





Frontispiece - Some of the 1996 new bandings at Inglewood Bird Sanctuary. Clockwise from top left: 1. Northern Flicker 2. Cooper's Hawk 3. Mourning Warbler 4. Western Tanager 5. White-throated Sparrow 6. Warbling Vireo. Photos 1,2,6 by Jennifer Lane, photos 3-5 by Gwen Smiley.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
INTRODUCTION	2
MIGRATION MONITORING	3
Background	3
Methods and Study Site	3
Coverage	6
New Bandings	6
Recaptures	7
Estimated Daily Totals (EDTs)	7
References	39
MONITORING AVIAN PRODUCTIVITY AND SURVIVAL (MAPS) ...	40
Background	40
Objectives	41
Methods	41
Coverage	41
Results	42
Discussion	42
References	42
PERSONNEL	46
Banders-in-Charge (BIC)	46
MORTALITIES AND INJURIES	48
EQUIPMENT	49
Mist-nets	49
Net Poles and Re-bar Stakes	49
Banding Equipment	49
Lab Equipment	50
Summary	50
FUNDING AND ACKNOWLEDGEMENTS	51
FATAL LIGHT AWARENESS PROGRAM (FLAP) CALGARY	52

LIST OF FIGURES

1. Topographic maps showing location of Inglewood Bird Sanctuary.	4
2. Schematic of Inglewood Bird Sanctuary migration monitoring station.	5
3. Capture Rates at Inglewood Bird Sanctuary - Fall 1996.	10
4. Migration at Inglewood Bird Sanctuary - Fall 1996.	33

LIST OF TABLES

1. Migration Coverage and Capture Rates - Fall 1996.	8
2. 1996 New Bandings at Inglewood Bird Sanctuary.	11
3. New Bandings at Inglewood Bird Sanctuary.	17
4. Recaptures at Inglewood Bird Sanctuary - Fall 1996.	19
5. Migrants at Inglewood Bird Sanctuary - Fall 1996.	25
6. Probable and Known Stopovers at IBS - Fall 1996.	34
7. Inglewood Bird Sanctuary MAPs Summary - 1996.	43
8. Inglewood Bird Sanctuary MAPs Summary - 1992-1996.	44
9. Inglewood Bird Sanctuary MAPs Point Count Summary - 1992-1996.	45
10. Banding personnel at Inglewood Bird Sanctuary - 1996.	47
11. Bird Collisions in Downtown Calgary by Building - 1996.	53
12. Bird Collisions in Downtown Calgary by Species - 1996.	54
13. Bird Collisions in Downtown Calgary by Date - 1996.	55

APPENDICES

1. Migration Monitoring Protocol.
2. 1996 Significant Recaptures.
3. 1996 Spring Banding.
4. 1996 Bird Collisions in Downtown Calgary.
5. 1996 Weather During Migration Monitoring.
6. CBBS 1996 Membership List.

EXECUTIVE SUMMARY

The Calgary Bird Banding Society (CBBS) was incorporated in March 1995 to conduct migration monitoring and other banding-based studies at Inglewood Bird Sanctuary (IBS).

Neotropical migrant birds are at risk due to resource exploitation both on their wintering and breeding grounds. IBS, a federal reserve, has long been known as an important migration site for Neotropical migrants. Located within 80 km of the Rocky Mountains, IBS is a necessary component of any national migration monitoring network.

The 1996 migration monitoring program follows pilot efforts in 1992 and 1994 and the first full fall program implemented in 1995. Eleven mist-nets were operated for a minimum of 6 hours per day on 70 of the 74 days between 31 July and 12 October. A total of 4547 net-hours resulted in 1,122 new bandings of 59 species. Ninety-two percent were Neotropical migrants. New bandings were fairly even over the migration monitoring period. Fall 1996 was quiet and uneventful. A Dusky Flycatcher and a Nashville Warblers were rare occurrences.

Recaptures totalled 368 involving at least 234 different birds of 34 species. Several birds, originally banded as early as 1992, were re-encountered. A Swainson's Thrush banded in August 1994 was netted in September 1996 providing a rare re-encounter of a migrant.

Banding data was integrated with census data and incidental observations to generate estimated daily totals for all species on most days that migration monitoring occurred. EDTs were split into migrants and known or probable stopovers (PKS) in order to clearly illustrate migration. A total of 132 species were detected including 23 species of warbler and vireo.

The MAPS site was operated again in 1996, building on previous data gathered in 1992, 1994 and 1996. A total of 136 birds were captured, of which 102 were new bandings. White-throated Sparrow was documented as a breeder.

Volunteers and Banders-in-Charge donated a total of 225 man-days to the banding projects (i.e. MAPS and migration monitoring). Three Banders-in-Charge, imported from Edmonton, AB and Whitewood, SK, provided 29 man-days of supervision to ensure maximum coverage during migration monitoring.

Twelve mortalities were sustained during the mist-netting of 1740 birds, 4 of which were predations, 1 by a Sharp-shinned Hawk and 3 by Mule Deer. Twenty injuries were recorded, most minor (wing abrasions etc.).

FLAP Calgary documented 235 collisions with buildings in downtown Calgary. Seven of the casualties were successfully released. Buildings with mirrored finishes had a higher incidence of bird collisions.

CBBS received funding from a wide variety of sources including a successful Birdathon in which members raised approximately \$2800 net to the society.

INTRODUCTION

The Calgary Bird Banding Society (CBBS) was incorporated on 22 March 1995 with the following objectives:

- Quantify long-term population trends of Neotropical migratory birds using constant effort mist-netting at Inglewood Bird Sanctuary;
- Promote expertise and involvement in bird banding;
- Promote conservation of Neotropical migratory birds through fostering public awareness and understanding of Neotropical migratory birds; and
- To provide for the recreation of the members and to promote and afford opportunity for friendly and social activities.

Membership in CBBS is open to anyone interested in bird banding. Although the primary project of the CBBS is monitoring of migratory birds at Inglewood Bird Sanctuary (IBS) in Calgary, other complimentary projects have been undertaken as well.

- A Monitoring Avian Productivity and Survival station was established at IBS in 1992 and was continued in 1996.
- A member of the CBBS is an office building manager in downtown Calgary and has initiated a program to monitor birds that strike office buildings, modeled after the successful FLAPS program in Toronto.

Additional project ideas are currently in the formulation stage and may emerge in the next few years.

MIGRATION MONITORING

Background

Neotropical migrant birds are those species that breed in the Nearctic biogeographic realm and winter in the Neotropics. The Neotropical migratory bird system involves perhaps 5-10 billion birds of over 150 species (Greenberg 1992). Recent (1978-1988) trends in data from the Breeding Bird Survey indicate that a majority of Neotropical migrants in eastern North America decreased in their population index (Sauer & Droege 1992). Although destruction of tropical forests on the wintering grounds has been implicated in this decline, increasing concern is being raised over the potential effect of accelerating land-use changes on the breeding grounds as well.

