

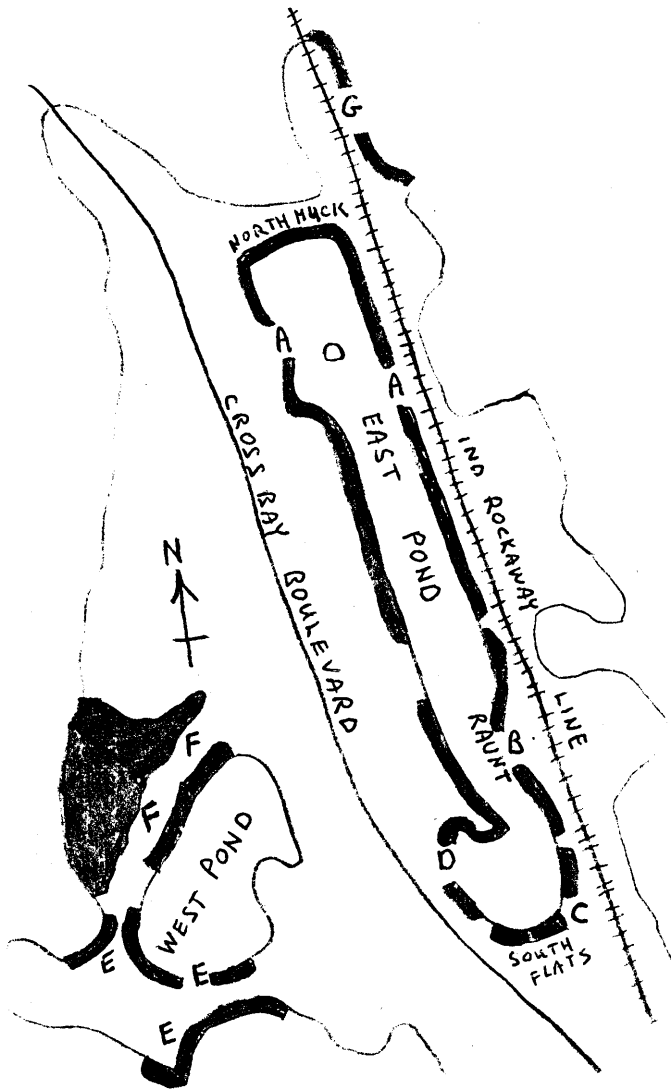


Figure 1. Jamaica Bay Wildlife Refuge
Shorebird Survey Areas.
(Adapted from Davis, 1982)

