USDA Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE

SPSD Assists the New York Restoration Project at Sherman Creek Park in Manhattan

Purpose

On November 16 and 17, 2023, Jordan Kim, Austin Price, and Reuben Wilson, Soil and Plant Science Division (SPSD) soil scientists with the Special Projects Region, completed technical soil services (TSS) at New York City's Sherman Creek Park in Manhattan (fig. 1). The TSS request was made by the New York Restoration Project (NYRP), a nonprofit organization focused on renovating gardens, restoring parks, planting trees, and promoting urban agriculture in the five boroughs across New York City.

Background

In the summer of 2023, the NYRP contacted the SPSD special projects team to request general soils information on the intertidal, upland, and marsh areas on property they want to restore for community revitalization and environmental conservation. The NYRP selected Sherman Creek Park, a five-acre track located on the Harlem River in Manhattan, for further restoration.

Sherman Creek Park, also known as Swindler Cove, was historically an illegal dumping ground with sunken boats, cars, and construction debris along the Harlem River. NYRP restored the area to a five-acre recreational greenspace and waterfront. It is one of the only areas in Manhattan with an intact tidal marsh, and it is threatened with erosion and submersion from rising sea levels. The park is in one of the most densely populated and underserved areas of New York City.

In 2020, NYRP introduced a living shoreline in response to the erosion the marsh and property were experiencing. The living shoreline integrated native plantings and an artificial oyster reef, which consists of stacked, specialized concrete blocks called an oyster castle, with the goal of reducing wave energy's erosive effects on the shoreline and enhancing the native wetland habitat.

Key Outcomes

The SPSD special projects soil scientists selected three areas in Sherman Creek Park to describe and sample the soils (figs. 2 and 3). The soil scientists described and classified the upland soil as the Ebbets series, a coarse-loamy, mixed, active, mesic Typic Eutrudepts. The tidal marsh soil classified as a Fluventic Sulfaquents, with a layer (92 to 127 centimeters) dominated by coal less than 2 millimeters in diameter. The intertidal soils were uniform with little variation and consisted of three Cseug or Cseg horizons of fine-silty material containing interspersed artifacts including coal and treated wood. The intertidal soils were classified as taxadjunct to the Pishagqua series, a fine-silty, mixed, superactive, nonacid, mesic Fluventic Sulfiwassents. The taxadjunct designation was given due to the presence of artifacts and some petroleum odor.

The SPSD special projects soil scientists then transferred the soil samples to North Carolina State University to run standard soil characterization analyses to learn more about the soils at the site. The NYRP will use the soil data to plan for further living shoreline implementation, to understand the historical extent of the marsh on the property, to establish the best areas for restoration, and to prioritize restorative efforts in New York City.
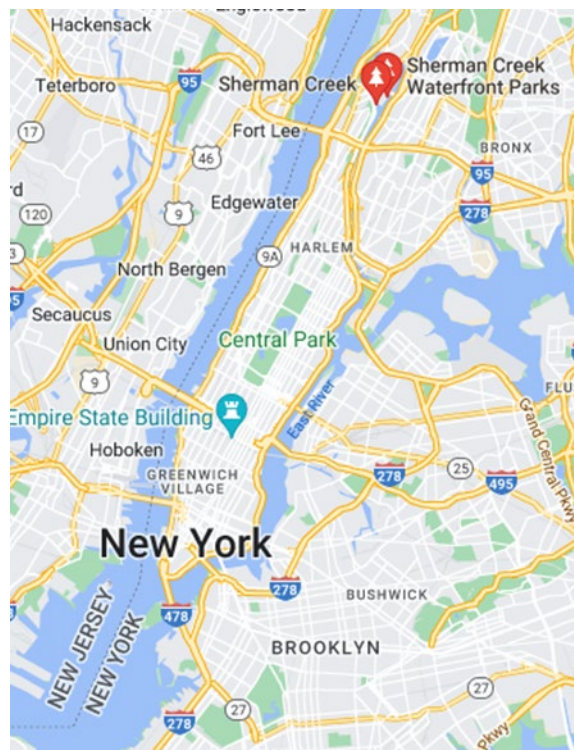

Figure 1. A Google map of New York City showing a red-colored tag marking the location of Sherman Creek Park in Manhattan.

Figure 2. A photo of SPSD special projects soil scientists describing and sampling soils at Sherman Creek Park in Manhattan.

Figure 3. A photo of the SPSD special projects soil scientists augering at Sherman Creek Park in Manhattan (photo courtesy of NYRP staff).