

Observing Wildlife Longitudinally in Washington Square Park

NYC Parks Research Permit Annual Report

*by Georgia Silvera Seamans and Loyan Beausoleil for Washington Square Park
(WSP) Eco Projects*



Figure 1. Washington Square Park, map via NYC Parks website

Overview

NYC Parks permitted the Observing Wildlife Longitudinally in Washington Square Park survey in MONTH 2016. Washington Square Park Eco Projects conducted the wildlife survey between August and December 2016. The 2016

permit was the first year that the survey applied for and received a permit.

Washington Square Park (WSP) is a 9.75-acre park located in the Greenwich Village neighborhood of Manhattan (Figure 1).

Project Description

There is anecdotal evidence about the faunal species that use WSP. The NYU Alumni Magazine commissioned an illustrated map of the wild inhabitants of the park, but this map does not provide spatial or numeric data.¹ Bloggers and the New York Times have documented the pair of red-tailed hawks that nest on a window ledge of the NYU Bobst Library facing the park. The Times hosted a hawk webcam from 2011, the time of the first nest, to 2014.² Two bloggers, D. Bruce Holton of Urban Hawks and “Roger Paw”, have photographed the mating pair and their offspring every year since 2011.³ The primary purpose of the Observing Wildlife Longitudinally in Washington Square Park project was to collect baseline data on wildlife specifically birds, squirrels, and rodents that use the park.

¹ Map of the Natural Inhabitants & Visitors of Washington Square Park by Eric Chase Anderson. NYU Alumni Magazine. Issue #23/Winter 2014.

<http://en.calameo.com/read/0039822742e15e808c3e3>

² <http://cityroom.blogs.nytimes.com/category/hawk-cam-live-from-the-nest/>

³ Roger_Paw blog: [roger paw blog](http://urbanhawks.blogs.com/urban_hawks/). Urban Hawk blog: http://urbanhawks.blogs.com/urban_hawks/

