WATER RANGERS
PROTECT · LEARN

Looking back
At an Amazing 6 Months!

Ontario Trillium Foundation

Fondation Trillium de l'Ontario

An agency of the Government of Ontario
Un organisme du gouvernement de l'Ontario

Jordan Ross, our Environmental Data Scientist on the Ottawa River. PHOTO: Justin Langille

Water Rangers

DEVELOPS TOOLS FOR ORGANIZATIONS AND THE PUBLIC TO EXPLORE/RECORD OBSERVATIONS FOR OUR WATERWAYS.

Thanks to Ontario Trillium Foundation, from May 1 until October 31, we worked to test our platform, taught people how to use it, and made our interface SO much better. This report highlights some of the things we've done.

On June 14, we had our official launch as Ottawa Riverkeeper's citizen science platform.

Ottawa Riverkeeper remain our primary partners: their team and volunteers have helped us all summer to test & improve our platform. We have released lots of new features on the Group profile based on their feedback, including a group map view, a leaderboard and seeing observations listed. We have lots more planned, based on their suggestions!
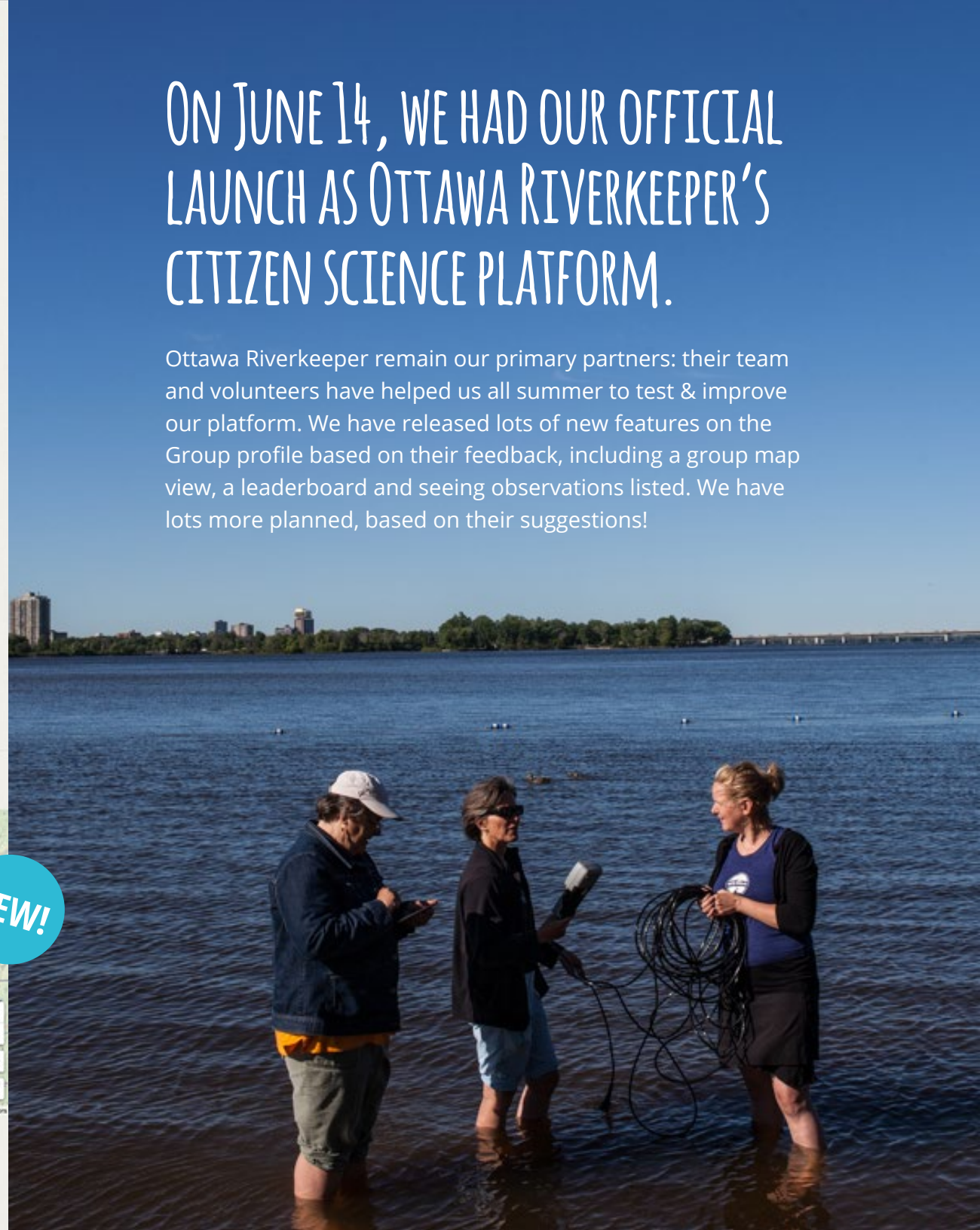

