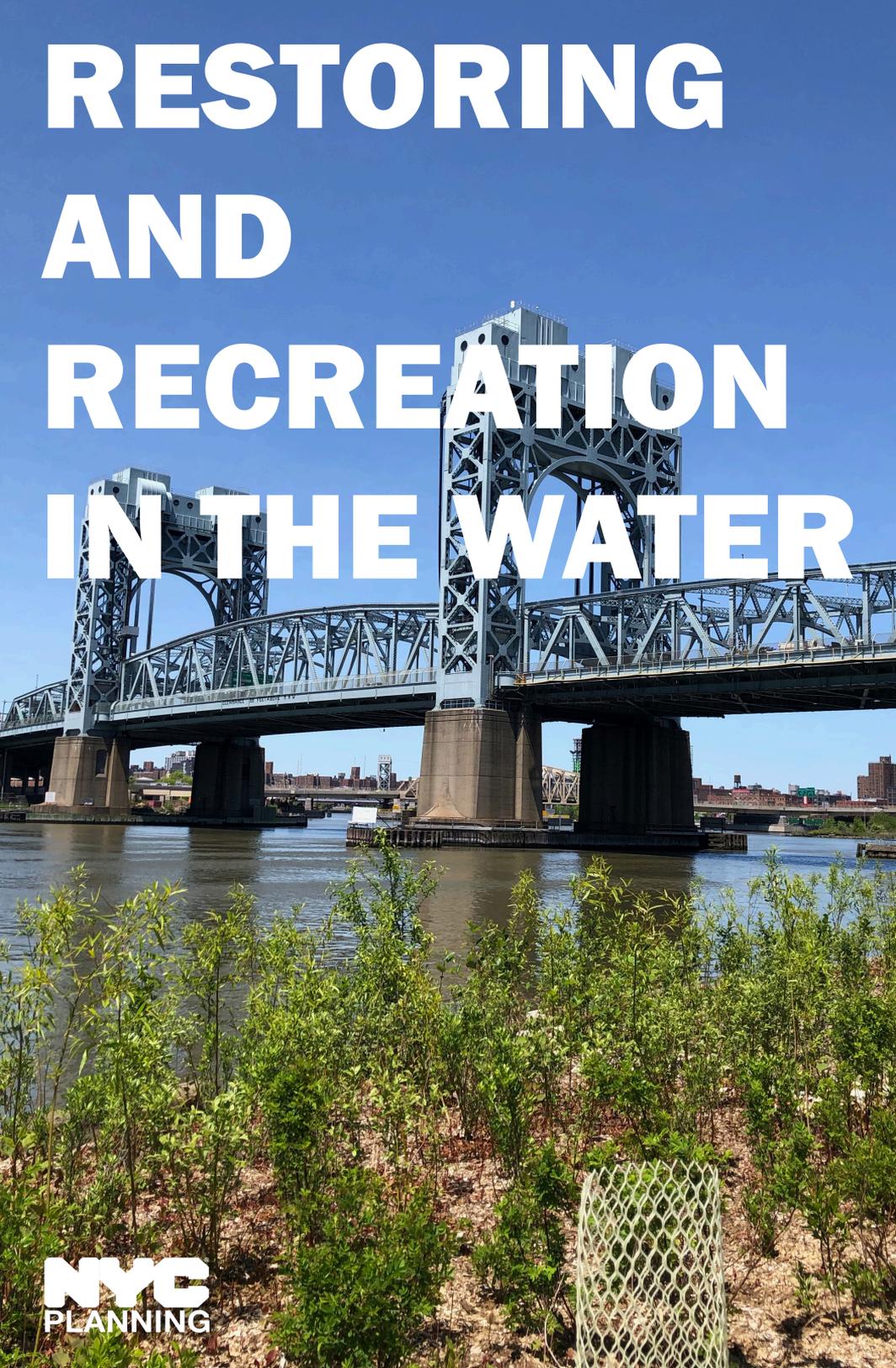


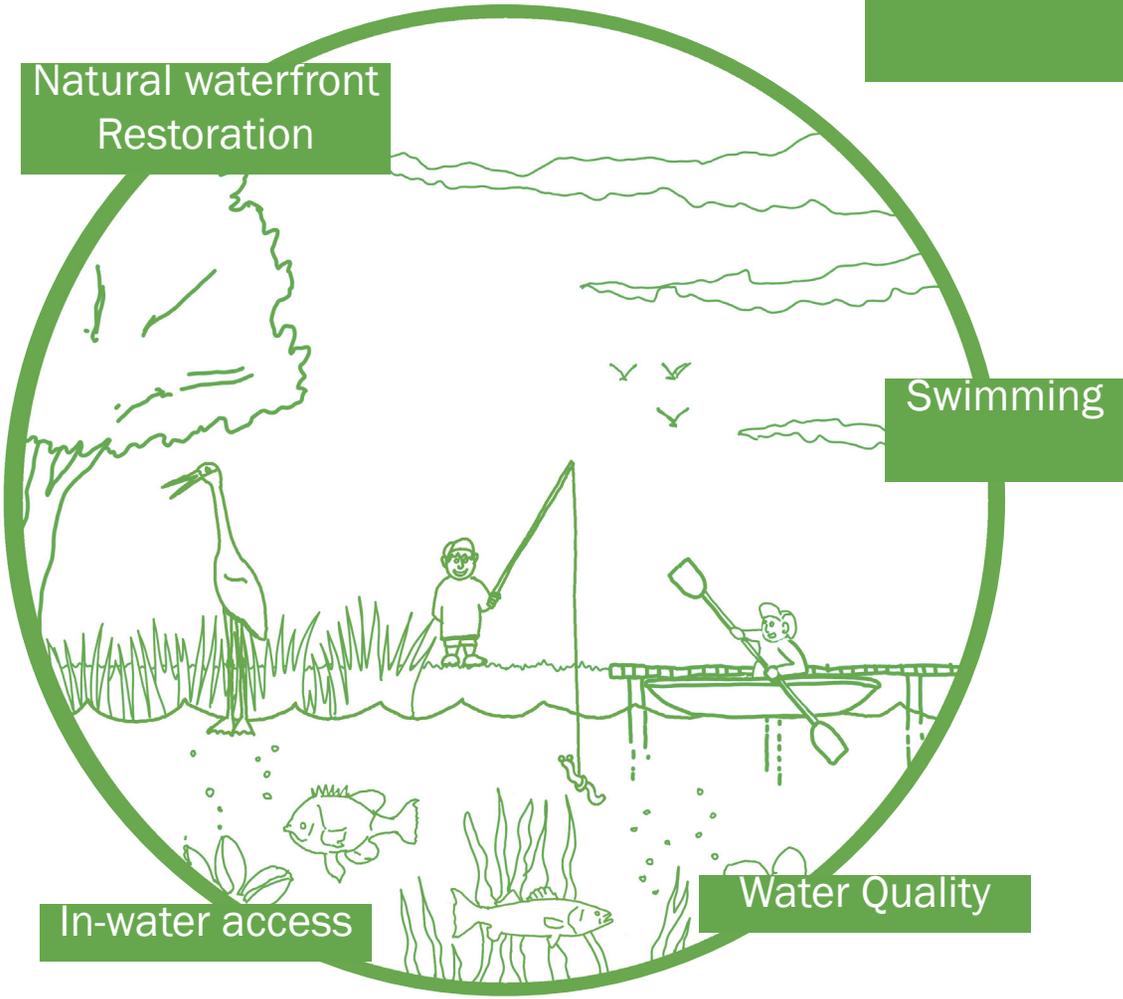
RESTORING AND RECREATION IN THE WATER

A large steel truss bridge spans a wide river under a clear blue sky. The bridge has two prominent towers with arched openings. In the foreground, there is a sandy bank with several young green trees and a white mesh protective cage around one of them. In the background, a city skyline is visible across the water.