Inglewood Bird Sanctuary (IBS) is a federal reserve long known as an important site for migrating passerines. IBS is strategically located within 80 km of the Rocky Mountains (Fig. 1) and will be a unique and valuable addition to the Canadian Migration Monitoring Network currently being encouraged by CWS and Long Point Bird Observatory. Because IBS is located within Calgary the potential for using volunteers will not be diminished due to remoteness. Pilot Neotropical migrant monitoring covering only a portion of the fall migration season was undertaken in both 1992 (842 birds of 52 species in 934 1½" net hours) and 1994 (468 birds of 48 species in 1076 1½" net hours) while full fall migration monitoring was initiated in 1995 (1978 birds of 62 species in 3456 1¼" net hours).

Methods and Study Site

The fall migration of Neotropical migrants was monitored at Inglewood Bird Sanctuary, 35 hectares of mature riverine balsam poplar forest, long known for its impressive fall migration of passerines. Constant effort mist-netting (i.e. constant number of nets in permanent locations for constant time period each day) and collection of associated morphometric and other data (age, sex, wing chord, weight, capture net, time of capture, fat reserves etc.) from each bird captured was carried out each day, weather permitting, during fall migration from 31 July through 12 October. Eleven 12-m 1¼" mist-nets were operated in permanent net lanes for a minimum of 6 hours each day beginning at sunrise.

Spring migration was monitored on a pilot basis only due to concerns of the Area Manager regarding potential adverse environmental impact. Spring conditions at the site are wetter than during fall. Nevertheless there is potential to expand the spring migration monitoring program in subsequent years.

Migration monitoring procedures have been developed for the IBS study site based

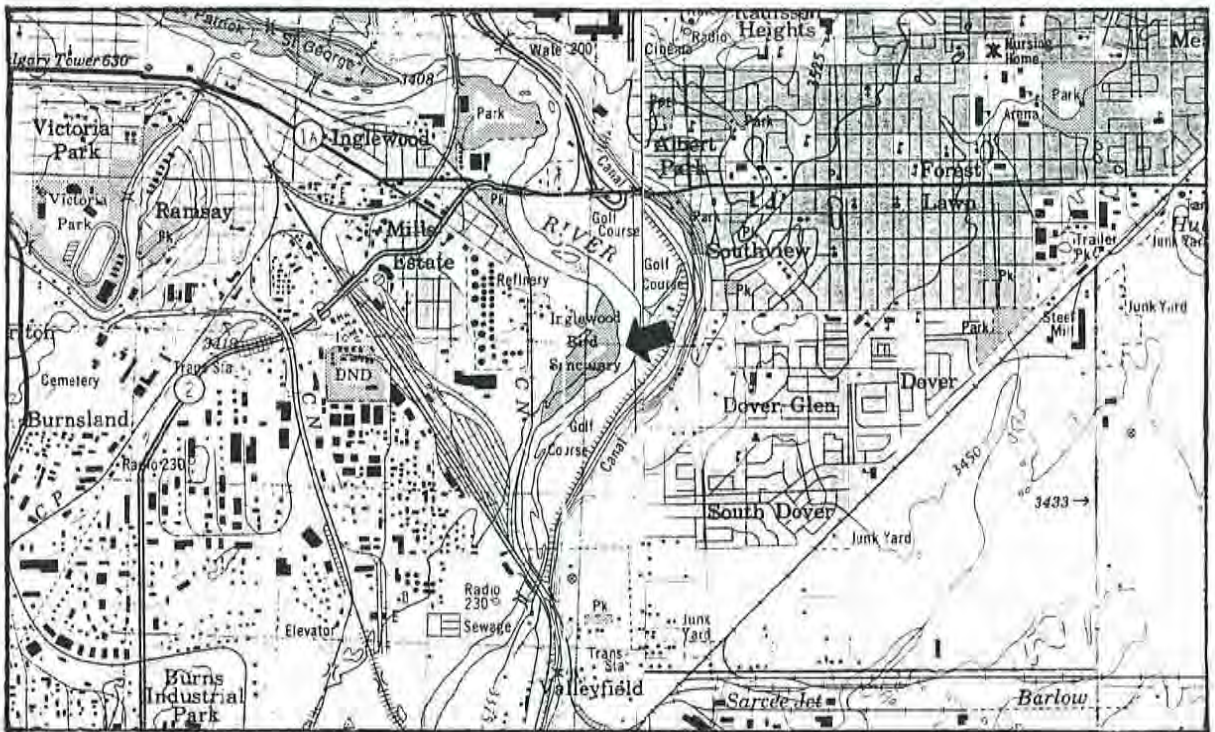
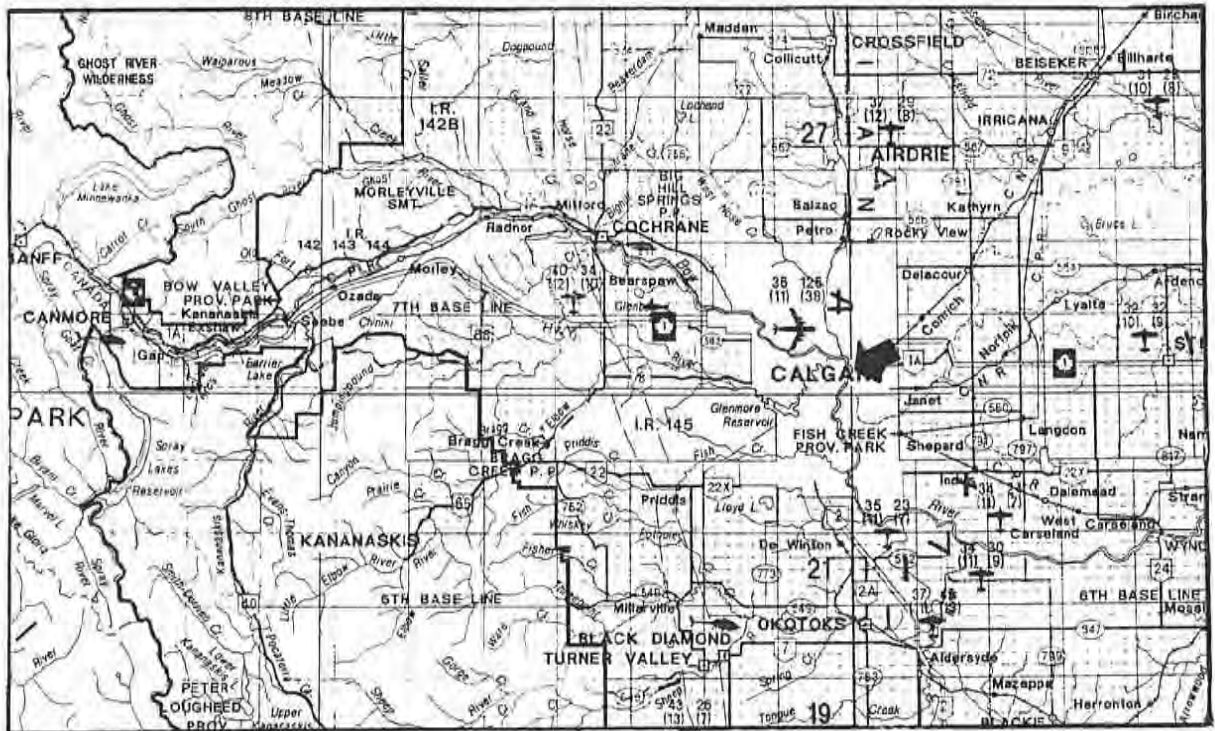


Figure 1. Topographic maps at 1:250,000 (top) and 1:50,000 (bottom) scales showing location of Inglewood Bird Sanctuary in southwestern Alberta. North is up.