Ottawa Riverkeeper

Riverwatch

311 OBSERVATIONS
72 LOCATIONS
1 ISSUES

EDIT GROUP

http://www.ottawariverkeeper.ca/what-we-do/monitor-the-rivers-health/river-watch/

LEADERBOARD

1 **Kat Kavanagh** — 3155 Points
2 **Louis Lafontaine** — 2030 Points
3 **Wendy Ryan** — 350 Points
4 **Justin Langille** — 290 Points
5 **Meaghan Murphy** — 90 Points
6 **Virginia MacLatchy** — 70 Points
7 **Raymond Touchette** — 30 Points
8 **Diane Schreiner** — 0 Points
9 **Howard Powles** — 0 Points
10 **Ruth McKlusky** — 0 Points

CONTACT

Meaghan Murphy,
Riverwatch Coordinator and
Staff Scientists
Tel: 613-321-1120 x 1006
Email: Email us

AREAS MONITORED

Ottawa River watershed

ABOUT

Riverwatchers identify themselves with specific sections of the Ottawa river or one of its tributaries and become involved in ways that reflect their own interest, time and skills. Each Riverwatch group identifies the activities in their local community that may be having an impact on the river. Together, they work with Ottawa Riverkeeper to find effective solutions to their local problems.

Read More

TESTING PROTOCOL

Riverwatchers conduct water quality tests monthly during the ice-free season.

The Riverwatcher test kits measure a number of key water quality parameters that are indicators of river health for aquatic life.

Read More

MEMBERS (30)

Kat Kavanagh — Last Observation — Sat, 05 Nov 2016 16:07 EDT — 102 2

Meaghan Murphy — Last Observation — Sat, 30 Jul 2016 15:10 EDT — 8 0

Raymond Touchette — Last Observation — Sat, 02 Jul 2016 12:38 EDT — 2 0

Wendy Ryan — Last Observation — Sat, 24 Sep 2016 10:00 EDT — 13 0

Louis Lafontaine — Last Observation — Sun, 25 Sep 2016 15:54 EDT — 59 0

Ruth McKlusky — 0 0

1 2 3 4 5 Next › Last »

Locations & Observations

LOCATIONS

Bennett Lake : Sudbury
Carp River : Downstream of Fitzroy Street Bridge
Gatineau River : Mueller Bay
Gatineau Tributary : Marina Road

LAST OBSERVATION MADE

2016-09-24 10:51 EDT — Contributed 1 of 1 Observations
2013-08-11 00:00 EDT — Contributed 1 of 1 Observations
2016-10-16 15:32 EDT — Contributed 1 of 2 Observations
2016-07-07 17:49 EDT — Contributed 3 of 4 Observations

Home | Opinion | World | Canada | Politics | Business | Health | Entertainment | Techno

Canada | Ottawa

Made-in-Ottawa app helps volunteers

'Riverwatchers' use smartphones to upload observations, photos to central database

By Giacomo Panico, CBC News Posted: Jun 14, 2016 2:25 PM ET | Last Updated: Jun 14, 2016 2:25 PM ET

The Ottawa Riverkeeper's Meaghan Murphy (left) trains volunteer 'Riverwatchers' Wendy Ryan and Howard Powles with help from Water Rangers app developer Kat Kavanagh (right). (Giacomo Panico/CBC)

162 shares

Facebook
Twitter
Reddit
Google
Share
Email

Volunteer ecologists who help keep watch over the Ottawa River have started using a locally developed app to record and share their observations in a central database.

