

Managing Urban Ecosystems-Coastal watershed Restorations, A Case Study in the Science of Restoration, Funding and Monitoring Natural Systems in New York Harbor.

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NYC Parks Natural Resources Group is presently managing \$200 million in restoration programs supported by monies recovered from natural resources damages claims, state and federal grants and public works mitigations. Everyone is accountable and everyone pays! This presentation will address the buzzwords, and programmatic goals that drive the USA's largest urban conservation program. New York City occupies a unique position on the eastern seaboard. Located at the juncture of northern and southern hardiness zones, the City is home to more than 40 rare and endangered species contained in a 28,000-acre park system. NYC Parks Natural Resources Group (NRG) has inventoried and mapped on its GIS, northern sugar maple and beech forest communities, mingling with southern hackberry and sweetbay magnolia, at the edges of their ranges. NYC was the first municipality in the USA to inventory its endangered species, in cooperation with the Natural Heritage Program, and propagate and re-introduce rare plants including serpentine bedrock influenced state rarities: *Asclepiul viridiflora*, *A Purpurascens*, and *Cyperus ovularis*. Hosting the largest breeding urban peregrine falcon population in the world, the City is managing ten sites. NRG's forest and wetland restoration projects are funded creatively through state, federal and private grants. NRG's Salt Marsh Restoration Team, now in its tenth year, is supported by \$1.75 million negotiated from an Exxon oil spill settlement. More than 10km of shoreline has been restored with 800,000 *Spartina alterniflora* marsh plants propagated from seed, collected by 500 inner City volunteers. Comprehensive research protocols have been established to monitor restored vegetation, Total Petroleum Hydrocarbons (TPH), bacterial analysis, macro-invertebrate populations in m2 quadrates. The project has focused on elucidating a relationship between heterotrophic bacteria, capable of degrading petroleum hydrocarbons, and the significant reduction in oil product through bioremediation. NRG presently serves as Chair of the NY/NJ Harbor Estuary Program's Habitat Workgroup (HWG). The HWG has standardized wetland monitoring protocols for public works mitigations and damages claims, as well as prioritizing acquisition and restoration projects for NY/NJ harbor's critical watersheds. This paper will highlight some of New York City's current coastal restorations and monitoring programs that contribute to urban and port renewal. A proactive model for funding restoration and monitoring, based on sound ecological principals.