How does shoreline restoration affect invertebrate populations?

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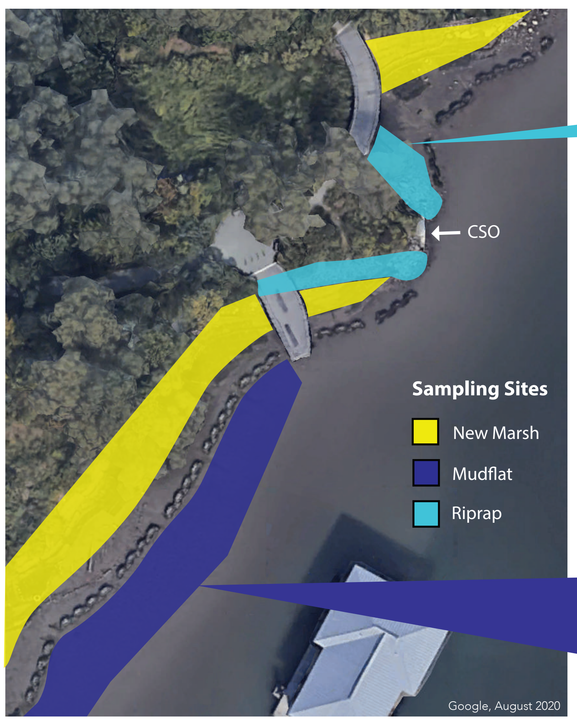
Sherman Creek Restoration

