

2020-2021



IISD

Experimental Lakes Area

ANNUAL REPORT

**NOTES ON A
FIELD SEASON**

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IISD-ELA's favourite
field notebook

MESSAGE FROM CHAIR OF THE BOARD AND EXECUTIVE DIRECTOR

Ever since we breathed new life into the site almost 10 years ago, IISD Experimental Lakes Area has opened its doors, both figuratively and literally, to the world.

And while the worst global pandemic in decades saw us closing those doors to all but essential research, this year we have been contentedly—and safely, of course—reopening them to new research and exciting opportunities.

As vaccines allowed the world to open up, our ever-innovative team set to work planning how we could welcome more researchers back into the site to conduct ongoing research and kick off some pressing new projects.

And new research is much needed.

The use of antidepressants and single-use plastics has exploded over the last few decades across the continent—and particularly over the last 2 years. We duly set about exploring how their disposal affects the health of fresh water. You can learn more about that work on page 6.

As always, we continued to look across the seas to apply our unique scientific perspective and to learn from others. It was in this spirit that we teamed up with researchers on the African Great Lakes—on which the welfare of over 62 million people across 10 countries depends—in what promises to be a highly fruitful and ever-evolving partnership.

The African Women in Science program has engaged and empowered dozens of burgeoning female scientists on the African Great Lakes online this year. While we have only had the privilege of meeting the participants virtually so far, we hope to open our actual doors to them as they visit the IISD Experimental Lakes Area site early next year to meet the scientists, learn valuable skills, and experience our unique approach to freshwater research first-hand. You can learn more about that project on page 8.

Speaking of lakes on this side of the pond, in order to celebrate our indefatigable team of researchers and scientists returning to their beloved lakes, we have designed this annual report in the style of their iconic field notebooks.

We hope this will give you a flavour of what it is like to be back out in the field as we continue to return to life as normal at the world's freshwater laboratory.

See you on the lakes, in person, soon ...

Jane McDonald

IISD-ELA Chair of the Board
IISD Executive Vice President



Matthew McCandless

IISD-ELA Executive Director
IISD Senior Director, Fresh Water

NOTES ON A FIELD SEASON

Everything from our daily habits to how we navigate the world has

completely transformed over the last 2 years.

And as with any great upheaval in human behaviour, there will be a resulting impact on the environment—and fresh water.



This year, we were thrilled to finally be able to kick off some new research projects as we set about exploring two such threats to freshwater health—the increase in use of both antidepressants and single-use plastics, including disposable masks and other personal protective equipment.



The first project will discover what happens when one of the most prescribed drugs in Canada—venlafaxine, a common antidepressant—is flushed out from humans and reaches our lakes. How does it affect how fish swim and interact? Does it have an impact on fish populations?



The second project explores what happens to all elements of a lake—from its zooplankton to its fish—when microplastics are introduced. Plastics are used in all aspects of contemporary life, but little is known about what happens when they break down and reach our precious water supplies.

As always, we are dedicated to exploring the emerging threats to fresh water, and this pandemic has proven to be no exception. Be sure to check out iisd.org/ela to stay up-to-date with everything we discover.



WE CARE. YOU CARE. ACARE.

Okay, perhaps that's not quite how the acronym of the African Center for Aquatic Research and Education—the organization with which we joined forces this year—came to be, but you get the idea.

Our work has now truly expanded globally as we work directly with hundreds of researchers across East Africa who work every day to ensure that the African Great Lakes—so critical to the welfare and livelihoods of over 62 million people across 10 countries—flourish.



And it makes sense.

So much of the research we have pioneered at the world's freshwater laboratory—from algal blooms to pharmaceuticals—affects the African Great Lakes too, so we are thrilled to now be reaching our hands across the ocean and ensuring our research informs the right policies and practices.



And we are excited to learn too.

The African Women in Science program, which launched this year, has already proven to be a great success, as women from across Africa come together to educate and empower female freshwater scientists in the early stages of their careers.

We are thrilled with how many female scientists have already benefited from the program and are even more excited to welcome some of them out to the IISD-ELA site next year—none of which would have been possible without the support of our wonderful community of donors, whose generosity will continue to empower that next generation of scientists.



SPEAKING EACH OTHER'S LANGUAGE

Anishinaabemowin—also known as Ojibwe—is the language spoken by the Anishinaabe people.

Given our location on Treaty 3 land, we have spent years engaging the Indigenous communities with whom we share the land—many of whom speak Ojibwe. We would like to think that in so many regards, we speak the same language—in some cases literally.

Take mercury, for example. First Nations communities in Canada often depend on freshwater fish for sustenance and are traditionally accustomed to catching their own

fish. It is therefore critical that we communicate the potentially harmful impact of mercury on fresh water and freshwater fish.

