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INTERNS

High school student **Castilleja DeMarco** supported the spring season of Changing Currents and School Watch activities.

U of T summer intern, **Joan Mella**, student successfully completed his internship this spring supporting our citizen science and education programs.

2 Canada Summer Jobs interns, **Brandon Ngyuen** and **Emma Lash** completed internships supporting our digital communications and citizen science programs, respectively.

4 Fleming College Students, **Scott Robertson**, **Bethany Linton**, **Nicole McClennan** and **Peter Sources** completed their Credit for Product placements producing BMI reference kits, outreach infographics and collecting aquatic and terrestrial field data.

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In the second year of our Strategic Plan 2017 – 2021 EcoSpark continued developing the partnerships and collaborations that are at the heart of our strategic goals:

to be the partner of choice for citizen science engagement, to be the partner of choice for civic engagement in land use issues, to inspire, empower and train the next generation of environmental leaders, and to ensure the resiliency and sustainability of EcoSpark. Through our partnerships EcoSpark continues growing and working to build a stronger and healthy environment for current and future generations.

Our government collaborations included leading the City of Toronto’s Community Stewardship program in a research project that included training and assessing the capacity of volunteers to use a new technique for tackling Phragmites - one of Toronto’s worst invasive species. And, working with the Town of Ajax on their campaign to have the head waters of Carruthers Creek added to Ontario’s Greenbelt, building on our work with the Oak Ridges Moraine Partnership to expand the Greenbelt.

Our work with the Oak Ridges Moraine Partnership (ORM) focused on engaging in provincial processes to expand the Greenbelt and update Watershed Guidance Documents. EcoSpark played a key role in developing and writing the Environmental Bill of Rights submissions on both issues.

EcoSpark’s partnership and collaborations with conservation authorities included working with Credit Valley Conservation and Central Lake Ontario Conservation Authority to engage over 700 students and teachers. Together we conducted streams studies, planted trees, and removed invasive species. We empowered youth by taking part in both monitoring the environment and taking actions to remediate damage and improve stream health and water quality.

Our academic partnership with school boards, universities and corporate sponsors helped bring together 130 grade nine girls with 20 women working in STEM fields for our 2nd annual Sparking Science conference. We also supported students from Milliken Mills in organizing a local climate action day.

In 2019 we are looking forward to strengthening these relationships and to continue the journey laid out for the third year of our strategic plan.

Sincerely,



CINDY CHAO
Chair of the Board of Directors



PAUL MERO
Interim Executive Director

A handwritten signature in black ink, appearing to be 'Cindy Chao'.

A handwritten signature in black ink, appearing to be 'Paul Mero'.

CHANGING CURRENT

EcoSpark's award winning Changing Currents program had a recording-breaking year in 2018 with staff leading hands-on water quality monitoring programs to 3,505 students, teachers, and community volunteers across 15 watersheds in the GTA.

The training and coaching teachers, community members and students receive plays an important role in the quality of our program. Workshops and program materials equip teachers with the skills they need to prepare their students to carry out curriculum connected stream studies. EcoSpark staff then lead students thorough an overview of the scientific protocols they will follow to conduct valid stream studies that will contribute to the ongoing assessment of the health of Greater Golden Horseshoe waterways. Students are then dressed for action and led through stream studies where they discover the world of benthic macroinvertebrates that live in the bottom of local streams and rivers.

In addition to discovering new worlds in the bottom of local streams, students might be introduced to Changing Currents alumni receiving an added layer of mentorship within the program. Over the years, returning students shared the knowledge and

insights gained from past stream studies with the students conducting the current studies. In 2018, alumni mentorship Louis Arbour Secondary School and Milliken Mills High School shared insights and ideas about the potential environmental issues that could be impacting the positive and/or negative findings of the current study.

