

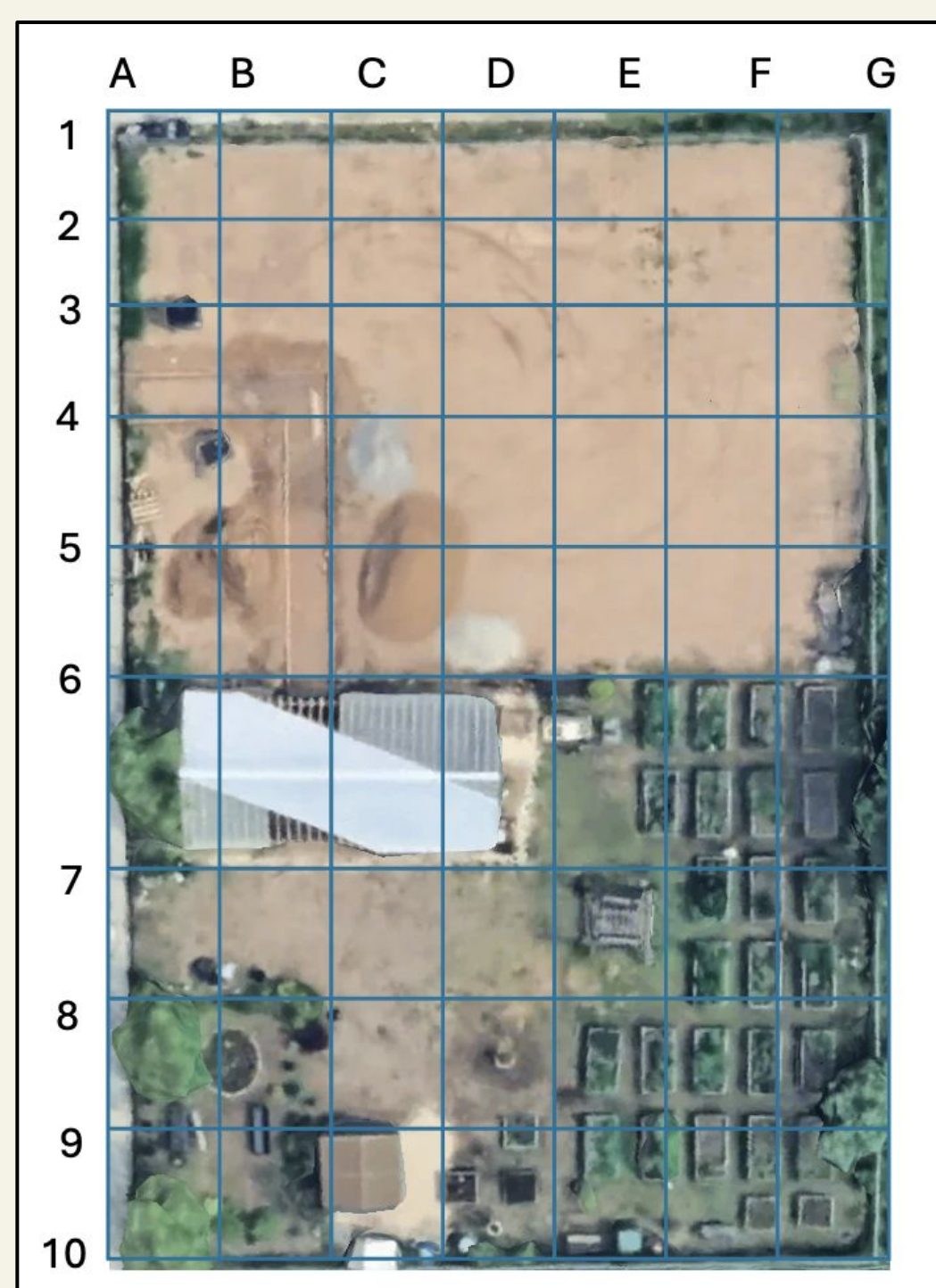
## Introduction

Climate change driven sea level rise has worsened flooding in the rockaways, especially in areas closer to Jamaica Bay. These floods have been destroying properties as well as negatively impacting the environment. **The Garden By The Bay**—a local community garden in Rockaway— has been **largely** impacted by the floods from Jamaica Bay high tides. We studied the areas in The Garden By The Bay in which flooding has been the most prevalent, and assessed how those specific areas are affected by the floods.

