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Dana Buchbinder
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Environmental Education Assistant

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EDUCATIONAL INTERNSHIPS

EcoSpark was pleased to work with

Fleming College students, Connor Laughling, Sydney Shepherd, Mitchell Walker, and Jacqueline Weber, completed their Credit for Product placements producing map stories about invasive species in York Region - *Invasive Species Threatening the York Regional Forest and Connecting to Your Senses in Ontario's Greenbelt.*

University of Toronto ENV440 intern, Rebecca Sutherland, successfully completed Environmental Science and Environmental Geography. The focus of her internship was piloting Caterpillars Count, a new citizen science project for EcoSpark.

Ryerson MSA intern, Eric Lum, successfully completed his Masters of Spatial Analytics internship, assisting with the migration of EcoSpark's digital maps from Google Maps to ESRI's ArcGIS. This move opened a suite of new tools to making citizen science more accessible to students and community members throughout the GTA.

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It is hard to describe what an extraordinary year it has been!

2020 was a year of uncertainty as EcoSpark, and the rest of the world, adjusted to the growing global pandemic. Our annual general meeting and in person support for schools and community groups were delayed, halted, or moved online based on the evolving restrictions and guidelines. Our staff and board members pivoted to virtual arenas using ingenuity and creativity, updating programs for remote delivery as it became apparent in person delivery would not be possible for much of the year.

We continued connecting with thousands of you with webinars and workshops on nature topics and advocacy issues. Our community grew as more people started exploring the green spaces in their local communities with family and friends.

Unfortunately, it was a tough year to work with schools as environmental education budgets were redirected and COVID-19 restrictions moved most learning to the digital world. However, the Greenbelt Youth Ambassadors worked tirelessly to learn about, and respond to, local community development and political processes as the Greenbelt came under assault from developers and even our provincial government!

COVID-19 restrictions also pushed EcoSpark to adopt a remote operating model - supporting staff working from home - as well as updating our website

and digital mapping technologies. The website was moved to SquareSpace, a more user-friendly platform, and our mapping software upgraded to ESRI's ArcGIS, improving and expanding the tools we have for sharing our work with students and the public.

Throughout the year EcoSpark was buoyed by the support of our members and funders, who allowed us to continue reaching out to others to share the important work we do. Nothing can replace connecting in person, whether it is working with classes or gathering data in the field. These activities will happen again.

We look forward to meeting together soon to share our love of nature, educating others and gathering real evidence of our combined concerns for local and global environmental issues.

Sincerely yours,



DONNA RICE
Chair



PAUL MERO
Executive Director

A handwritten signature in black ink that reads "DL Rice".

A handwritten signature in black ink that reads "Paul Mero".

DIGITAL MAPPING

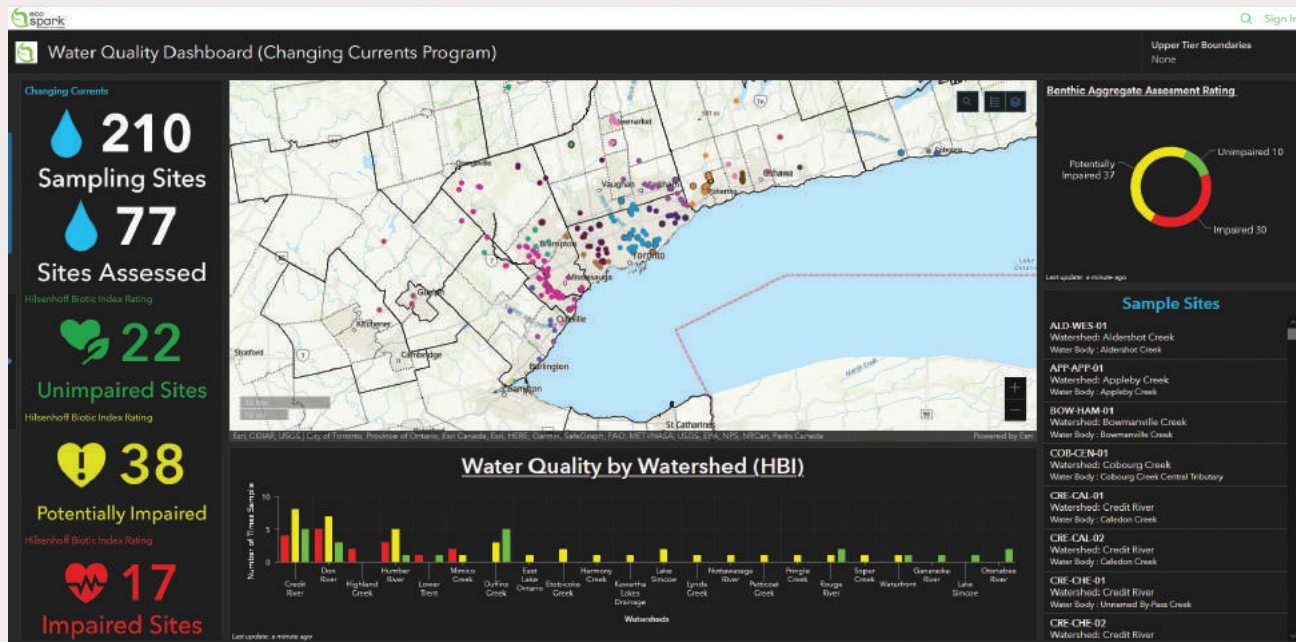
EcoSpark’s mission is to empower people to take an active role in protecting and sustaining nature.