In 2018, one third of the schools taking part had completed a study the previous year. Some teachers and schools, such as Mrs. Coughler's grade 11 and 12 classes from Port Hope High School monitor a local site over longer periods of time. Mrs. Coughler's classes have been monitoring a site on the Ganaraska River intermittently between 2008 through 2018, giving students 7 years of comparative data to study water quality trends. Through Changing Currents, Port Hope High School students are taking a leading role in strengthening their community's connection to the local environment.





Port Hope students collecting benthics to assess the health of Ganaraska River.



Mississauga's Cawthra Park Secondary School has been monitoring Cooksville Creek for the past 4 years, consistency collecting scientific data. Teachers Tricia Fitzpatrick and Lindsay McLeod also make it a point of building mentoring opportunities into their Changing Currents sessions by having past experience student lead the younger students through the study.

4 CHANGING CURRENTS



CHANGING CURRENT - BRANCH OUT PROGRAM

In 2018, EcoSpark and Credit Valley Conservation (CVC) celebrated the second year of our collaboration engaging and connecting youth in the Peel Region to the Credit River watershed. The collaboration combines EcoSpark's Changing Currents stream studies program with CVC's Branch Out land stewardship program. The day long program engages students and teachers in EcoSpark's hands-on water quality monitoring and CVC's Branch Out stewardship activities which include native tree and shrub plantings and pruning, invasive species removal, and shoreline cleanups.

With the generous support of the Ontario Trillium Foundation and the Community Foundation of

Mississauga, the program engaged 1,684 students and 88 teachers from 26 schools in efforts to monitor and protect the Credit River Watershed in 2018. Students monitored the water quality of 920 metres of streams, an increase of 200 metres compared to 2017, and stewarded over 1.14 hectare or 11,400 metres of public lands.

The partnership between EcoSpark and CVC has deepened the impact of both organization's programs. It has enhanced the grade 6 to 12 science and geography curriculum outcomes and raised awareness about the importance of water quality and local climate change issues. Importantly, students after participating, were inspired by the new knowledge and skills they had acquired and how they were able to apply them to restoring natural areas in their communities.



CHANGING CURRENTS - L.E.A.D.S.

In 2018, EcoSpark and The Riverwood Conservancy joined forces to deliver Changing Current's Leadership in Environmental Achievements through Diversity and Skills (L.E.A.D.S.) program sampling sites of the Credit River on conservancy grounds. Riverwood staff led the collection and assessment of the chemical sampling and EcoSpark's Changing Currents staff led the benthic macroinvertebrates (BMIs) sampling and assessment component of the studies. Students in this program were provided with additional time to explore the intricacies of the BMIs collected under microscopes to gain a deeper understanding of the anatomies of the BMIs they discovered. The joint-program ran from September to October and was also supported by volunteers from RBC.



CHANGING CURRENT - CONSERVATION YOUTH CORPS (CYC)

Continuing our work in Peel, in the summer of 2018, EcoSpark collaborated with the Conservation Youth Corp Program (CYC) offered by Credit Valley Conservation. This program engages weekly crews of high school students in various activities including tree planting, trail maintenance, invasive species removal, stream restoration, electro-fishing, bird house construction and EcoSpark's stream assessments. In the summer of 2018 EcoSpark had the pleasure of working with five CYC crews.



Conservation Youth Corps removing invasive periwinkle from Rattray Marsh Conservation Area.

NATURE ACADEMY

In 2018, EcoSpark continued delivering professional development to teachers through the Nature Academy program. We expanded our workshops to include online webinars focused on our Complete Communities program. The program – with funding from the Ontario Growth Secretariat - included lessons on using Neptis Geoweb – a graphic information system (GIS) mapping program built to visualize planning choices.

THE COMPLETE COMMUNITIES PROGRAM

The program continued building on the work started in 2017 to increase awareness and understanding of growth planning among teachers and students in the Greater Golden Horseshoe (GGH). By promoting and supporting the concepts of complete and low-carbon communities and the merits of growth planning in the GGH in formal education, EcoSpark is actively training the next generation of environmental leaders.

