



Introducing the

# LUSH Rangers!

This year, with the help of Charity Pot, we transformed citizens' relationship with local waterbodies through citizen science.



# An innovative environmental non-profit

From the tiniest creek to the biggest lake, Canada is known for its water. Yet average citizens do not realize how their livelihood is connected with their watershed. Even when they learn about beaches closing or fish dying, they do not feel there is anything they can or should do. Water Rangers empowers citizens to learn and take action on water conservation through our user-friendly web platform, water stewardship training, and water quality testkits. Founded in 2015 through Aquahacking, we're a non-profit organization based in Ottawa aiming to make water science easy to understand. We deepen our impact by providing tools and training to understand, test and protect waterways.



# ABOUT THIS PROJECT

## EMPOWER

This project looked to give tools to those who didn't have an opportunity to test waterways before. Some were encouraged to test regularly, while others could 'dip their toes in the water' and borrow a kit. Low barriers to entry gave more people an opportunity to have their first connection with water testing.

We encouraged our participants to take photos of wildlife, and learn what invasive species might be present. They also enthusiastically cleaned garbage from shorelines, further beautifying Ontario's waterways!

## EVOLVE

This project continues to be a way to harness user experiences to design better tools. This funding helped us improve our technology so that we can continue to have more impact as we grow. Technology often falls behind our ideas, and we were able to deliver improvements to data collection and apps. This project helped us make space for our ideas to evolve.

But there's more planned: we wanted to make testing even more engaging and responsible, and we're improving testkit design and interpretation, plus making our plan to go waste-free in 2019!



# About the outreach

'LUSH Rangers' (as we affectionately dubbed this group of dedicated testers) conduct water quality tests, clean up garbage, and learn about ecosystems in order protect their local lake, river or stream! This project was funded by LUSH, our friends in trying to change the world.

Our Theory of Change states that when people learn about, then test water, they are prompted to take action to protect it (Learn --> Test --> Act). Through this grant, we took community and youth groups through this journey by first introducing them to water health, teaching them how to test water and the value of collecting baseline data over time, and then prompting them to act to protect waterways and share their knowledge with others.

Groups and individuals selected were located mostly in the Lake Ontario Watershed, although we seized the opportunity to establish testkit lending locations in other Ontario locations. We provided support in-person and online to take groups on a journey that deepened their appreciation for waterways.

We also allowed people to borrow kits from willing partners around the province, and brought kits with us to events like Waterlution, where we trained lots of new water testers!

