



Project Report

Stories for Stream2Sea: Mapping Changing Ocean Relationships and ACTION in Canadian Communities

Principal Investigator: Dr. Jen McRuer and Dr. Lisa (Diz) Glithero

Funding Partner: MEOPAR

As per the reporting requirements outlined in your Performance and Reporting Agreement, please submit this completed form (and associated financial spreadsheet) to Evelyn Hornbeck, evelyn.hornbeck@meopar.ca by **Tuesday, November 22, 2022.**

1. Project status

What is the current status of your project? Has anything changed from your original proposal or the last report?

- This progress report confirms that the active research stage of the Stories for Stream2Sea project has been completed, including the real-time, integrated StoryMap. Data have been analyzed and an overview incorporated onto the StoryMap for public viewing. Other project deliverables including an academic paper are in a final draft stage and will be submitted to a peer reviewed journal in December 2022.

2. HQP

Please list any HQP involved in this project. Were they Canadian citizens (includes permanent residents) or foreign citizens?

HQP1

Name: Dr Jen McRuer

Email address: jen@colcoalition.ca

Current level of study/employment: Postdoc

University: University of Victoria

Department: Ocean Networks Canada

Residency: Canadian citizen

Position: Lead researcher

HQP2

Name: Dr Diz Glithero

Email address: diz@colcoalition.ca

Current level of study/employment: National Lead; Adjunct Professor

University: University of Victoria; University of Ottawa

Department: Canadian Ocean Literacy Coalition; Faculty of Education

Residency: Canadian citizen

Position: Co-researcher

HQP3

Name: [Martha Paiz-Domingo](#)

Email address: mpaiz2@uwo.ca

Current level of study/employment: Masters

University: The University of Western Ontario

Department: Geography

Residency: Canadian citizen

Position: Project intern

3. Project deliverables

a) **Please review the following deliverables, taken from your Performance and Reporting Agreement. Describe progress against each deliverable, including whether or not it has been completed, if the path towards the deliverable had to be changed and challenges or opportunities that arose throughout the project or, your progress to date. If the deliverable has been completed, include a short statement on next steps for this result.**

1. Design recruitment materials to inform participants to relay method intent and process, as well as principles of ocean literacy and the UN Decade of Ocean Science for Sustainable Development. This process will situate participants to share their learning with others to encourage ongoing ocean storytelling

Status: Completed

Progress:

- Our recruitment approach was guided by a literature review of academic publications and institutional policies (universities and government agencies) on best practices for equity, diversity, and inclusion (EDI). With a lens on EDI, our initial recruitment coincided with the host organization's new website launch in April 2022 and involved wide circulation of the StoryMap's URL on social media (Twitter, Instagram, Facebook, LinkedIn); in email with study partners and networked affiliates; and in newsletter content of host organization and funding partners. Secondary recruitment aligned with Ocean Week Canada (OWC) and World Ocean Day in June 2022 and aimed to target diverse and less heard voices in Ocean Science across Canada (e.g., Indigenous People, People of Colour Francophone Canadians, minority language groups, new immigrants, women, early career professionals, youth), with additional consideration of online accessibility and diverse levels of understanding and experience.

- We succeeded in recruiting participants who self-identified with many different marginalized groups, primarily: Women (26%); Mid/late-career change (17%); Youth 18-25 (17%); Early Career Professional (13%); and Trans/ Queer/LGBTQIA+ (13%); with lesser representation from those identifying as people of colour, English as an additional language, French Canadians, and Métis.

Challenges:

- Following 3 consecutive recruitment stages, the project engaged 23 storytellers across 5 Canadian regions. Many reasons may have contributed to this lower-than-expected recruitment, including: lack of appeal in survey and/or story format, timing of recruitment, survey dissemination language, and ArcGIS technological challenges from both design and user perspectives (see Appendix A for an overview). For a lengthier discussion of these potential hindrances, and the lessons learned, please refer to the academic publication that resulted from our efforts (forthcoming manuscript: [McRuer, J., Paiz-Domingo, M. & Glithero, L.D. \(2022, Forthcoming\). Bridging Ocean Literacy and Ocean Science: Using Community Science Journalism to Advance Collaborative Agendas. *Frontiers in Marine Science*.](#))

2. Facilitate standardized data collection through the story submission process to capture story content tags

Status: Completed

Progress:

- A survey tool was co-designed to standardize data collection through the story submission process. Survey questions served to collect data on changes in ocean relationships/connections; emotions and values related to change; perceived drivers (direct/indirect) of change; priority areas of ocean science concern and in relation to UN Decade Societal Outcomes; approaches for innovation, entrepreneurship, and community solutions; and the value of the storytelling process to personal ocean understandings. In addition, submitted stories also included an uploaded file of creative content (e.g., photo, video, audio, text, art) to showcase ocean connections in a visual manner.
- The survey tool remains open for public participation and involvement should interest arise; however, the active recruitment stage has been closed.