Through teacher training workshops, in person and online webinars, 209 teachers learned to use the newest generation of mapping technology. 16 teachers also had EcoSpark staff co-teach lessons for 264 students. Teachers and students worked with new geography lesson plans using open source government data showing the history of development in the GGH and highlighting the merits of the Greenbelt and growth planning.



Teachers from York Region District School Board learning Tree ID as part of School Watch training.





Our Citizen Science Coordinator teaching a students about Bird ID at Dell Park, Toronto.

SCHOOL WATCH

In addition, the growing School Watch program was moved under the Nature Academy umbrella. With funding from TD Friends of the Environment we began a process of increasing the number and range of workshops and programs EcoSpark has to offer teachers and students. In 2018 School Watch engaged 65 teachers through 4 teacher training

workshops and engaged 492 students from York Region animating school ground greenspaces through citizen science. We also produced a School Watch guide for educators and purchased other workshop resources teachers can access - including an equipment library (e.g., binoculars).



Language Instruction for NewComers to Canada adult students engaging in Park Watch with Parkway Forest Park, Toronto.

8 NATURE ACADEMY

PARK WATCH

The TD Friends of the Environment funded Park Watch pilot program engaged 252 volunteers in eight hands-on citizen science workshops in the City of Toronto's green spaces. Volunteers from "Friends of" park groups, the City of Toronto Community Stewardship Program, and the Language Instruction for Newcomers to Canada (LINC) program at the Working Women's Community Centre were trained in citizen science techniques to monitor stream health and survey pollinators, birds, and amphibians, and other research projects. Participants gained the skills to contribute to 12 citizen science databases to support research and stewardship of public parks and ravines.



Teachers making PlantWatch observations at George Peck Public School in Toronto.

**PHRAGMITES - CSP PARTNERSHIP**

Phragmites, one of Ontario's most invasive species, has been spreading across the province at an alarming rate. EcoSpark, partnering with Lynn Short, a Professor in the Department of Horticulture at the School of Applied Technology at Humber College, and the City of Toronto's Parks, Forestry & Recreation, Natural Environment & Community Programs Departments and their Community Stewardship Program (CSP) volunteers, launch a project to evaluate a manual spading technique for managing the invasive species.

In the fall of 2018 EcoSpark began working with CSP volunteers to begin testing the efficacy of engaging volunteers using Lynn's non-chemical technique.

The goal of the project is to determine if local volunteers can be engaged in their local communities to successfully manage removal of Phragmites and the restoration of local ecosystems. We completed the first season of Phragmites removal and data collection. We trained 84 volunteers to identify, measure, report, and remove Phragmites from known locations on 4 sites across Toronto and provided an original assessment of Phragmites from 1 additional site. Approximately 506 lb. of Phragmites was removed from Beechwood Wetland, with smaller quantities removed from the other sites. Biodiversity surveys were also begun at all 5 sites. The project will resume in the spring and summer of 2019.



Community Volunteers pulling invasive Phragmites Species at Riverdale Park East, Toronto.

SPARKING SCIENCE THROUGH MENTORSHIP

SPARKING SCIENCE THROUGH MENTORSHIP

The 2018 Annual Sparking Science through Mentorship conference took place on October 10th. The one-day conference increases science literacy among grade 9 girls and demonstrate that science careers can be fun, fulfilling and come in many different shapes and forms.

Conference organizers believe it is important to reach girls early in their high school years to ensure they developed positive associations that will encourage them to pursue science studies through their high school years and beyond.

The conference is co-hosted by EcoSpark, Dunbarton High School, Durham Regional School Board, and the University of Toronto Scarborough (UTSC). Sponsors included the Office of the Vice Principal Research and the Office of the Dean at UTSC as well Veridian and Ontario Power Generation (OPG).