## Legacy

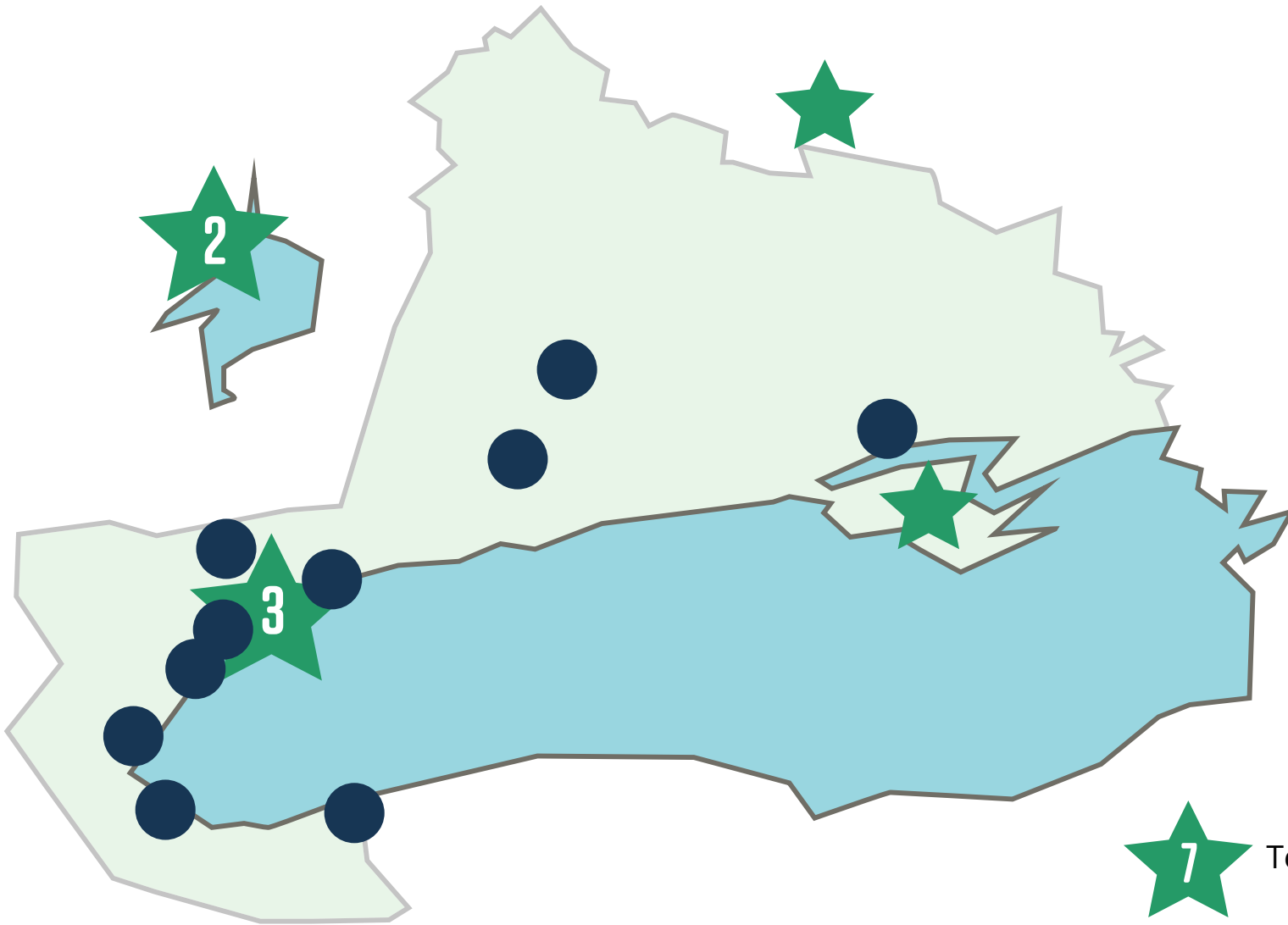
Our volunteers are dedicated. One helped us distribute kits, and others organized community events. Almost all participants wished to continue monitoring the next year. They are allowed to keep their testkit and continue contributing to open data and water stewardship. We can't wait to continue with them next year!



# Where?

**132**  
Test locations

**382**  
Observations



**7** Testkit lending locations

**10** Longterm tester's locations

\* Represents home base for our testkits and does not show all the testing locations

# Why testkits?

Initially, Water Rangers' aim was to make water quality data available and understandable to the general public and give organizations a place to collect data. We soon learned that people were excited about participating, but that they had no access to testing equipment to do it! So, we developed our testkits to be affordable, easy-to-use, require minimal training, safe and accurate.

Low-cost equipment allows more people to deepen their understanding of water issues, and leads to further protection. We believe that crowdsourcing water quality data through citizen science is the only way to achieve sustainable water monitoring. Together with our platform, we can offer people the tools to protect our waters!

Our first connection point was through water testing. Participants conducted water tests (either at a regular testing spot, at regular intervals) or when travelling, used their kit to explore new spaces.

[The testkit] gave me an opportunity to explore lakes and creeks in a way that I was never able to before. It opened my eyes to the possibilities of getting involved to help protect the environment, and it was really interesting to learn about the chemistry and health of different water bodies. It is an incredible feeling to know that you're contributing to protecting water. I cannot wait to learn more.