Restoring and Recreation in the water

Build on water quality improvements and coastal habitat restoration efforts

Increase awareness about opportunities to explore NYC from its waterways





OVERVIEW

The City has invested over \$12 billion to improve our wastewater treatment and sewer infrastructure over the past 10 years, and the harbor is now the cleanest it has been in over 100 years. This improvement to water quality has allowed an incredible diversity of marine life to return to NYC, including whales, sharks, seals, sea turtles, and healthy fish populations to support this wildlife. Since the 1990s, the NYC Department of Parks and Recreation (DPR) has led over 35 salt marsh restorations, totaling over 150 acres, across all 5 boroughs. These restoration efforts strengthen coastal habitats, improve water quality, and offer protection against storm surges by absorbing the impact of waves. Restoration and remediation efforts also help connect New Yorkers to the natural waterfront by allowing for safe in-water recreation. There are over 50 human powered boat launches throughout NYC, which provide opportunities for on-water recreation from Long Island City to the North Shore of Staten Island, to Jamaica Bay and beyond.

Current Challenges

While we are making great strides in restoring coastal habitats, they also face many risks, all of which will be intensified by climate change. Salt marshes and tidal wetlands are no longer actively filled or destroyed for development. However, salt marsh loss has continued, despite regulatory protections, due to impacts from erosion and disrupted sediment supply, for example. Risks from sea level rise and coastal erosion requires that any efforts to restore coastal wetlands consider resiliency to storms and changing environmental conditions as well. While most of the city's waterways have seen historic improvements, there are still areas that require significant remediation (such as Flushing Creek and the Gowanus Canal). A legacy of waterfront industry in NYC also means that many shoreline sites require extensive environmental remediation on land, before they can be safely enjoyed by the public. Nevertheless, this offers the opportunity for redevelopment in a way that is responsive to the needs of the community, and promotes ecological health. Combined Sewer Overflows

(CSOs), caused by heavy rainstorms that overwhelm our combined sewer infrastructure, continue to degrade water quality, damaging ecosystems and posing health risks. However, these risks can be mitigated by increasing the use of green infrastructure, and coastal habitats that can be used to absorb excess runoff, before it reaches the sewer system.

In-water recreation requires balancing the needs of waterborne transportation while ensuring the safety of human-powered boaters.



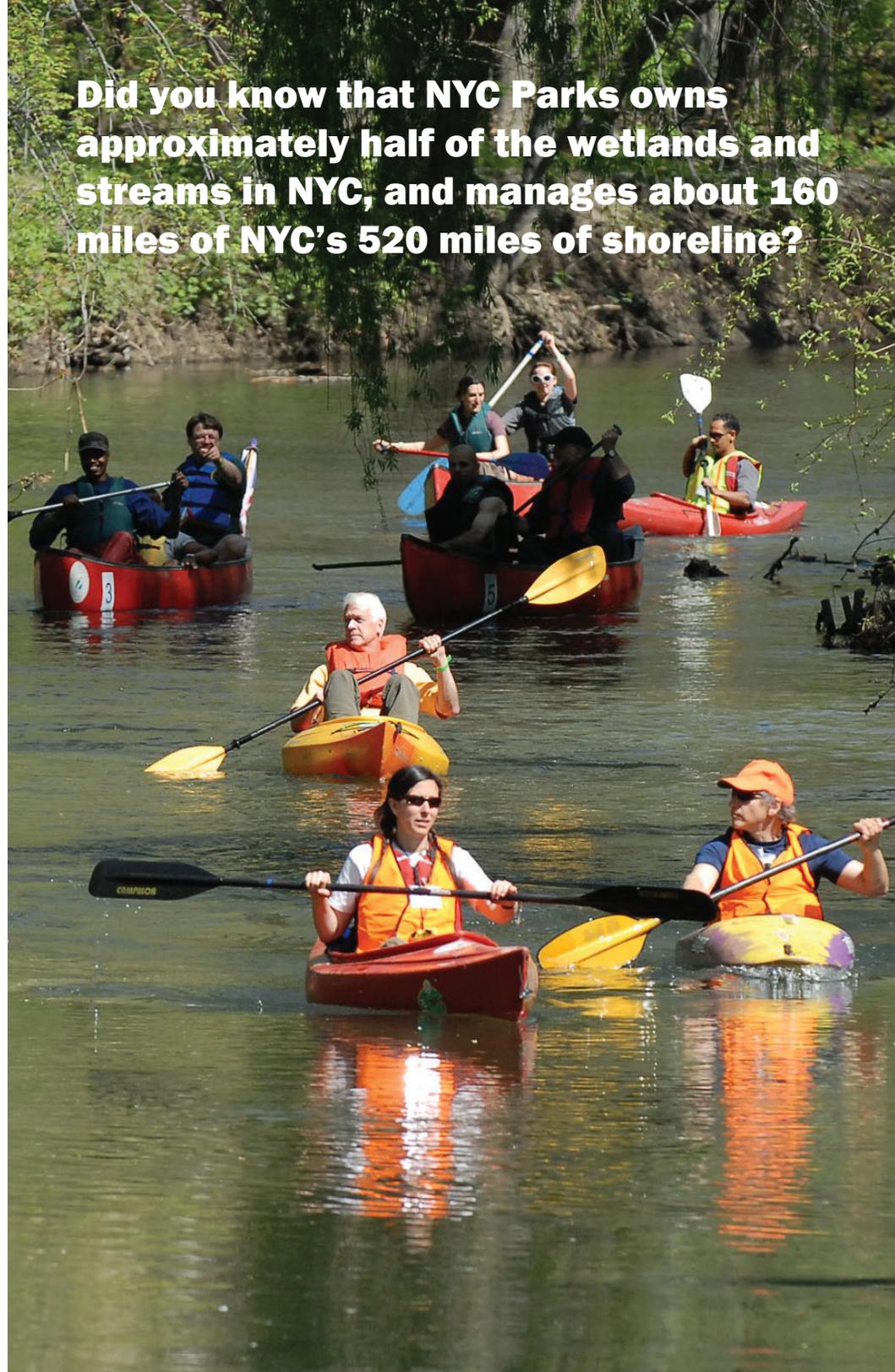
Did you know that 15% of New York City marshes have been lost since 1974?