THE 1984 FALL SHOREBIRD SEASON AT JAMAICA BAY WILDLIFE REFUGE

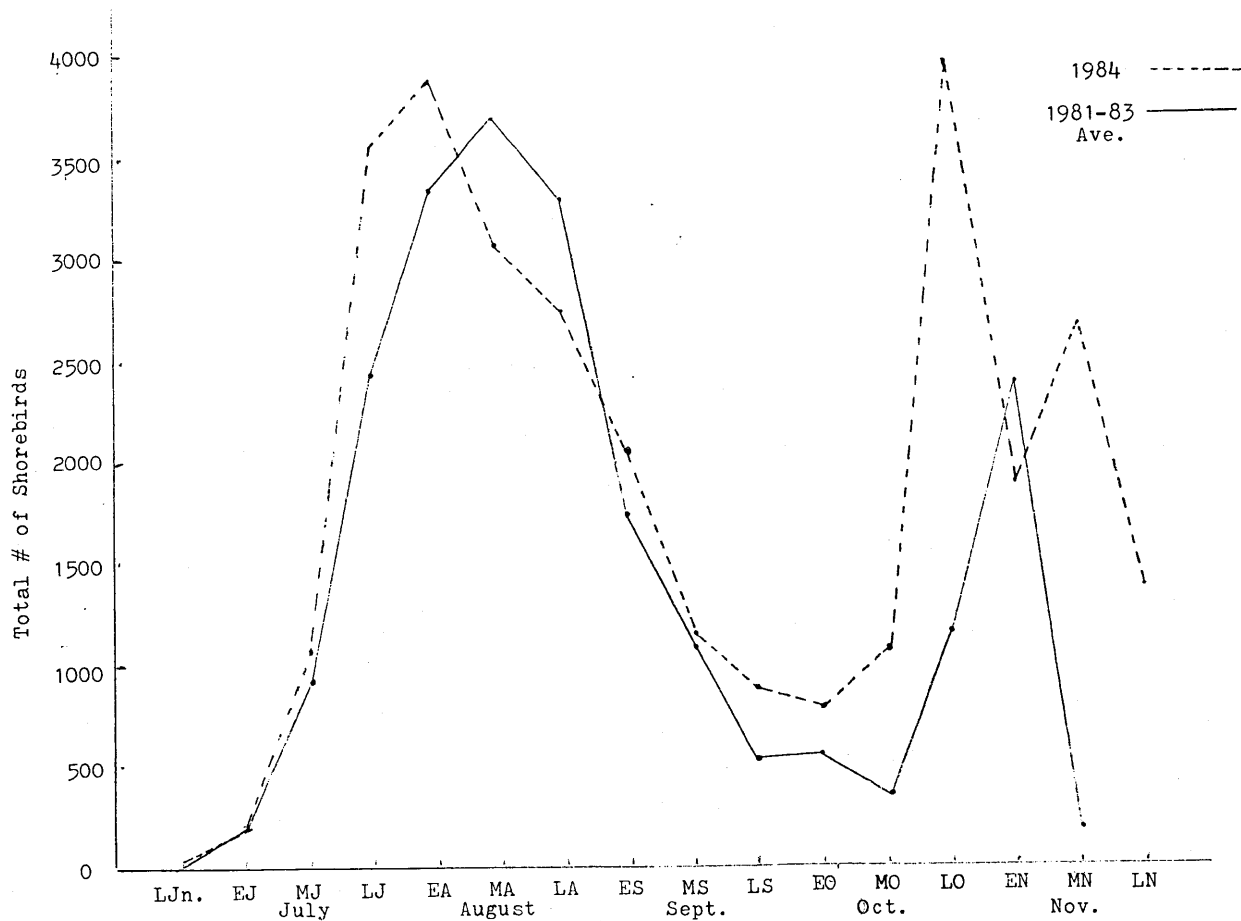
ARTHUR MORRIS

Thirty-four species of shorebirds were noted at Jamaica Bay Wildlife Refuge (JBWR), Queens County, during the period 24 June to 24 November. During this time the refuge was visited 48 times and every species present was censused at least once a week. I endeavored to follow the techniques of Thomas H. Davis (1982). All visits overlapped the time of high tide, when the greatest number of birds fly into the East Pond from surrounding saltwater flats to rest, feed, and preen. A majority of birds present disperse to these tidal flats throughout Jamaica Bay as the tide recedes. This tidal influence was at its greatest late in the season. My visits averaged three to six hours in length. The refuge was divided into seven survey areas. Thomas W. Burke (22, 29 July and 4, 11 August), Stephen B. Dempsey (31 July and 9, 15 August) and Barbara J. Spencer (25 July) "took the count" while I was out of state.

Because of the inaccessibility of the East Pond (see below) early season coverage was limited at first to the West Pond, and then, additionally to the South Flats of the East Pond. Mid and late season censuses found the West Pond accounting for only 2-10% of the daily totals. Due to several torrential downpours between 30 June and 16 July, the water level on the East Pond was far higher than normal for this period. The storm of 30 June alone raised the level of the East Pond eight inches overnight (Bob Cook, pers. comm.). It appeared that the wet weather and conditions affected the birders more than the birds. The many birders who had spoken of participating in the search for the rarities of previous years (Sharp-tailed Sandpiper, Little Stint) were virtually absent during this period (17-22 July). Migration however, continued apace. In fact, the peak of adult migration was reached more than a week early (Graph 1). During the first three weeks of July only small portions of the flats normally available to the birds for feeding and roosting were exposed. The Raunt, a favored roosting spot, was completely inundated for most of this period. In spite of this, shorebird numbers, while slightly lower than 1983 totals, were well above the 1981-1983 average (Davis, 1982, 1983, 1984; see Graph 1). Species diversity for this period, and for the entire season, was normal. No extreme rarities were noted this season.

The rainfall mercifully abated and by early August the pond had drained so that normal (low) water levels were attained. Water levels remained normal for the rest of the season, as the pond gradually began refilling after mid-October.

Graph 1. Comparison of 1984 Shorebird Migration to 1981-83 Average.



The late season was marked by unusually mild weather, which continued into November. It would seem that this mild weather was at least partly responsible for the unprecedented high totals of October-November and for the record number of shorebirds (6226) censused on 27 October.

In comparing the 1984 data with Tom Davis' previous surveys (Graph 1) it is important to consider the possibility of observer bias. Davis feels that I "counted" more birds than he would have this season because of my lack of experience in extrapolated and estimated censusing. Knowing in advance that this would be the case, I took a most conservative approach to counting. In addition, if sizable groups of birds dispersed after being counted, care was taken not to recount smaller groups of the same species found afterwards.

