

PROJECT OVERVIEW

An important component of the work at the Stone Living Lab is to engage a **wide range of perspectives** in contributing to our sustainable future. Community science is a great way to involve members of the public in active areas of scientific research. This is the first of a planned series of annual projects that will be designed to **complement the core research** of the lab.

BEACH PROFILING

Imagine slicing a beach in half to look at it from the side – that cross-sectional view would show you the **slope** of the beach from the top all the way down to the water line. This is what we refer to as a **beach profile**. Beach profiles are constantly changing. The three main influences on beach geomorphology are **waves, wind, and timing**.



Beach profile changes are often most dramatic after storms, but changes can also happen more gradually on a seasonal basis.

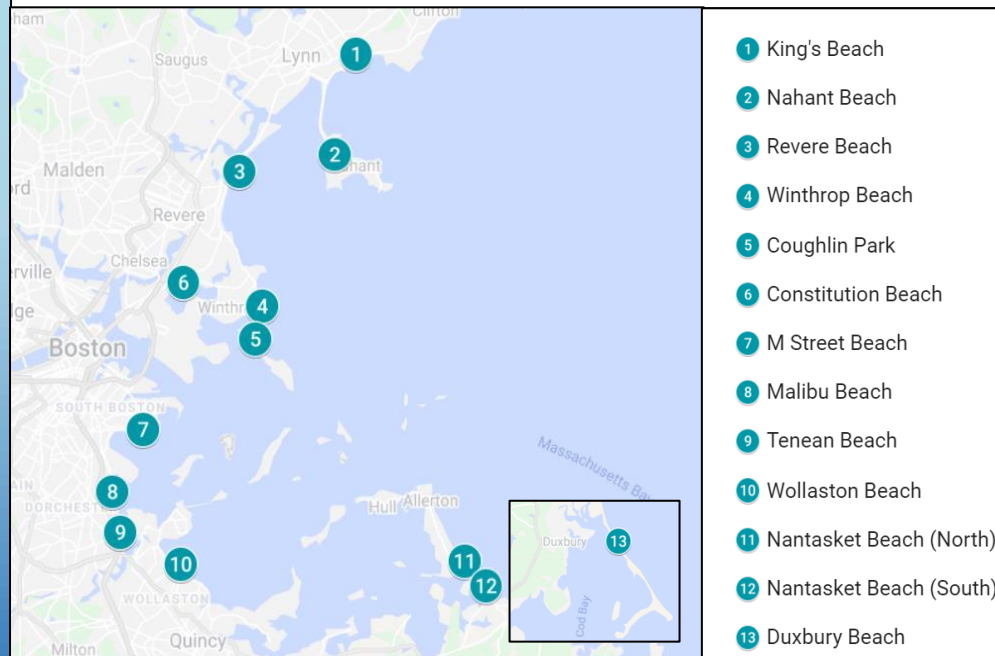
Our community scientists are trained to use the **Emery Method** of beach profiling. This is a simple but effective method of measuring elevation change that was developed by oceanographer K.O. Emery in the 1960s.

OUR BEACHES

A distinct feature of Boston Harbor is the collection of islands right off the city's coastline. They serve as places of recreation and education, but their most important role may be protecting Boston's shorelines. During intense storms, the harbor islands absorb wave energy before they reach the shores, providing a **protective barrier** between the Atlantic and the city's shoreline.

The shores of Boston Harbor are home to a many urban beaches. Given the reality of climate change, the future of many of these sites is **uncertain**. We chose a variety of beaches to study for this project. Some of are in low energy environments sheltered by the harbor islands, while others outside of the city are directly exposed to the Atlantic.

Here is a map of our beaches:

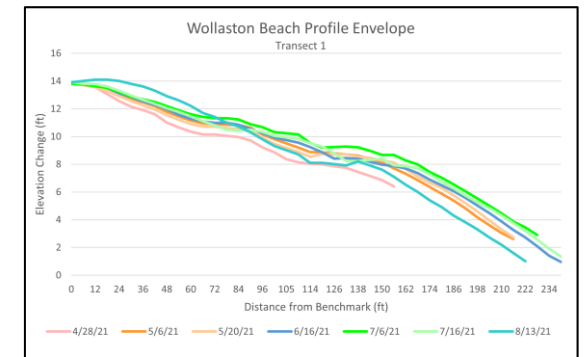


PRELIMINARY DATA

Our volunteers began profiling in April of 2021 and will continue until December. Together, they have gathered data from **66 beach visits**.



For each beach, we construct a **beach profile envelope** – a collection of all profiles taken along one transect. This shows how beaches change over time.



POTENTIAL APPLICATIONS

Researchers, community members, city planners, and educators can use the information from this study to **better understand** the responses of their nearby beaches to episodic storms, seasonal changes, and in response to climate change. Follow along for monthly updates of our study here:



Thank you to our volunteers!