- Julie Lachapelle



88%

Had never tested regularly,  
and 38% had never  
tested before



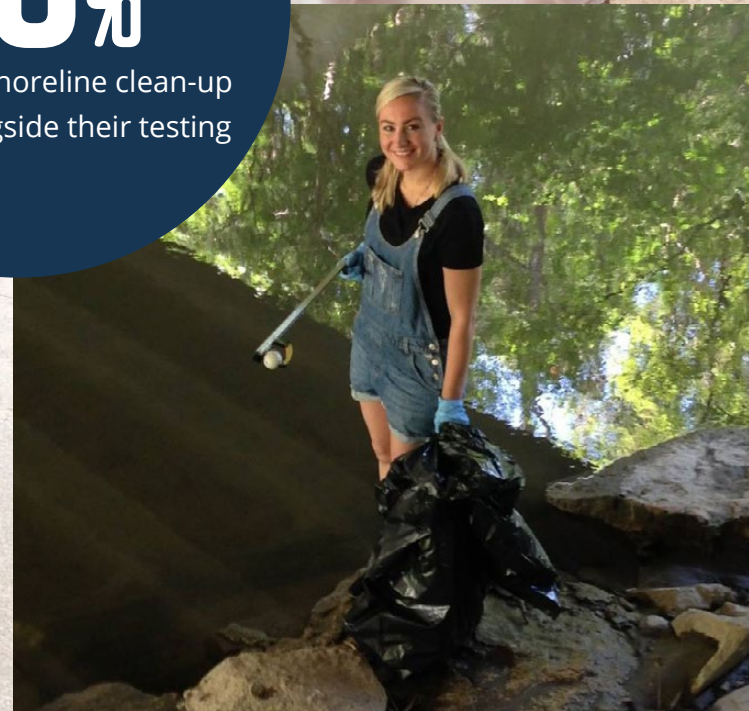
# Testing to action: Time to clean-up!

We challenged testkiters to clean up trash as a way to 'give back' to the waterbodies they love. For example, Korice Moir, along with her community group, did a massive clean-up at Mimico Creek and Local MPP Kinga Surma joined in and tried out water testing. Connections made! This is what we hope for: Water Rangers don't just collect data, they make a real difference in their community!



68%

Conducted a shoreline clean-up  
this year alongside their testing



# Teaching others

There's research that shows when you know something well enough to teach it, you truly understand it. While we know there's lots of room to make our training materials even better, we LOVED seeing our testers becoming teachers :D

88%

Shared their knowledge with curious bystanders.





# Doing more!

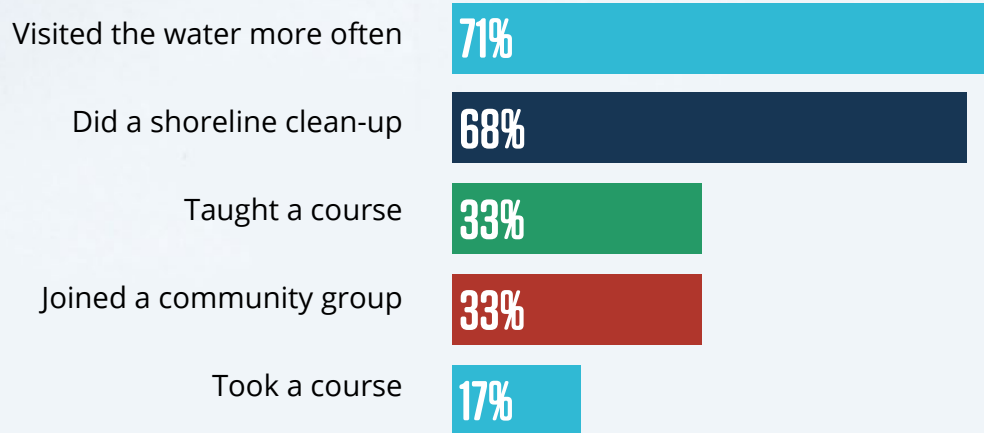
We wanted to know: does participating in programs like this lead to EVEN MORE? Our participants almost all said, "YES!"