Opportunities

There are many opportunities to enhance water quality, and promote recreation through the restoration of natural waterfronts. Salt marshes and oyster reefs filter and clean polluted water, and provide habitat for native species and protection against storm surges. Native grasses along dunes and beaches prevent shoreline erosion. However, these spaces need our support to provide these essential services. We can restore degraded marshes by removing debris, fill, and invasive species, and planting more resilient native species. Placing a thin layer of clean soil on existing salt marshes can also help to protect the marsh from the risks posed by sea level rise. As we redevelop shorelines, we can remove hardened shorelines, and create structures for plant growth and habitat improvement. This will also increase the ecosystem's ability to capture and filter stormwater, reducing the amount of pollutants entering wetlands.

Did you know that the Billion Oyster Project has installed over 27,000,000 oysters in NYC waterways since 2014?

Did you know that NYC Parks owns approximately half of the wetlands and streams in NYC, and manages about 160 miles of NYC's 520 miles of shoreline?



Case Studies

Hunts Point Riverside Park, Bronx



This former illegal dumping ground has been transformed into a waterfront oasis, with a pier for fishing, and a kayak and canoe launch. Even the spray shower and playground takes the shape of built-in canoes, as kids can safely play in the “water” on hot days. NYC Parks is currently designing a reconstructed dock in the park, (August 2020) to continue providing an opportunity for kayaking and rowing along a predominantly industrial waterfront on the Bronx River.

Alley Creek Restoration, Queens



The Department of Environmental Protection (DEP) and the Department of Parks and Recreation (DPR) is restoring tidal salt marshes along Alley Creek in Bayside, Queens. This project will also construct a living shoreline with oyster habitats along the western shore of Alley Creek at Alley Pond Park, and will be completed by Fall 2019. The marsh restoration aims to naturally improve water quality and restore natural habitats in Alley Pond Park, while the enhancing resiliency of the marsh.

Randall’s Island Living Shoreline



Have you seen the recently completed ‘living shoreline’ on Randall’s Island? Rather than having a straight continuous edge, the many terraces and tide pools create new habitats and encourages biodiversity. Markers at different elevations of the shoreline allow anyone to observe the effects of changing tides and rising sea levels firsthand. The shoreline uses native plants for environmental remediation, acting as a “living cap” on contaminated sediment. Poplar trees can be used to help extract heavy metals from the soil.