One additional area censused this year, Area G (Table 3), consisted of the shoreline east of the subway tracks one quarter mile north of the northeast corner of the East Pond, northwards to the base of the railroad bridge. To validate comparisons with Davis' previous work, Area G totals were *not included* in daily totals. The number of birds roosting at this comparatively small site fluctuated markedly, ranging from less than one to 193% of the daily total. On average, the Area G total was equal to a highly significant 67% of the daily total. It is possible, as suggested by Davis (1983), that some species shift their roosts to this location in response to the presence of Peregrine Falcons hunting at the East Pond. This matter will be investigated next season by starting coverage of Area G in August.

In gathering census data for the first time, I found the most striking revelation to be that some groups of shorebirds remained at the refuge for considerable periods of time—one, two and sometimes three or more weeks. This is contrary to the findings of banding studies at major staging areas, which indicate that the length of shorebird stopovers should be measured in days rather than weeks (Davis, pers. comm.). A large group of birds would arrive at the refuge on a given date. They would be seen on visit after visit, roosting at the same spot, feeding in the same areas, with flock composition remaining stable and recognizable. Certain individuals could often be recognized because of odd plumage characteristics or physical defects. With the passage of time, feather wear was easily detected on birds that had arrived as freshly plumaged juveniles. With each passing week fewer and fewer of the original group were present, as small groups peeled off and departed for points south. This pattern was especially noticeable in the Greater Yellowlegs, Hudsonian Godwit, White-rumped and Pectoral sandpipers, and both dowitchers.

From the data for 1981-1984, it is evident that increasing numbers of shorebirds are visiting the refuge each year. There are several possible explanations for this. A. The "word-is-spreading" theory; birds of previous years lead others in increasing numbers to the rich mudflats of the "newly discovered" East Pond (The East Pond was first drawn down in 1976). B. Increased breeding success in the far north. C. Favorable local or regional conditions or weather patterns. D. Improvement of feeding conditions on the adjacent tidal flats in Jamaica Bay itself, due to decreased industrial pollutant and bacterial levels. The Port Authority at J.F.K. International Airport has maintained booms for the past ten years at run-off sites where jet fuel and other industrial pollutants are vacuumed up by waiting treatment trucks. (Sam Chevalier, pers. comm.). Studies over the past seven years have shown a trend toward reduced bacterial levels in the bay and a study in its second year has Jamaica Bay ranked near the top among major East Coast estuaries in macro-benthotic (shellfish) productivity (John Tanacredi, National Parks Service, pers. comm.). E. Any combination of the above. The answer may lie in the data of future years.

This survey was done in cooperation with the International Shorebird Survey, Manomet, Massachusetts.

I would like to thank Tom Burke, Stephen Dempsey and Barbara Spencer, for without their help this project could not have been completed. I would like to thank my wonderful family for putting up with me. And most of all I would like to thank Tom Davis, whom I have so freely plagiarized, for teaching me the basics of shorebird aging and identification during the 1983 season, for reviewing his censusing procedures with me, for encouraging me to continue his work, for instilling in me his love of the magic and mystery of shorebirding, and finally, for his review of this manuscript. Without Tom there would be no Shorebird Survey at Jamaica Bay.

SELECTED SPECIES ACCOUNTS

Black-bellied Plover: An above-average season peaked in October rather than the usual September. This would appear to be due to the unseasonably mild late-season weather.

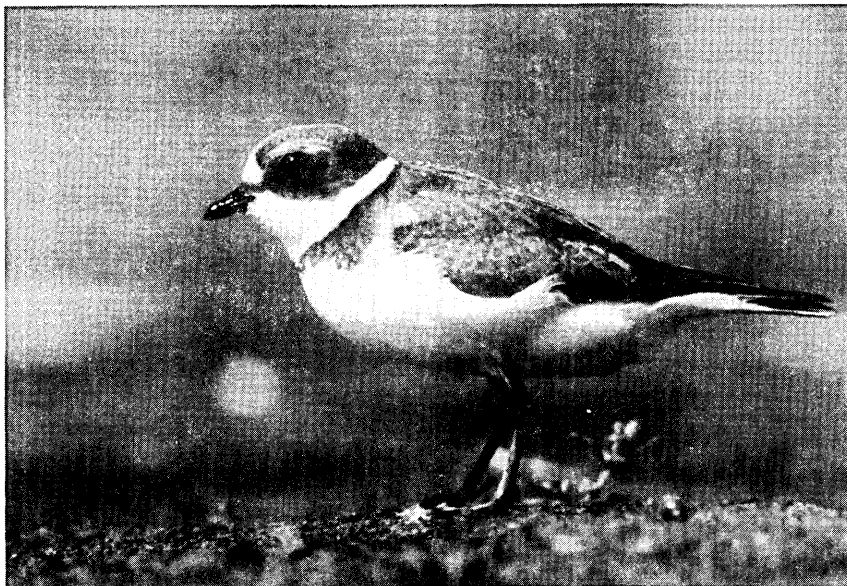
Lesser Golden-Plover: An average season negated the recent upward trend, which peaked in 1983. Fading adults were noted on 24 August and 31 August. All other birds were juveniles.