# 75%

Participated in at least one additional action that protects waterways while part of this program

## What they did



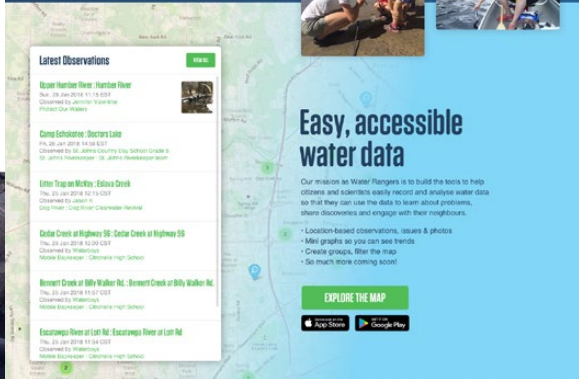
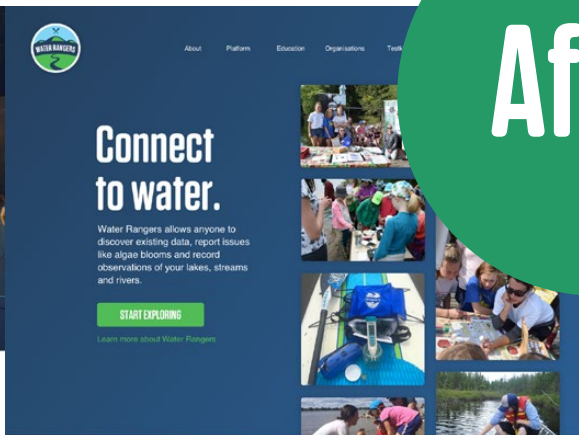
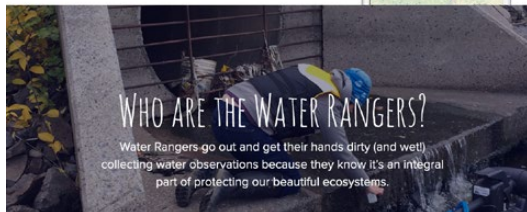
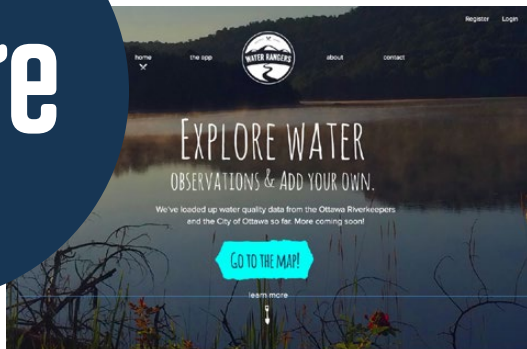
Our theory of change says that when people learn about, and then test water, they are prompted to act to protect waterways.



# Technology telling a story

We worked on some essential updates to our app as planned, but our users told us efforts would have even more impact through updating our website to make it match our strategy to transform citizen science for water. We explored how we can tell a story so that more people connect to the message, “water needs to be protected”. Through research and prototyping, we’ve designed a new website that ties together our core Theory of Change. We wanted to make sure we are LIVING what we envision.