3. Design an interactive, virtual StoryMap to disseminate ocean stories widely, including among popular and alternative media outlets (regionally, nationally, internationally)

Status: Completed

Progress:

- A virtual StoryMap was created to share the Project relevance; host the survey for story submissions; showcase stories and creative content on an interactive map; as well as display real-time analysis of story content. The

StoryMap was translated into both official languages of Canada.

- Outreach efforts included wide circulation of the StoryMap during Ocean Week Canada (OWC) and World Ocean Day in June 2022 – affording a regional and national reach; Additionally, regional and national media outlets and university communications offices were included in recruitment efforts to extend circulation of the opportunity and share existing stories. The StoryMap URL with all stories remains active and continues to be showcased on the COLC website for continued uptake.

4. Launch story map / disseminate project data

Status: Completed

Progress:

- The StoryMap was successfully launched, and stories can continue to be viewed:
 - i. bit.ly/Storiesfors2s (English Version);
 - ii. bit.ly/histoirespourS2S (French version).

Challenges

- The initial timeframe of the StoryMap launch was delayed by ArcGIS technological challenges from both design and user perspectives (Please see Appendix A for an overview).

5. The results from data analysis will augment COLC's work to date, directly supporting the National Strategy and Implementation Plan. Analyzed results will be included in a final report, at least one journal publication, and on the interactive StoryMap to further support community science journalism as an educational tool.

Status: Completed

Progress:

- Participant stories were quantitatively analyzed based on demographics (e.g., age, gender and identity, sector affiliation), location (e.g., region & ocean location), and context (e.g., categorical themes). Story context of analytical interest included ocean connections to everyday life; observations of change, perceived drivers, and impacts; emotions and values affected by identified change; approaches for ocean science and innovation, personal and community solutions and action; and ocean health priorities. Furthermore, we measured the impact of community science journalism on strengthening ocean values, perceptions, and actions in the Canadian general public, as discerned through StoryMap interest, use, and uptake (as indicated by google analytics on StoryMap site); as well as final survey evaluation questions on participant-perceived impact.
- Analyzed results augment COLC's work to date in the Canada-wide study, *Understanding Ocean Literacy in Canada (2019-2020)*. Results directly support the resultant National Strategy and align with the

current Implementation Plan, as they provide information on the public's ocean knowledge, ocean values, and ocean action – the three goals of the National Strategy.

- An academic paper is in its final draft to showcase the novel methodology of this Project and the analysis of results. The results are also showcased on the StoryMap itself, to further support community science journalism as an educational tool.

b) Did COVID-19 impact your ability to advance this project? How?

- Despite the continued COVID-19 impacts over the course of our research, our advancements were not impeded. Virtual connections were utilized for communication with the postdoc's team, technological support members, and the project participants.

c) What are your future plans for this project?

- Future research plans include working closely with the COLC team and its research partners to analyze and expand COLC's National Survey (2019-2020) findings, alongside other Canadian NGOs' public opinion research on ocean perceptions, attitudes, values of people in Canada. A landscape scan of this body of existing public opinion research aims to contribute to population-level analysis of ocean literacy measures, to discern gaps and priorities. This baseline will aim to guide iterative public opinion surveys over the UN Decade to provide indications of ocean literacy impact over time.
- Diverse stories exploring different peoples connections to the ocean will be collected through non-research, creative formats in the lead up to Ocean Week Canada 2023 (June), including a Fishers podcast series and live storytelling events such as [Dip in the Sea \(Oct 1, 2022 event\)](#) and at IMPAC5.

4. Project highlights

Please describe three highlights from throughout your project's timeline. This can include updates about your research, knowledge mobilization, outreach, or training activities.

Examples include: interesting research results, publications, new partnerships, internships, research expeditions, etc. Please share photos too, if applicable.

- A virtual StoryMap was created to share the Project relevance and host the survey for story submissions, as well as display real-time analysis of story content. The StoryMap was created in both official languages of Canada (English and French) and remains active for public engagement.
- As per initial Project proposal, an early career intern was recruited to join the Project team over the course of 8 months. Their involvement was based on their skills and experience in ArcGIS (the StoryMap host platform); their interest in ocean-related research; and their self-