The app, developed by Ottawa-based non-profit Water Rangers, allows anyone with a smartphone to submit measurements such as water temperature, as well as observations about pollution, wildlife sightings and invasive species.

"What we're trying to do is open up citizen science to the everyday person," said Kat Kavanagh, executive director of Water Rangers, during the app's launch Tuesday in Gatineau's Moussette Park, on the shore of the Ottawa River.

With the aid of a geo-locating feature, the information — which can include photos — is then fed into a central database where it can be plotted and analyzed.

Kavanagh said she hopes the app will be used to help improve conditions along the Ottawa River.

"I think the first step in making change is awareness," said Kavanagh.

New tool for 'Riverwatchers'

The Ottawa Riverkeeper relies on an army of 75 volunteers called "Riverwatchers" to patrol approximately 600 kilometres of the Ottawa River, or nearly half the waterway's length.

During their annual get-together Tuesday, Riverwatch coordinator Meaghan Murphy trained the first batch of volunteers to use the Water Ranger app.

"They really are our eyes and ears on the river," said Murphy. "What's so awesome about this app is people can take what they know and share it publicly."

Kat Kavanagh's Water Rangers app allows Ottawa Riverkeeper 'Riverwatchers' Wendy Ryan (left) and Howard Powles (right) to publish their observations and recordings of the Ottawa River into a central database through a smartphone. (Giacomo Panico/CBC)

Murphy said staff at the Ottawa Riverkeeper plans to track all the information posted on Water Rangers, including observations posted by the general public.

"That information comes to us, tells us that there's an issue, and then we can help problem-solve and create change," said Murphy.

Kavanagh and her team at Water Rangers created the app as an entry in last year's inaugural "aquahacking" event, where it took first prize.

In addition to the partnership with the Ottawa Riverkeeper, Water Rangers has teamed up with Mobile Baykeeper in Alabama.

A map of the Ottawa River from the Water Rangers website. (Water Rangers)

Our launch on June 14 with Ottawa Riverkeeper was featured on CBC news online, on the radio and TV!

Ottawa Riverkeeper @ottriverkeeper — Following

Citizen scientists trained to protect Water w/ award winning @water_rangers app! @HUBOttawa @WWFCanada @AquaHacking

RETWEETS 7   LIKES 16

8:02 AM - 14 Jun 2016

You, Kat Kavanagh, Ferme Moore and Ottawa Riverkeeper

7   16

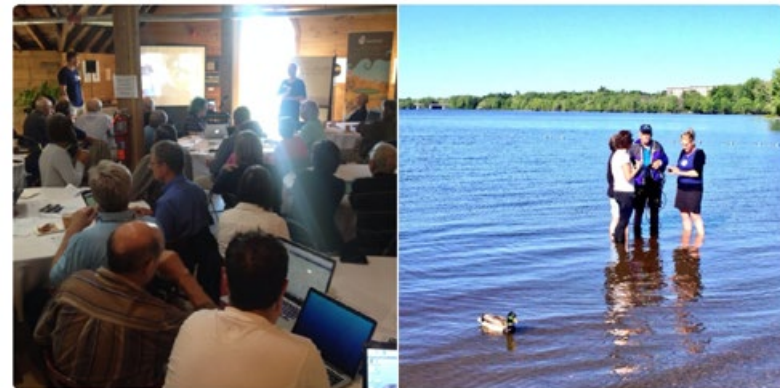**Water Rangers**
Published by Kat Kavanagh [?] · June 17 ·

