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NEW YORK CITY AUDUBON SOCIETY

HARBOR ECOSYSTEM STUDY:

AUTUMN MIGRATION OF BIRDS ON THREE ISLANDS

IN THE ARTHUR KILL/KILL VAN KULL

A Report to the New York City Audubon Society

November 1996

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Newark Bay Study Area
NBSA-00012

The New York City harbor islands have long been known for their breeding herons, egrets, ibis, gulls, and cormorants. Many of these islands are large enough to host many other species of birds, including migrant songbirds, hawks, and owls. Studies conducted nearby at Jamaica Bay (Kerlinger 1994, 1995a) on Staten Island (Kerlinger 1995b) and along tributaries to the Arthur Kill (Kane et al. 1991a, 1991b) and the Raritan Bay (Kane and Kerlinger (1994) have revealed exceptional concentrations of migrating songbirds including neotropical species such as warblers, tanagers, vireos, thrushes, orioles and others. Thus, it is logical that the same islands that support heron and egret colonies, because of their forested and brushy habitats, would also host many species and individuals of migrating songbirds and other species.

As part of a continuing series of studies by the New York City Audubon Society in the New York/New Jersey harbor, three islands in the Arthur Kill were examined for use by migrating songbirds, hawks, and owls during the autumn of 1996. Specifically, this study was an attempt to determine the number and type of migrating songbirds on Shooter's Island, Prall's Island, and Isle of Meadows, as well as the types of habitats used by migrants. This report details the findings of this study and provides a set of management suggestions including habitat restoration.

Methods

Migrating songbirds and other landbirds were sampled between 12 September and 25 October 1996 on Shooter's Island in the Kill van Kull and on Prall's Island and Isle of Meadows in the Arthur Kill. A boat was used to visit these islands commencing at least one and one-half hours after sunrise (Wiedner, Kerlinger et al. 1992, also see Moore et al. 1990) and continuing until about 1 p.m. The principal investigator, this author, was frequently accompanied by a volunteer. Volunteers were recruited primarily to provide educational experiences for New York City Audubon Society members as well as to help the principal investigator with the boat. At least two trips to the islands were aborted when wind and tide made landing problematic and risked damaging or stranding the boat at low tide.

On each island between four and six, 25 m radius point counts were made to acquire representative samples of the habitats on each of the islands. In addition, migrants seen outside of the point count sites were also noted. Because the islands differ in vegetative ecology, the habitats are not always comparable among islands. However, determination of comparative use of these different habitats by migrant songbirds was possible within each island. For these analyses only songbirds seen on point count sites were included. Hawks and owls were not included in the analyses because they were often flying at low altitudes hunting in more than one habitat. On Shooter's Island four sites, designated "Edge," "Brush," "Birch," and "Cherry") were established for point counts. The "Edge" site consisted of habitat that was at the edge of the

island including some phragmites, brush (groundsel, Japanese honeysuckle, and poison ivy) and some trees (sumac, ailanthus, The Brush habitat was about 35 m inland from the water's edge an consisted of taller shrubs (sumac and Japanese honeysuckle) and more trees (ailanthus, mulberry, and black cherry). The Birch site was more forestlike than previous habitats and had an almost closed canopy and consisted of gray birch, taller sumac, and some black cherry. The Cherry site was even more mature forest, having a virtually complete canopy in excess of 25 feet. Trees consisted of black cherry, gray birch, ailanthus, and a couple of red maple and a pin oak. This site was in the interior of the island and is the tallest and thickest forest of any of the islands.

Four point counts were established on Prall's Island including "Edge," "Sumac," "Birch," and "Ailanthus." The Edge site was located at the interface between intertidal zone and upland part of the island, consisting of a brushy mix of sumac, phragmites (and other grasses and herbaceous plants), groundsel, gray birch, ailanthus and a crab apple tree. Only the crab apple tree was greater than 20 feet tall and there was no canopy. The sumac site consisted of a grassy interior site with dense sumac up to 3 feet tall, with occasional phragmites, black chokeberry, multiflora rose, blackberry, and gray birch. There was no canopy. The birch site had a partially closed canopy dominated by gray birch, black cherry, some blackberry, sumac, poison ivy, and one apple tree. Finally, the ailanthus site was a nearly mature ailanthus forest with a couple of black cherries mixed in. Under this canopy were some elderberry, poison ivy, and some herbaceous plants.