Historically, there has been little communication available in First Nations languages of the Western scientific understanding of the harmful nature of mercury accumulation in freshwater fish.

That's why, over the past 3 years, we have been working with a group of Elders, language experts, and youth to translate two animated videos explaining our research on mercury contamination and climate change into Ojibwe.



The process was fun, engaging, and challenging—and even resulted in us coining some new terms in Ojibwe.

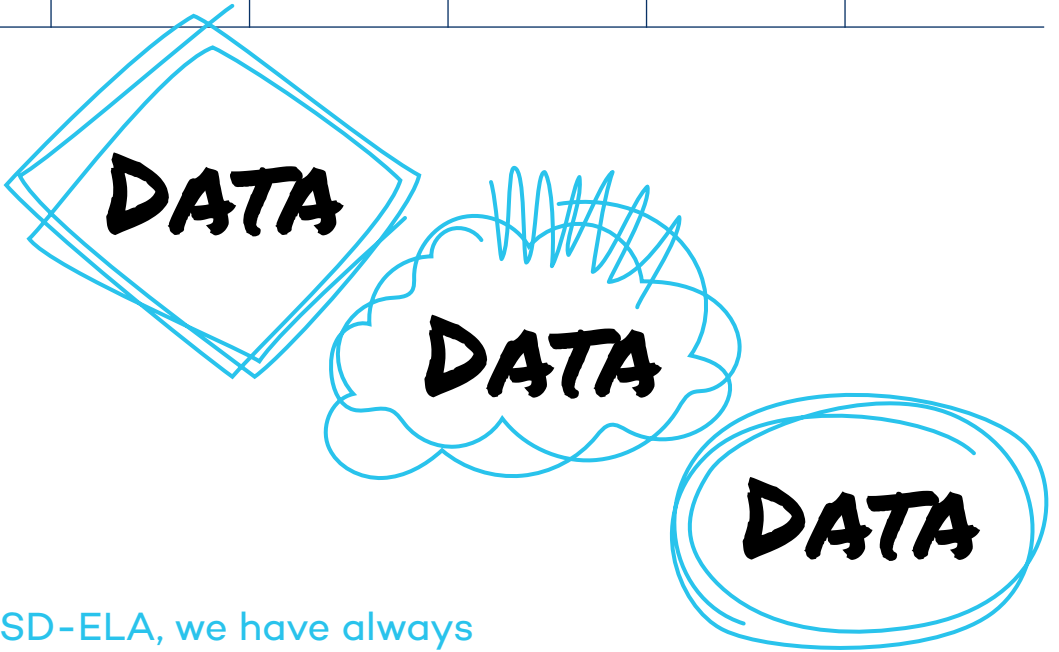
Visit iisd.org/ela to watch the videos and to learn more about our linguistic journey.

We would also like to extend our thanks to the Department of Canadian Heritage and MakeWay Foundation, without whose generous support this project would not have been possible.



“Our language has vitality, with the ability to create new words!”

Jason Jones,
language teacher



At IISD-ELA, we have always prided ourselves on having an unparalleled environmental dataset—charting the vicissitudes of the health of our lakes, from temperature to chemistry, for over 50 years.

We are now at a point where we want to share it with the world so that it informs new research and sound environmental policy. And to that end, we have set about not only digitizing our own exceptional dataset but also innovating ways of collecting more freshwater data.





This year, for example, we headed out onto Lake 227 armed with only a solar panel, an Internet-connected Aquahive, and an In Situ optical sonde. Ever since then, we have been watching Lake 227's algal blooms and busts from the comfort of our home offices.

This adaptive, remote way of monitoring spells the future of environmental tracking—and we are proud to be leading the way in exploring how similar platforms and systems can be installed across Canada to inform us of changes in water quality for faster and better decision making.

That's just one of many next steps we look forward to as we continue to expand our journey into digital data—all made possible by generous funding from RBC, for which we are extremely grateful.

REMEMBERING DAVID SCHINDLER 1940-2021



It was with great sadness that the team here at the world's freshwater laboratory learned of the death of David Schindler this year, at the age of 80.

Put simply, without Dave, there would be no IISD Experimental Lakes Area as we know it today.

Back in 1968, David Schindler was named Leader of Experimental Lake Investigations at the nascent

Experimental Lakes Area and went on to hold that position for over 20 years—until 1989.

In those two decades, he led multiple touchstone research projects at the site, including confirming the cause of harmful algal blooms and exploring the effect of acid rain on freshwater systems.

Indeed, it was the impact of these two critical studies that helped ensure that Dave was the recipient of the

“Dave’s achievements are incredible, and he secured a legacy as one of the world’s leading freshwater researchers and a proud ambassador of Canadian science around the globe.”

Michael Paterson

"I count myself among the many limnologists working in the field across the world today whose passion for fresh water and its protection was inspired by Dave's pioneering approach to researching our fresh water. And for that, I thank him deeply."