- identification of being an under-represented voice in ocean science.
- Project goals aimed to co-produce knowledge and solutions to: (1) showcase diverse and less heard voices in ocean science (e.g., Black, Indigenous, People of Colour, women, early career professionals, and youth); (2) contribute to community adaptation and collaboration; (3) inform Ocean Science policy, conservation management and decision-making with respect to ocean continuum planning, monitoring, and use; (4) meaningfully partake in the UN Decade of Ocean Science for Sustainable Development (2021-2030). Although a representative sample of the Canadian public was not captured in this research, the project did succeed in showcasing less heard voices. In terms of contributing to community adaptation and collaboration as well as Ocean Science directions, research analysis showcased on the StoryMap website and in an academic publication can help to inform collective efforts and generate discussion around public perceptions on ocean change.
 - Stories for Stream2 Sea has been a collaborative initiative from start to finish. From the Canadian public who identified the project as a priority; to initial design and proposals; funding from partners and public contributors; design and development of storytelling tools; content reviewers and editors; and storytellers who are now sharing their ocean connections. All who have helped to bring this project to life have expressed the value they see in this initiative. Especially its value as a much-needed opportunity for collective action to help inform ocean science priorities in Canada, and to help safeguard our ocean for current and future generations.
 - The StoryMap methodology inspired a [global ocean literacy research community StoryMap](#) that has grown to over 130 active contributors.

5. Outreach and communication activities

Please describe any activities or output related to this project in the last fiscal year. Activities and outputs may include: training workshops, webinars, networking events, communications activities (websites, social media, blogs), panels or presentations and writing/publishing reports, policy briefs or white papers.

Communications Activities:

- Project was featured in Canada's Ocean Decade Newsletter – [April 2022 Issue 2](#) and [June 2022 Issue 3](#)
- Secondary project recruitment aligned with Ocean Week Canada (OWC) and World Ocean Day in June 2022. The project was showcased widely through social media recruitment campaigns associated with the Canadian Ocean Literacy Coalition, and during Ocean Week Canada. The StoryMap links remain active on the Coalition's website, for continued engagement.

Academic Publications:

- McRuer, J., Paiz-Domingo, M. & Glithero, L.D. (2022, Forthcoming). Bridging Ocean Literacy and Ocean Science: Using Community Science Journalism to Advance Collaborative Agendas. *Frontiers in Marine Science*.

Websites:

- English version StoryMap link: bit.ly/Storiesfors2s
- English version survey link: bit.ly/S2Sshareyourstory
- French version StoryMap link: bit.ly/histoirespourS2S
- French version survey link: bit.ly/sondage_S2S

Funding Partner Publications:

- Mitacs (2022). Stories for Stream2Sea: Mapping changing ocean relationships and ACTION in Canadian Communities. Mitacs Projects. <https://www.mitacs.ca/en/projects/stories-stream2sea-mapping-changing-ocean-relationships-and-action-canadian-communities>
- MEOPAR (2022, April 19). Stories for stream2sea: Mapping changing ocean relationships and action in Canadian communities. MEOPAR Blog. <https://meopar.ca/stories-for-stream2sea-mapping-changing-ocean-relationships-and-action-in-canadian-communities/>

6. Conferences

Please provide a list of any conferences you or your project staff have attended over the last fiscal year (2021/2022).

- N/A

7. Publications

Please provide a list of any academic and non-academic publications related to your MEOPAR research that were either submitted, accepted, or published within the last fiscal year (2021/2022). This can include, but is not limited to: journal articles, articles in magazines or newspapers, books/chapters, policy briefs, etc. You must provide the citation details, including author(s), year of publication, title, book/journal name, number, pages, publisher, DOI, etc. For non-academic publications, provide a link where possible. **Please put a * besides MEOPAR authors to identify them clearly.** *If you have the pdf document of the publication, please attach the document to your report.*

Academic Publications:

- McRuer, J., Paiz-Domingo, M. & Glithero, L.D. (2022, Forthcoming). Bridging Ocean Literacy and Ocean Science: Using Community Science Journalism to Advance Collaborative Agendas. *Frontiers in Marine Science*.

Websites:

- McRuer, J., Paiz-Domingo, Glithero, L.D. (2022, April 14). StoriesforStream2Sea (English StoryMap) Esri StoryMap. bit.ly/Storiesfors2s
- McRuer, J., Paiz-Domingo, Glithero, L.D. (2022, April 14) S2S: Share Your Story (English version). Esri Survey123. bit.ly/S2Sshareyourstory
- McRuer, J., Paiz-Domingo, Glithero, L.D. (2022, April 14). HistoirespourS2S (French version). Esri StoryMap. bit.ly/histoirespourS2S
- McRuer, J., Paiz-Domingo, Glithero, L.D. (2022, April 14) S2S: Partagez votre histoire (French version). Esri Survey123. bit.ly/sondage_S2S

Funding Partner Publications:

- Mitacs (2022). Stories for Stream2Sea: Mapping changing ocean relationships and ACTION in Canadian Communities. Mitacs Projects. <https://www.mitacs.ca/en/projects/stories-stream2sea-mapping-changing-ocean-relationships-and-action-canadian-communities>
- MEOPAR (2022, April 19). Stories for stream2sea: Mapping changing ocean relationships and action in Canadian communities. MEOPAR Blog. <https://meopar.ca/stories-for-stream2sea-mapping-changing-ocean-relationships-and-action-in-canadian-communities/>

8. Media coverage

If applicable, provide the total number of media interviews and corresponding outlets (e.g., CBC) related to your project over the last fiscal year. Please include links when possible.