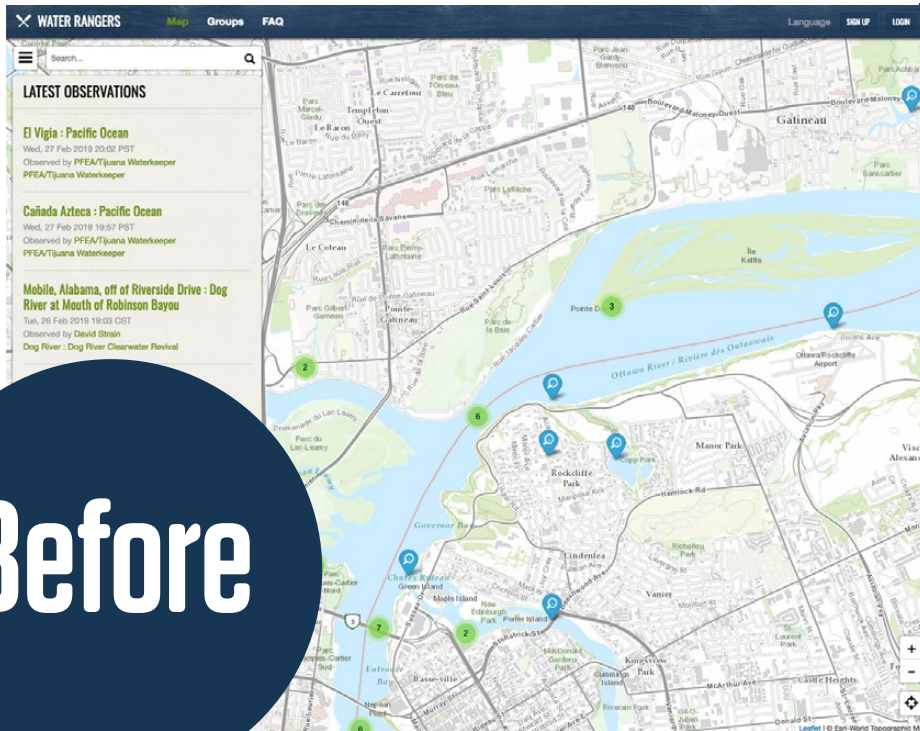
The core pieces are now built, and we’re refining messaging and user flows so that people can navigate to find what they need. It’s part of our plan for 2019: we will be finishing developing resources (including videoing experts answering questions) to match our user’s needs as we grow the movement this year. We will focus on stories, answering questions and making connections deeper so that we can prompt even more action. This undertaking could only have happened through LUSH’s support!



- Basic / Static
- Just the facts
- A typical website
- No stories
- Basic exploration
- No action
- Felt disconnected from data collection and testkits

- Leads users on a journey
- Tells stories
- Answers questions
- Unifies design elements, like navigation across the map and marketing websites
- Giving people opportunities to do more
- Shares our vision for where we want to go!

# Integrated, meaningful, local



Before

Before, we dump you straight on a map. We don't explain what to do, and observations are from everywhere. Users told us they didn't know where to start.

After, we focus on leading new people to understand what they can do, give them a local perspective (showing observations and actions they can take in their region) and guide people on a journey, showing stories and explanations. Plus, the new navigation actually supports their exploration!



After

# Lending kits: An opportunity to share and learn

A huge part of this program was educating people and equipping them with new knowledge... when they were ready for it! Our advanced users went beyond water testing and delved into invasive species monitoring and more.

But the point is to make it even easier for anyone to 'try out' water testing. So, we had locations around Ontario where people could borrow a kit. Some took it with them to the cottage. Others borrowed kits for their classroom. Others borrowed the kit, but didn't make it out water testing... yet! We now have contact with them, and encourage them to try again. The point of making barriers low, means we can get more people involved who wouldn't otherwise be involved!

## Lending locations

- County Sustainability Group (Bay of Quinte)
- Lake Ontario Waterkeeper  
(2 in Toronto to equip teachers)
- WWF Offices (Toronto)
- Pembroke Field Museum
- Canadian Freshwater Alliance (Orillia)

MORE PLANNED FOR THIS YEAR!

89%

Learned something new about  
their waterbody



# A day out with LUSH

On a hot day in July, we had the pleasure to introduce LUSH staff members with place-based citizen science for water! We loved LUSH's enthusiasm for learning and sense of fun. We were impressed with your water testing skills, sense of adventure, plus 'the golf-ball games'! Thank you to Reggie and Mariya for making this day possible.

A special thanks to First Nations who introduced our day, Korice Moir, who spoke about local experiences of Mimico Creek, and Elise Mackie from Lake Ontario Waterkeeper for sharing how they do monitoring for beach closures.





 coblou



# Supporting local artists!

Inspired by LUSH's artistry and originality, we had t-shirts designed by local Ottawa artist Corinne Blouin.