In 2020 we are doing this by providing tools - new digital maps, dashboards, and storymaps - to help citizen scientists see the fruits of their labour with a clarity that wasn’t available in the past. With these tools participants can monitor environmental changes over time, measuring the power of their environmental stewardship actions.

New ArcGIS mapping tools allow us to present 20 years of stream monitoring on a single “Water Quality Dashboard”. The dashboard displays EcoSpark’s youth-gathered studies collected from hundreds of monitoring sites, across 30 watersheds. The new map and dashboard were integrated into our virtual Changing Currents program, giving students the power to get a historical view of water quality trends over both time and geographic areas.

Related storymaps, like “Connecting to your senses in the Greenbelt”, help participants integrate maps, images, sound and video to highlight their experiences of discovering the Greenbelt. Seeing and hearing the sounds of birds nesting and living on the Greenbelt creates more immersive opportunities for others to emotionally connect to the world around us.

Despite all of the COVID-19 challenges, Ecospark engaged 428 youth, teachers and community volunteers with the Changing Currents program in 2020. With the program ready for both in person and online delivery we are hoping 2021 will be a better year for everyone!



CHANGING CURRENTS

EcoSpark's Changing Currents program shifted streams in 2020 as the COVID-19 pandemic restrictions limited our ability to run in-person field sessions.

Staff adapted our traditional outdoor education program with COVID-safe options for the late summer and early fall months. As restrictions shifted and increased during late fall, our Changing Currents staff adapted again with a virtual water quality monitoring program that safely brought understanding local watershed health to the comfort of students' homes.

When restrictions permitted, EcoSpark had the pleasure of working with partners at the Toronto Region Conservation Authority (TRCA) to engage their Girls Can Too and Young Professionals Ravine programs to help monitor the health of the Don and Humber River watersheds. In early fall, the Changing Currents team squeezed in 9 field sessions - including

5 schools and 1 park group before COVID-19 restrictions prevented in-person gatherings.

An additional positive outcome of EcoSpark's shift to remote program delivery was our ability to offer a version of the Changing Currents program in winter months when streams are frozen and enthusiasm for outdoor education programs was low. This development opened a new opportunity for our program to run sessions year round and in areas we might not have been able to reach with our traditional program option.



Country Day students collecting benthic macroinvertebrates at a tributary of the Humber River.



4 CHANGING CURRENTS



Cobourg students collecting benthic macroinvertebrates to assess the health of their local stream following Ecospark scientific protocol.

Using historical water quality data collected by past participants, ArcGIS, and other interactive technologies, the team was still able to engage participants in in-depth discussions about what influences water quality and what they can do to improve the health of their local watershed. Overall, feedback was positive, including this comment from a participating teacher - “[I was] thoroughly impressed with the virtual program [...] I also appreciated how flexible and adaptable EcoSpark has been in being able to deliver their programs with such strict and unique circumstances. Thank you!”

Despite all of the COVID-19 challenges, Ecospark engaged 428 youth, teachers and community volunteers with the Changing Currents program in 2020. With the program ready for both in person and online delivery we are hoping 2021 will be a better year for everyone!