Here's the clip from the CBC Ottawa News! With Meaghan Murphy, Wendy and Howard

Water Rangers on CBC News
00:58
OTTAWA news

1,606 People Reached

636 Video Views

59 Reactions, Comments & Shares

	43 Like	7 On Post	36 On Shares
	2 Love	2 On Post	0 On Shares
	5 Comments	1 On Post	4 On Shares
	9 Shares	7 On Post	2 On Shares

167 Post Clicks

Thank you Ottawa Riverkeeper, for all your support!

"Water Rangers has provided a unique, intuitive and engaging tool that is connecting citizen scientists throughout our watershed with a shared passion for water health. It is empowering people to learn and share their knowledge of water health with their communities and to begin to think seriously about the factors that may compromise that health. We are so excited to have such an amazing engagement tool available in our watershed."

- Dr. Meaghan Murphy
   Staff Scientist & Riverwatch
   Coordinator for Ottawa RIverkeeper

Our primary partner
Ottawa Riverkeeper

To engage more people, we lent out some testing equipment. It was a popular engagement tool!

Going forward, we want to extend this engagement tool so we can allow anyone interested to become a water steward.

"The first water test was like slowly wading into cold and unfamiliar waters, but as I grew familiar with the equipment and processes, it was easy to dive right in every day before I went out for a swim. Super easy, fast and fun! Now I just have to figure out how to get my hands on a test kit permanently."

- Tabatha, White Water Canoer with RA Canoe & Camping Club

172

People directly trained on water quality testing & using Water Rangers during 34 excursions

538

People presented to in-person and demonstrated Water Rangers in 9 presentations

On the next few pages, we create a timeline for both of these metrics with the number people trained on each day. Training people and speaking about our platform has been the best way to learn how to help people be great water stewards.

Ottawa River, 45 minutes West of Ottawa

Brila Youth Projects

On May 5, 12 youth aged 11-14 learned about our platform, water quality testing and water activism. The workshop was part of Ottawa U's week-long introduction to university for youth.

Ottawa River, downtown Ottawa

Ottawa Riverkeeper: Riverwatchers

On June 14, we had our official launch featured on CBC news and worked with approximately 30 riverlovers to train them how to use our platform.

RACCC

On August 8, we went out on an excursion with some White Water Canoers who are part of RA Canoe & Camping Club (RACCC). We tested lots of remote waters. We found some new bugs, and our waterproof phone case worked like a charm!

Ashbury College

On October 4, we trained 3 groups of 8th grade science kids from Ashbury College on water quality testing and how to track their data. There were 56 kids total plus 2 teachers.

Ottawa River, near Foresters Falls

Ottawa River, New Edinburgh Boat Club

Lake Dalhousie, Mississippi Valley

MVCA

After working with their staff this summer on their City Stream Watch and Lake Monitoring Program (photo shown), we presented to the Mississippi Valley Conservation Authority's (MVCA) Board Meeting on October 19. The board members also represent more community groups we hope to work with soon.

SMARTER

On October 27, we presented to Stream Monitoring, Assessment & Research Team Eastern Region (SMARTER Ontario).

"I see the work that you are doing as a gateway high and non-threatening way to get into the world of environmental science, monitoring, stewardship and understanding. Need to bottle your enthusiasm...."

- Mike Yee, SMARTER organizer and Manager of Biology and Water Quality at RVCA

Oh, How we've grown...

Over the next few pages, we display some of the key metrics for our growth from May 1 until October 31. We had defined some metrics in our grant application, and have incredible growth in those categories, plus many more!

Westboro Beach, Ottawa River

19
Average observations per location

of Observations

OTF METRIC: 800 NEW OBSERVATIONS

APR 30	4,066
OCT 31	16,509 ↑308%

of Locations

OTF METRIC: 50 BODIES OF WATER

APR 30	195
OCT 31	873 ON 206 BODIES OF WATER ↑348%

"Doing this work has truly been a life changing experience. It was incredible to learn from everyone how to test and observe the river, what it means to you and what Riverwatching might look like in the future."