Semipalmated Plover: A second consecutive above-average season for this species began with an early adult on 30 June.

American Oystercatcher: Unprecedented numbers of this species reflect continued explosive increases in local and regional breeding populations with a new maximum of 66 on 6 August (Don Riepe).

American Avocet: Three winter-plumaged adult females were found by this observer in their customary haunts at the north end of the East Pond on 4 October. They remained at least until 14 October. This appears to represent the largest number seen in the region since 9 out of a flock of 12 were illegally shot on the Newark Meadows in 1932 (Bull).

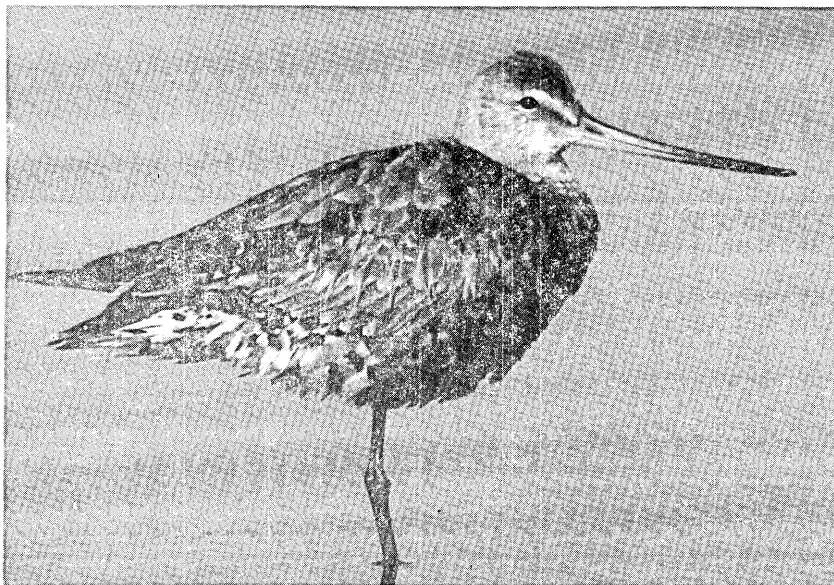
Greater Yellowlegs: Low numbers in the early season were offset by



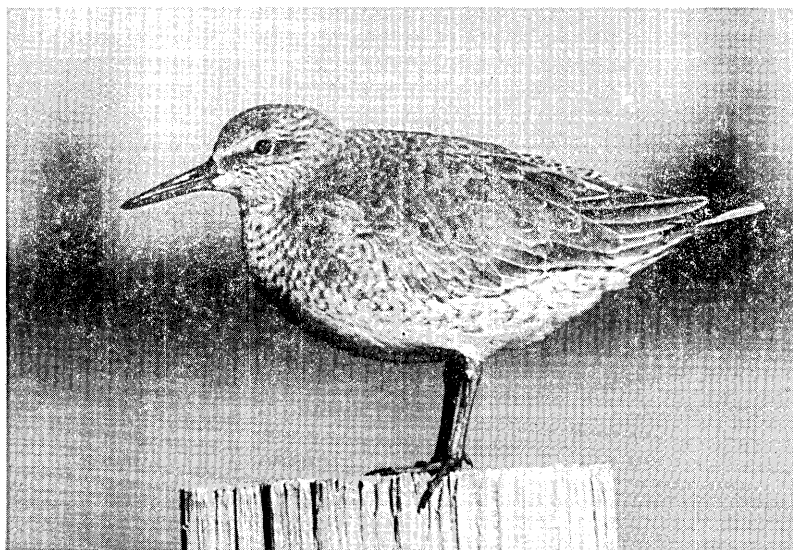
Semipalmated Plover – Juvenile
16 Sept. 1984