What Corinne says:

"I was inspired by the never-ending cycle of water and the integration of life within these waters. I wanted to represent plant life that could be found in our waters."

We wanted to make the testkits feel special, too, and so our team made 8 unique designs for them, complete with handwritten notes. This has become our new way to share creativity with our kits, and people are loving this homemade touch!



# An inspiring LUSHie

We were so excited to share watertesting with the LUSH staff, and one exceptional LUSHie went above and beyond to test waterways this year. Thanks to Brandy for her passion and enthusiasm! Here's her story:

"Hi! I'm Brandy, sudsy Lushie by day and Water Ranger by night. Over the last month I've been testing various bodies of water in the GTA and Ottawa and looking at the trends amongst each area. From PH to Conductivity I've been learning about how a creek varies from a lake, how a pond varies from a stream and how each and every body of water changes on a day to day basis. Factors such as storms, algae and temperature can drastically change today's reading from yesterday's reading. What first interested me into becoming a Water Ranger was Toronto dealing with the unpleasant smelling blue-green algae blooms in the Humber River.

Coming from a science background has a lot to do with why I love being a Water Ranger. I enjoy tracking trends and adding data to help others with research and to help protect our precious waterways and preserve the natural environment. An added bonus for me is comparing the water in my aquarium to the bodies of water around me with fish in them.

Growing up I've always loved lakes and beaches, my experience with testing has only made me love water even more and shown me that it truly is a precious resource that needs to be monitored in order to be protected. I'd like to thank the whole Water Rangers team for giving me the ability to participate in this amazing and eye opening experience."





# A little bit of motivation!

A program that lasts 3 seasons can be hard to maintain. Our participants have busy lives, and so we tried to make it fun and community-driven.

## Sent regular updates

Sent out bi-weekly newsletters to let people know where they were at and try to inspire them to do more.

## Kept track

Tracked metrics and posted results on social media.