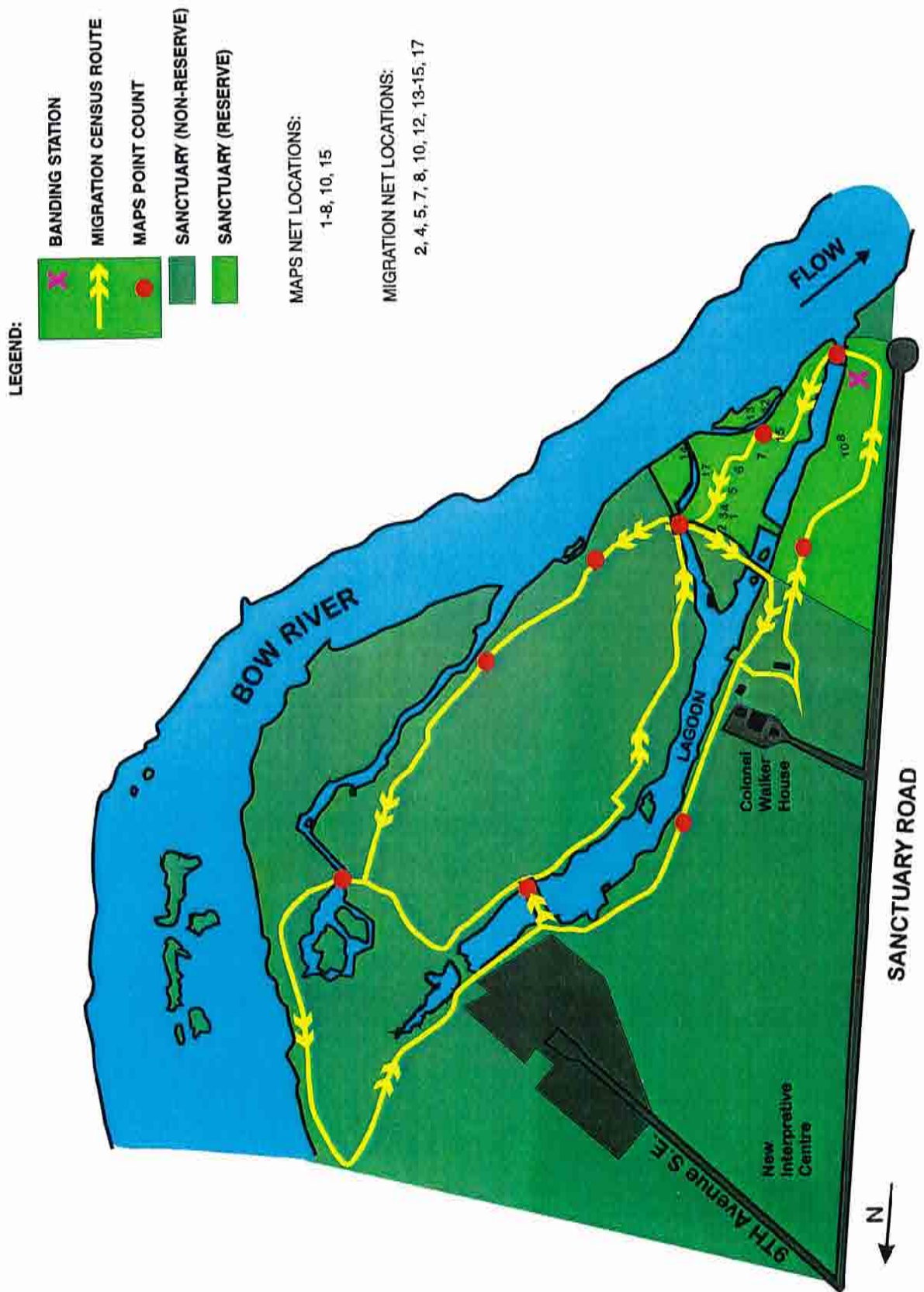


Figure 2. Schematic of Inglewood Bird Sanctuary migration monitoring station.

on those standardized and outlined in *A manual for monitoring bird migration* (McCracken *et al.* 1993), *Recommended methods for monitoring bird migration* (Hagan *et al.* 1994) and *Recommended methods for monitoring bird populations by counting and capture of migrants* (Hussell and Ralph 1996), modified to accommodate the specific requirements of the IBS site (Appendix 2). Net locations and the daily census route are shown on Figure 2.

Coverage

Fall migration monitoring at IBS operated from 31 July - 12 October, a span of 74 consecutive days. Standardized constant-effort mist-netting was conducted for a minimum of 6 consecutive hours starting at sunrise on each day that conditions allowed. Additionally a standardized census was taken 2-3 hours from the start of the netting. During 1996, a coverage of 94.6% was achieved. That is, mist-netting occurred on 70 of the 74 target days for a total of 4547.2 net-hours (Table 1, Figure 3). The 4 days missed were due to weather.

Daily census were obtained on 69 of the 70 days on which mist-netting occurred and 3 of the days on which mist-netting did not occur.

New Bandings

A total of 1,122 new bands were placed on birds of 59 species (Table 2). Of these, 1,037 (92%) were Neotropical migrants. The only day on which 50 or more new bandings occurred was 20 September (63). Approximately 47% of new bandings occurred in August, 45% in September and 8% in October. In general the monitoring period was relatively quiet with no significant peaks of migration. A summary of new bandings at IBS from 1992-1996 is presented in Table 3.

Migration monitoring was continued into October but adverse weather and low capture rates dampened enthusiasm to continue beyond the 12th. Capture rates were very discouraging during the last few days. Plans for the 1997 season include continuing the migration monitoring period until about the same time but no longer.