- Gillis, M. [Host]. (2022, June 15). A bill aimed at controlling seal populations was defeated, we'll hear arguments pro and con; looking for your stories that involve the ocean. [Audio podcast episode]. In CBC Radio: The Broadcast. <https://podcast.app/a-bill-aimed-at-controlling-seal-populations-was-defeated-well-hear-arguments-pro-and-con-looking-for-your-stories-that-involve-the-ocean-e313368088/>
- Martin, B. (Host). (2022, April 22, 2022). Ocean Literacy – more than just science. Clocean Podcast – Wta'n: Our living ocean. <https://podcasts.io/podcasts/clocean-podcast-wta-n-our-living-ocean/episodes/ocean-literacy-more-than-just-science>

9. Campaign analytics

Please attach any information or analytics available from the crowdfunding platform used for your Fathom Fund campaign. This may include web traffic, platform statistics, social media analytics, funder statistics.

- We do not have access to this data.

10. Fathom Fund impact

What kind of impact did the Fathom Fund's public crowdfunding element have on your research project?

- This project would not have been possible without the support of MEOPAR and the Fathom Fund. The unique approach of incorporating a crowdfunding campaign to secure funding for this initiative was a valuable way to communicate the project with a public audience to generate awareness and interest. The successful campaign was also a telling way to gauge the project's continuing support on behalf of the public and networked partners. Interestingly, Stories for Stream2Sea is designed to be a crowdsourcing effort in community science journalism, so the successful FF crowdfunding campaign was a reminder of the shared value in collective action, and the project's potential to continue building this momentum.

11. Feedback, please

Do you have any suggestions for improvements to the Fathom Fund?

- Our participation in the Fathom Fund process and the support we received from MEOPAR in its execution, were exceptional.

Appendix A: Running list of primary ESRI challenges that have delayed launch of survey

Background: ESRI has two survey platforms (which employ ArcGIS Online): one is a plug-and-play basic version; the other is a more complex make-it-from scratch version.

1. We began the initial survey platform design in August/September 2021 using the plug and play version. We did not realize, until it was complete, that this version does not afford robust or user-friendly analysis on the backend (there is no ESRI documentation on this, that could have helped us to prevent this issue).
2. We were advised by ESRI tech support to transfer our existing plug and play survey to the more complex platform. They said it was as simple as a click of a few buttons. In making this attempt, we found out that the platforms do not actually communicate as we were told they would (again, no documentation on this), making transition from one to the other impossible. Thus, we were told the only solution was to resort to building the survey code from scratch to reflect our survey theme, questions, formatting, etc. An arduous chore, as every survey element had to be entered manually and formatted using html code (which the lead researcher had to learn via crash course in October/November).
3. When it came time to publish the more robust version in early December 2021, we came to learn that the previews provided in build mode (to see how the survey looks on a tablet, mobile phone, desktop computer...) did not align in "real time" - question and formatting appearances differed from mobile to computer and across browsers (firefox, safari, chrome), making many questions non-readable in the computer version. We tried to find resolutions to this throughout December 2021 and January 2022, with ESRI's tech, research, and education teams.
4. Unable to find an easy solution, as it requires a quarterly annual review by ESRI's US-based design team, we decided to send the survey out with mobile instructions only at the end of January to our collaborative reviewing team. We received several comments in response that this process was not easy, did not work on all phone models, and that a computer version would be advisable to include as many participants as possible.
5. We had a research assistant join our team late January 2022. Together, we have done the best job possible in making the mobile and computer versions professional and user-friendly.
6. Before our new launch date mid-February 2022, we asked select reviewers to submit their stories to the survey to provide examples for the public. Three reviewers were prevented from submitting by the ESRI platform.
7. After talking with tech once again to resolve this issue, we learned that the issue was two-fold: 1. two people (i.e., lead researcher and research assistant) cannot make edits on the same survey with the same ESRI license (despite ESRI touting a collaborative work flow). 2.

Additionally, the survey platform told us that the mainframe feature layer (that stores all survey info and eventual data, no longer existed). This resulted from changing the name of the survey from the ESRI standard "Form 1" which "broke" the communication between feature layers.

We followed ESRI tech support recommendations: recreated the survey yet again, edits were made by only one "owner", titles were set from the onset, and now upon transfer back to original owner, we find ourselves yet again at square 1 - with the feature service not recognizable. Once again, we are waiting on ESRI tech support to find a solution.