

Supporting Indigenous Communities in Creating a Water Secure Future

PROJECT SUMMARY

Co-Creation of Indigenous Water Quality Tools, Aquatic Assessment and Restoration Strategy seeks to advance water security initiatives in Six Nations of the Grand River through the development of local, Haudenosaunee-led water monitoring technologies, management strategies, educational resources, and youth capacity building.

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PROJECT NAME: Co-Creation of Indigenous Water Quality Tools (CCIWQT)

Progress

Indigenous water security is **holistic and integrative**, and this is reflected in the project's wide range of research



Results

Tangible results extend from valuable research findings that can support community decision-making, to

- in the project's wide range of research goals and objectives.
- Through participatory mapping, an
 Indigenous map has been developed using *Terrastories*.
- Educational materials have been embedded in a culturally-informed
 Virtual Reality experience.
- Development of distributive water monitoring technologies, including surface water quality sensor deployment in the field.
- A fish survey was conducted within the reach of the Grand River adjacent to Six Nations.
 Contaminant analysis will follow.



Recording mapping data on the Two Row Paddle.

User Engagement

Ongoing dialogue with our community partners provides us with valuable feedback about **their perspective** on the advancement of research activities.

- In June, we hosted "A Grand day of STEM activities for Indigenous high school students" (Google it!).
- In July, we participated in the Two
 Row On The Grand, a multi-day
 paddle that resulted in the collection
 of valuable mapping data.
- On July 22, we set up a booth at the
 Six Nations Pow Wow to share

- accreditation for Indigenous youth.
- Results from studying the impact
 of climate change on Six
 Nations indicated: a) higher
 temperatures, b) more extreme
 rain, c) greater water stress.
- Over 40 species of fish were identified to live in the Grand River. This will be compared to eDNA in water samples.
- By participating in our experiential & youth-focused STEAM activities, Indigenous students from local schools have received Certificates of Completion.



Sensor deployment in the McKenzie Creek.

- information about the project.
- On July 28, we co-hosted a youth-led event 'Gathering Good Minds' and

received youth impressions on the

Virtual Reality experience.

Outcomes and Application Uptake

Making knowledge accessible to community through research driven by local priorities and disseminated via bilingual learning platforms.

- The Indigenous map created by Six Nations using Terrastories is being released to the public to act as a **living digital archive**, serving as a repository of Indigenous culture, language, and knowledge.
- An **open-access paper** detailing the results of our climate change study will help inform climate resilience and adaptation strategies (in accordance with Six Nations 2019 Community Plan). Other assessments (human & ecological health) will pursue a similar outcome.
- Providing Indigenous youth with **accredited training and capacity-building opportunities** will help improve the current underrepresentation of Indigenous people in STEM programs. This supports co-creation and investment in community human capital.