Michael Paterson

inaugural Stockholm Water Prize in 1991. His countless achievements and accolades are too numerous to list, but they include 30 honours and 13 (academic and honorary) degrees from universities in North America and around the world.

Dave's legacy at the world's freshwater laboratory is truly unparalleled, and

his tenure at the site continues to affect and inform our work daily.

Many friends of IISD Experimental Lakes Area, and of Dave, chose to honour his legacy with gifts supporting our Endowment Fund as well as our Campus Improvement Initiative. To them, we would like to express our deepest gratitude.



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PHILANTHROPY

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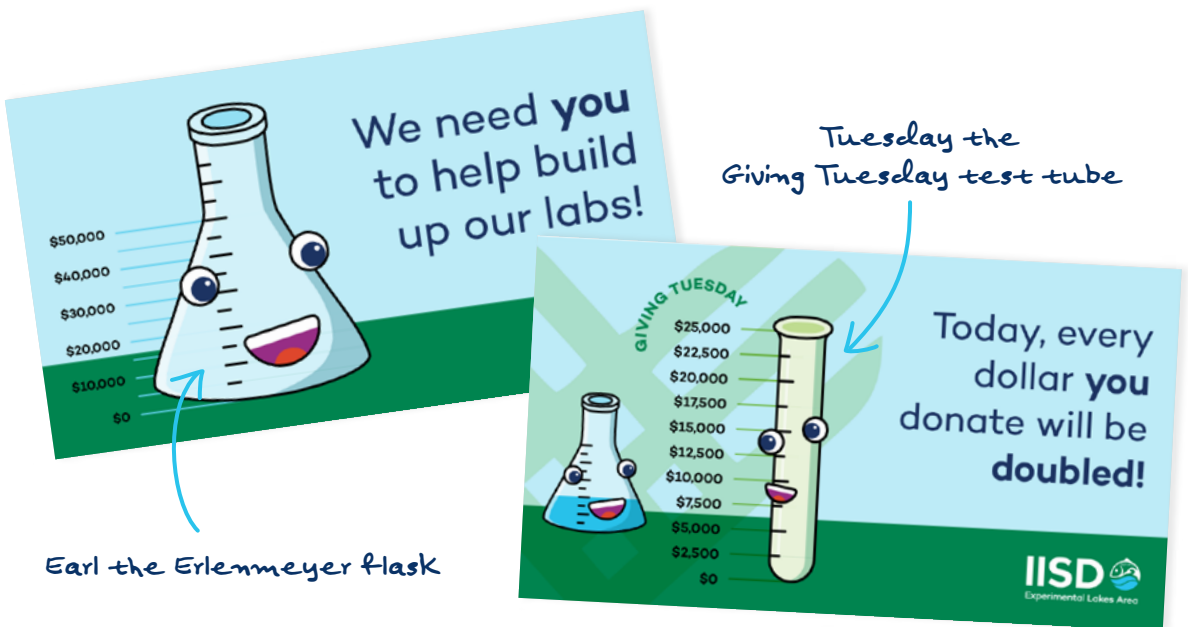
BUILDING UP OUR LABS

Last year, we asked for your help to build up the capacity of IISD-ELA's chem lab and add a key field instrument to the fish crew's toolkit. And the enthusiastic response from you, IISD-ELA's community of donors, truly wowed us! Together with our partners in MANTECH and Red River Co-op, and generous contributions from 192 donors, we managed to raise CAD 60,610.

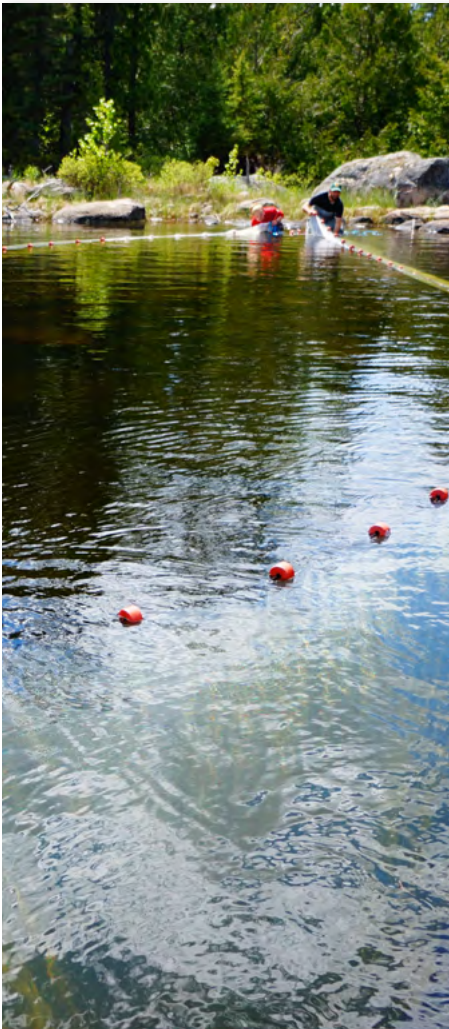
Since then, we've put these funds to work, procuring a microcentrifuge that has already

been field tested. Researchers draw blood from trout and then use the microcentrifuge to spin the sample on site, to immediately separate the blood and plasma. This enables a clean plasma sample to examine for markers of stress.