A banding station adds another dimension to understanding the avifauna at a site and the IBS station is no exception. Several species were recorded during banding operations that are infrequently reported by bird watchers. A Dusky Flycatcher banded on 13 August and a Nashville Warbler on 25 September provided rare records of these species for IBS. The *Oporornis* warblers are often difficult to detect and identify through conventional bird watching. During 1996 migration monitoring at IBS 4 Connecticut Warblers, 10 Mourning Warblers and 8 MacGillivray's Warblers were banded. Only one Western Tanager was banded in contrast to the 12

in 1995. Two secretive Swamp Sparrows were also banded.

Recaptures

Recaptures totalled 368 involving at least 234 different birds of 34 species (Table 4). Some individuals appear to remain at IBS for a considerable length of time. A MacGillivray's Warbler remained at IBS from 13 August-20 September, a Mourning Warbler was present from 25 August-15 September, a Tennessee Warbler lingered from 13 July-19 August, and a Gray Catbird tarried from 25 August-9 September. Some examples of birds which apparently stopped over at IBS to replenish energy reserves for the next migration leg are: Swainson's Thrush - 10-12 September - increased its mass 16.3%; White-throated Sparrow - 7-14 September - increased its mass 14.9%; Eastern Kingbird - 15-19 August - increased its mass 9.1%; Dark-eyed Junco - 21 September-5 October - increased its mass 16.7%; Northern Waterthrush - 14-19 August increased its mass 11.8%; and a Yellow Warbler 11-16 August increased its mass 13.5%.

Recaptures are, of course, highest in resident species. The Black-capped Chickadee illustrates this in dramatic fashion with 46 recaptures compared to 17 new bandings! Some migrant species, like the Yellow-rumped Warbler with 92 new bandings and 3 recaptures, appear to pass through the IBS site very quickly. Significant recaptures during migration monitoring are presented in Appendix 2. Of the 9 significant recaptures three are of particular interest. A Swainson's Thrush banded at IBS on 21 August 1994 and recaptured there on 3 September 1996 presumably represents a rare re-encounter of a migrant. A Warbling Vireo banded at IBS on 28 July 1992 and recaptured there on 7 September 1996 was at least 5 years old. Similarly a House Wren banded at IBS on 21 July 1992 and recaptured there several times in 1996 was at least 5 years old.

Estimated Daily Totals (EDTs)

The estimated daily totals (EDTs) represent an estimate of the total number of birds by species present at IBS site each day. Each EDT incorporates the bird banding data as well as a standardized comprehensive census and any incidental observations made during banding. The EDTs, after removal of probable and known stopovers (PKS) (see Appendix 1), give an overall picture of bird migration and form an integral part of CBBS's migration monitoring project. Tables 5 and 6 summarize the migrant and PKS components of the EDTs by species and day. Figure 4 presents the migrant component in graphical form.

The EDTs at IBS during the 1996 fall migration documented 132 species seen, heard or captured. This total includes 23 species of warblers and vireos, 6 species of

Table 1. Migration Coverage and Capture Rates - Fall 1996

Date	Net-hours	Captures				Total	Captures/100 Net-hours
		New Bandings	Recaptures	Escapes	Mortalities		
31-Jul	60.2	15	3	1	0	19	32
01-Aug	61.1	19	4	0	0	23	38
02-Aug	62.1	9	2	1	0	12	19
03-Aug	0.0	0	0	0	0	0	n/a
04-Aug	61.6	13	8	0	0	21	34
05-Aug	61.8	10	7	0	0	17	28
06-Aug	60.2	7	2	0	2	11	18
07-Aug	62.1	8	0	0	0	8	13
08-Aug	61.9	13	4	0	0	17	27
09-Aug	65.2	17	9	1	0	27	41
10-Aug	60.7	23	5	2	0	30	49
11-Aug	63.7	14	6	0	0	20	31
12-Aug	61.2	15	5	0	0	20	33
13-Aug	64.6	29	2	1	0	32	50
14-Aug	64.4	31	5	0	0	36	56
15-Aug	63.9	33	11	0	0	44	69
16-Aug	71.1	21	13	0	0	34	48
17-Aug	66.5	33	4	0	0	37	56
18-Aug	73.7	19	6	0	0	25	34
19-Aug	68.9	41	7	1	0	49	71
20-Aug	69.1	38	11	0	0	49	71
21-Aug	67.1	18	9	0	1	28	42
22-Aug	67.8	12	6	0	0	18	27
23-Aug	66.3	4	5	2	0	11	17
24-Aug	66.3	17	8	1	0	26	39
25-Aug	71.0	10	7	0	0	17	24
26-Aug	67.1	12	5	1	0	18	27
27-Aug	66.6	7	1	0	1	9	14
28-Aug	66.1	9	0	1	0	10	15
29-Aug	67.4	3	3	1	0	7	10
30-Aug	68.3	13	3	0	0	16	23
31-Aug	67.0	8	4	1	0	13	19
01-Sep	68.6	4	2	1	0	7	10
02-Sep	66.9	17	5	0	0	22	33
03-Sep	41.8	10	2	0	0	12	29
04-Sep	67.8	29	20	1	0	50	74
05-Sep	68.5	8	8	0	0	16	23
06-Sep	80.3	43	15	1	0	59	73

Table 1. Migration Coverage and Capture Rates - Fall 1996

Date	Net-hours	Captures				Total	Captures/100 Net-hours
		New Bandings	Recaptures	Escapes	Mortalities		
07-Sep	70.2	24	14	3	0	41	58
08-Sep	67.6	14	7	2	0	23	34
09-Sep	66.9	16	6	0	0	22	33
10-Sep	66.0	8	3	1	0	12	18
11-Sep	72.0	10	4	0	0	14	19
12-Sep	66.0	12	6	2	0	20	30
13-Sep	67.1	35	8	2	1	46	69
14-Sep	73.4	31	8	1	4	44	60
15-Sep	68.2	3	2	1	1	7	10
16-Sep	72.2	11	3	1	0	15	21
17-Sep	0.0	0	0	0	0	0	n/a
18-Sep	28.7	13	1	0	1	15	52
19-Sep	0.0	0	0	0	0	0	n/a
20-Sep	67.1	63	13	0	0	76	113
21-Sep	68.0	22	8	0	0	30	44
22-Sep	66.2	37	10	3	0	50	76
23-Sep	66.9	20	6	0	0	26	39
24-Sep	67.9	9	4	0	0	13	19
25-Sep	65.5	9	1	0	0	10	15
26-Sep	65.7	11	2	0	0	13	20
27-Sep	68.8	38	9	0	0	47	68
28-Sep	62.9	2	2	0	0	4	6
29-Sep	49.9	2	1	0	0	3	6
30-Sep	38.1	14	3	1	0	18	47
01-Oct	0.0	0	0	0	0	0	n/a
02-Oct	17.4	4	1	0	0	5	29
03-Oct	71.4	11	8	0	0	19	27
04-Oct	74.5	9	5	2	0	16	21
05-Oct	76.2	15	3	0	0	18	24
06-Oct	73.4	37	7	2	0	46	63
07-Oct	76.7	4	0	0	1	5	7
08-Oct	74.4	1	2	0	0	3	4
09-Oct	73.6	1	0	0	0	1	1
10-Oct	67.2	1	2	0	0	3	4
11-Oct	62.8	2	2	1	0	5	8
12-Oct	55.4	1	0	0	0	1	2
Total	4547.2	1122	368	39	12	1541	34