Ecospark Changing Currents and Park Watch programs joined forces to deliver an aquatic and terrestrial citizen science monitoring program for the Toronto Region’s Park People group at Wilket Creek Park.



SCHOOL WATCH

In 2020, the School Watch program directly engaged 174 students and 113 teachers with their environment, encouraging them to witness the connection between the health of the environment and human activities. Through hands-on field science, students gained the knowledge and skills to monitor their local environments, track changes in flora and fauna over time, and participate in effective stewardship activities to support ecological health.

School Watch trained teachers and students to become citizen scientists who engage in their communities. EcoSpark developed four new topic areas with grade 6-12 student sessions, teacher resources, curriculum-linked and teacher-reviewed lesson plans, and extension activities. The subjects include Pollinator Habitats, Ticks & Climate Change, Biodiversity & Invasive Species, and Tree Benefits. Each subject relates to STEM and/or geography outdoor learning goals while enabling students to collect or analyze citizen science data. By sharing their data with larger community-based environmental monitoring initiatives, our participants contribute to

efforts for short and long-term ecological health of school grounds and green spaces.

School Watch was able to deliver programs despite the substantial challenges of Covid-19. For much of 2020 our school participants were unable to attend in-person training. We developed and implemented safety measures for in-person outdoor learning that some schools were able to use with our staff meeting with classes on school grounds, but for the most part our participants were only able to take part remotely. This fostered a creative online learning program developed to engage participants in outdoor environmental education remotely. Combining virtual webinars based on citizen science data and techniques with asynchronous activities for students to complete with their families from home, in parks and yards and other green spaces in their communities.



A School Watch high school participant measures pollinator transects during an EcoSpark session with the Country Day School (King City), to survey biodiversity in the headwaters of the Humber River.



CITIZEN SCIENCE



Summer student Rebecca Sutherland (3rd from left) discusses Caterpillars Count project results with volunteers, staff, and board, following a season of data collection in Brookbanks Park.



PARK WATCH

2020 witnessed the launch of EcoSpark's work on the Caterpillars Count citizen science project and related park-based environmental monitoring and digital mapping initiatives. Caterpillars Count (developed by University of North Carolina) is a citizen science project for measuring the seasonal variation, also known as phenology, and abundance of arthropods like caterpillars, beetles, and spiders found on the foliage of trees and shrubs. Climate change is affecting the timing of spring leaf out, insect activity, and bird migration and breeding. EcoSpark established a demonstration site with a University of Toronto intern placed with us, who completed more than 300 branch surveys with plant, insect, and bird data at Brookbanks Park, Toronto. The intern

delivered a summary of the project for EcoSpark board and staff and presented findings in maps and a webpage for the community. Data was contributed to iNaturalist, eBird, and the Caterpillars Count citizen science programs.

EcoSpark developed educational materials for adult community volunteers and grade 6-12 teachers to introduce phenology. Park Watch also delivered biodiversity training (in partnership with the City of Toronto Community Stewardship Program) and continued developing opportunities for future work with park volunteers and the general public to connect people with citizen science, including planning for the 2021 City Nature Challenge bioblitz event.

SCIENCE IN THE CITY

Thanks to TD Friends of the Environment Foundation, EcoSpark was able to successfully connect Toronto neighbourhoods with training and resources for environmental monitoring through the Science in the City project. Our activities have furthered our mission to empower communities to take an active role in protecting and sustaining their local environments. Modifications to program delivery, including remote engagement options, have enabled people to participate safely in citizen science activities during Covid-19. This project has contributed to strengthening networks as we work with municipal and community partners, schools, and local volunteers to provide tools for education, monitoring and influencing positive change.

In the Fall of 2020 EcoSpark became an official partner of Toronto District School Board (TDSB), indicating that the educational partnership team has reviewed and approved our program for

grade 6-12 students as part of their curriculum and for teacher professional development. EcoSchools representatives with TDSB and other local school boards also signed on to a partnership with EcoSpark for delivering our programs.

In response to participant needs and to improve cross-program strengths and connections, EcoSpark also offered joint programs with citizen science activities combined with our Changing Currents stream monitoring program. Teachers or community groups can now register a class for both programs for a full day of experiential learning in addition to the half-day single program options. Of the participants, we successfully engaged 189 Science in the City participants in joint events that included both citizen science and Changing Currents content for a richer experience.