## Research Objectives

- ★ Find out what points in Garden By The Bay experience the most flooding
- ★ Identify the plants at these points.

### Study Site: The Garden By The Bay



\*This is a modified map of Garden by the Bay that we made to identify specific plots through the use of a coordinate system. \*

## Methods and Procedure



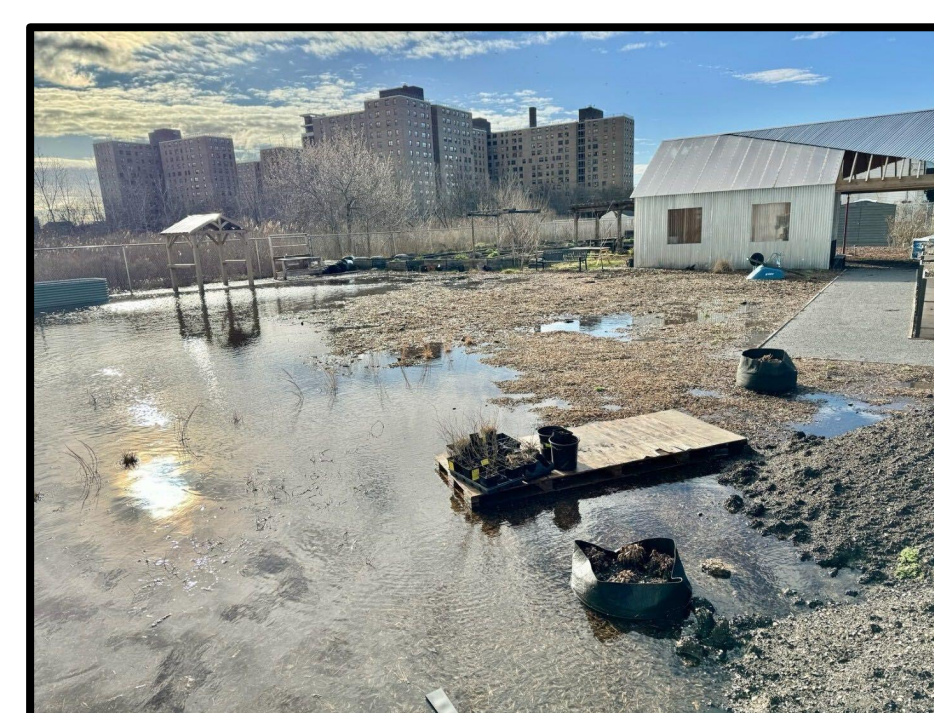
### ELEVATION SURVEY

- ★ Using measuring tape, we mapped out the coordinates throughout the garden(A1-G10).
- ★ We used a GPS RTK system to record the elevation for each of the coordinates.



### PLANT SURVEY

- ★ Using our coordinated points, we did a survey on all the plants species that we observed at specific coordinates.