Figure 3. Capture Rates at Inglewood Bird Sanctuary - Fall 1996

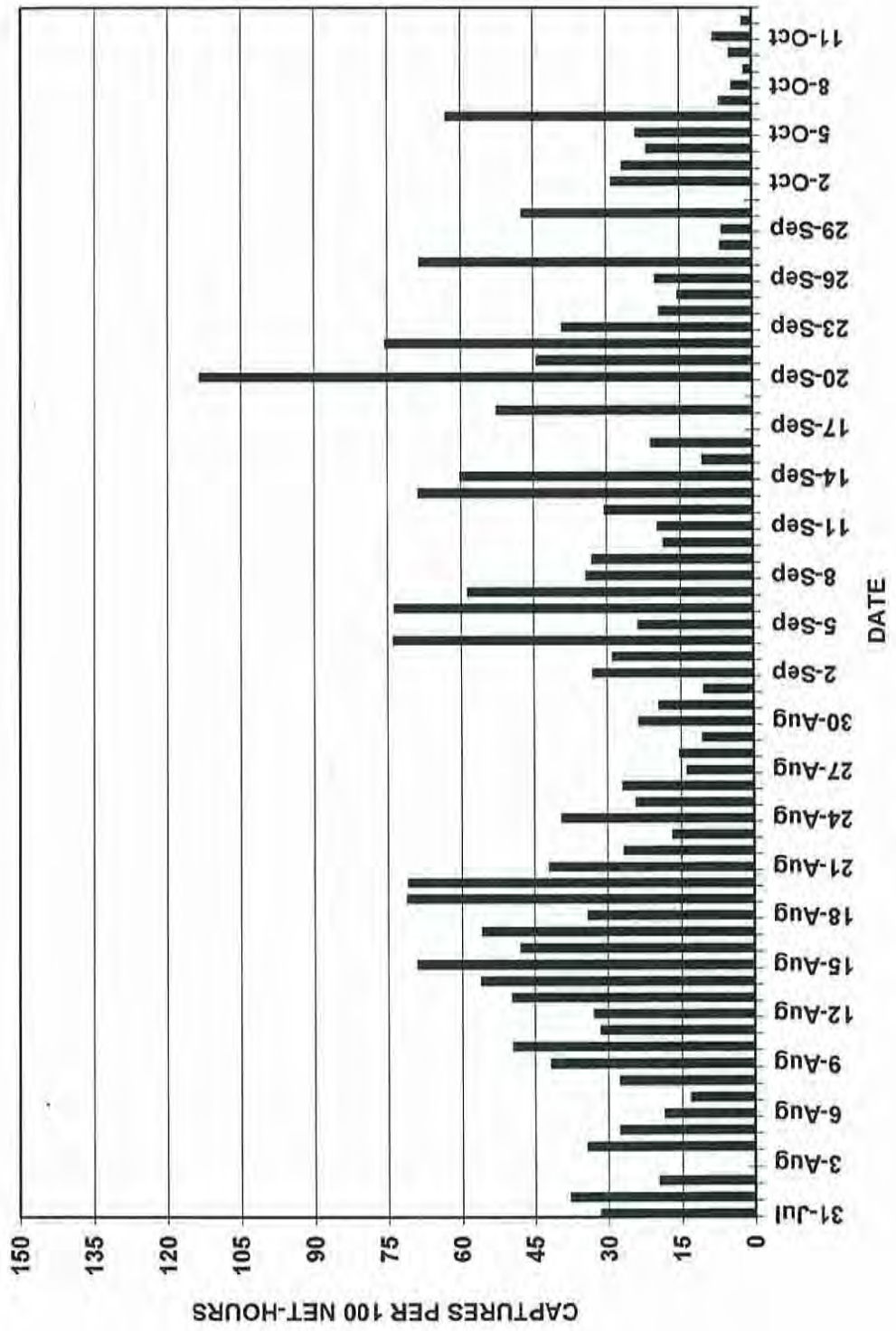


Table 2. New Bandings at Inglewood Bird Sanctuary - Fall 1996

Date	31-Jul	1-Aug	2-Aug	3-Aug	4-Aug	5-Aug	6-Aug	7-Aug	8-Aug	9-Aug	10-Aug	11-Aug	12-Aug
Sharp-shinned Hawk													
Cooper's Hawk													
Northern Goshawk													
Solitary Sandpiper							1						
Belted Kingfisher													
Downy Woodpecker													
Northern Flicker													
Western Wood-Pewee									1		1		
Trall's Flycatcher								1	1				
Dusky Flycatcher													
Least Flycatcher									1				
Eastern Kingbird						2		1	1	2			
Blue Jay													
Black-billed Magpie													
Black-capped Chickadee	2	1						1					
Red-breasted Nuthatch					1								
House Wren	4	6	3		2	2	2	2			2	3	
Golden-crowned Kinglet													
Ruby-crowned Kinglet													
Townsend's Solitaire													
Swainson's Thrush		1	1										
Hermit Thrush													
American Robin	4	4	3		5	2			3	5	2	2	3
Gray Catbird													
Cedar Waxwing	1				2	2				1	4		
Solitary Vireo													
Warbling Vireo	2		1			2					1		1
Red-eyed Vireo													
Tennessee Warbler	2	1	1		1					1	3	1	1
Orange-crowned Warbler													
Nashville Warbler													
Yellow Warbler		2			1		2	1	2	5	5	2	7
Magnolia Warbler													
Yellow-rumped Warbler											1		
Palm Warbler													
Blackpoll Warbler													
Black-and-white Warbler													
American Redstart													
Ovenbird													1
Northern Waterthrush								1					
Connecticut Warbler										1		2	2
Mourning Warbler													
MacGillivray's Warbler													
Common Yellowthroat													
Wilson's Warbler													
Canada Warbler													
Western Tanager					1								
American Tree Sparrow													
Chipping Sparrow		4					1		2	1	1		
Clay-coloured Sparrow								2	1				
Song Sparrow									1		1	1	1
Lincoln's Sparrow											1		
Swamp Sparrow													
White-throated Sparrow												1	
White-crowned Sparrow													
Dark-eyed Junco													
Brown-headed Cowbird												1	
Baltimore Oriole										1			
American Goldfinch											1		
Total	15	19	9	0	13	10	7	8	13	17	23	14	15