- Justin Langille,
  Masters Anthropology
  Student who worked with
  us this summer

With Ottawa Riverwatcher, Louis, Hawkesbury

of Registered Users

OTF METRIC: 100 NEW USERS REGISTERED

APR 30	32
OCT 31	210

↑**556%**

of Groups

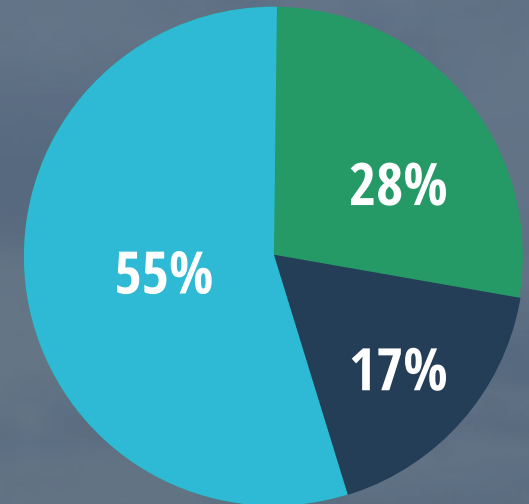|	
APR 30	10
OCT 31	30

↑**200%**

28%

55%

17%

● **ALREADY TESTING**
Users currently participating in stewardship or water science programs.

● **BRAND NEW**
Users who have never participated in stewardship before.

● **UNDECLARED**
We're not sure if they have a background in stewardship or not.

7

Average users per group

Ottawa River, downtown Ottawa

of App Users

OTF METRIC: 400 UNREGISTERED USERS

NOV 1 - APR 30   1,048

MAY 1 - OCT 31   3,593   ↑ 243%

7:54
Average time on the app

of App Pageviews

OTF METRIC: 2,000 PAGEVIEWS

NOV 1 - APR 30   10,377

MAY 1 - OCT 31   40,908   ↑ 294%

of Website Sessions

OTF METRIC: 1,000 PAGEVIEWS

NOV 1 - APR 30   2,847

MAY 1 - OCT 31   4,824   ↑ 69%

Green's Creek, Orleans, with RVCA City Stream Watch

Lots of New Partners!

Level 1: Full strength colour
These groups have been trained and are active on our platform!

Level 2: 60% opacity
Groups we've presented to and trained on our platform and we're working with them to get them using Water Rangers soon.

- Conservation Authority
- Community Group / NGO
- Educational Institution
- Other

South Nation Conservation Authority

Lake Clear
Bonnechere River Watershed

Lake Ontario Waterkeeper

Robot Missions

Watersheds Canada

Rideau Valley Conservation Authority
Lake Monitoring Program

White Lake Association
Mississippi Valley Watershed

Christie Lake Association
Rideau Valley Watershed

Lake Links
50+ Lake Associations in Rideau Valley

Girl Guides
Ottawa Troop

Mississippi Valley Conservation Authority
Lake Monitoring Program

Rideau Valley Conservation Authority
Algae Watch Program

Ottawa Riverkeeper
Riverwatch Program

RA Canoe & Camping Club

Lake of the Woods Water Sustainability Foundation

Green Sailors Network
Toronto-based

Muskies Canada
Ottawa Chapter

Great Lakes Observing System (GLOS)

Ottawa Wavemakers

Carleton University

Ashbury College

Ottawa University

Aquahacking
For the Ottawa River, next year for Lake Erie

Mackenzie Data Stream

Hub Ottawa

City of Ottawa

International Joint Commission

Corpus Christi K-6 School

Algonquin College

Level 3
People we've spoken to but haven't formally worked with yet.