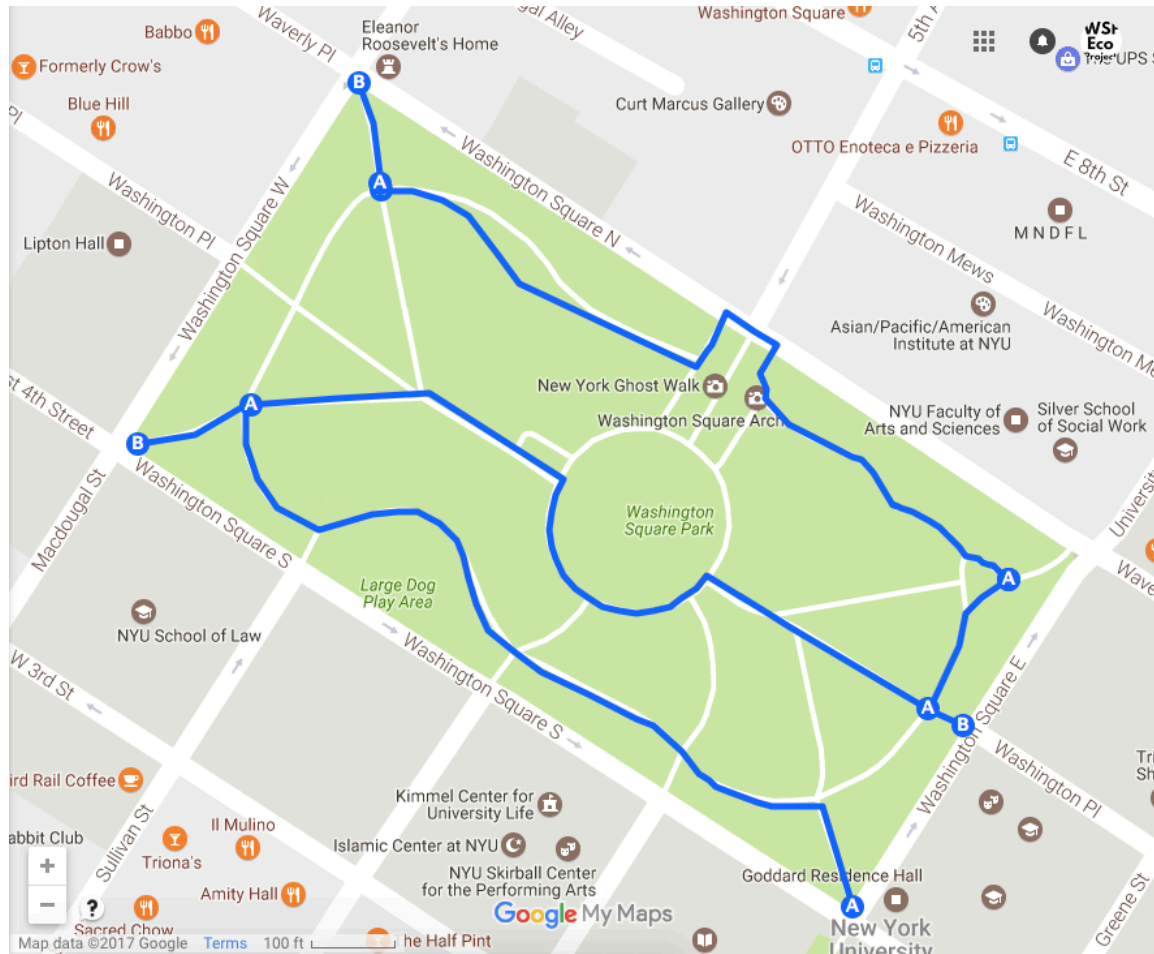


Figure 2. Continuous transect line, Washington Square Park Wildlife Survey 2016

Methodology

The initial protocol called for wildlife counts at eight sampling locations throughout the park. After the permit was received, Georgia Silvera Seamans of WSP Eco Projects corresponded with Debra Kriensky, a conservation biologist on staff at NYC Audubon. The following sampling design was implemented. A continuous line transect was mapped on the park (Figure 2). The surveyors, Georgia Silvera Seamans and Loyan Beausoleil, walked the line in the same direction and for approximately the same amount of time each time the survey was

conducted. Each survey was conducted between 7:00 and 8:30 a.m. Eastern Standard Time on days without rain. We recorded formally wildlife that were seen within the park's boundaries while walking the line transect. Birds that were heard, flew overhead, or were observed outside the park and wildlife that were neither bird, nor squirrel, nor rodent (ex: butterfly) were not recorded officially. Also not counted were birds or squirrels that had flocked around a human providing food. Birds and other wildlife were identified formally by Loyan Beausoleil and recorded on a paper map by Georgia Silvera Seamans. Bird observations were submitted to and tracked on the eBird website. Bird and other wildlife observations were mapped to a Google map.

Results

Seven continuous line transects were completed between August 31 and December 2, 2016.

Bird Sightings - Numbers

The team of Loyan Beausoleil and Georgia Silvera Seamans recorded 33 different bird species within WSP totaling 1,157 individuals (Figure 3). The most number of individuals was recorded on August 31st (n=350). The most number of species recorded on a single checklist was 15 on October 13th.

YEAR REPORT: High Count												
Report Details												
Date range:	Jan 1, 2016 - Dec 31, 2016						Total # of Species:		33			
							Total # of Checklists:		7			
Location(s): Washington Square Park												
Summary												
	Jan 2016	Feb 2016	Mar 2016	Apr 2016	May 2016	Jun 2016	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Number of Species	--	--	--	--	--	--	--	8	18	15	17	10
Number of Individuals	--	--	--	--	--	--	--	350	206	125	274	202
Number of Checklists	--	--	--	--	--	--	--	1	2	1	2	1

Figure 3. eBird Checklists Summary, Washington Square Park Wildlife Survey 2016

The species observed most often was the House Sparrow (n=403 across 7 checklists) followed by the Rock Pigeon (n=383 across 7 checklists). The least observed species, n=1 in each instance, were the American Kestrel, Brown Creeper, Winter Wren, Carolina Wren, Golden-crowned Kinglet, Swainson's Thrush, Magnolia Warbler, and Swamp Sparrow. House Finches were only observed on one date, December 31st, when 9 were spotted. A single Hermit Thrush was spotted on two separate dates.

Bird Sightings – Microhabitats in the park

WSP is composed of several microhabitats. The major distinguishing factor of these microhabitats is the types and layers of vegetation. We noticed variations in the species and the number of individuals found in the park's microhabitats.