On Isle of Meadows five habitats were selected: "Grass," "Forest Patch," "Sumac," "Birch," and "Cherry." A grassy field with a few phragmites, groundsel, gray birch, sumac, and sassafrass was situated outside the main forest on the island. Within these grassy areas are forest patches that consist of black cherry, gray birch, and bayberry. One of these was selected as a point count site. The sumac stand was similar to the sumac stand on Prall's Island, except it is not as extensive or as tall. The tallest sumacs on the point count were only about 5-6 feet tall. These trees were mixed with grass and bare sand/gravel patches and occasional small gray birch. The Birch and Cherry sites were both covered with a nearly complete canopy with forest height being greater than 25 feet. The Birch site consists of gray birch, black cherry, red maple, with an understory of pokeberry, poison ivy, elderberry, and herbaceous plants. The Cherry site consisted mostly of black cherry, mixed with ailanthus, gray birch, and a hackberry. There was very little vegetation on the forest floor, although a few poison ivy as well as pokeberry and other herbaceous plants were present.

On Prall's Island and Isle of Meadows, succession is occurring with less grassland/phragmites each year. Sumac, sassafras, gray birch, and black cherry are invading these fields, along with some bayberry, poison ivy, blackberry, and other shrubs. Eventually, a majority of these islands will be forested. It should be remembered that on no island can the forests be considered truly mature or in a near climax state. Very few older trees are present on the islands and very few trees exceed 30-40 feet in height.

A minimum of five and a maximum of ten minutes was spent at each point. If after five

minutes, more than one or two birds were present, up to ten minutes was spent at a point count site. The justification for the variable time spent at each site was that more birds require more observation time for locating and identification. Pishing, squeeking, and an Eastern Screech Owl imitation were used to lure birds from thick brush. The method was important for finding species like warblers and thrushes that often do not leave thick vegetation and cannot be seen. These noises were made as quietly as possible to prevent luring birds from adjoining habitat. In some cases, especially with Yellow-rumped Warblers, the numbers of individuals on a point count site may be high as a result of attracting birds from off site. In most of these instances, the birds were lured from similar habitat.

Results

During 14 trips (one trip was completely aborted, a second was partially aborted due to weather) to the islands, a total of 62 species of migrating landbirds were observed, among which, 49 species were songbirds (79.0%), eight species were diurnal raptors (12.9%), one species was an owl, and four other landbird species including the Ruby-throated Hummingbird, two woodpeckers, and a Yellow-billed Cuckoo (Table 1). Slightly less than one half (29, 46.8%) of all species are strong Neotropical migrants. In several other species (e.g., Palm Warbler, Yellow-rumped Warbler), small numbers of individuals or entire populations are Neotropical migrants. Among the 49 songbird species, slightly fewer than one half are Neotropical migrants (24 species, 49.0%). These numbers include individuals not seen on point count sites.

An examination of habitat use on the three islands shows large differences in the numbers of species and individuals of songbird migrants that use each type of habitat. The largest number of species was usually seen in habitats in which a forest canopy was present. In edge, sumac, and grass habitats, only one half the number of species were observed as were observed on birch and cherry type habitats (Table 2). On Shooter's Island, only 8 species were observed on the edge site as compared with 15 and 16 species seen on birch and cherry sites. On Prall's Island, only 8 and 7 species were present in the edge and sumac sites as opposed to the birch site, which hosted 28 species. Similarly, grass (5 species), sumac (3 species), and forest patch (4 species) habitats on Isle of Meadows hosted less than half as many migrant songbird species as did birch (14 species) and cherry (10 species; Table 2). Species totals were, however, very low in forests where the canopy was dominated by ailanthus, as was the case on Prall's Island. On this site, only 4 songbird species were seen. What was obvious was the very large number of species seen on the birch site immediately adjacent to the ailanthus site. That only 10 species of songbirds were present on the cherry site on Isle of Meadows may be explained by the presence of several ailanthus trees within the point count area. An almost identical pattern was also obvious for the average number of species seen within the point quarters.

Somewhat different patterns emerged for the number of individuals seen in the different habitats. In general more individuals were seen in brushy habitats than in birch or cherry habitats on Shooter's Island, although there was a large amount of variation. On Prall's, the largest

average number of individuals was present in the edge habitat, followed closely by the sumac site. Both the edge and sumac seemed to host large numbers of fewer individuals than other habitats, and most often these birds were in flocks. As with the number of species, the ailanthus point count hosted fewer individuals than any other habitat sampled on Prall's. On Isle of Meadows, the greatest average number of individuals was observed in the birch forest, followed by the cherry and forest patch sites. Densities of migrants on grass and sumac sites was much lower. However, it should be noted that a habitat type that regularly was even more productive than any other on Isle of Meadows was a small field/clearing within the forest. This site offered foraging opportunities within the safety of a brushy forest edge that surrounded the clearing. Frequently, fifty or more sparrows and Yellow-rumped Warblers were foraging in this location (see Appendix I). This also explains the large discrepancy between number of species seen on the point count sites as opposed to the entire area of Isle of Meadows (Table 2).

