

Environmental Critical Zones: Reading the Wrack Lines

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Abstract

Reading the Wrack Lines is an interdisciplinary environmental literacy and educational outreach project designed to engage the local community with innovative learning approaches focused on the reality and possibilities for change in our coastal environment. The project is framed by cross-cutting themes of diversity and inclusion, and includes partnerships with local institutions, environmental specialists, and under-represented communities. Through a series of creative writing workshops and site visits, participants reflect on the changing environment and create poetic works for inclusion within two art works: a generative audio-video installation projected on a nearby lighthouse, and a laser-cut felt word-based floor sculpture that includes spoken word audio. The creative process and final artistic products of this project empower participants and articulates a vision for environmental change to the larger public.

Keywords:

Generative, audio-visual projection, community engagement, environmental literacy outreach, digital poetics



Reading the Wrack Lines lighthouse projection at University of Connecticut Avery Point on Earth Day 2021.

Introduction

A wrack line or wrack zone is a coastal feature where organic material and other debris is deposited on the beach at high tide. The wrack can be made up objects such as seaweed, crustaceans, feathers and bits of plastic. As the edge between the natural input of marine resources and the land, the wrack zone is interrelated with the state of the sea. Shorelines, locally and globally, are affected by stronger and more frequent storms and

the threat of sea level rise. Locally, our waters are seeing a decline of species, warming water temperatures, acidification, and changing ocean currents. This project engages the community through coastal site visits and creative writing workshops about climate justice, the local ecology, and proposals for positive change. By developing an awareness of local climate change firsthand, participants in *Reading the Wrack Lines* see connections to larger global climate concerns.

Background

Reading the Wrack Lines is the most recent artistic collaboration between the authors, and is part of a series of works focused on climate change and the environment. A previous collaboration, *Open Waters [Northwest passage | Open Polar Sea | Arctic + Great Lakes Plastic]* was shown at museums and presented at the Generative Art Conference, the work was inspired by a five-hundred-year history of northern exploration, current geopolitics, and global circulation of microplastics. Another previous collaboration, *Ice Core Modulations: Performative Digital Poetics* was presented at Generative Art Conference (among other venues) and included imagery and poetic fragments inspired, generated and controlled via historical CO₂ data taken from ice core samples made available from the National Snow and Ice Data Center (NSIDC).

All of these collaborations have sought to create engaging works that address complex environmental issues through a plurality of artistic, poetic, and scientific perspectives. The collaborators have brought to bear individual skills such as

audio-visual generative computer programming, various forms of visual art media, poetry, and electroacoustic composition to synergistically create these works, using shared source materials such as place-based personal narratives, historical materials, scientific data, site-based audio-visual media, and poetic texts.

Goals, Objectives and Artistic Dimensions

Reading the Wrack Lines seeks to increase environmental literacy through community outreach and provide a sense of empowerment to the participants and the public through the process of creative writing about the environment incorporated into artwork.

The overarching goals and objectives of the project include:

- Enhancing learning about environmental issues and ocean literacy for participants to be more resilient to a changing climate and environment
- Organizing workshops for participants to respond to environmental issues through creative writing responses formulating multiple points of view with many voices.
- Providing a venue for our community to creatively offer what may be possible; to respond, react, and propose change to environmental issues.
- Presenting community writing and voice through innovative multisensory formats exploring digital poetics in a reflective and engaging experience.

The artistic dimensions are framed by

creative community narratives, the local environment as subject matter, and the project medium including digital and physical forms. Based on these objectives, *Reading the Wrack Lines* collaboration resulted in two distinct works showcasing community voices:

- A generative audio-visual work programmed in Processing software composed of texts, visuals, and audio of participants' spoken texts. This work was projected onto the local lighthouse on April 22, 2021 (Earth Day)
- A sculpture consisting of digitally fabricated laser cut felt and embedded audio on exhibit in the "Fire and Ice Art on the Edge" show from September through October 2021.

connections among the arts, environment, technology, and materials.



Reading the Wrack Lines laser cut felt floor sculpture with embedded audio on exhibit in "Fire and Ice" exhibition.

Description of works

Laser cut felt floor sculpture

The sculptural work of *Reading the Wrack Lines* is a soft undulating felt floor piece comprised of digitally fabricated text phrases featuring excerpts from community poetry and environmental data. Embedded in the felt forms are two generative audio systems evoking the randomness of the environment. Community voices are identified by the script text form and environmental data is identified by the san serif text form. These multiple points of view are composed, making a unified visual form—speaking in unison to the urgency and possibility for environmental change. All text forms are intermingled with the negative (or leftover) felt, resonating notions of waste and reuse. The work seeks to draw out the poetic from



Detail of laser cut felt floor sculpture with embedded audio.

On-site audio-visual projection

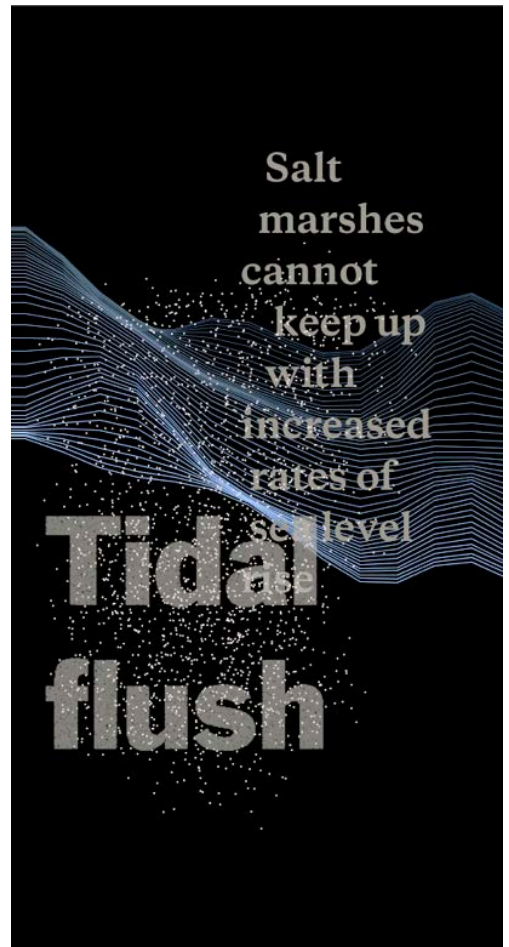
The generative audio-visual projection merges the built environment, the ocean, and the text and audio voices of com-

munity participants in a performative event seeking a call for behavioural change. Built in Processing software, the generative system presents randomly ordered community poetic phrases at various font sizes that slowly appear and then dissolve with techniques reminiscent of text erasure.

Summary

The collaborative intent of *Reading the Wrack Lines* project allowed for interdisciplinary synergy between a creative team spanning computer science, electronic sound composition, and visual art, and with the local community and environmental specialists. The work amplifies participants' voices through physical and virtual public presentations. Our collaborative team plans on an ongoing series of installations that bring community voice, art and science together; immersively engaging awareness and activating voice about nature, place and a positive future climate.

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Screen image of *Reading the Wrack Lines* generative system for projection on lighthouse.