Water Bros
Champlain & Westboro Community
Greenspace Alliance
Taylor Statten Camps
WWF Canada
RVCA: City Stream Watch
FOCA: Ontario Cottagers Association
Evergreen
Muskrat Watershed
WaterAid

Shoreline Clean-up
Sustainable Enterprise Alliance
River Institute
Evidence for Democracy
Lost Rivers
The Kind Village
Environment & Climate Change
Lake Simcoe Conservation Authority
Ottawa EcoDistrict
Ontario MPP: Marie France Lalonde

Ontario Centres for Excellence
Swim Guide
Len's Cove Marina
JessEco Events
Wellington WaterWatch
Invest Ottawa
RBC Canada
H2OAlliance
Conservation Ontario
Ontario Invasive Plant Council

New Frontiers School Board
Watershed Monitoring
Let's Talk Science Outreach
CISED
SimbiH2O
Ottawa River Musky Factory
IBM Bluemix team
Great Lakes Action
Scouts Canada

Crowe Lake, Rideau Valley

Our partner
Rideau Valley Conservation Authority

Feeling the love with Rideau Valley

"We had tried to create a reporting website but lacked the technical skills. In order to make a one stop shop for citizen science reporting we have transitioned our reporting website over to the Water Rangers. Having their technical skills to create the website they have has been a great asset."

-Kaitlin Brady, Project Coordinator for People, Aquatic Plats and Healthy Lakes Project at Rideau Valley Conservation Authority

Our partners get what we're trying to accomplish.

"The hardest part of any science stewardship project is ensuring that volunteers with little scientific experience can collect useful and accurate data. With the Water Rangers project, Kat has committed to this goal by immersing herself in field work with multiple organizations, including the MVCA, working emphatically towards the most feasible, cost-effective, engaging and accurate way for the Water Rangers volunteers to collect environmental data. As such, I have no doubt that this project will continue to grow as an invaluable tool to connect the public with their environment!"

-Melanie Dodd-Moher, Environmental Technician, Mississippi Valley Conservation Authority

Our partner

Mississippi Valley Conservation Authority

PHOTO by Justin Langille

Creating a social media presence has become increasingly important.

We get to engage with a wider more diverse audience online, and can share our successes with our new followers. While growing social media wasn't one of our grant goals, it has, over the past 6 months become a way for us to better communicate ourselves and so we've worked hard to promote it. We've posted 353 tweets and 26 Facebook posts.

Facebook likes

APR 30 — 141

OCT 31 — 203 ↑ 45%

4,013
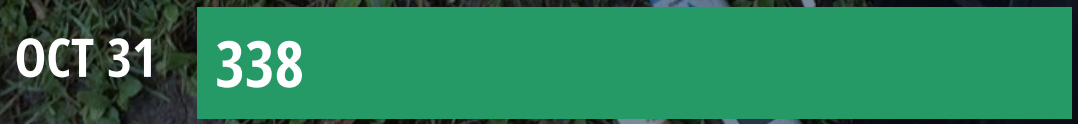Total reach (organic)

677
Post clicks

387
Reactions, comments & shares

30.3k
Tweet impressions

3,213
Twitter Profile visits

793
Retweets, likes and user mentions

TWITTER FOLLOWERS

APR 30 **131**

OCT 31 **338**

↑ **158%**

Water Rangers @water_rangers
So happy to have met the most genuine woman Sophie Gregoire-Trudeau at #RiverkeeperGala @ottriverkeeper pic.twitter.com/qKQbaT0KNs

Water Rangers @water_rangers
Prototyping testkit container. Couldn't machine stitch vinyl so had to handsew! #ottwavemakers @HUBOttawa @WWFCanada pic.twitter.com/1bmTFCUUve

Water Rangers @water_rangers
Interested in learning about water me @HUBOttawa for a lun http://ottawa.impact science-picnic/

Water Rangers @water_rangers
At @ottriverkeeper with @rivermeredith a @cathmckenna celebrating our river with the @water_rangers 4K swim! #swimdrinkfish pic.twitter.com/u6MmyQf5RK