As was expected Neotropical songbirds dominated the counts in September, giving way in October to migrants that do not leave the United States during autumn. With this change in species composition, came a concordant change in habitat use. As the season progressed more species and individuals commenced using brush, edge, sumac, and even grass sites. The most common species were Yellow-rumped Warblers and White-throated Sparrows. Earlier in the season, the Neotropical migrants (mostly warblers and thrushes) seemed to prefer the birch and cherry sites that were more mature and had a canopy. The later season species, like Yellow-rumped Warblers and sparrows were also often in larger flocks. These later season migrants also used the more mature forest habitats, but usually in smaller numbers than in brush or edge habitats Table 2. Thus, it seems that more Neotropical songbird migrants prefer forested areas on these islands than edge or earlier succession habitats.

Discussion

The finding that more species of migrating birds use forests with canopies as stopover sites than edge or brushy habitats has previously been reported by Moore et al. (1990) and Kerlinger (Kerlinger 1994, 1995a). In the Moore et al. study, birds were sampled during migration along a successional gradient on islands in the Gulf of Mexico off Mississippi. The authors also found that more species used habitats that were more diverse in vertical structure. In all of these studies, canopy forests with significant understory had more species than forests lacking an understory. It would seem that vertical habitat diversity in the form of many layers of vegetation perhaps provides a greater diversity of food and cover for the migrants involved. Also of significance is the fact that Neotropical migrants tend to use the later successional stages.

That the metropolitan New York City area is an important area for migrating birds is not new. It has long been known that the East Coast of the United States hosts significant numbers of migrating birds including songbirds, raptors (hawks and owls), shorebirds, and waterfowl. Studies by Kane et al. (1991a, 1991b), Kane and Kerlinger (1993), and Kerlinger (1994, 1995) have repeatedly documented the importance of small forested patches in and around the New

York/New Jersey harbor to migrating songbirds and other landbirds. All of these studies have demonstrated that the diversity and numbers of migrants are among the greatest reported from the east coast habitats. The present study is the first to document significant landbird migrant use of islands in the harbor.

Perhaps the single most important feature of these islands that makes them valuable to migrating songbirds and hawks is that they are uninhabited. Because of this, the islands have "wild" habitat in the form of fields, brush, and forest. Although it is in no way pristine habitat, it provides the essential cover and forage needed by migrating birds.

One unfortunate outcome of these findings is the realization that a large proportion of at least two islands do not support many species of migrants. On Prall's Island and Isle of Meadows, the grass, sumac, and brushy habitats support but a fraction of the overall species that use the islands. These habitats are relatively unimportant to most Neotropical songbird migrants. In these early successional stages, non-Neotropical migrants sometimes gather in large numbers. However, it should be remembered that these habitats are present over a much greater proportion of the harbor than are more mature forests.

The results reported herein show that the islands of the Arthur Kill and Kill van Kull support a great diversity and large number of migrating landbirds, including both Neotropical and non-Neotropical songbirds. The results of the habitat analyses suggest that only a portion of some islands are productive for migrating songbirds and that habitat modification could result in a greater portion of the islands being useful to migrating songbirds, especially Neotropical species.

Management Recommendations

To insure that the islands remain as viable stopover habitat for migrating songbirds as well as the herons and egrets that nest on them, three recommendations are listed below.

1. Minimal human intrusion is the primary reason for the value of the islands as stopover sites for migrating landbirds as well as nesting egrets, herons, and ibis. Avoidance of intrusion should be of overriding concern in any future management plans for the islands. Although the songbirds will tolerate some human contact, the herons, egrets, and ibis that nest on the islands will not. Human intrusion, mostly through habitat modification, however, could reduce the value of the habitat for migrants. The fact that there are no plans for development on the islands is reassuring, but the fact that the Isle of Meadows does not belong to NYC Parks and Recreation is disturbing.

2. Habitat modification and restoration could enhance the value of these islands to migrants as well as to breeding herons and egrets. Because most Neotropical migrants and many of the other species prefer forested habitat, it is recommended that portions of Prall's Island and Isle of Meadows be planted with trees and shrubs that will benefit these species. This recommendation is compatible with herons and egret habitat needs and it seems that in some ways their breeding

population may be limited by available nesting substrate. Specific recommendations regarding habitat restoration on the islands are provided in Kerlinger (1996), including an evaluation of how those recommendations will influence the herons and egrets. Any management strategy, especially one that incorporates habitat restoration or modification, should be developed to maximize the habitat provided for the nesting herons and egrets as well as migrating landbirds. Elements of such as strategy are provided in Kerlinger (1996).

