



# EROSION

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# WHY EROSION

The effects of erosion on the island province from which I come are visible, audible, measurable and of increasing concern. Intense tropical storms and hurricanes which have become increasingly common are accelerating the rate and scale at which the island is disappearing.

Capturing the sounds of the shrinking coastline, both from the perspective of the eroded (land) and the eroding (sea and air) is at once an act of ecological exploration, preservation, and defiance. It provides a space for reflection, applies pressure towards action, and serves as an aide-memoire for impermanence.

**01**

CONSERVATION

Capturing the ephemeral voice  
of the wearing away

**03**

EXPOSURE

Conversations at the foreshore

**02**

TRANSMUTATION

Stone to sand to sea to sound

**04**

PRESENT

Final notes and references

# 01

## CONSERVATION

*the act of preventing something from being lost, wasted, damaged, or destroyed.<sup>2</sup>*

***Conservation of mass**, principle that the mass of an object or collection of objects never changes, no matter how the constituent parts rearrange themselves.<sup>3</sup>*

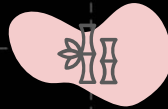


# EROSION // CONSERVATION



## GEOGRAPHICAL

Walking the boundary  
between land and sea, loss  
and transmutation, elemental  
forces and environmental  
stewardship



## ACOUSTIC

Capturing sonic  
snapshots of a fragile,  
protean coast



## COGNITIVE

Preserving and  
broadening the  
experienced ecology of  
sound, and consequent  
identity/memory imprint

# RECORDING PROCESS

- Creating a library of coastal (typically foreshore) and inland field recordings across the province, with an aim to produce a collection in which synchronic reference points which would localize the recordings in a specific time period, typically human activity, are largely absent.
- Using hydrophones to capture both inshore and offshore underwater environments of the Atlantic ocean as well as other smaller bodies of water which provide the geographical boundary for the island.
- Recording at high elevations in which air and wind are most evident.





# 02

## TRANSMUTATION

*the action of changing or the state of being changed into another form<sup>4</sup>*

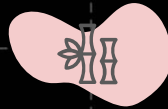


# EROSION // TRANSMUTATION



## GEOGRAPHICAL

Elemental agents of wind & water tirelessly granulate the sandstone coastline. A non-ideological annexation of the geopolitical identity of the land is already in progress.



## ACOUSTIC

Disparate field recordings taken on land, in air and within the sea are blended and processed to facilitate new perspectives.



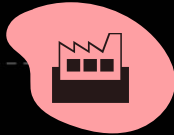
## COGNITIVE

The monolithic scale of the effects of climate change' are fractionated into a localized case study. A future is projected in which the question is not 'if' but 'when'.

# INSTALLATION

## SPACE

Blacked-out room measuring approximately 30' x 20' with a raised platform LED floor

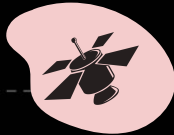


## LIGHT/SOUNDHOUSES

Seven structures resembling lighthouses featuring LED "lanterns", surface sound ports & containing rotating speakers are installed in fixed positions

## PROJECTIONS

Digital representations of Prince Edward Island (Epekwitk) in timelapse of forecast erosion patterns over the next 300+ years



## DIFFUSIONS

Field recordings of coastal and inland sounds, underwater sounds, high altitude sounds processed digitally with techniques analogous to the theme of erosion

# 03

## EXPOSURE

*the act of showing something that is usually hidden<sup>5</sup>*

*the state of being in a place or situation where there is no protection from something harmful or unpleasant<sup>6</sup>*

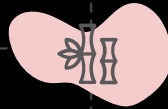


# EROSION // EXPOSURE



## GEOGRAPHICAL

Illuminating the identities and interplay between acoustic spaces of land, sea and air