Art Morris

JBWR

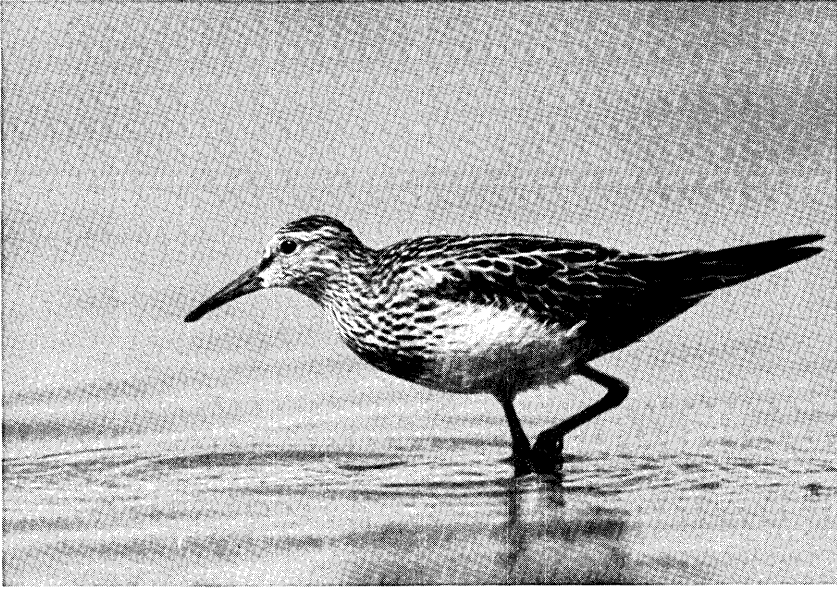


Hudsonian Godwit – Adult
 30 Oct. 1984
Rob Villani *JBWR*



Red Knot – Adult - winter plumage
 22 Dec. 1984
Art Morris *Zach's Bay, LI*

- unusually high late-season totals. This species became the first ever noted on all visits during an entire censusing period.
- Lesser Yellowlegs:** An above-average season was highlighted by a new maximum of 137 on 26 August.
- Willet:** Ninety-one birds were noted on 25 dates, with high numbers present early in the season reflecting a continuing increase in the local breeding population.
- Upland Sandpiper:** A seasonal total of two individuals was highlighted by a rare on-the-ground appearance on the grassy shore of the West Pond on 11 September (T W. Burke).
- Whimbrel:** Although 20 birds on seven dates were reported between 21 July and 22 September this species was not seen by this observer. A new maximum of ten was recorded on 21 July (Paul Dumont).
- Hudsonian Godwit:** Eighty-two birds on 28 dates represented an above-average season, with juveniles well outnumbering adults. A majority of the eight birds present on 16 September remained at the refuge through mid-October. Two recognizable individuals remained at least through early November.
- Marbled Godwit:** The season's total was two individuals. Many reports of up to four Marbled Godwits were made by observers who misidentified distant juvenile Hudsonians as Marbleds.
- Ruddy Turnstone:** This above-average season was comparable to 1983, with a new maximum of 283 recorded on 4 August.
- Red Knot:** The recent upward trend of this species continued. The new maximum of 1,685 on 31 July was more than double the previous maximum.
- Sanderling:** A far below-average season, with the roosting flocks of previous years absent from the northwestern shore of the East Pond. Modest numbers of this species were present at Area G late in the season (see Table 3).
- Semipalmated Sandpiper:** A below-average season.
- Western Sandpiper:** Very few Westerns were noted at the Refuge this season.
- Least Sandpiper:** An average season.
- White-rumped Sandpiper:** An average season, with a notable flight of 37 birds (33 juveniles) noted on 8 October. Juveniles of this species were the last to arrive at the Refuge this year (first juvenile, 28 September), replacing the Long-billed Dowitcher which in all prior seasons had been the species whose juveniles arrived last at the Refuge.
- Baird's Sandpiper:** Individual Baird's were reported on 2 and 3 September and 6-9 September (m.ob.). Two present on 27 September (John G. Williams) marked the first multiple occurrence of this mid-continental migrant at JBWR.



Pectoral Sandpiper – Juvenile
22 Sept. 1984

Art Morris

JBWR

Pectoral Sandpiper: An average season except for the record flight of 72 juveniles (new maximum) on 28 September. Many birds of this group remained at the Refuge until mid-October.

Dunlin: An unprecedented season found large numbers present until the end of the censusing period. A new maximum of 4,379 on 27 October was more than double the previous maximum. Rain on the 26th left East Pond margins puddled and muddy. Clouds of Dunlins were seen in flight up and down the length of the East Pond and many groups of 500 to 1,200 were observed feeding and roosting. Although an accurate count under such conditions is unattainable, both Rob Villani and I felt that we had underestimated!

Curlew Sandpiper: Bright but fading breeding-plumaged adults were noted on 19 July (David Krauss) and 9-15 August (m.ob.).

Buff-breasted Sandpiper: The season's total was three individuals. One was on the West Pond on 2 and 3 September (m.ob.). One was on the East Pond 27 September (John G. Williams). Another, present on the East Pond 5-8 October, marked the latest appearance of this bird at JBWR (previous late date 18 September).