3. Although this study documented significant use of the islands by migrating landbirds, the study did not thoroughly determine the magnitude of the usage. In addition, there are several other islands in the New York/New Jersey harbor that may be important migratory stopover habitat. Such islands as those in the East River (North and South Brother) should be studied to determine their suitability and importance to migrants.

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Table 1. Species seen during the 1996 autumn migration study on and off survey points. An asterisk indicates that the species is a Neotropical migrant (at least a large proportion of its population).

Species	Island		
	Shooter's Island	Prall's Island	Isle of Meadows
Osprey*			X
Northern Harrier		X	X
Sharp-shinned Hawk		X	
Cooper's Hawk		X	X
Red-tailed Hawk	X	X	X
American Kestrel		X	X
Merlin*			
Peregrine Falcon*		X	
Barn Owl			X
Yellow-billed Cuckoo*		X	
Ruby-throated Hummingbird*			X
Northern Flicker	X	X	X
Yellow-bellied Sapsucker	X		X
Eastern Phoebe	X	X	X
House Wren	X	X	X
Winter Wren		X	X
Golden-crowned Kinglet	X	X	X
Ruby-crowned Kinglet	X	X	X
Veery*		X	
Swainson's Thrush*	X	X	
Hermit Thrush	X	X	X
Wood Thrush*			X
American Robin	X	X	X
Gray Catbird*	X	X	X
Brown Thrasher	X	X	X
Cedar Waxwing	X	X	X
Solitary Vireo			X
Red-eyed Vireo*	X	X	X
Blue-winged Warbler*	X	X	
Nashville Warbler*	X	X	
Yellow Warbler*		X	
Chestnut-sided Warbler*	X		
Magnolia Warbler*	X		
Cape May Warbler*		X	
Black-throated Blue Warbler*	X	X	X

Yellow-rumped Warbler	X	X	X
Black-throated Green Warbler*		X	
Blackburnian Warbler*			X
Palm Warbler	X	X	X
Blackpoll Warbler*	X	X	
Black-and-white Warbler*	X	X	
American Redstart*	X	X	X
Ovenbird*	X		
Northern Waterthrush*	X		X
Connecticut Warbler*	X	X	
Common Yellowthroat	X	X	X
Wilson's Warbler*	X		
Canada Warbler*			X
Scarlet Tanager*			X
Eastern Towhee	X	X	X
American Tree Sparrow			X
Chipping Sparrow			X
Field Sparrow	X		X
Savannah Sparrow		X	X
Song Sparrow	X	X	X
Swamp Sparrow	X	X	X
White-throated Sparrow	X	X	X
White-crowned Sparrow			X
Dark-eyed Junco	X	X	X
Baltimore Oriole*			X
Purple Finch			X
American Goldfinch	X	X	X

Table 2. Summary of migrant songbird species and individuals seen by habitat on each of three Arthur Kill island during autumn migration 1996. Numbers within the habitat types in the table reflect only those species and individuals seen within point quarters.

Shooter's Island - Total Species = 30 (including off transects)

	Edge	Brush	Birch	Cherry
Number of Species	8	13	15	16
Number of Neotropical Species	1	2	8	8
Average Number of Species	1.25	2.42	2.12	2.25
Average Number of Individuals	1.75	4.25	3.25	3.75

Prall's Island - Total Species = 31 (including off transects)

	Edge	Sumac	Birch	Ailanthus
Number of Species	8	7	28	4
Number of Neotropical Species	2	2	15	3
Average Number of Species	1.76	1.31	3.38	0.54
Average Number of Individuals	7.38	5.62	5.92	0.92

Isle of Meadows - Total Species = 22 (44 species were seen including hawks, owls, and species observed)

	Grass	Patch	Sumac	Birch	Cherry
Number of Species	5	4	3	14	10
Number of Neotropical Species	0	0	0	6	4
Average Number of Species	0.73	0.91	0.55	2 64	1.64
Average Number of Individuals	1.00	2.45	1.18	4.09	2.64

Appendix I. Records of migrant sightings by habitat on three islands in the Arthur Kill (Shooter's Island, Prall's Island, and Isle of Meadows) during autumn 1996. For descriprtion of habitats, see methods.