Meanwhile, in the chemistry lab, Sonya Havens is running samples through the new MT-100, the purchase of which was made possible by donor generosity, that will allow us to automate analysis of our lake samples for pH, alkalinity, conductivity, and turbidity.



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ENDOWMENT FUND UPDATE: INVESTING IN THE FUTURE OF OUR FRESH WATER

It is exciting to report that the IISD Experimental Lakes Area Endowment Fund crossed its first million-dollar milestone this year! As you know, the IISD-ELA is dedicated to keeping our water—and the communities who depend on it—safe.

To keep our operations running and growing over time, we need long-term financial sustainability. The endowment fund was established in response to this need. The fund is intended to ensure that we can continue to protect fresh water throughout any future uncertainty.

Thanks to donors like you, as well as the generosity of Michael Paterson and the Gail Asper Family Foundation and an anonymous donor, we're advancing toward our CAD 10 million goal. New gifts will still be matched 3:1, meaning each dollar you donate will leverage three for the future of fresh water.

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CAMPUS IMPROVEMENT

To meet growing interest in IISD-ELA from scientists, researchers, and students, we need a new home. Canada's first Centre for Climate and Lake Learning will provide a place where kids can get their hands wet, where local Indigenous communities can gather and share knowledge, and where the future of freshwater research will come to life.

We're fundraising right now to make sure this vision becomes a brick-and-mortar reality. You can help us reach our goal by giving today.

To learn more about what's coming up with the Centre for Climate and Lake Learning and how you can help support building it, get in touch with us! Reach Erin Bend at ebend@iisd-ela.org.

**To see the full list of our
2020–2021 donors visit our
website iisd.org/ela/support.**

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FINANCIALS



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STATEMENT OF FINANCIAL POSITION

	2021 \$	2020 \$
Assets		
Current		
Cash and cash equivalents	1,699,938	1,185,596
Restricted cash	528,413	524,377
Current portion of grants receivable	1,032,937	961,750
Accounts receivable	80,844	62,046
Prepaid expenses	75,127	132,500
Total current assets	3,417,259	2,866,269
Grants receivable	263,300	541,413
Investments	1,245,568	952,109
Capital assets, net	1,200,325	967,218
Intangible assets	28,584	28,584
	6,155,036	5,355,593

STATEMENT OF FINANCIAL POSITION

	2021	2020
	\$	\$
Liabilities and net assets		
Current		
Accounts payable and accrued liabilities	640,526	452,016
Due to International Institute for Sustainable Development	74,193	24,859
Current portion of deferred contributions	1,460,672	1,380,427
Total current liabilities	2,175,391	1,857,302
Deferred contributions	165,032	441,811
Deferred capital contributions	1,039,189	801,984
Total liabilities	3,379,612	3,101,097
Net assets		
Net assets invested in capital assets	317,524	150,970
Sustainable Future Fund	800,000	800,000
Remediation fund	528,413	524,377
Unrestricted net operating surplus	1,129,487	779,149
Total net assets	2,775,424	2,254,496
	6,155,036	5,355,593

**To see the full IISD-ELA financial
statements, visit our website at
iisd.org/ela/about/annual-report**

**STATEMENT OF OPERATIONS AND CHANGES IN
UNRESTRICTED NET OPERATING SURPLUS**


	2021	2020
	\$	\$
Revenue		
Designated grants	3,735,829	4,300,869
Sustainable Future Fund	—	2,176
Donations – unrestricted	74,662	93,452
Amortization of deferred capital contributions	143,395	115,044
Other	456,534	351,316
Investment income	18,041	31,159
	4,428,461	4,894,016
Expenses		
Field station operations	746,766	939,847
Field research	1,708,599	1,875,365
Administration	734,940	762,214
Marketing and fundraising	139,963	170,856
Outreach and education	311,534	408,713
Laboratory research	63,982	75,394
Offsite research and technical review	201,749	248,183
	3,907,533	4,480,572
Excess of revenue over expenses for the year	520,928	413,444
Appropriation from and to unrestricted net operating surplus		
Change in net assets invested in remediation fund	(4,036)	(11,320)
Change in net assets invested in capital assets	(166,554)	(27,979)
Increase in unrestricted net operating surplus	350,338	374,145
Unrestricted net operating surplus, beginning of year	779,149	405,004
Unrestricted net operating surplus, end of year	1,129,487	779,149



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