Short-billed Dowitcher: Yet another unprecedented season with a new maximum of 2,210 on 29 July nearly tripling the previous high count. The high water levels during the period 11 July to 4 August found Short-billeds feeding belly deep in record numbers on flats that would have been exposed and dry in a normal season.

Long-billed Dowitcher: A below-average season with the exception of the late season influx of 33 birds on 27 October, a new maximum. This group consisted of both winter-plumaged adults and molting first-winter birds. Also of note was the record early arrival of juvenile Long-billeds on 22 September (previous early date 26 September).

Wilson's Phalarope: The season's total was at least 13 birds. Three adults in fading breeding plumage present on the West Pond 24-26 June were probably southbound migrants departing from southerly breeding outposts (John Bull, pers. comm.).

Red-necked Phalarope: The season's total was three individuals.

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- Davis, Thomas H. 1983. The 1982 fall shorebird season at Jamaica Bay Wildlife Refuge. *Kingbird* 33(2): 94-102.
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35 Mimosa Lane, Staten Island, New York 10312

Table 1. JBWR Fall Shorebird Census

	6/24	6/26	6/30	7/3	7/6	7/9	7/11	7/12
Plover, Black-bellied								
Lesser Golden-Semipalmated			1			1	1	4
* Killdeer	11	14	15	16	13	11	9	14
* American Oystercatcher	5		1	1	1	4	2	
American Avocet								
Yellowlegs, Greater	1	2	3	2	2	12	15	17
Lesser	3	4	1	2	3	4	7	18
Solitary Sandpiper						1		
* Willet	5	4	9	7	7	3	3	2
Sandpiper, Spotted	(1)		1	6		1	4	1
* Upland								
Whimbrel								
Godwit, Hudsonian								
Marbled								
Ruddy Turnstone								
Red Knot								
Sanderling								
Sandpiper, Semipalmated	2	2	6	14	18	121	112	6
Western								
Least				15	6	24	37	97
White-rumped								
Baird's								
Pectoral								
Dunlin								
Sandpiper, Curlew								
Stilt								
Buff-breasted								
Dowitcher, Short-billed	1		(3)	57	73	168	211	241
Long-billed								
Common Snipe								
* American Woodcock		(2)			1			
Phalarope, Wilson's	3	3						
Red-necked								
#Species	9	7	9	9	9	11	10	9
# Individuals	32	31	40	120	124	350	401	400
Coverage: East Pond					B	B	B	B
West Pond	EF	EF	EF	EF	EF	EF	EF	EF

* - breeds locally () - reported by others ✓ - numbers not counted

Table 1. JBWR Fall Shorebird Census

	7/16	7/17	7/19	7/20	7/21	7/22	7/25	7/29
Plover, Black-bellied			1			1	3	23
Lesser Golden-Semipalmated	12	23	34	51	✓	101	300	180
* Killdeer	9	8	3	2	✓	9	3	9
* American Oystercatcher	1		1	1		5		3
American Avocet								
Yellowlegs, Greater	7	3	5	8	✓	34	12	107
Lesser	7	17	18	41	✓	38	40	48
Solitary Sandpiper								
* Willet	5		1			7		2
Sandpiper, Spotted	3	2	2	2		5		1
* Upland								1
Whimbrel					(10)			
Godwit, Hudsonian				1				
Marbled								
Ruddy Turnstone			6	3	✓	11	12	44
Red Knot	8		51	8	✓	76	15	1117
Sanderling		1	1	1	✓	9	1	1
Sandpiper, Semipalmated	280	✓	383	602	✓	850	1100	510
Western		2	2	1				1
Least	48	✓	27	74	✓	68	45	47
White-rumped								1
Baird's								
Pectoral	(3)		(1)	2			1	
Dunlin								1
Sandpiper, Curlew			(1)					
Stilt	3	2	1	1	✓	22	8	28
Buff-breasted								
Dowitcher, Short-billed	700	✓	840	1387	✓	1030	800	2210
Long-billed						1	1	1
Common Snipe								
* American Woodcock						(3)		
Phalarope, Wilson's								
Red-necked								
#Species	13	11	18	16	12	17	13	21
# Individuals	1086	Inc.	1378	2185	Inc.	2270	2340	4336
Coverage: East Pond	ABC	BC	BC	ABC	ABC	ABCD	ABCD	ABCD
West Pond	EF	EF	EF	EF	EF	EF	EF	E