September 12, 1996: no volunteers

Shooter's Island:
Edge: Common Yellowthroat - 1
Brush: Common Yellowthroat - 1
Birch: Common Yellowthroat - 1, Chestnut-sided Warbler - 1, Ovenbird - 1, Connecticut Warbler
Cherry: Unidentified thrush - 1

Prall's Island:
Edge: Common Yellowthroat - 1, American Redstart - 1
Sumac: 0
Birch: Brown Thrasher - 1, Red-eyed Vireo - 1, Black-and-white Warbler - 1, Blue-winged Warbler - 1, Cape May Warbler - 1, Baypoll Warbler - 1, American Goldfinch - 1
Ailanthus: 0

Isle of Meadows: Survey aborted

September 15, 1996: 30% CC, 65 F, Lite wind (volunteer - Jane Kashlak)

Shooter's Island:
Edge: Gray Catbird - 1, Common Yellowthroat - 1
Brush: American Redstart - 1
Birch:
Cherry:

Prall's Island:
Edge:
Birches: Yellow-billed Cuckoo - 1, Gray Catbird - 2, Connecticut Warbler - 2, Black-and-white Warbler 1
Sumac: 0
Ailanthus: Black-and-white Warbler - 1

Isle of Meadows:
not surveyed

September 20, 1996: 63 F, 0% CC, W 4-5 mph (no volunteer)

Shooter's Island:
Edge: Gray Catbird - 1
Brush: 0
Birch: Magnolia Warbler - 1, Baypoll Warbler - 2, Unidentified warbler - 1
Cherry: Gray Catbird - 1, Ovenbird - 1
Also on island were 2 Black-crowned Night-herons and 3 Spotted Sandpipers

Prall's Island:
Edge: Gray Catbird - 3
Sumac: Unidentified warbler - 1
Birch: House Wren - 1, Veery - 1, American Robin - 1, Nashville Warbler - 2, Common Yellowthroat - 1, Blackpoll Warbler - 1, Black-throated Green Warbler - 1, Unidentified warbler - 1
Ailanthus: 0
Also on island was a female Ring-necked Pheasant

Isle of Meadows:
Grassy: 0
Forest Patch: 0
Sumac: Song Sparrow - 1
Birch: Gray Catbird - 1, Brown Thrasher - 1, American Robin - 1, Red-eyed Vireo - 2, Canada Warbler - 1, Northern Waterthrush - 1, Unidentified Warbler - 1
Cherry: Gray Catbird - 1, Brown Thrasher - 2, Red-eyed Vireo - 1, Northern Waterthrush - 1, American Redstart - 1
Also on island were two Downy Woodpeckers, at least two-three Northern Waterthrushes, several Red-eyed Vireos, and a Ruby-throated Hummingbird.

At GATX Terminal landfill (explosion site) were 9 or more American Kestrels hunting and resting.

September 24, 1996: 10% CC (high), 59 F, W 1-3 mph (no volunteer)

Shooter's Island:
Edge: Common Yellowthroat - 1
Brush: Phoebe - 1, House Wren - 1, Gray Catbird - 3, Common Yellowthroat - 2,
Birch: Gray Catbird - 1
Cherry: Gray Catbird - 2, House Wren - 1
Also on island - Downy Woodpecker - 1, Red-tailed Hawk, Belted Kingfisher, Spotted Sandpiper - 2

Prall's Island: 75% CC, light variable wind
Edge: Gray Catbird - 6, Common Yellowthroat - 1
Sumac: Cedar Waxwing - 3
Birch: Northern Flicker - 1, American Redstart - 3, Black-throated Blue Warbler - 1
Ailanthus: 0

Great Egret - 1, Spotted Sandpiper - 2, American Robin - 2, Northern Flicker - ##, Blue Jay - 24+

Isle of Meadows:
Grassy: 0
Forest Patch: 0
Sumac: 0
Birch: 0
Cherry: Northern Flicker - 1

Northern Harrier hunting and American Kestrel on Isle of Meadows, Osprey nearby

September 26, 1996: 10-15% CC, 60 F, 8-10 NNE (volunteer Debbie Sullivan)

Shooter's Island:
Edge: 0
Brush: Northern Flicker - 1, House Wren - 1, Gray Catbird - 1
Birch: Black-throated Blue Warbler (f) - 1, Unidentified warbler - 1
Cherry: Swainson's Thrush - 1, American Redstart - 1, Unidentified warbler - 1

Also present Downy Woodpecker

Prall's Island:
Edge: Cedar Waxwing - 4
Birch: 0
Ailanthus: 0
Sumac: 0

Also present Downy Woodpecker

Isle of Meadows:
Grassy Area: 0
Forest Patch: Palm Warbler - 1 (Coopers Hawk - with full crop)
Sumac: 0
Birch: Thrush sp.
Cherry: 0