Water Rangers @water_rangers
Built from #Aquahacking, we trained 60 from @ashburycollege Tues on Science! https://app.wa

Impressions   3,397
                     164
                     125
                     13

Media engagements

Likes   256
                     10

Total engagements

Detail expands   1,670   909
Media engagements   136
Likes   69   11
                     23   4

Total engagements   1,514
                     58
                     21
                     10
                     9

City Stream Watch in Shirley's Creek, Kanata for MVCA

Great day to be out and helping clean Kettle Island on the Ottawa River. @ottriverkeeper @water_rangers

RETWEETS LIKES
2   11
12:10 PM - 27 Aug 2016
Ottawa, Ontario

Ms. Wainwright
@ms_wainwright
itizen scientists of @CorpusOttawa head to the anal to check pH balance, temperature, and algae! @water_rangers

Ottawa Riverkeeper
@ottriverkeeper
So proud of our partner @water_rangers who just rocked on st @AquaHacking 2016! #AquaHacking #citizenscience

Water Rangers @water_rangers
Interested in learning about me @HUBOttawa for a lun http://ottawa.impacthub. science-picnic/ ... #wa

Water Rangers @water_rangers
Newest prototype of the test kit! There's a secchi refractometer inside! er.com/Ydtg

Water Rangers @water_rangers
Great to meet the @LOWaterkeeper crew today... Love all the work they are doing for @swimguide ! #swimdrinkfish

Water Rangers @water_rangers
Any #LWR16 members want to come to the water at lunch for some citiz sting, come find the girl w ottwavemakers pic.twitter.com/56X4cxQsK

Water Rangers @water_rangers
Starting gathering equipment our test kits, thanks to #ott @HUBOttawa and @WWFC pic.twitter.com/b3ngdEurqo

Impressions   118
                     7

Total engagements

A FEW OF OUR TWEETS!

AQUA HACKING

RETWEETS LIKES
6   12

RETWEETS LIKES
2   8

Our booth at Discover Ontario in May

Invasive species removal with RVCA in August

Peter, Muskies Canada fisherman in September

Good technology requires testing and constant refinement.

We want ours to be as useful and impactful as possible. Our process is based on user-testing.

~300
Tasks, bugs & user feedback tasks completed

Just a few of the tasks • Built the ability to report an issue along with a progress timeline and being notified of changes to the issue • Badges, Points, Leaderboards • Ability to filter the map by certain data, groups • Created Groups in order for Organizations to manage their members and information, Group members, Observations made and Locations monitored • Started on the mobile app design, fixed bugs on mobile (i.e. didn't let you find yourself since button was cut off, allow you to cancel an image upload) • Add multiple photos per observation with improved user interface • Ability for original creator to delete observations / locations • Added in water quality test fields • Added new map layers • Changed colour coding on map point links • Improved the display of the profiles • Fixed lots of reported issues / bugs with the app • Importing data • Built in support for French translation • Improvements to our administration panel • Pagination for observations so that page load is fast • Fixing issues with Lat/Long • Added analytics tracking • Bugs on Android

We're still map-based, but so much better!

Our map works so much better on mobile phones, and we now let you filter the map so you can see specific types of tests or groups! Our focus remains in the Ottawa area, Rideau Valley and Mississippi Valley and we see even more potential for more growth with many more groups in this region in the coming year!

✕ **WATER RANGERS**   Beta v1.2   **Map**   **Groups**   **My Profile**   Language   **LOGOUT**

FILTER LOCATIONS ✕

Show me locations with...

WATER QUALITY TESTS ⊖

- ☐ pH
- ☐ Water Temperature
- ☐ Air Temperature
- ☐ Dissolved Oxygen
- ☐ E.coli Fecal coliforms
- ☐ Phosphates total
- ☐ Secchi Depth
- ☐ Nitrites
- ☐ Nitrates
- ☐ Conductivity
- ☐ Alkalinity
- ☐ Turbidity
- ☐ Hardness
- ☐ Total Kjeldahl Nitrogen
- ☐ Total Phosphorus
- ☐ Salinity
- ☐ Water Depth

WILDLIFE ⊕

INVASIVE SPECIES ⊕

ISSUES ⊕

GROUPS

Search... 🔍

NEW!