* - breeds locally () - reported by others ✓ - numbers not counted

Table 1. JBWR Fall Shorebird Census

	7/31	8/4	8/9	8/11	8/15	8/21	8/26	8/31
Plover, Black-bellied	81	68	289	302	327	608	794	903
Lesser Golden-Semipalmated	609	421	584	595	1117	655	429	478
* Killdeer	3	6	3	6	5	9	11	11
* American Oystercatcher	21	45	5	31	6	3	33	25
American Avocet								
Yellowlegs, Greater	75	108	94	88	124	56	220	247
Lesser	38	45	67	58	43	122	137	121
Solitary Sandpiper		(1)						
* Willet		3	1	9		2	1	8
Sandpiper, Spotted	4	5	1	3	3	1	2	
* Upland				1				
Whimbrel				(2)			1	
Godwit, Hudsonian		2	3	2	1	1	1	1
Marbled				1		1		
Ruddy Turnstone	106	283	48	175	115	31	22	48
Red Knot	1685	1516	346	325	150	131	301	67
Sanderling	2	10		1	1	53	9	22
Sandpiper, Semipalmated	1215	750	1099	820	1092	508	415	638
Western				1	6		1	2
Least	47	51	50	51	62	96	130	57
White-rumped	3	9	1	4	4	4	11	16
Baird's								
Pectoral		2		1	3	3	2	14
Dunlin		1		1				
Sandpiper, Curlew			1	1	1			
Stilt	3	7	2	3	4	11	12	19
Buff-breasted								
Dowitcher, Short-billed	1317	1210	451	424	132	214	153	269
Long-billed	2	2	12	5	11		2	11
Common Snipe								
* American Woodcock		(2)		1				
Phalarope, Wilson's	1	1				2	5	2
Red-necked					1			
#Species	17	23	18	26	21	20	23	21
# Individuals	5212	4558	3057	2911	3208	2511	2693	2960
Coverage: East Pond	ABCD	ABCD	ABCD	ABCD	ABCD	ABCD	ABCD	ABCD
West Pond	EF	E	EF	E	EF	EF	EF	

* - breeds locally () - reported by others √ - numbers not counted

Table 1. JBWR Fall Shorebird Census

	9/1	9/7	9/13	9/15	9/16	9/22	9/23	9/28
Plover, Black-bellied	✓	809	✓	✓	327	288	✓	503
Lesser Golden-Semipalmated	1				3	1	1	7
* Killdeer	✓	319	✓	✓	106	56	✓	13
* American Oystercatcher	✓	7	✓	✓	(1)	14	✓	14
American Avocet	✓	(✓)	✓	52	5	4		51
Yellowlegs, Greater	✓	86	✓	✓	45	202	✓	18
Lesser	✓	64	✓	✓	75	43	✓	33
Solitary Sandpiper	(1)							
* Willet	✓				2	3	2	
Sandpiper, Spotted	✓	2	✓	1	(1)	1		
* Upland								
Whimbrel					(4)	(1)		
Godwit, Hudsonian			(1)	(1)	8	6	4	3
Marbled				1	1	1	1	
Ruddy Turnstone	✓	8	✓	(✓)	1		1	1
Red Knot	✓	109	✓	✓	84	17		58
Sanderling	✓	4	✓	(✓)	10	6	✓	
Sandpiper, Semipalmated	✓	374	✓	✓	431	224	✓	233
Western	1	4		2	4			1
Least	✓	114	✓	✓	38	19	✓	30
White-rumped	✓	12	✓	✓	4	11	✓	11
Baird's	see	(1)	text					
Pectoral	✓	13	✓	5	4	12	✓	72
Dunlin		6	✓	✓	11	17	✓	112
Sandpiper, Curlew								
Stilt	✓	37	80	✓	13	20	✓	14
Buff-breasted	see	text						
Dowitcher, Short-billed	✓	87	✓	✓	11	9	3	4
Long-billed						4	3	10
Common Snipe								
* American Woodcock	1			1	(1)			
Phalarope, Wilson's								1
Red-necked					1			
#Species	23	19	18	21	25	22	20	20
# Individuals	Inc.	2056	Inc.	Inc.	1191	959	Inc.	1189
Coverage: East Pond	BC	BC	BC	BC	ABCD	ABCD	BC	ABCD
West Pond					E			E