Table 2. New Bandings at Inglewood Bird Sanctuary - Fall 1996

Date	13-Aug	14-Aug	15-Aug	16-Aug	17-Aug	18-Aug	19-Aug	20-Aug	21-Aug	22-Aug	23-Aug	24-Aug
Sharp-shinned Hawk												
Cooper's Hawk												
Northern Goshawk												
Solitary Sandpiper		1				1	4	2			1	1
Belted Kingfisher						2			2			
Downy Woodpecker	1	1										
Northern Flicker		3	1					2				
Western Wood-Pewee												
Trail's Flycatcher		2				2	2	2	1			
Dusky Flycatcher	1											
Least Flycatcher						3		2		1		1
Eastern Kingbird	2	2	2	2		1		3				
Blue Jay												
Black-billed Magpie												
Black-capped Chickadee				1								
Red-breasted Nuthatch										1		
House Wren	4	2	2		1		3	2		1		
Golden-crowned Kinglet												
Ruby-crowned Kinglet												
Townsend's Solitaire												
Swainson's Thrush	1						1	1				
Hermit Thrush												
American Robin	7	2	6	6	9	6	5	1		1		1
Gray Catbird							1					
Cedar Waxwing				1			3					
Solitary Vireo												
Warbling Vireo							1			1	1	
Red-eyed Vireo												
Tennessee Warbler	1	1	6	3	1			1	1			1
Orange-crowned Warbler												
Nashville Warbler												
Yellow Warbler	6	4	7	3			7					
Magnolia Warbler									1			1
Yellow-rumped Warbler							1		1			
Palm Warbler												
Blackpoll Warbler												
Black-and-white Warbler												
American Redstart					1						1	
Ovenbird				1		1	2				1	2
Northern Waterthrush	2	11	5	2	5	4	1	3	2			4
Connecticut Warbler												
Mourning Warbler					1				1	1		2
MacGillivray's Warbler	1				1				1			2
Common Yellowthroat												
Wilson's Warbler					3		3	23	9	5		2
Canada Warbler	1											
Western Tanager												
American Tree Sparrow												
Chipping Sparrow	1						1			1		
Clay-coloured Sparrow					1		1					
Song Sparrow	1			1	1	1						
Lincoln's Sparrow		1										
Swamp Sparrow												
White-throated Sparrow												
White-crowned Sparrow												
Dark-eyed Junco												
Brown-headed Cowbird		1										
Baltimore Oriole			4		1		5	1				
American Goldfinch				1								
Total	29	31	33	21	33	19	41	38	18	12	4	17

Table 2. New Bandings at Inglewood Bird Sanctuary - Fall 1996

Date	25-Aug	26-Aug	27-Aug	28-Aug	29-Aug	30-Aug	31-Aug	1-Sep	2-Sep	3-Sep	4-Sep	5-Sep	6-Sep
Sharp-shinned Hawk													
Cooper's Hawk													
Northern Goshawk													
Solitary Sandpiper	1			1								1	
Belted Kingfisher											1		
Downy Woodpecker													
Northern Flicker		1									1		
Western Wood-Pewee													
Trail's Flycatcher	1	2	2	2		2				1		1	1
Dusky Flycatcher													
Least Flycatcher											1		
Eastern Kingbird													
Blue Jay													
Black-billed Magpie													
Black-capped Chickadee									1		1		
Red-breasted Nuthatch													
House Wren	1	1		1		1							
Golden-crowned Kinglet													
Ruby-crowned Kinglet													
Townsend's Solitaire													
Swainson's Thrush	1				1			1		1	2	3	1
Hermit Thrush													
American Robin													
Gray Catbird	1		2										
Cedar Waxwing													
Solitary Vireo													1
Warbling Vireo									2			1	2
Red-eyed Vireo											2		1
Tennessee Warbler			1						1		1		
Orange-crowned Warbler		1							2	1	3		3
Nashville Warbler													
Yellow Warbler		2				1	2						
Magnolia Warbler													
Yellow-rumped Warbler													1
Palm Warbler													
Blackpoll Warbler							1	1			1		
Black-and-white Warbler		1				1							
American Redstart						1					1		
Ovenbird	2	1		3		4	1	1		2	1	1	1
Northern Waterthrush			1	2							2		
Connecticut Warbler											1		1
Mourning Warbler	3												
MacGillivray's Warbler					1	1							
Common Yellowthroat													
Wilson's Warbler		2				1	3	1	9	3	9	1	31
Canada Warbler			1										
Western Tanager													
American Tree Sparrow													
Chipping Sparrow													
Clay-coloured Sparrow													
Song Sparrow													
Lincoln's Sparrow		1			1	1	1		1	2	1		
Swamp Sparrow											1		
White-throated Sparrow									1				
White-crowned Sparrow													
Dark-eyed Junco													
Brown-headed Cowbird													
Baltimore Oriole													
American Goldfinch													
Total	10	12	7	9	3	13	8	4	17	10	29	8	43

Table 2. New Bandings at Inglewood Bird Sanctuary - Fall 1996

Date	7-Sep	8-Sep	9-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	16-Sep	17-Sep	18-Sep
Sharp-shinned Hawk												
Cooper's Hawk							1					
Northern Goshawk												
Solitary Sandpiper												
Belted Kingfisher												
Downy Woodpecker			1									
Northern Flicker												
Western Wood-Pewee												
Trail's Flycatcher					1			1				
Dusky Flycatcher												
Least Flycatcher												
Eastern Kingbird												
Blue Jay								1				
Black-billed Magpie												
Black-capped Chickadee												
Red-breasted Nuthatch												
House Wren												
Golden-crowned Kinglet												
Ruby-crowned Kinglet	1						1					2
Townsend's Solitaire												
Swainson's Thrush	2		2	1	4	3	2	3				5
Hermit Thrush												2
American Robin		1						1				
Gray Catbird												
Cedar Waxwing												
Solitary Vireo												
Warbling Vireo	1					1						
Red-eyed Vireo	1											
Tennessee Warbler												
Orange-crowned Warbler	3		2	1	1		3	5		2		
Nashville Warbler												
Yellow Warbler	1					1	1					
Magnolia Warbler												
Yellow-rumped Warbler						1	12	2				
Palm Warbler			1				1					
Blackpoll Warbler			3			2						
Black-and-white Warbler												
American Redstart								1				
Ovenbird												1
Northern Waterthrush			1	1		1	2			1		
Connecticut Warbler												
Mourning Warbler							1					
MacGillivray's Warbler										1		
Common Yellowthroat												
Wilson's Warbler	8	6	4	2	1	2	8	13	2	6		1
Canada Warbler												
Western Tanager												
American Tree Sparrow												
Chipping Sparrow								1				
Clay-coloured Sparrow												
Song Sparrow		1										
Lincoln's Sparrow		1	2	1		1	2					
Swamp Sparrow												
White-throated Sparrow	3	2			1							1
White-crowned Sparrow	4	3		1	2			3	1	1		1
Dark-eyed Junco				1			1					
Brown-headed Cowbird												
Baltimore Oriole												
American Goldfinch												
Total	24	14	16	8	10	12	35	31	3	11	0	13

