



# Natural Systems

**INITIATIVES** **Parks and Public Space** • Facilitate urban agriculture and community gardening • Create a network of green corridors • Plant one million trees • Conserve natural areas • Support ecological connectivity • Incorporate sustainability through the design and maintenance of all public space | **Brownfields** • Promote green remediation in the NYC Brownfield Cleanup Program • Promote green space on remediated brownfield properties | **Waterways** • Expand the Bluebelt program • Build public green infrastructure projects • Engage and enlist communities in sustainable stormwater management • Modify codes to increase the capture of stormwater • Provide incentives for green infrastructure • Enhance wetlands protection • Restore and create wetlands • Improve wetland mitigation • Improve habitat for aquatic species | **Water Supply** • Continue the Watershed Protection Program • Protect the water supply from hydrofracking for natural gas | **Energy** • Improve our codes and regulations to increase the sustainability of our buildings | **Solid Waste** • Create additional opportunities to recover organic material | **Climate Change** • Identify and evaluate citywide coastal protective measures

Situated on a great tidal estuary, sculpted with gentle hills and rocky outcroppings, and conditioned by four distinct seasons, the natural biodiversity of New York City is sometimes hidden in plain sight. We might not even notice the gull-billed tern pausing for rest in Jamaica Bay, or the red-tailed hawk browsing for prey in Riverdale, but the clean water and hospitable trees they depend on are basic elements of our quality of life. The beaver or alewife herring tentatively returning to the Bronx River may be a modern novelty, but their presence can become a living lesson for school children in adjoining neighborhoods, who are also starting to explore that waterway for the first time in generations.

Building New York involved leveling hills, filling wetlands, burying springs and streams, and felling trees and vegetation. One of the most productive oyster beds in the world was eradicated by pollution in our harbor. While we built a great city, in some cases we also paid an unknown price for burying nature beneath our streets and buildings. Many of the natural systems that we discarded performed essential functions. The trees and vegetation allowed the rain to percolate into the soil; now we spend billions of dollars on concrete detention tanks and grey infrastructure to prevent flooding. The wetlands protected our coasts, cleaned our waters, and provided habitat for fish and shellfish; now our coastline is developed with seawalls and jetties, and we import our fish from ever-distant waters. The trees and vegetation provided shade and free cooling; now we dash from air-conditioned space to air-conditioned space to escape the sweltering summer heat.



Yet our forbearers also replicated fragments of nature in manicured patches which are today among our most cherished places in the city. And in recent decades, our view of the relationship between city and nature has begun to shift and the edges blur. We have a better understanding of how natural systems moderate climate, manage water, and protect our coasts. We also have a greater ability to engineer such systems within an urban setting. We now place a higher value on preserving and reconstructing native habitats and species and on the importance of human contact with nature.

New York City will always be a decidedly urban place, but increasingly we will discover that fragments and functions of nature are not always a contradiction to urbanity. Nature is finding a new place in the city, not only in parks or yards, but if we stop, breathe, and look in the trees along our streets, perhaps in the vegetation which increasingly caps our roofs, and in the waters along our shore. Narrow strands of continuous natural fabric are being woven into one of the most densely-settled human habitation in the nation. This new recognition of urban nature represents a continuum, from areas that are truly wild, to highly engineered bio-systems that recreate the functions of old natural systems within the constraints of the modern city.

Regenerating our natural systems is a strategy that crosses traditional bureaucratic and jurisdictional boundaries and provides multiple, overlapping benefits. Infrastructure like advanced tree pits, Greenstreet plantings, and porous pavements will help restore the ecological health of our harbor by allowing rain water to seep into the soil or evaporate instead of flowing into our wastewater treatment plants. Replacing asphalt and concrete infrastructure where it's practical to do so also provides natural cooling, accessible recreation spaces, and a more pleasant pedestrian experience. Similarly, restoring our wetlands and providing habitat for birds, fish, and other aquatic life will restore the ability of these ecosystems to retain storm water, clean our waterways, and protect us from storm surges.

The more than nine million people and the uncounted other species who will share our city in 2030 deserve the range of natural and recreational experiences provided by programs like MillionTreesNYC, our green infrastructure plan, and the expansion and enhancement of our parks and rooftops. We have learned that protecting and enhancing the natural systems, visible and invisible, within our city are critical to achieving our goals for a greener, greater New York. But these systems will do more than clean our harbor and provide us with parkland. They will transform the urban experience into one that includes a rich interaction with nature, which in turn reminds us that we are human.