Leaflet | © Esri-World Topographic Map

ISSUE REPORT
Pollution

Foam coming in from the entry point of the stream from Lac Girard. Looks like washing up liquid or shampoo. Apparently this happens every Monday.

Weather
Hot. 31 degrees

Have you seen this before?
No

Contact Us

Email: ollie@waterrangers.ca

NOTE: Contact information is only visible to you and the Agency the issue was reported too.

ISSUE HISTORY

2016-09-05

Pollution reported to Water Rangers : Ocean Explorers Team, Water Rangers : Explorer's team by Ollie Kavanagh.

2016-09-05

Ollie Kavanagh has marked this issue as **resolved**.

Foam bubbles have no disappeared from the lake.

Comments

eg. Any updates to report with the issue?

SUBMIT

Leaflet | © Esri-World To...

DETAILS

Reported on:
Mon, 05 Sep 2016 11:55 EDT

Reported by:
Ollie Kavanagh

Reported to:
Water Rangers : Ocean Explorers Team,
Water Rangers : Explorer's team

Lat: 45.6501608763127
Lng: -75.745153427124

LATEST PHOTOS

About this Location

LAKE MCGLASHAN : NEAR THE STREAM THAT COMES FROM LAKE GIRARD

This spot is located near the stream which flows from Lake Girard

21 OBSERVATIONS
3 ISSUES
0 COMMENTS

SUMMARY PAGE

Our biggest new feature was creating a way to report issues.

Our users said they wanted a better way to track issues like pollution and algae reporting. So, we built a huge extension to our platform based on their suggestions. To do this, we also had to rebuild our entire information profile, so that a location could have both issues and observations.

• Track the issue over time and create a timeline.
• Ability to resolve and close issues.
• Add multiple photos with captions.
• Create shapes on the map that allow groups to be notified if any observations or issues were reported in their region.
• Ability to report it to organizations on our platform.

Feedback on this has been excellent, and while it's not widely used yet, we've had interest from new groups who specifically want to use it for reporting issues in their region!

NEAR THE STREAM THAT COMES FROM LAC GIRARD
Lac McGlashan

⊕ ADD OBSERVATION
⚠ REPORT AN ISSUE

OBSERVATIONS 21   ISSUES 3   COMMENTS 0

ISSUE STATUS: RESOLVED

Water Quality
2016-07-09

Reported by
Kat Kavanagh
Water Rangers : Explorer's team

FULL REPORT

DETAILS

📍 View Location summary
✏ Edit Location details

Added by
Kat Kavanagh

Description
This spot is located near the stream

We've done so much, but there's so much more work to do!

70%

Used field sheets & reported online later

Many noted that our platform didn't work in remote places that didn't have internet. We know we need to build an offline app.

50%

Found our platform intuitive

We know older users need the easiest system possible, so we have even more work to do to make sure that the platform works for first-time users.

Testing the mobile experience

We're on the road to change how stewardship & technology work for water.

We have had lots of new and existing water lovers who are enthusiastic for what we're doing and we want to make our impact even stronger. We're developing strategic partnerships with organizations, schools and other community groups who will help us grow and our tools help make water stewardship fun and educational!

Ontario Trillium Foundation

Fondation Trillium de l'Ontario

An agency of the Government of Ontario
Un organisme du gouvernement de l'Ontario

On November 16, we thanked Ontario Trillium Foundation with the help of Melissa Pomeroy, our Case officer.

We had a party to celebrate our successes and presented this report. Thirty Water Rangers volunteers and supporters joined us to test water, listen to stories and music about water. It was tons of fun! Melissa, thank you for all your enthusiasm and support!