

Change – The transformative power of citizen science

“From sea to street”:
initiating change for stronger connection with our ocean

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Abstract

The Earth's vital ocean is constantly changing and is at risk due to pollution, overfishing, and climate change (Pörtner et al. 2022). Research highlights the importance of personal attachment to the sea in fostering responsible stewardship (Chawla 2020; Pyle 2003). In urban areas, opportunities for human-nature interactions are limited, making mediated experiences, i.e., indirect interactions a crucial tool for fostering ocean stewardship. Murals, a form of street art, are prevalent in many cities around the world (Schacter and MacDowall 2023) and have been suggested as tools to promote community engagement and raise environmental literacy and awareness (see Mattern 1999; Sanchez et al. 2020; Schneller and Irizarry 2014). Based on the lessons learned from the project “From Sea to Street”, we hypothesise that murals evoke emotions, thoughts and memories, thereby shaping and strengthening people's connection to the marine environment.

Keywords: street art, murals, ocean literacy, citizen science.

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Citizen science for ocean conservation

The project “From Sea to Street” (FStS) (June–December 2023) was a citizen science initiative co-developed by the authors, focusing on the intersection of street art, citizen science and ocean conservation in Spain, Latvia, and the Netherlands (IMPETUS 2023). Our international and multidisciplinary project team set out to decode the language of urban murals and how they shape people’s relationship with the seas and oceans. In this context, we defined an ocean/sea-themed mural as a mostly large-sized painting on a publicly accessible wall of a building or other surface that features ocean/sea-related themes such as marine life, the marine environment, people’s interaction with the ocean/sea, or cultural, mythological, and traditional elements related to the ocean/sea, created with the necessary legal permits (VU 2023).

Our approach consisted of three parallel pathways. First, we encouraged people to submit photos of mural artworks (N=54), along with information about the artist and location, via an online form or through social media. Parallel to that, we conducted a multilingual online survey (N=254). In both cases, participants were asked to share the emotions, memories, and thoughts that the murals evoked in them. Third, we interviewed and collaborated with artists and organised street art tours and community workshops in the project’s focus countries: Spain, Latvia, and the Netherlands (Figure 1).



Figure 1. Snapshot of the project activities: a) interviews during the mural festival “Viladomar” in Rianxo, Spain (photo: Sophia Kochalski), b) guided street art tour by boat on the river Daugava in Riga, Latvia (photo: Edgars Šulcs), c) applying street-art techniques at the Street Art Museum Amsterdam in the Netherlands as part of the Interdisciplinary Community Service Learning course, Athena Institute, VU Amsterdam (photo: Tanja Warning).

Creating positive change together

The finding that marine-themed murals arouse interest, inspire, and stimulate thought was evident in the face-to-face discussions and in the open questions as part of the online survey. The type and intensity of the reactions depended on which mural image was shown to the survey participants. Figure 2 shows an example of a word cloud containing all reactions to a mural by the artist Tim Rodermans which portrays a jumping humpback whale in almost its true size (see: Whale – Fraunhoferstraat Amsterdam n.d.). The viewers were impressed by its size, beauty, and strength; it made them think of nature, freedom, and the environment.



Figure 2. Frequency of words based on the narratives provided for a mural of a jumping humpback whale. The larger the letters, the more frequently the words appeared; each word listed was mentioned at least twice.

For the same mural of the humpback whale, respondents were given a list of 18 discrete emotions from which they could select up to five. The most frequently selected emotions were intense positive emotions: elation (56%) and awe (52%). Many participants also experienced calmer positive emotions (amusement, 35%; contentment, 30%), as well as interest (35%) and surprise (20%). Only two of the 84 respondents viewing this specific mural chose the option that it evoked “no emotion” in them. The negative emotions that were available for selection (e.g., sadness, fear, anxiety, anger, disgust) were mentioned little/not at all (N<5).

The extent to which the project activities and the emotions, thoughts, and memories evoked by murals affect people’s attitudes and actions beyond the moment remains an open question for further research. The possible relationship is exemplified here by a contribution from Puerto Rico, from where a picture of artisanal fishermen was submitted via the mural submission form:

“The image echoes the struggle of the artisanal fishermen of the island of Culebra, Puerto Rico (...) It teaches me that together we can overcome great inequalities at key moments but that its unjust legacy (pollution from bombs) continues to require keeping the memory alive”.

Final remarks

Through our work, we support the statement made by McKinley et al. (2021): “[t]here is a need to recognise the complexity of the emotional connections and the corresponding diversity of values (both monetary and non-monetary) that different audiences across Europe may have towards their aquatic environments” (p.4). Street art (Thompson et al. 2023), particularly murals (Sanchez et al. 2020), holds this open-collaborative space to explore the human-ocean relationship.

With active citizen participation, the FStS project mapped and analysed murals, decoding which stories and emotions they evoke. While we successfully identified clear patterns for individual murals, expanding the participant base and reaching a broader audience would be desirable for future research. Additionally, the project has created a platform for exchange on marine science, art, and citizen science, which can facilitate further work.

Building on our project’s insights, we emphasise the value of further expanding community engagement around street art and marine conservation. This can be done through educational activities, digital applications such as the SPOTTERON ArtSpots app (ArtSpots n.d.), or street art festivals, such as a mural tour organised in the context of “The Nature of Cities Festival” (TNOG 2024). Citizen science in particular can provide valuable approaches to not only generate data and knowledge, but also to facilitate and sustainably transform people’s connection to nature.

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