Also on island were Downy Woodpecker and Northern Flicker

October 1, 1996: 0% CC, 65 F, Wind light (Sasha Litman)

Shooter's Island:
Edge: Gray Catbird - 1, Ruby-crowned Kinglet - 1, Eastern Phoebe - 2, Yellow-rumped Warbler - 2, Palm Warbler - 1. 15 Black-crowned Night-herons. (2 Yellow-rumped Warblers flying off island to west)
Brush: Virginia Rail - 1, House Wren - 1, Gray Catbird - 1, Nashville Warbler - 1, Song Sparrow - 2, Goldfinch - 2
Birch: Ovenbird - 1, American Redstart - 1, Black-throated Blue Warbler - 1, Unidentified Warbler - 1
Cherry: Unidentified thrush - 1

Prall's Island:
Edge: Yellow-rumped Warbler - 9, Song Sparrow - 1 (warblers were feeding on sumac fruit; flying out over water to west was Magnolia Warbler)
Sumac: Red-eyed Vireo - 1, Yellow-rumped Warbler - 5+ (eating sumac fruit)
Birch: Nashville Warbler - 1, Unidentified Warbler (both feeding in gray birches and cherries), Eastern Towhee - 1
Ailanthus: 0

Isle of Meadows:
Grass: 0
Cherry/Birch Patch: 0
Sumac: Yellow-rumped Warbler - 1
Birch: Phoebe - 1, Unidentified thrush - 1, Black-throated Blue Warbler - 1, Blackburnian Warbler - 1, Yellow-rumped Warbler - 2
Cherry: Downy Woodpecker* - 1, Northern Flicker - 2, Scarlet Tanager - 1, Yellow-rumped Warbler - 1

October 2, 1996: 95% CC, 60 F, S 2 mph (Jean Bourque)

Shooter's Island:
Edge: Yellow-rumped Warbler - 1
Brush: 0
Birch: Unidentified warbler
Cherry: Black-and-white Warbler - 2, American Redstart - 5+, Black-throated Green Warbler - 1, Blue-winged Warbler - 1, Black-throated Blue Warbler - 1, Wilson's Warbler - 1

Also on island were 2 Belted Kingfishers and 2+ Northern Flickers

Prall's Island:
Edge: Yellow-rumped Warbler - 3, Song Sparrow - 1

Birch: Swainson's Thrush - 2, Veery - 1, Common Yellowthroat - 1, Unidentified warbler - 1
Sumac: Yellow-rumped Warbler - 6+, Eastern Towhee - 1
Ailanthus: Swainson's Thrush - 1

Isle of Meadows:
Grass: 0
Forest Patch: 0
Birch: American Robin - 1, Unidentified warbler - 2
Cherry: 0

Also on island were American Robin - 3.
Dozens more Yellow-rumped Warblers on island feeding on winged sumac fruits.

October 10, 1996: 100% CC (clearing through am), 60 F, NW <5 but increasing from W-NW to 10-13 mph (Ben Longstreth)

Shooter's Island:
Edge: Unidentified warbler - 1
Brush: House Wren - 2, Gray Catbird - 2, Eastern Towhee - 1
Birch: Northern Waterthrush - 1, Common Yellowthroat - 2
Cherry: House Wren - 1, Unidentified warbler 1

Also on island were several Yellow-rumped Warblers, Spotted Sandpiper - 2, Belted Kingfisher - 1, Downy Woodpecker - 1, Ruby-crowned Kinglet - 1

Prall's Island:
Edge: Yellow-rumped Warbler - 2
Birch: Unidentified warbler - 1, Song Sparrow - 2
Sumac: Yellow-rumped Warbler 12+, Song Sparrow - 1, American Goldfinch - 3
Ailanthus: 0

Many dozens of Yellow-rumped Warblers seen flying about on island, especially along edge and in sumac areas feeding on sumac fruits. Also seen were 2 American Kestrels in flight.

Isle of Meadows:
Grass: 0
Forest Patch: Yellow-rumped Warbler - 4 (perhaps feeding in adjacent sumac)
Sumac: 0
Birch: Black-throated Blue Warbler - 1
Cherry: 0

Present on island were Sharp-shinned Hawk in flight, presumably hunting, an immature Northern

Harrier that was hunting, Baltimore Oriole - 3, Gray Catbird -2, and a flock of 30+ White-throated Sparrows and 6 Song Sparrows. Also, more than 50 Yellow-rumped Warblers were seen moving about the island.

