUSTAINABILITY FOCUSED	ANALYSIS	IMPACT	FEASIBILITY
SEED FUNDING	ACTION ORIENTED	COLLABORATION	SUPPORT	CAPACITY BUILDING

Before starting, you may find it helpful to consult the [SPF Sustainability Brief](#) and [Vision 2020 Climate & Sustainability Action Plan](#).

CONTEXT

Criteria assessed in this section: **SUSTAINABILITY FOCUSED, ANALYSIS**

- 1. What specific sustainability-related need/issue have you identified at McGill and aim to address through your project? In your response, please describe clearly how the need/issue is related to sustainability.**

Note: Please wait to detail your project idea in response to Question 5. Limit ~100 Words

This project is a follow up to the Dairy Cow Pasture project by planting new trees and bushes to provide windbreaks to increase snow retention in fields to reduce winter kill of forage plants. This will also assist in carbon sequestration, and further enhance habitat for birds, insects and other wildlife. There are two areas of the pasture that are prone to drought (B & C), so a simple, portable irrigation system is proposed to increase forage yields (as well as carbon sequestration). This will extend the amount of time cattle can be on pasture, and will also irrigate the young trees to assure their establishment.

- 2. How do you know this is a need/issue? What research have you done (e.g. consultation, observation, survey)?**

Limit ~100 Words

This project will help McGill University to fulfill the objective of carbon neutrality by 2040 by increasing carbon sequestration from fields and pastures. Also, it meets the requirement for the MAPAQ Prime Vert program by creating better habitat for insects and birds. Finally, the irrigation systems for pastures B and C will improve the productivity of these fields. The more grass we produce, the more carbon we capture. It will also allow for a higher stocking density for livestock.

- 3. What relevant information and/or best practices have you found that relate to this need/issue? In addition to information from external sources, detail any relevant related initiatives (past or current) that you are aware of at McGill.** *Limit ~100 Words*

This project is a follow up to the successful Dairy Cow Pasture project funded by SPF last year, thus it will follow the same best practices of tree planting and pasture management, which will now be enhanced by irrigation. Pasture irrigation systems were validated in Bas-St-laurent in 2018 and demonstrated to be effective in Quebec drought conditions. A simple, low-cost irrigation system could be included in our pasture demonstrations to farmers and industry professionals, as well as McGill students as part of a sustainable way to feed dairy animals and enhance the environment.

- 4. What expertise or qualifications does your team have regarding this need/issue, if any?** *Limit ~100 Words*

Phase 1 of the Dairy Cow Pasture project demonstrated our ability to successfully lead and implement projects and demonstrate sustainable systems to farmers, students, the general public and industry. This ability was confirmed by the MAPAQ evaluation. Also, the new wind breaks were designed by an agro-forestry specialist, Andre Vezina, and accepted by the Physical Facilities sub-Committee of Macdonald Campus, whose chair, Benoit Cote, is a forestry specialist and Director of the Morgan Arboretum.

PROJECT IDEA

Criteria assessed in this section: **ALL ELIGIBILITY & EVALUATION CRITERIA**

5. In context of the sustainability-related need/issue that you previously identified, what is your project idea? Please describe the idea thoroughly and concisely. In your response, share how your project is new or how it is complementary to existing initiatives. *Limit ~400 Words*

This project will plant 339 new trees and 896 bushes in the MacDonald farm fields (see design). We will follow the same approach we followed last year for the Dairy Cow Pasture Project, by cultivating the soil, then laying down plastic mulch to control weeds, and planting the trees within this mulch. This project is complementary to last year's project by improving forage conditions and wildlife habitat on the Mac Farm, while increasing carbon sequestration. Trees will be planted on the edges of fields to reduce wind and capture snow to cover the fields. Shrubs will be planted along drainage ditches to reduce and eventually eliminate the need to bush-hog these areas; this will also help to prevent erosion, and create a completely new habitat for birds and insects.

6. Is your project related to the University's [Vision 2020 Sustainability Strategy](#)? Yes No Not sure

7. If you answered yes to Question 6, how does it relate? Please refer to the strategy category (e.g. Research, Education, Connectivity, Operations, and Governance & Administration) or related action from the [2017-2020 Climate & Sustainability Action Plan](#) in your response. *Limit ~100 Words*

This project will be a major contributor to McGill's vision of being carbon neutral by 2040. In a short-term perspective, the project will (O-2): Optimize the environmental performance of McGill's buildings by providing protection from the wind, and (O-3): Develop a Waste Reduction and Diversion Plan by improving carbon sequestration of the actual pasture and reduce carbon emissions of the manure pit. Also, it will reduce forage losses consumed by the cows. The project will (E-1): Increase access to extra-curricular opportunities in sustainability for undergraduate students by providing example of BMP for pasture. The project will (R-1): Enhance the visibility of sustainability research at McGill.

TRANSFORMING CAMPUS

Criteria assessed in this section: **AT MCGILL, IMPACT**

8. In the table below, describe your proposed project's 2-5 main impacts on the McGill campus community or goals to accomplish. Please check the stakeholders that will be impacted. Finally, please list at least one key **success indicator** for each impact (e.g. # people will be engaged in the project, % waste will be diverted from the landfill, # buildings will be LEED certified, etc.)

Main Impacts/Goals		McGill Stakeholders Impacted (check all that apply)	Key Success Indicator(s)
REQUIRED	1 Increase carbon sequestration by planting trees in the fields	<input checked="" type="checkbox"/> Undergraduate <input checked="" type="checkbox"/> Academic Staff <input checked="" type="checkbox"/> Postgraduate <input checked="" type="checkbox"/> Admin. Staff <input checked="" type="checkbox"/> Alumni	Trees planted before the end of June

OPTIONAL	2	Increasing productivity and forage yield of pastures B and C	<input checked="" type="checkbox"/> Undergraduate <input type="checkbox"/> Postgraduate <input type="checkbox"/> Alumni	<input checked="" type="checkbox"/> Academic Staff <input checked="" type="checkbox"/> Admin. Staff	Higher field productivity measured with herbometer
	3	Longterm: Improving alfalfa survival by the snow accumulation on alfalfa fields (10 years horizon)	<input type="checkbox"/> Undergraduate <input type="checkbox"/> Postgraduate <input type="checkbox"/> Alumni	<input checked="" type="checkbox"/> Academic Staff <input checked="" type="checkbox"/> Admin. Staff	Increase survival rate of alfalfa fields
	4		<input type="checkbox"/> Undergraduate <input type="checkbox"/> Postgraduate <input type="checkbox"/> Alumni	<input type="checkbox"/> Academic Staff <input type="checkbox"/> Admin. Staff	
	5		<input type="checkbox"/> Undergraduate <input type="checkbox"/> Postgraduate <input type="checkbox"/> Alumni	<input type="checkbox"/> Academic Staff <input type="checkbox"/> Admin. Staff	

9. Have you considered implementing your project at more than one McGill campus? (e.g. If your project is downtown, could it be implemented at Macdonald Campus as well?)

Yes No

10. If relevant, please describe your choice(s) of campus(es) and why this choice is best for your project. *Limit ~150 Words*

It is only possible at Macdonald campus.