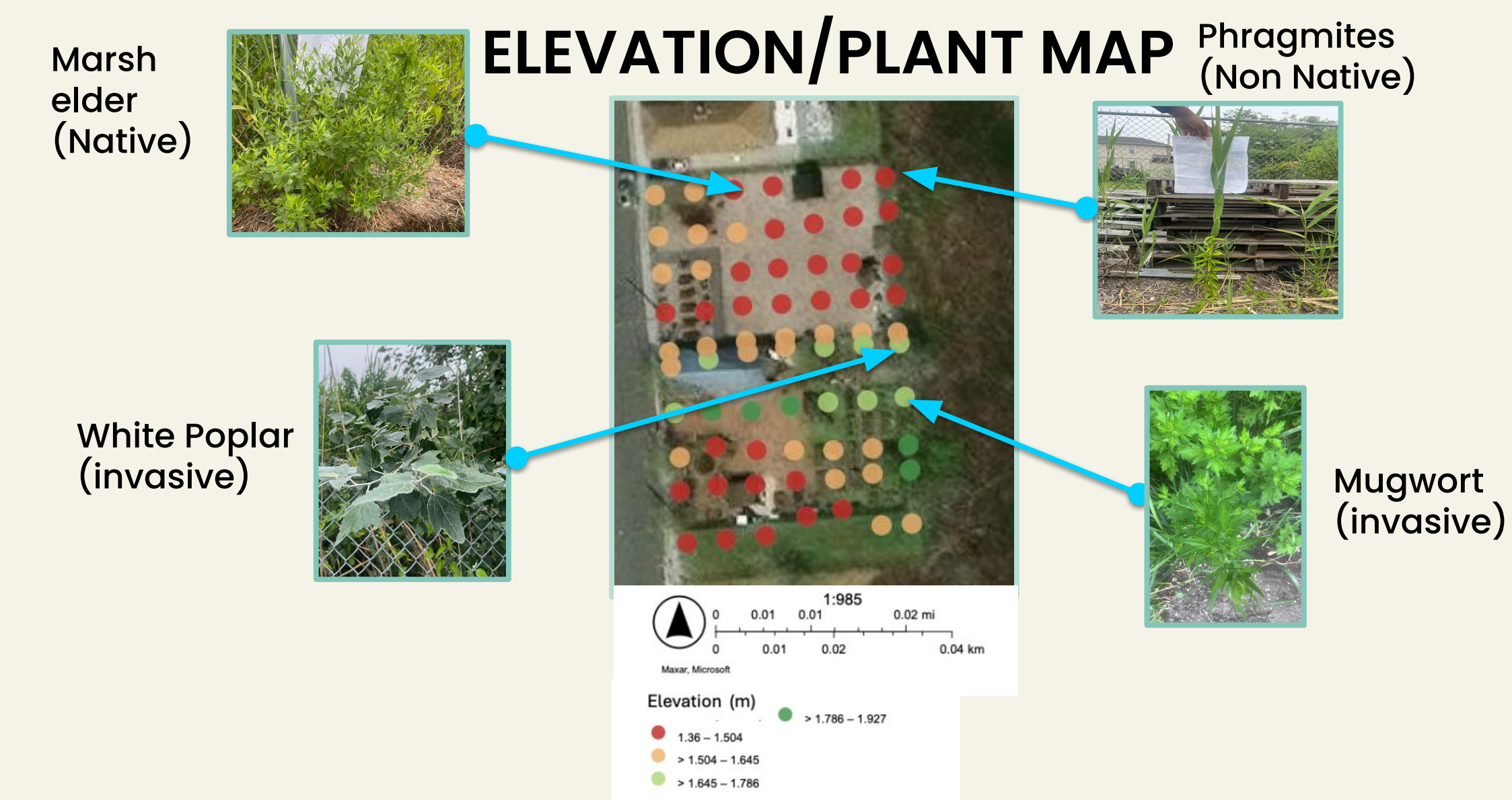


### *Blue Sky Flooding*

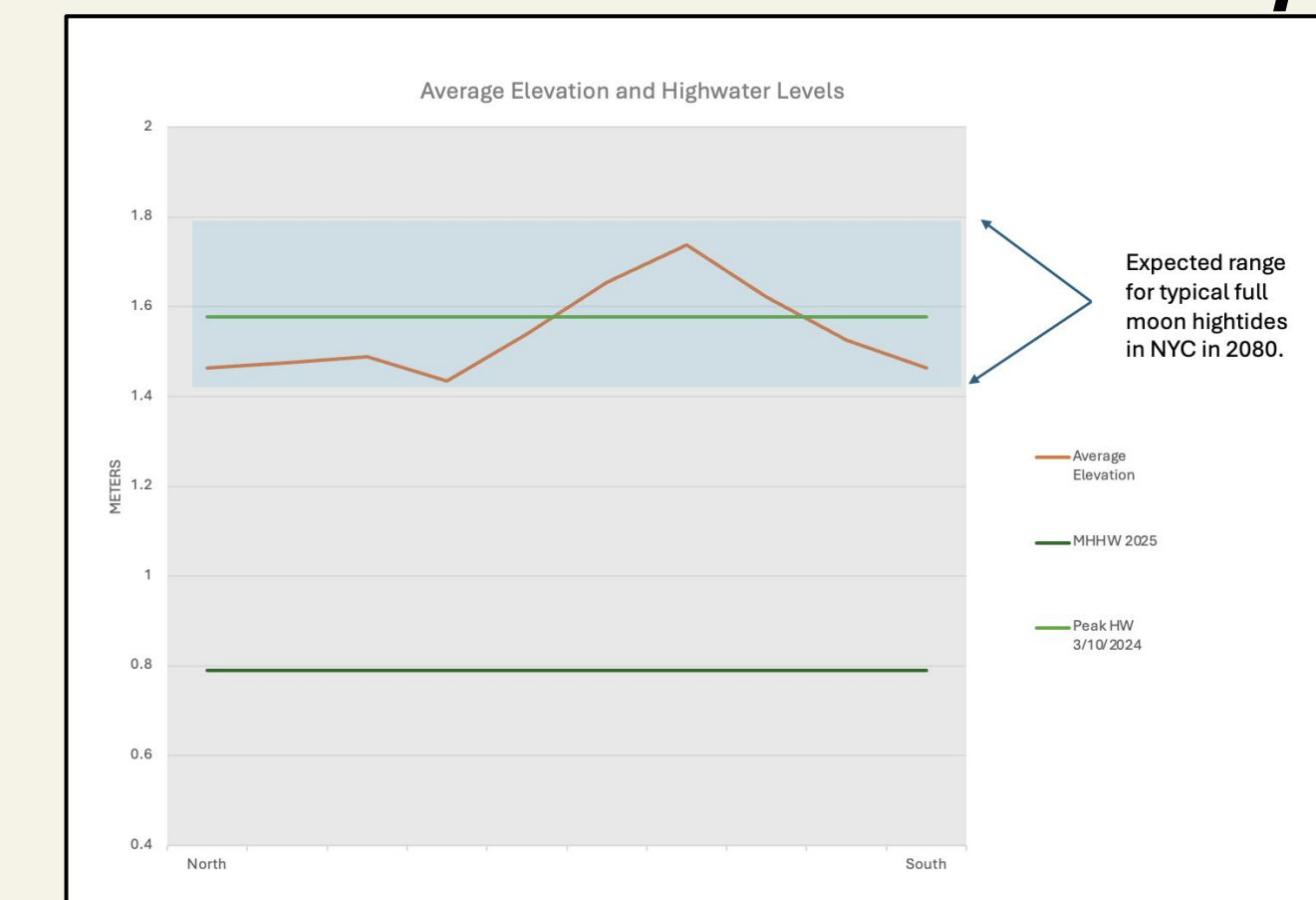
**March 10, 2024**

– Taken at The Garden By The Bay by The Garden By The Bay

## Results



### AVERAGE ELEVATION/HIGH WATER



- ★ MHHW aka mean higher high water is the high water level during high tides during the full/new moons.
- ★ The flood on 3/10/2024 caused the water level to be above the elevation of The Garden By The Bay. If sea levels increase by 25-39 inches by 2080, the flooding on March 10 will be a regular occurrence.

## Conclusion

The areas that were more susceptible to flooding (lower elevation) showcased more wetland plants. As sea level rises, floods in The Garden By The Bay are projected to become more frequent. With this, we expect to see a larger variety of these wetland plants dispersed around the garden. To combat sea level rise for The Garden By The Bay and all surrounding areas in the Rockaway peninsula, we should direct our efforts towards protecting wetlands, cultivating living shorelines and other nature based solutions.

## References

- ★ iNaturalist
- ★ NPCC Report