## Had challenges!

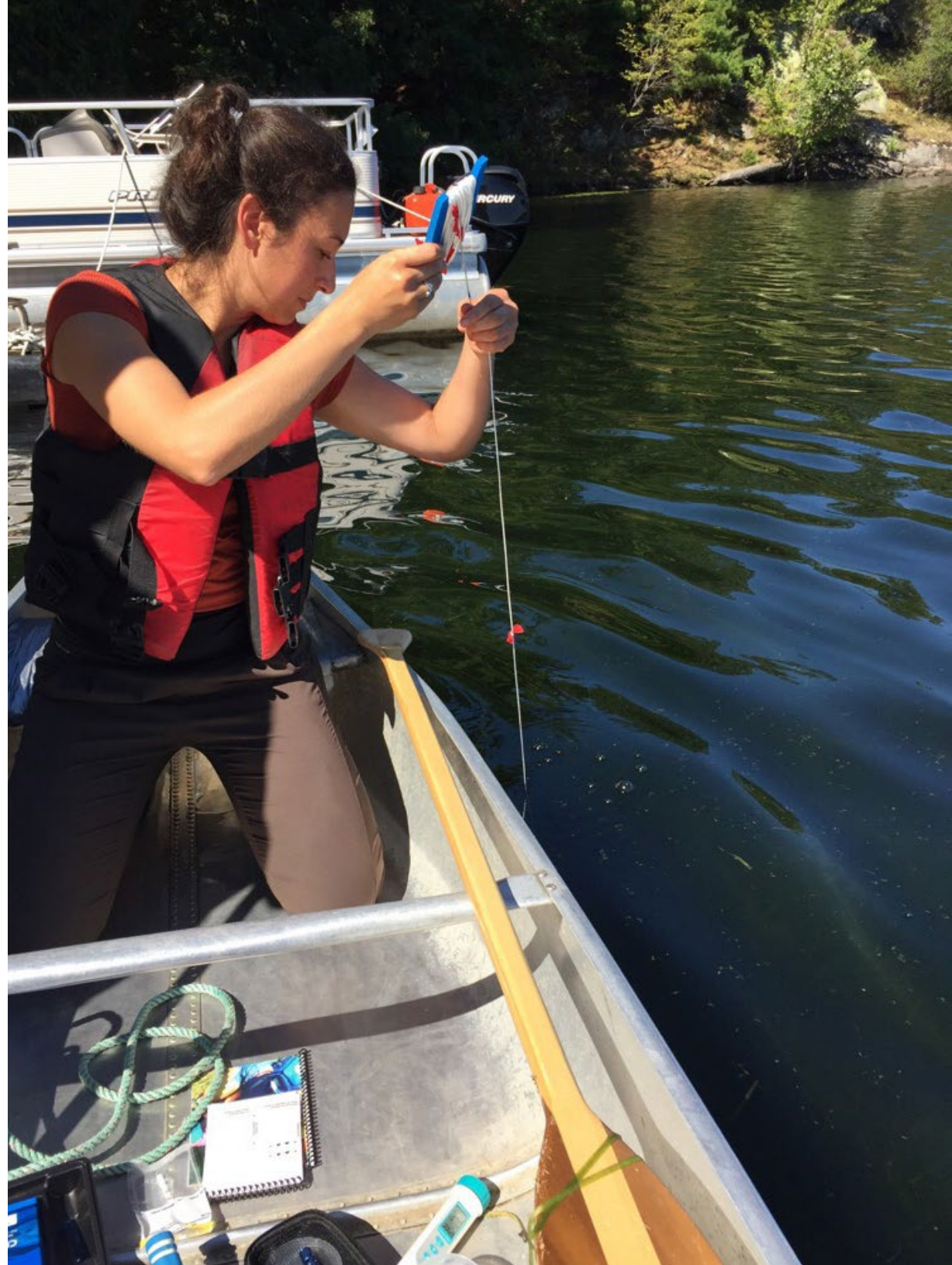
Created challenges with prizes. One participant who won our Nature Appreciation Challenge and got our awesome t-shirt!

## Resupplied our most dedicated testers

For the first 3 testers who were extremely keen, we offered to send them resupplies for the most expensive component, the dissolved oxygen ampoules.

## Got social

Started a closed Water Rangers Testers group on Facebook, where testers could share their results, photos and experiences.



# Sharing the story!

Here are just 5 of the posts from this year's program for the Lake Ontario Watershed. We loved sharing successes and journey with the public (beyond what they shared themselves on the closed Facebook Group). We know that it works too! Because we shared, our army of citizen scientists taking care of waterways continues to grow! (Plus, because of our lending program, Minister McKenna tried out water testing with our kits!).

52

Posts

TARGET: 50 posts

21.2k

Views on posts

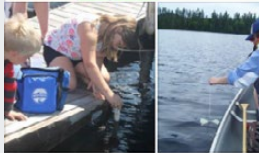
TARGET: 5k

**Water Rangers**  
Published by Kat Kavanagh · June 13, 2018 ·

Live in the Lake Ontario watershed? If you are looking to try out water testing for your local lake, river or stream with our testkit, you have until June 24th to apply to become one of our 10 new tester groups this summer! Help us gather more citizen monitoring data, and inspire more people to learn about and protect our waterways.

Learn more: <https://waterrangers.ca/en/lush-rangers/>

Apply by Sun June 24th by midnight: <https://waterrangers.ca/en/apply/> See More



6,251 People Reached 542 Engagements

**Anna Mandalentsis**  
October 1, 2018

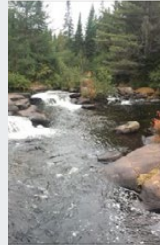
My brother and I completed the Highland Backpacking Trail this weekend and I made a condensed testing kit to take with me. I tested head and provoking lake, as well as the madawaska. I can't add pics yet for whatever reason but thought id share here in the meantime. When every article is weighed and meaningful in ur backpack, it shows how committed and enthusiastic I am for water testing 😊



**Water Rangers @water\_rangers** · 20 Jul 2018  
So exciting! Plus, we love seeing you using our #citizenscience testkits! 🌱

**Catherine McKenna** 🇨🇦 @cathmckenna  
Learning how to take water samples with Gabby from @swimdrinkfish 🐟

Thanks for your work to ensure that future generation...