* - breeds locally () - reported by others ✓ - numbers not counted

Table 1. JBWR Fall Shorebird Census

	9/29	9/30	10/4	10/8	10/11	10/12	10/14	10/18
Plover, Black-bellied	✓	207	203	251	322	209	472	106
Lesser Golden-Semipalmated	3	2			0		2	0
	4	3		3	(1)		1	1
* Killdeer	✓	7	10	9	4	1	1	
* American Oystercatcher			3	38	14	5	3	2
American Avocet			3	3	3	3	3	
Yellowlegs, Greater	✓	3	56	251	248	68	95	127
Lesser	✓	11	21	21	21	17	11	17
Solitary Sandpiper								
* Willet		(1)	1	2				
Sandpiper, Spotted								
* Upland Whimbrel								
Godwit, Hudsonian	4	2	2	6	7	4	4	5
Marbled	1	(1)						
Ruddy Turnstone	7	3	2	1	0	0	0	0
Red Knot	✓	7	3		5	0	70	11
Sanderling			0	0	1	0	11	0
Sandpiper, Semipalmated	✓	96	31	144	95	46	37	31
Western	1		1					
Least	11	8	2	3	1		1	2
White-rumped	9	9		37	22	9	9	9
Baird's	See Text							
Pectoral	✓	7	35	34	37	16	18	8
Dunlin	✓	74	13	314	633	142	621	558
Sandpiper, Curlew								
Stilt	✓	3	6		2	2	4	4
Buff-breasted	See Text			4				
Dowitcher, Short-billed		1	1	1	2	1	2	1
Long-billed			1	9	10	8	8	1
Common Snipe						(1)		
* American Woodcock								
Phalarope, Wilson's	(2)		1			2	2	
Red-necked								
#Species	18	18	20	19	20	19	21	18
# Individuals	Inc.	445	395	1128	1428	534	1375	883
Coverage: East Pond	BC	BC	ABCD	ABCD	ABCD	ABCD	ABCD	ABCD
West Pond				E	E		(E)	

* - breeds locally () - reported by others ✓ - numbers not counted
 0 - present at Area G

Table 1. JBWR Fall Shorebird Census

	10/19	10/22	10/27	11/3	11/6	11/10	11/12	11/24
Plover, Black-bellied	85	88	1079	64	210	481	334	95
Lesser Golden-Semipalmated	2	3	2				1	
* Killdeer	2	5	1	2				
* American Oystercatcher	(40)			15				
American Avocet								
Yellowlegs, Greater	85	283	297	12	75	97	25	7
Lesser	9	9	6		2	1		
Solitary Sandpiper								
* Willet								
Sandpiper, Spotted								
* Upland								
Whimbrel								
Godwit, Hudsonian	3		4	1	2	1	(2)	
Marbled								
Ruddy Turnstone		2	3	1	0	4	3	
Red Knot		29	301	4	34	62	40	8
Sanderling	43	0	104	3	1	3	5	15
Sandpiper, Semipalmated	18	32		1				
Western								
Least			2					
White-rumped	4	6	9	(5)	1			1
Baird's								
Pectoral	12	3	5					
Dunlin	863	1096	4379	935	1522	2057	2247	1266
Sandpiper, Curlew								
Stilt								
Buff-breasted								
Dowitcher, Short-billed			1					
Long-billed		7	33		4	21		7
Common Snipe	1							
* American Woodcock								
Phalarope, Wilson's								
Red-necked								
#Species	13	14	15	11	10	9	7	7
# Individuals	1167	1564	6226	1043	1851	2727	2657	1399
Coverage: East Pond	BC	A(n.end)	AB	ABCD	ABCD	ABCD	ABCD	ABCD
		BC	CD					
West Pond	EF		EF	E		EF	E	EF

*-breeds locally (✓)-reported by others ✓-numbers not counted
 0-present at Area G

Table 2. Species Diversity 1981-1984

	Late Early	June- July	Late July	Early Aug.	Late Aug.	Early Sept.	Late Sept.	Early Oct.	Late Oct.	Nov.
1981		14	25	25	26	26	27	23	21	
1982		13	24	25	29	31	30	26	19	
1983		12	27	24	26	31	28	22	19	14
1984		13	25	29	26	28	29	26	21	14

Table 3. Area G Census

	9-28	10-4	10-8	10-11	10-12	10-14	10-18
Plover, Black-bellied	350	246	350	510	150	250	390
Lesser Golden-Semipalmated	6		1	1			1
Ruddy Turnstone		3		1	1	2	1
Red Knot		10		11	20	22	24
Sanderling		46	19	130	87	61	54
Dunlin		270	205	250	325	25	610
# Species	2	5	4	6	5	5	6
# Individuals	356	575	575	903	583	360	1080

	10-22	10-27	11-3	11-6	11-10	11-12	11-24
Plover, Black-bellied	650	4	247	312			1
Lesser Golden-Semipalmated							
Ruddy Turnstone	2		8	9		4	
Red Knot	3		80	137			
Sanderling	123		63	15		5	
Dunlin	600		494	1200	1	62	
# Species	5	1	5	5	1	3	1
# Individuals	1378	4	892	1673	1	71	1