Table 2. New Bandings at Inglewood Bird Sanctuary - Fall 1996

Date	19-Sep	20-Sep	21-Sep	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	27-Sep	28-Sep	29-Sep	30-Sep
Sharp-shinned Hawk												
Cooper's Hawk												
Northern Goshawk												
Solitary Sandpiper												
Belted Kingfisher		1					1			1		
Downy Woodpecker												
Northern Flicker												
Western Wood-Pewee												
Trail's Flycatcher												
Dusky Flycatcher												
Least Flycatcher												
Eastern Kingbird												
Blue Jay												
Black-billed Magpie								1				
Black-capped Chickadee		2				1						1
Red-breasted Nuthatch												
House Wren												
Golden-crowned Kinglet												
Ruby-crowned Kinglet		1		1	1	2	1	2	2			1
Townsend's Solitaire						1						
Swainson's Thrush		8		3			2	1				
Hermit Thrush					2				1	1	1	
American Robin				1					1			1
Gray Catbird												
Cedar Waxwing												
Solitary Vireo												
Warbling Vireo		1										
Red-eyed Vireo												
Tennessee Warbler									1			
Orange-crowned Warbler		25	9	17	15	2	1	2	6			5
Nashville Warbler							1					
Yellow Warbler												
Magnolia Warbler												
Yellow-rumped Warbler		12		6		1	1		23		1	2
Palm Warbler		1										
Blackpoll Warbler												
Black-and-white Warbler												
American Redstart				1								
Ovenbird		1	2	1								
Northern Waterthrush												
Connecticut Warbler				1					1			
Mourning Warbler		1										
MacGillivray's Warbler												
Common Yellowthroat		1										
Wilson's Warbler		7	4	3	1							
Canada Warbler												
Western Tanager												
American Tree Sparrow												
Chipping Sparrow							1					
Clay-coloured Sparrow												
Song Sparrow												
Lincoln's Sparrow		2	2	1					1			1
Swamp Sparrow												
White-throated Sparrow			2	2	1	1		2				1
White-crowned Sparrow			2					2	2			
Dark-eyed Junco			1			1	1	1				2
Brown-headed Cowbird												
Baltimore Oriole												
American Goldfinch												
Total	0	63	22	37	20	9	9	11	38	2	2	14

Table 2. New Bandings at Inglewood Bird Sanctuary - Fall 1996

Date	1-Oct	2-Oct	3-Oct	4-Oct	5-Oct	6-Oct	7-Oct	8-Oct	9-Oct	10-Oct	11-Oct	12-Oct	Total
Sharp-shinned Hawk								1					1
Cooper's Hawk													1
Northern Goshawk				1									1
Solitary Sandpiper													14
Belted Kingfisher													8
Downy Woodpecker													3
Northern Flicker													8
Western Wood-Pewee													2
Trill's Flycatcher													25
Dusky Flycatcher													1
Least Flycatcher													9
Eastern Kingbird													18
Blue Jay													1
Black-billed Magpie													1
Black-capped Chickadee			1	2							2	1	17
Red-breasted Nuthatch													2
House Wren													45
Golden-crowned Kinglet				1									1
Ruby-crowned Kinglet				1	1	1							18
Townsend's Solitaire													1
Swainson's Thrush		1											52
Hermit Thrush		1	1		3	3							15
American Robin													82
Gray Catbird													4
Cedar Waxwing													14
Solitary Vireo													1
Warbling Vireo													18
Red-eyed Vireo													4
Tennessee Warbler													30
Orange-crowned Warbler			1	1	1	4							116
Nashville Warbler													1
Yellow Warbler													62
Magnolia Warbler													2
Yellow-rumped Warbler				3	6	18							92
Palm Warbler						1							4
Blackpoll Warbler													8
Black-and-white Warbler													2
American Redstart													6
Ovenbird													30
Northern Waterthrush													56
Connecticut Warbler													4
Mourning Warbler													10
MacGillivray's Warbler													8
Common Yellowthroat													1
Wilson's Warbler			1			1							175
Canada Warbler													2
Western Tanager													1
American Tree Sparrow					2		1						3
Chipping Sparrow													14
Clay-coloured Sparrow		1											6
Song Sparrow													9
Lincoln's Sparrow			2		1	2							29
Swamp Sparrow							1						2
White-throated Sparrow			5			3	1						27
White-crowned Sparrow		1					1						24
Dark-eyed Junco					1	4			1	1			15
Brown-headed Cowbird													2
Baltimore Oriole													12
American Goldfinch													2
Total	0	4	11	9	15	37	4	1	1	1	2	1	1122

Table 3. New Bandings at Inglewood Bird Sanctuary

Year	1992	1994	1995	1996
Start	03-Aug	18-Aug	01-Aug	31-Jul
Finish	22-Sep	09-Sep	30-Sep	12-Oct
# Days	26	20	54	70
Species				
Wood Duck			1	
Sharp-shinned Hawk	2	2		1
Cooper's Hawk				1
Northern Goshawk				1
Solitary Sandpiper	3	2	3	14
Spotted Sandpiper		1	2	
Belted Kingfisher	2	2	8	8
Yellow-bellied Sapsucker			1	
Downy Woodpecker		1	2	3
Northern Flicker	2	1	4	8
Olive-sided Flycatcher	3		3	
Western Wood-Pewee	6	4	11	2
Yellow-bellied Flycatcher			1	
Traill's Flycatcher	24	16	29	25
Western Flycatcher			1	
Dusky Flycatcher			2	1
Least Flycatcher	16	5	16	9
Eastern Phoebe		1		
Eastern Kingbird	1	2	7	18
Blue Jay				1
Black-billed Magpie			2	1
Black-capped Chickadee	9	12	7	17
Red-breasted Nuthatch		3		2
White-breasted Nuthatch	1	1	6	
Brown Creeper	1			
House Wren	3	3	50	45
Golden-crowned Kinglet	2		2	1
Ruby-crowned Kinglet	3	1	10	18
Townsend's Solitaire				1
Veery	2			
Gray-cheeked Thrush	1			
Swainson's Thrush	34	13	17	52
Hermit Thrush	4		3	15
American Robin	5	11	114	82
Gray Catbird		1		4
Cedar Waxwing	12	1	42	14
European Starling			2	
Solitary Vireo	1		1	1
Warbling Vireo	8	15	13	18
Philadelphia Vireo	1			
Red-eyed Vireo	3	1	2	4
Tennessee Warbler	43	5	33	30
Orange-crowned Warbler	24	36	177	116
Nashville Warbler				1
Yellow Warbler	56	19	44	62

