Lorelei Wolf – Summer Fellowship Report 2024

This summer, I studied and monitored the ecosystem health of some of Cape Cod's estuaries through an internship with the Waquoit Bay National Estuarine Research Reserve (WBNERR). Specifically, I designed an experiment to investigate the health of submerged aquatic vegetation in Waquoit Bay. Eelgrass (Zostera marina) is an ecosystem engineer, providing habitat to economically important shellfish (among other forms of biodiversity), trapping excess environmental carbon, producing oxygen, and increasing coastal resilience against erosion. However, eelgrass ecosystems are declining rapidly due to historic dredging, rising temperatures, invasive crab species, and coastal development. My project sought to assess eelgrass survival rates and resiliency when replanted in ecosystems in Waquoit Bay. I aimed to identify any local sites where eelgrass populations might be restored.

My time at WBNERR was incredible, as I was exposed to many different field and laboratory methodologies while learning about marshland ecosystems. In addition to leading my own experiment with eelgrass, I assisted in the Reserve's yearly vegetation plot surveys and instrument deployments in the ponds and marshes. This work contributed to the Reserve's mission of long-term ecosystem monitoring and stewardship while introducing me to the variety of methods employed in marshland and coastal ecology. This was an experience I could never have had in the classroom, and has affected the way I picture my future. I am currently applying to graduate programs to pursue a doctorate in coastal biogeochemistry, potentially with a focus on eelgrass ecosystems.

I am so grateful to the Harvard Club of Cape Cod for making this experience possible. Because of your support, I had the freedom to pursue my own independent research project in addition to assisting WBNERR in their yearly data collection. I learned so much by being immersed in this unique and important environment, and look forward to a future in fieldwork and scientific research.