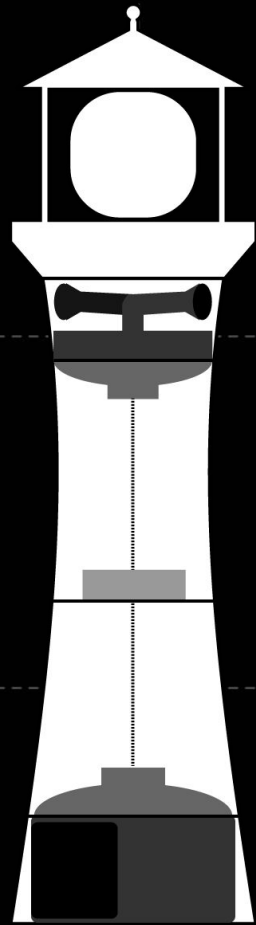
## ACOUSTIC

Painting a canvas of sound using textures, space and sonic fingerprints



## COGNITIVE

Inviting participants to explore their relationship with geographic boundaries, the idea of permanence and the effects of environmental change on a place and its inhabitants



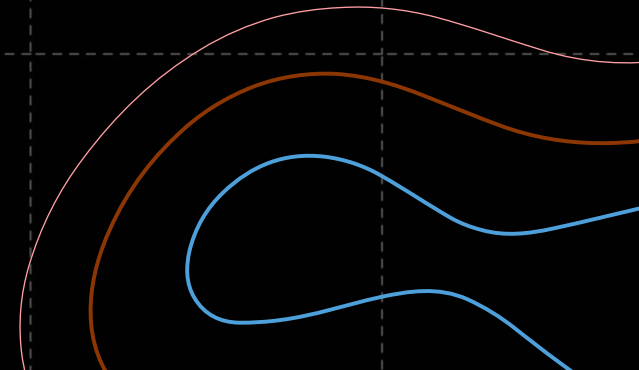
Curved LED screen  
connected to RasPi  
accessible via WiFi

Rotating horns  
(one active, one dummy  
horn for counterbalance)  
with high frequency driver

Networked audio interface  
with crossover-style signal  
splitting

Drum rotor with low  
frequency driver

# Cross-section of a light/soundhouse



# Representation of the installation space



# Starting projection & light/soundhouse positions





Projected erosion





# End projection & light/soundhouse positions





# 04

## PRESENT

Current status, final thoughts and  
references

# CURRENT STATUS

## *Recording*

### LAND

Several hours of coastal recordings have been captured and catalogued with additional field recordings to fill in the gaps slated for the coming days

### SEA

Stereo pair of hydrophones has finally cleared customs and is arriving today. Inshore recordings to start immediately, offshore TBD.

### AIR

Independent high altitude recordings (helium balloon rig) to be tested and if feasible recordings to be made. Tall buildings and lighthouses as a backup plan.

## *Spatialisation*

As a compromise between my practice of non-standard multi-channel diffusion methods and the limitations of working in stereo currently, I have developed a (virtual) speaker placement and rotation simulation using surround panning, this gives me a ballpark idea of how speaker proximity and rotational speed will affect the listening experience from various points within the installation.

# CURRENT STATUS

## *Electroacoustic techniques*

Some of the erosion-analogous techniques and practices I have explored to evoke the nature of the coastal erosion include spectral transformation, resynthesis, filtering, bit reduction and wavefolding.

## *Light/soundhouse construction*

The development of an inexpensive, modular, easy-to-assemble and deploy light/soundhouse form would take a not-insignificant amount of time with access to laser cutting and 3D-printing tools. Networked audio, drivers, speaker rotation mechanisms, floor-mount screens and the curved/flexible LED arrays will need to be broken down into component costs and a budget created before proceeding.

# FURTHER READING & REFERENCES

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- 1. *Ibid*
- 2, 4, 5, 6. Hornby, Albert Sydney. *Oxford Advanced Learner's Dictionary of Current English* / [by] A.S. Hornby ; Editor Jonathan Crowther. Oxford, England: Oxford University Press, 1995.
- 3. The Editors of Encyclopaedia Britannica, *Science*. Encyclopaedia Britannica. Access date: October 08, 2020.



# THANKS!

Comments, questions, suggestions

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