**Anthony**  
@BlackLabCanoe

Got out with @WWFCanada 🐼 to test out a citizen science freshwater sampling kit. Great news - we love it! Found good readings in Toronto's Don River. Sampled pH, DO, conductivity, secchi and more. Kit by [waterrangers.ca](http://waterrangers.ca) 🌊



9:34 AM - 12 Jul 2018  
3 Retweets 11 Likes  
Elizabeth Hendriks, Heather Crochetiere and WWF-Canada 🐼

**Mimico Creek @MimicoCreek** · 29 Jun 2018  
Looking forward to water quality testing with this new @water\_rangers testkit. Awesome! Bring on the summer! #citsci



1 Retweet 5 Likes

# Growing bonds

Whether it was direct or not, this year's support from LUSH lead to us making new partnerships that are helping us grow! Our executive director was asked to speak or participate at conferences, and we're solidifying relationships throughout Canada. All this helps us grow the movement, and have more of an impact on our freshwater.

## We were invited to present!

- River Institute - River Symposium • *May 2018*
- Waterkeeper Alliance - Conference • *June 2018*
- Freshwater Alliance - Living Waters Rally • *October 2018*
- Aquahacking - Masters of Ceremony • *October 2018*

## Relationships are growing with...

- Government of Northwest Territories
- Swim Drink Fish Canada
- WWF Canada Freshwater Division
- Canadian Freshwater Alliance
- #NatureForAll
- Government of Canada's Clean Tech Hub
- Waterlution
- McGill University
- First Nations in Labrador, Saskatchewan and Alberta

### South Nation Conservation Authority Recognition 2018

*For contributions and initiatives  
toward protecting the  
environment*



### WatersNext Early Adopter Award 2018

*National award from Water  
Canada for work in citizen science*

“ This is such a great program, and we look forward to use it in other areas across the Great Lakes as part of the Great Lakes Community Monitoring Initiative.

- Elise Mackie, Swim Drink Fish Canada  
Testkit lending location



# The people behind the scenes!

It's thanks to our team members' dedication to the cause that we have incredibly talented people working to protect waterways. This project wouldn't have been possible without the hard work of our volunteers, but also the people on the team who helped organize, track and monitor. Thanks to Toni, Kat, Abbey, Ollie, Alicia and Mark, who worked throughout the season to keep this going. An extra special THANK YOU to Jordan, Natalie, Jenn, Julie S, and Julie L, who gave up their Sunday afternoon to help us assemble the kits! We have yearly 'thank-you' year end parties to bring together those who believe in this movement and shared highlights from this project. Here's some pictures of our favourite people!



A woman with dark hair tied back, wearing a red and black life vest, is seated in a metal boat on a body of water. She is holding a small, white and blue digital water testing device in her right hand, dipping it into the water. The background shows a calm blue lake under bright sunlight.

# What's next?

**In 2019, with LUSH's help, we will...**

- Implement "no waste" testkits
- Launch a new website to inspire action!
- Distribute testkits for Lake Erie
- Grow our impact globally!



**This revolution in water monitoring is possible because of LUSH's generous contribution through their Charity Pot program.**

These incredible volunteers have proven that they can deepen their connection to water, and we're so grateful to LUSH for supporting our vision for connected, empowered citizens protecting waterways. We are so grateful to these citizens whose passion for water makes this change possible! We can't wait to see where this goes from here!



# Thank you, LUSH!

Please contact [kat@waterrangers.ca](mailto:kat@waterrangers.ca) if you have any questions!