Testing native plant growing kits for schools and community groups to support the Pollinators Lesson Plan and Science in the City activities.



CITIZEN SCIENCE



Family-friendly tree monitoring tips were included in online program delivery to support environmental observation during school closures. Citizen scientists were encouraged to photograph trees near home and in public parks, such as King's Mill Park.

GREENBELT YOUTH AMBASSADORS

The Greenbelt Youth Ambassador (GBYA) program had to make a big shift in 2020. Our goal was to engage youth through a series of Greenbelt tours and a summer organizing conference where they could meet others who share their environmental concerns. Covid-19 restrictions halted those plans.

Instead the GBYA program brought in Greenbelt experts online, learning about the goals and history of the Greenbelt and the working mechanics of

environmental regulations and protection in Ontario. When the Ontario Government called for comments on amendments to Greenbelt and environmental planning processes the GBYA responded, giving a youth perspective where there hadn't been one before.

In the fall of 2020, the youth ambassadors engaged in a strategic planning process, learning skills that will help them take on roles in the next generation of environmental leaders.



SPARKING SCIENCE

The 2020 Sparking Science Conference had to be cancelled due to school boards and teachers adjusting to COVID-19 pandemic restrictions.

With school boards mandated to operate remotely, the adjusted semesters and class schedules left many teachers struggling to adjust their lesson plans to

work in the new schedule. In addition to remote class delivery, it was also difficult for teachers and students to get to know each other. Given this challenging learning environment it was decided that running a conference - even virtually - would be too much to ask of both students and teachers.

FINANCES

EcoSpark's 2020 Audited Financial Statements were prepared by Pennylegion Chung LLP and dated May 4, 2021.

The following information is an excerpt from the Audited Financial Statements; the full statements can be made available upon request.

SUMMARIZED STATEMENT OF FINANCIAL POSITION	2020	2019
AS AT DECEMBER 31, 2020		
ASSETS		
Current assets		
Cash	\$368,147	\$137,800
Guaranteed investment certificates	-	76,166
Accounts receivable	12,701	44,656
Sales and property taxes recoverable	13,568	3,568
Prepaid expenses	7,780	1,478
	\$402,196	\$263,668
LIABILITIES AND NET ASSETS		
Current liabilities		
Accounts payable and accrued liabilities	\$7,248	\$6,056
Deferred revenue	255,855	187,762
	263,103	193,818
CEBA Loan payable	30,000	-
Net assets - Unrestricted	109,093	69,850
	\$402,196	\$263,668
REVENUE		
Contributions	\$224,321	\$376,795
Workshop fees	6,070	29,669
Fundraising and other	23,587	10,749
CEBA, CEWS and CERS	93,377	-
	347,355	417,213
EXPENSES		
Personnel	235,004	238,811
Program	27,099	101,092
Rent	18,031	16,725
Office and general	14,276	7,654
Insurance	4,509	4,541
Professional fees	4,202	4,156
Communications	3,787	11,403
Training and development	1,204	3,150
Amortization	-	403
	308,112	387,935
EXCESS (DEFICIENCY) OF REVENUE OVER EXPENSES	39,243	29,278
Net assets, beginning of year	69,850	40,572
NET ASSETS, END OF YEAR	\$109,093	\$69,850

SUMMARIZED STATEMENT OPERATIONS AND CHANGES IN NET ASSETS	2020	2019
FOR THE YEAR ENDED DECEMBER 31, 2020		
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THANK YOU TO OUR SUPPORTERS

All of our work and achievements are made possible through the dedication and support of our staff, board of directors, partners, and supporters. A heartfelt thank you to everyone who has contributed to our success!



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OUR MISSION

EcoSpark works with communities and schools, providing them with the knowledge and tools to monitor their environment and take action for positive environmental change.



FOR MORE INFORMATION

Call

647-258-3280

E-mail

info@ecospark.ca

Visit

www.ecospark.ca

EcoSpark

Artscape Wychwood Barns

601 Christie St, Suite 174

Toronto ON M6G 4C7



EcoSpark gives people the tools and knowledge to create positive environmental change.

To make a donation, visit ecospark.ca/donate or call 647-258-3280 x 2005.

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