Modifying Yang et al.'s (2015) typology of a forest park in Shanghai, we classified four habitat types in WSP: (1) lawn areas with mostly grass and dispersed trees, (2) meadows with herbaceous perennials, shrubs and/or small trees, (3) wooded areas with under-tree layers, and (4) single large trees (ex: the English elm in the northwest corner of the park). An additional factor is shelter from traffic. The northeastern fence between the Washington Arch and University Place was covered with a screen mesh to mitigate construction noise and dust on Waverly Place. While the fence was installed for human comfort it had the additional benefit of creating a safe space for birds. The northwestern quarter of the park is the most densely layered in terms of vegetation and secluded in terms of human foot traffic.

Table 1. Bird observations at the English elm in Washington Square Park between August 31, 2016 and December 2, 2016.

Date of Observation	Bird Species	No. of Indiv	Migratory status		
August 31, 2016	American Robin	2 (juveniles)	Year-round		
Aug. 31, 2016	Blue Jay	1	Year-round		
September 15, 2016	American Redstart	5 (4 female)	Migrant		
Sept. 15, 2016	Northern Flicker	2	Migrant		
Sept. 15, 2016	Blue Jay	2	Year-round		
September 26, 2016	Eastern Phoebe	3	Migrant		
Sept. 26, 2016	Northern Flicker	1	Migrant		
October 13, 2016	American Robin	2 (1st year)	Year-round		
Oct. 13, 2016	Yellow-bellied Sapsucker	1	Migrant/Winters		
Oct. 13, 2016	House Sparrow	3	Year-round		
November 1, 2016	Dark-eyed Junco	7	Winters/Migrant		
Nov. 1, 2016	Northern Flicker	2	Migrant		
Nov. 1, 2016	Red-bellied Woodpecker	1 (female)	Year-round		
Nov. 1, 2016	Downy Woodpecker	1 (female)	Year-round		
November 18, 2016	American Robin	1	Year-round		
Nov. 18, 2016	White-breasted Nuthatch		Migrant		
December 2, 2016	House Finch	2* (male)	Year-round		

*7 additional HOFI were spotted in a London planetree just south of the elm.

Table 2. Bird observations at the Washington Arch meadows in Washington Square Park between August 31, 2016 and December 2, 2016.

Date of Observation	Bird Species	No. of Indiv	Migratory status		
August 31, 2016		-		-	
September 15, 2016	Mourning Dove	1	Year-round		
Sept. 15, 2016	House Sparrow	13			
Sept. 26, 2016	House Sparrow	6			
Sept. 26, 2016	Blue Jay	1			
October 13, 2016	House Sparrow	11			
Oct. 13, 2016	Mourning Dove	3			
Oct. 13, 2016	Ovenbird	1			
Oct. 13, 2016	Northern Cardinal	2 (1 juvenile; 1 adult female)			
Oct. 13, 2016	Swamp Sparrow	1			
Oct. 13, 2016	American Robin	1			
Oct. 13, 2016	White-throated Sparrow	2			
Oct. 13, 2016	Yellow-rumped Warbler	1			
Oct. 13, 2016	Ruby-crowned Kinglet	1			
November 1, 2016	House Sparrow	6			
Nov. 1, 2016	American Robin	6			
Nov. 1, 2016	Hermit Thrush	1			
November 18, 2016	House Sparrow	16			
Nov. 18, 2016	Mourning Dove	1			
Nov. 18, 2016	White-throated Sparrow	4			
December 2, 2016	Nuthatch	2			
Dec. 2, 2016	Mourning Dove	7			
Dec. 2, 2016	White-throat Sparrow	8			
Dec. 2, 2016	Yellow-bellied Sapsucker	1 (juvenile)			
Dec. 2, 2016	House Sparrow	35			
Dec. 2, 2016	Downy Woodpecker	1 (female)			
Dec. 2, 2016	Red-bellied Woodpecker	1 (female)			
Dec. 2, 2016	Tufted Titmouse	4			

On average, and as the season progressed, more migrants and wintering bird species were observed in the northern and northwestern sections of the park. We can follow this progression by considering observations made at three areas within the northwest quarter of the park: (1) the English elm at the northwestern entrance to the park, the end point of the continuous line transect (see Table 1), (2) the Washington Arch meadows (see Table 2), and (3) the Holley Plaza meadow (see Table 3).