October 16, 1996. Wind - SW - 10, Cloud Cover about 5%, 58 F (volunteer - Sasha Litman)

Shooter's Island

Edge: 0
Brush: Common Yellowthroat - 1, Yellow-rumped Warbler - 1, White-throated Sparrow - 1
Birch: Golden-crowned Kinglet - 4+, Yellow-rumped Warbler - 1
Cherry: Yellow-rumped Warbler - 3, White-throated Sparrow - 1

Prall's Island:

Edge: Yellow-rumped Warbler - 12+
Sumac: Yellow-rumped Warbler - 12+, Song Sparrow - 1
Birch: Northern Flicker - 1, Gray Catbird - 1, Yellow-rumped Warbler - 10+
Ailanthus: Yellow-rumped Warbler - 3

There were hundreds, if not thousands of Yellow-rumped Warblers on the island and many White-throated Sparrows. An American Kestrel was seen leaving the island and flying to the west.

Isle of Meadows

Grass: Song Sparrow - 3, Swamp Sparrow - 1
Forest Patch: Yellow-rumped Warbler - 6, American Goldfinch - 2, Unidentified sparrow - 1
Sumac: Yellow-rumped Warbler - 4
Birch: Hermit Thrush - 1, Golden-crowned Kinglet - 2, Yellow-rumped Warbler - 5+
Cherry: Golden-crowned Kinglet - 1, Yellow-rumped Warbler - 2, White-throated Sparrow - 2

There were hundreds of Yellow-rumped Warblers throughout the island. Also seen were a Red-tailed Hawk (hunting), a Merlin hunted the open areas briefly, several Hermit Thrushes, Yellow-bellied Sapsucker (2), a Solitary Vireo, Northern Flicker (2), Palm Warbler (2), many White-throated Sparrows, a couple of Chipping Sparrows, a White-crowned Sparrow. The latter four species were numerous around the clearing in the center of the island.

October 17, 1996. Wind WNW - <2 mph, Cloud Cover 80% though thin, 60 F. (volunteers - Ben Longstreth and Marie Winn)

Shooter's Island

Edge: 0
Brush: Common Yellowthroat - 1, Yellow-rumped Warbler - 2, White-throated Sparrow - 3, Song Sparrow - 1
Birch: Unidentified Warbler - 1, White-throated Sparrow - 1
Cherry: Unidentified songbird

Also present on the island were at least a dozen Yellow-rumped Warblers, two Song Sparrows, a thrush - probably Hermit - and a Downy Woodpecker.

Prall's Island

Edge: Gray Catbird - 1, Yellow-rumped Warbler - 15+
Sumac: Yellow-rumped Warbler - 10+, Song Sparrow - 2
Birch: Yellow-rumped Warbler - 8+
Ailanthus: Yellow-rumped Warbler - 4

Yellow-rumped Warblers were incredibly abundant - 100's. A Sharp-shinned Hawk hunted on the island, and a few Northern Flickers were observed.

Isle of Meadows

Grass: 0
Forest Patch: Yellow-rumped Warbler - 6, Song Sparrow - 1
Sumac: Yellow-rumped Warbler - 3
Birch: Yellow-rumped Warbler - 2, White-throated Sparrow - 3
Cherry: 0

In the clearing were dozens and dozens of Yellow-rumped Warblers, White-throated Sparrows, Song Sparrows, a few Field Sparrows, and one White-crowned Sparrow.

October 21, 1996. Wind - South 8+ mph, Cloud Cover 60% and variable, 57 F, and rain is stopping. (volunteer - Scott Barnes)

Shooter's Island

Edge: Yellow-rumped Warbler - 2, White-throated Sparrow - 2, Field Sparrow - 1
Brush: Common Yellowthroat - 1
Birch: 0
Cherry: Hermit Thrush - 1, Common Yellowthroat - 1, Yellow-rumped Warbler - 1, White-throated Sparrow - 6+

There were many Yellow-rumped Sparrows around the island.

Prall's Island

Edge: Yellow-rumped Warbler - 6+, Song Sparrow - 1
Sumac: Yellow-rumped Warbler - 4
Birch: Golden-crowned Kinglet - 1, Yellow-rumped Warbler 2+
Ailanthus: Yellow-rumped Warbler - 1

Also on island were: Red-tailed Hawk (1), Northern Flicker (#), Golden-crowned Kinglet (1), Eastern Phoebe (1), Black-bellied Plover (flying out), and Yellow-rumped Warbler (#)

Isle of Meadows

Grass: Yellow-rumped Warbler - 1, Savannah Sparrow - 2+, Dar-eyed Junco - 1
Forest Patch: 0
Sumac: 0
Birch: Gray Catbird - 1, Winter Wren - 1, American Robin - 1, Golden-crowned Kinglet - 2, Yellow-rumped Warbler - 6+, and White-throated Sparrow - 3.
Cherry: Cooper's Hawk - 1 (hunting), Golden-crowned Kinglet - 3, White-throated Sparrow - 2.