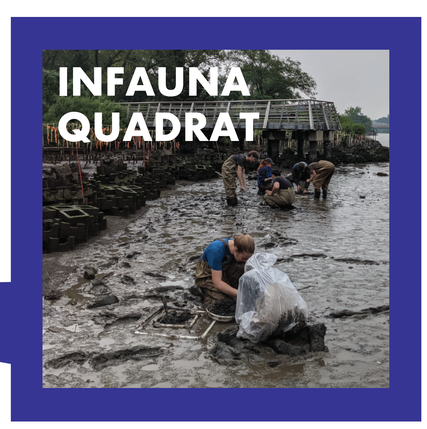
1

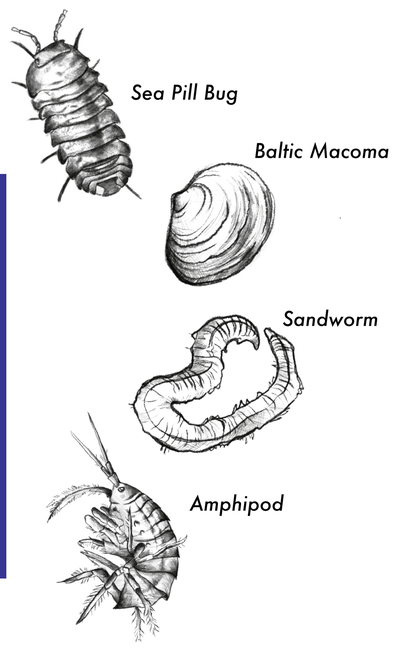
DURING

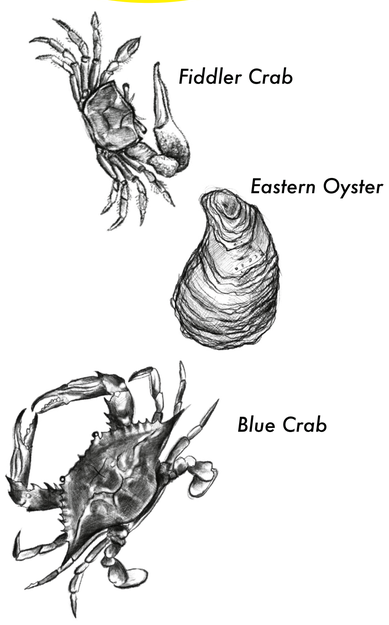
2

METHODS







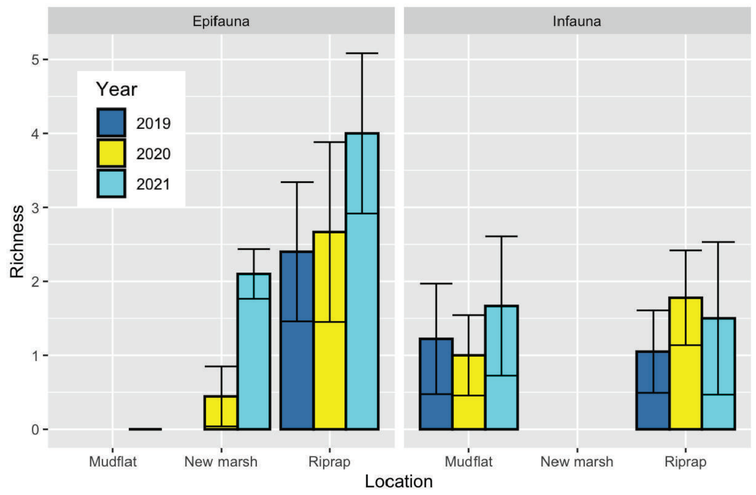


Quadrat Sampling:

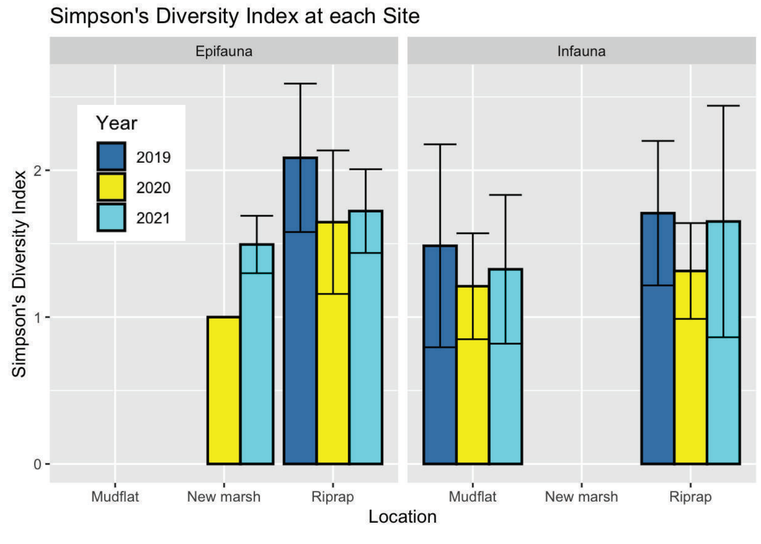
- Epifauna: Mudflat and Riprap (2019-2021), New Marsh (2020-2021)
- Infauna: Mudflat and Riprap (2019–2021)

RESULTS

Richness at each Site



Simpson's Diversity Index at each Site



How did richness change?

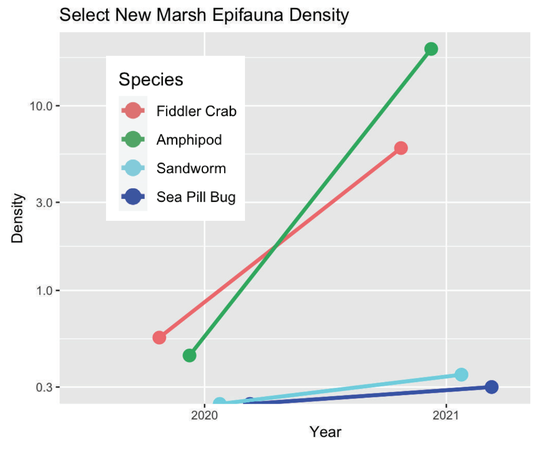
- Epifauna richness increases from 2020 to 2021 at both the new marsh and riprap sites
- Richness at mudflat & riprap infauna sites is mostly consistent over time

Density?

- Four main species that increased in density at the new marsh were the fiddler crab, amphipod, sandworm, and sea pill bug.

Simpson's Diversity?

- Diversity at the new marsh site increased slightly from 2020 to 2021
- Simpson's diversity for infauna and epifauna is mainly consistent across years at riprap and mudflat sites



Why did new marsh richness, diversity, and some species' density increase?

- These increases may be due to collection of organic matter (food for invertebrates) in the core fiber mattresses installed during restoration
- Lower richness and diversity levels in 2020 compared to mudflat and riprap sites may be due to the disruptive effects of the restoration, so higher levels in 2021 could reflect recovery from that event

NEXT STEPS

- Continue sampling to determine if populations will achieve greater richness and diversity as the restoration site recovers
- Continue to examine species-specific trends to find if some species are more responsive to restoration
- Compare to similar restoration sites in urban areas to determine if these trends are generalizable

ACKNOWLEDGEMENTS

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CITATIONS

Figures 1 & 2. Photos taken by NYRP in 2020 and used with permission.