Table 3. Bird observations at the Holley Plaza meadow in Washington Square Park between August 31, 2016 and December 2, 2016.					
Date of Observation	Bird Species	No. of Indiv	Migratory status		
August 31, 2016	Rock Dove	3			
Aug. 31, 2016	American Redstart	3			
September 15, 2016	Mourning Dove	1			
Sept. 15, 2016	Common Yellowthroat	2 (1 female)			
September 26, 2016	House Sparrow	1			
Sept. 26, 2016	Common Yellowthroat	1 (male)			
Sept. 26, 2016	Magnolia Warbler	1			
Sept. 26, 2016	Carolina Wren	1			
October 13, 2016	Brown Creeper	1			
Oct. 13, 2016	White-throated Sparrow	4			
Oct. 13, 2016	Yellow-rumped (Myrtle)	2			
Oct. 13, 2016	Ruby-crowned Kinglet	1			
November 1, 2016	Dark-eyed Junco	1			
Nov. 1, 2016	White-throated Sparrow	12			
November 18, 2016	-	-	-		
December 2, 2016	-	-	-		

Non-bird Sightings

In addition to birds, the survey team also counted squirrels and rodents. 173 squirrels, 3 mice, and 1 rat were observed during the survey period. There were many large burrow holes in the park indicating the presence of more rats than was sighted.

Off-the-record Sightings

We observed a single Monarch butterfly on September 15, 2016. One surveyor, Georgia Silvera Seamans, regularly saw gulls flying overhead. Up until October, we noticed bees in the meadow area across from the Garibaldi Statue. We spotted a Cooper's Hawk on top of the Amity Hall building on December 2, 2016.

Discussion and Conclusion

WSP is a neighborhood park with a mix of vegetation types: trees both deciduous and evergreen, shrubs, herbaceous perennials, annuals, and lawn grass. For the purposes of this survey we identified four habitat types: (1) lawn areas with mostly grass and dispersed trees, (2) meadows with herbaceous perennials, shrubs and/or small trees, (3) wooded areas with under-tree layers, and (4) single large trees. Together, these habitat types could confer a small forest fragment designation to WSP. Small forest fragments, typical of urban areas, and individual trees in urban

residential settings have been found to provide stopover-site ecological services for long- and short-distance migrants (Hostetler, 2016).⁴ Our short survey revealed that a mix of neo-tropical migrant, wintering, and year-round bird species used the park between August and December of 2016. Although we did not consistently note behavior when we recorded our sightings, we noticed birds flying between nearby trees, perched on trees and other plants, and foraging on trees and on herbaceous perennials.

A formal microhabitat analysis was not a goal of this project but we assumed that different areas of the park would be more attractive to certain species than to others. This implicit hypothesis was born out during the course of this survey. Using Yang et al.'s (2015) behavioral distribution typology, we found the following to be true for WSP based on our observations across five months. More migrants and wintering species were found in areas of the park with more vegetative complexity, i.e. areas with tree, shrub, and perennial layers. Yang et al. (2015) argue that different layers serve different purposes. Like Yang et al. (2015), we saw the birds in WSP flying in and out of the tree canopy and often perching on

⁴ Why Conserve Small Forest Fragments and Individual Trees in Urban Areas?, Mark Hostetler, The Nature of Cities, March 6, 2016, <https://www.thenatureofcities.com/2016/03/06/why-protect-small-forest-fragments-and-individual-trees-in-urban-areas/>

high branches. Also, we observed foraging on shrubs. Shorter trees and herbaceous perennials seemed to be common foraging sites in WSP.

Washington Square Park is home to common urban birds such as Rock Dove (Pigeon) and House Sparrows. It also provides rest and forage services to short- and long-distance migrants. To improve on existing ecological conditions, we suggest the following strategies: (1) enhance the existing meadow areas and where possible expand their footprint; (2) plant more bird-friendly (small-stature) trees and shrubs including evergreen species; (3) add more sheltering plants in more people-used areas of the park; (4) maintain more high forage groundcover for late fall and early spring migrants.

Respectfully submitted by

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