Also present on island were a Northern Harrier, a Tufted Titmouse, large numbers of Yellow-rumped Warblers, Song Sparrows, White-throated Sparrows, and a Gray Catbird. Many of these were along the berm as we moved into the island and at the clearing in the middle of the island.

October 22, 1996. Wind - West less than 5 mph, 10% Cloud Cover, 57 F

Shooters Island

Edge: Palm Warbler - 2, Yellow-rumped Warbler - 2
Brush: Ruby-crowned Kinglet -1, Yellow-rumped Warbler - 10, White-throated Sparrow - 2
Birch: Gray Catbird - 1, Yellow-rumped Warbler - 2, White-throated Sparrow - 1
Cherry - Gray Catbird - 1, White-throated Sparrow - 6

Also present on the island was a Downy Woodpecker and many dozens of Yellow-rumped Warblers.

Prall's Island

Edge: Eastern Phoebe - 1, Cedar Waxwing - 10, Yellow-rumped Warbler - 9, White-throated Sparrow
Sumac: Gray Catbird - 1, Yellow-rumped Warbler - 8

Birch: Wood Thrush - 1, Yellow-rumped Warbler - 5+, White-throated Sparrow - 1
Ailanthus: Yellow-rumped Warbler 2

A few Yellow-rumped Warblers were observed flying to the west leaving the island. Dozens more were seen on the island. Northern Flicker, Savannah Sparrow, and Downy Woodpecker were also observed.

Isle of Meadows

Grass: Yellow-rumped Warbler - 2
Forest Patch: Yellow-rumped Warbler - 3
Sumac: Yellow-rumped Warbler - 2
Birch: Yellow-rumped Warbler - 6, White-throated Sparrow - 1+
Cherry: Golden-crowned Kinglet - 4, Yellow-rumped Warbler - 2+, White-throated Sparrow - 1

At the clearing on the island were hundreds of sparrows and other species: Cedar Waxwing (9), Yellow-rumped Warbler, Song Sparrow, Swamp Sparrow, Field Sparrow, American Tree Sparrow, Chipping Sparrow, White-throated Sparrow, and Purple Finch. Also on the island were a Downy Woodpecker, numbers of Yellow-rumped Warblers, and a Red-tailed Hawk (hunting).

October 25, 1996. Wind - West 12+ mph, 10% Cloud Cover (clear), 55 F

Shooter's Island

Edge: 0
Brush: Ruby-crowned Kinglet - 2, Song Sparrow 1, Swamp Sparrow - 1
Birch: Yellow-rumped Warbler - 3, White-throated Sparrow - 3, Dark-eyed Junco - 3
Cherry: White-throated Sparrow - 1

Prall's Island

Edge: Yellow-rumped Warbler - 6, White-throated Sparrow - 1, Song Sparrow - 1
Sumac: Yellow-rumped Warbler - 2
Birch: Phoebe - 1, Winter Wren - 1, Ruby-crowned Kinglet - 1, Yellow-rumped Warbler - 5, Rufous-sided Towhee - 1
Ailanthus: 0

A Red-tailed Hawk was hunting on the island and Water Pipits (5-6) were taking off from the island as I approached. Also seen were Golden-crowned Kinglet (3+), and numbers of White-throated Sparrows and Yellow-rumped Warblers.

Isle of Meadows:

Grass: Song Sparrow - 1, Savannah Sparrow - 1
Forest Patch: Yellow-rumped Warbler - 2, Song Sparrow - 1
Sumac: Song Sparrow - 2
Birch: American Robin - 1, White-throated Sparrow - 1
Cherry: Golden-crowned Kinglet - 1

A Barn Owl was perched at the edge of the central clearing. It flew and was harassed liberally by 100 crows. An American Kestrel was hunting on the island and 4 Red-tailed Hawks were soaring over the island/perching presumably hunting. Dozens of Yellow-rumped Warblers flitted about. At the central clearing the following sparrows were present: Song Sparrow, Swamp Sparrow, White-throated Sparrow, Field Sparrow, as well as Golden-crowned Kinglet and Gray Catbird. A Tufted Titmouse was heard.