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Synergies and Tradeoffs between Waterfront Design and Ecosystem Services in the Hudson River Estuary

Waterfront design planning processes typically have the goal of maximizing ecosystem services (ES, i.e., the benefits that the environment provides to humans). In this way design priorities are often heavily influenced by the scale at which ES have been identified or quantified in a coastal waterfront area, and by whom the priorities are identified. However, little is currently known about whether and which ES actually result from waterfront gray and green infrastructure and design and how ES are perceived and prioritized by waterfront users. This undergraduate research experience will focus on examining the extent to which different waterfront design features support the presence and perceptions of ES. We will lead students in conducting site-level research in specific waterfront locations along the Harlem River in NYC and the Pocantico River in Westchester County. A mixed methods approach will be used to look at the impact of waterfront design interventions on specific ES. Collected social and ecological data will be combined in comparative and predictive models to uncover key drivers and patterns of ES. These models will be highly beneficial to improving decision-making about waterfront design in the Hudson River and beyond.