Charles River, Boston



Photo by Esplanade Association

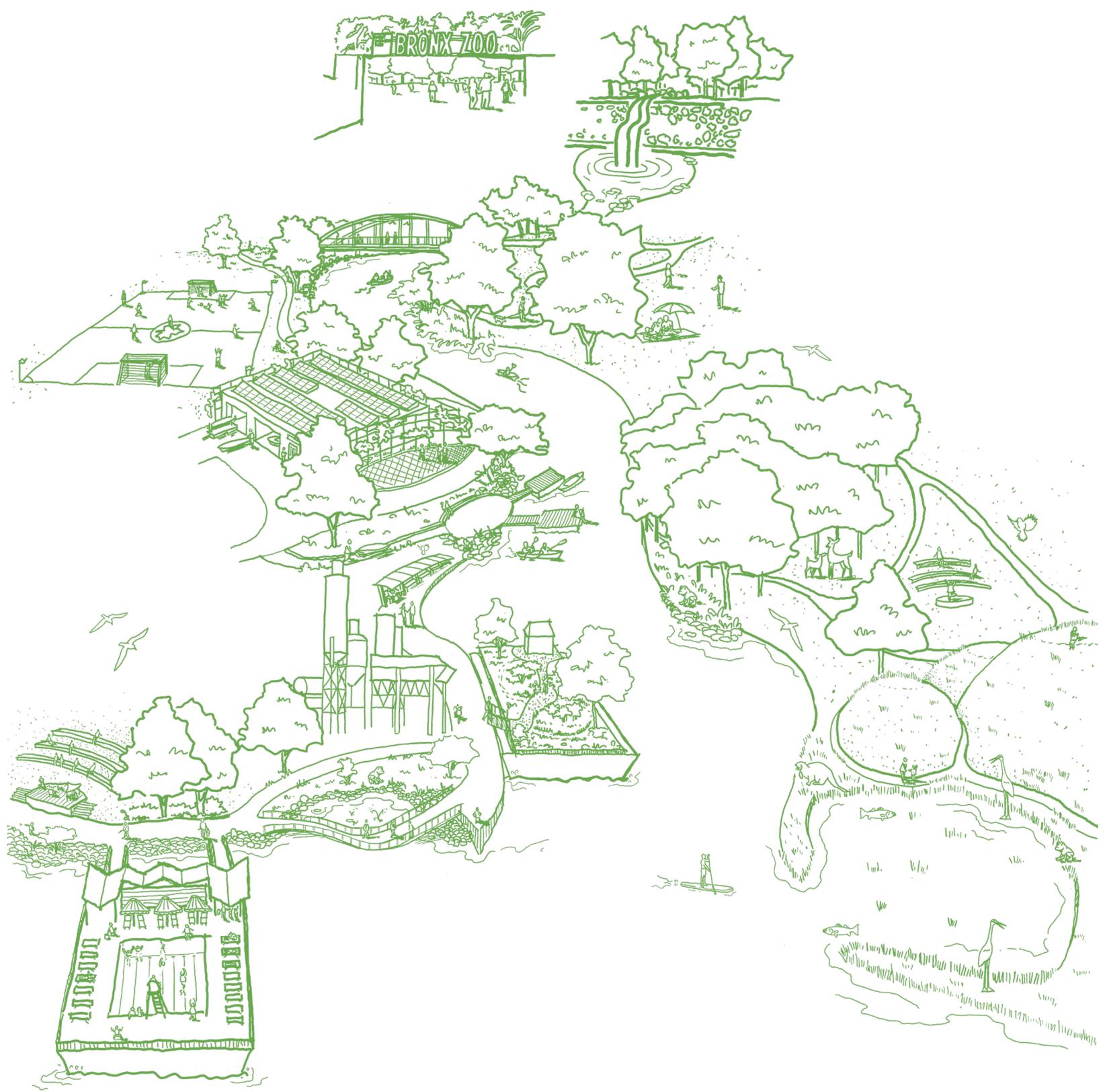
In 1995, the New England EPA headquarters set a long-term goal of a swimmable Charles River. Swimming in the Charles was then allowed in 2013 for the first time in 50 years, thanks to joint efforts on behalf of the EPA, local and state governments, and community-based organizations to curb CSO outfalls and enforce timely responses to sewage leakages.

Discussion Questions

How does the health of NYC's waterways and waterfront affect you and your community? What would it take for you to swim, boat, or kayak in NYC waters?

What needs to be improved? Where would you like to see restoration efforts take place?





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