The 2018 conference featured 20 women, from diverse backgrounds, working in a variety of STEM fields that included ecology, forestry, neuro and

behavioural biology, mineralogy, astrophysics, and computer science. One of the mentors included EcoSpark's Executive Director, Joyce Chau! The keynote speaker was Dr. Christina Guzzo, Assistant Professor in the Department of Biological Sciences at UTSC, and head of a research laboratory focused on HIV/AIDS and human immunology. The keynote speech was followed by a day of interactive sessions with 120 students, divided into smaller groups, meeting with the mentors who shared their experiences getting into and working in STEM fields

By introducing mentors to the grade nine girls, Sparking Science showed the girls they have viable science career paths.





Greenbelt Youth Ambassadors visiting the Glen Major Forest Gravel Pit on the Spring tour of Ontario's Greenbelt.

CIVIC ENGAGEMENT AND LAND USE PLANNING IN GREATER GOLDEN HORSESHOE

Working with the ORM Partnership, EcoSpark has been actively involved in the implementation phase of the provincial Coordinated Review process. We made provincial Environmental Bill of Rights submissions on the proposed Greenbelt expansion on March 2, 2018 and the proposed Watershed Guidance Document on April 7, 2018.

Together we pushed for a systematic approach to ensure sensitive features and functions of the region's watersheds are fully protected from urbanization. The work included an online petition urging the Premier to expand the Greenbelt through a proposed "Bluebelt" project highlighting vulnerable water sources across the Greater Golden Horseshoe.

FINANCES

EcoSpark's 2018 Audited Financial Statements were prepared by Cowperthwait Metha, Chartered Accountants and dated February 26, 2018. 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

AS AT DECEMBER 31, 2018

	2018	2017
ASSETS		
Current assets		
Cash	\$ 234,408	\$ 137,858
Short-term investments	-	10,498
Accounts receivable	10,655	77,040
Sales and property taxes recoverable	2,781	3,040
Prepaid expenses	6,020	6,153
	<hr/>	<hr/>
	253,864	234,589
Furniture and equipment	403	1,743
	<hr/>	<hr/>
	\$ 254,267	\$ 236,332
LIABILITIES AND NET ASSETS		
Current liabilities		
Accounts payable and accrued liabilities	\$ 16,188	\$ 12,859
Deferred revenue	197,507	194,527
	<hr/>	<hr/>
	213,695	207,386
Net assets - Unrestricted	<hr/>	<hr/>
	40,572	28,946
	<hr/>	<hr/>
	\$ 254,267	\$ 236,332

SUMMARIZED STATEMENT
OPERATIONS AND
CHANGES IN NET ASSETSFOR THE YEAR ENDED
DECEMBER 31, 2018

	2018	2017
REVENUE		
Foundation grants	\$ 214,880	\$ 253,275
Government funding	87,365	60,605
Other program funding	63,053	39,798
Donations	4,948	22,579
Other	2,151	2,372
	<hr/>	<hr/>
	372,397	378,629
EXPENSES		
Program development and delivery		
Salaries and benefits	208,589	159,308
Program resources and events	73,100	118,124
Program administration	21,473	22,425
Purchased services	18,529	18,736
Program travel	14,920	14,811
	<hr/>	<hr/>
	336,611	333,404
Administration		
Office and general	9,986	12,098
Salaries and benefits	9,490	6,301
Rent	3,344	3,204
Amortization	1,340	799
	<hr/>	<hr/>
	24,160	22,402
Total expenses	<hr/>	<hr/>
	360,771	355,806
EXCESS OF REVENUE OVER EXPENSES FOR THE YEAR	<hr/>	<hr/>
	11,626	22,823
Net assets, beginning of year	28,946	6,123
	<hr/>	<hr/>
NET ASSETS, END OF YEAR	\$ 40,572	\$ 28,946

THANK YOU TO OUR SUPPORTERS



The McLean Foundation

Chawkers Foundation

A BIG THANKS to all the individuals who generously supported EcoSpark's mission and work in 2018. Together, we engaged more than 5,000 teachers, students and community members in citizen science projects. With your continued support we know that we can accomplish even more in the year to come.



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

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info@ecospark.ca

Visit

www.ecospark.ca

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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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