Table 3. New Bandings at Inglewood Bird Sanctuary

Year	1992	1994	1995	1996
Start	03-Aug	18-Aug	01-Aug	31-Jul
Finish	22-Sep	09-Sep	30-Sep	12-Oct
# Days	26	20	54	70
Species				
Chestnut-sided Warbler	1			
Magnolia Warbler	9	4	2	2
Yellow-rumped Warbler	293	171	496	92
Townsend's Warbler	1			
Bay-breasted Warbler			1	
Palm Warbler		3	7	4
Blackpoll Warbler	17	5	17	8
Black-and-white Warbler	4	1	1	2
American Redstart	19	4	3	6
Ovenbird	22	6	10	30
Northern Waterthrush	22	8	23	56
Connecticut Warbler	2	2	4	4
Mourning Warbler	4	2	5	10
MacGillivray's Warbler	2		3	8
Common Yellowthroat		1	6	1
Wilson's Warbler	121	68	102	175
Canada Warbler	1			2
Western Tanager	1	1	12	1
Rose-breasted Grosbeak	6			
American Tree Sparrow			10	3
Chipping Sparrow	4	1	29	14
Clay-coloured Sparrow		1	1	6
Savannah Sparrow		1		
Fox Sparrow	1	1	1	
Song Sparrow		1	9	9
Lincoln's Sparrow	9	7	53	29
Swamp Sparrow				2
White-throated Sparrow	13	11	73	27
White-crowned Sparrow	5	4	20	24
Harris' Sparrow			1	
Dark-eyed Junco	5	3	15	15
Red-winged Blackbird			4	
Common Grackle			3	
Brown-headed Cowbird			1	2
Baltimore Oriole	4		21	12
Purple Finch		1		
American Goldfinch	3			2
Total	841	466	1549	1122
Species	52	48	61	59
Net-hours	934	1078	3456.4	4547.2
Bandings/100 Net-hours	90.0	43.2	44.8	24.7

Table 4. Recaptures at Inglewood Bird Sanctuary - Fall 1996

Species	Date	31-Jul	01-Aug	02-Aug	03-Aug	04-Aug	05-Aug	06-Aug	07-Aug	08-Aug	09-Aug	10-Aug	11-Aug	12-Aug
Solitary Sandpiper														
Belted Kingfisher														
Downy Woodpecker							1							
Northern Flicker														
Trail's Flycatcher														
Eastern Kingbird			1			2								
Black-capped Chickadee			1	1		2	4	1		3	4	2	2	2
House Wren		2	1											
Ruby-crowned Kinglet														
Swainson's Thrush													1	
Hermit Thrush														
American Robin						1								
Gray Catbird														
Cedar Waxwing						1								
Warbling Vireo										1		1	2	1
Red-eyed Vireo														
Tennessee Warbler		1	1			2	2	1						
Orange-crowned Warbler														
Yellow Warbler			1	1							3	1	1	1
Magnolia Warbler														
Yellow-rumped Warbler														
Blackpoll Warbler														
Ovenbird														
Northern Waterthrush											1			1
Connecticut Warbler														
Mourning Warbler														
MacGillivray's Warbler														
Wilson's Warbler														
Chipping Sparrow														
Song Sparrow														
Lincoln's Sparrow														
White-throated Sparrow														
White-crowned Sparrow														
Dark-eyed Junco														
Total		3	4	2	0	8	7	2	0	4	9	5	6	5

Table 4. Recaptures at Inglewood Bird Sanctuary - Fall 1996

Species	Date	13-Aug	14-Aug	15-Aug	16-Aug	17-Aug	18-Aug	19-Aug	20-Aug	21-Aug	22-Aug	23-Aug	24-Aug	25-Aug
Solitary Sandpiper									1				1	1
Belted Kingfisher					1			1						
Downy Woodpecker									1					
Northern Flicker					1									
Trail's Flycatcher														
Eastern Kingbird			1				1	1						
Black-capped Chickadee			1	1	2				1					
House Wren			1	1	4	1	1		2	3		1	2	
Ruby-crowned Kinglet														
Swainson's Thrush										1				
Hermit Thrush														
American Robin							1	1	1					
Gray Catbird														
Cedar Waxwing														
Warbling Vireo														
Red-eyed Vireo														
Tennessee Warbler								1	1	1		1	1	
Orange-crowned Warbler														
Yellow Warbler				3	1								2	1
Magnolia Warbler														
Yellow-rumped Warbler														
Blackpoll Warbler														
Ovenbird			1						1					1
Northern Waterthrush			1	5	4	2	2	3	1		1			
Connecticut Warbler														
Mourning Warbler							1						1	3
MacGillivray's Warbler									1			1	1	1
Wilson's Warbler										2	2	1		
Chipping Sparrow														
Song Sparrow			1			1								
Lincoln's Sparrow				1										
White-throated Sparrow			1											
White-crowned Sparrow														
Dark-eyed Junco														
Total		2	5	11	13	4	6	7	11	9	6	5	8	7

Table 4. Recaptures at Inglewood Bird Sanctuary - Fall 1996

Species	Date	26-Aug	27-Aug	28-Aug	29-Aug	30-Aug	31-Aug	01-Sep	02-Sep	03-Sep	04-Sep	05-Sep	06-Sep
Solitary Sandpiper													
Belted Kingfisher													
Downy Woodpecker							1						
Northern Flicker												1	
Trail's Flycatcher													
Eastern Kingbird													
Black-capped Chickadee		2							2		7		1
House Wren					1				1		1		1
Ruby-crowned Kinglet													
Swainson's Thrush										1	1	1	1
Hermit Thrush													
American Robin													
Gray Catbird												1	
Cedar Waxwing													
Warbling Vireo											1	2	3
Red-eyed Vireo													
Tennessee Warbler							1						
Orange-crowned Warbler											2		2
Yellow Warbler		1											
Magnolia Warbler													
Yellow-rumped Warbler													
Blackpoll Warbler													
Ovenbird		1	1		1	2				1		1	
Northern Waterthrush							1				1	1	1
Connecticut Warbler													
Mourning Warbler		1			1						1		
MacGillivray's Warbler					1			2			2		
Wilson's Warbler							1		2		3	1	6
Chipping Sparrow													
Song Sparrow													
Lincoln's Sparrow													
White-throated Sparrow											1		
White-crowned Sparrow													
Dark-eyed Junco													
Total		5	1	0	3	3	4	2	5	2	20	8	15

Table 4. Recaptures at Inglewood Bird Sanctuary - Fall 1996

Species	Date	07-Sep	08-Sep	09-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	16-Sep	17-Sep	18-Sep
Solitary Sandpiper													
Belted Kingfisher													
Downy Woodpecker				1									
Northern Flicker							1						
Trail's Flycatcher													
Eastern Kingbird								1	1				
Black-capped Chickadee					1						1		
House Wren													
Ruby-crowned Kinglet													
Swainson's Thrush	1		1			2	2	1	1				
Hermit Thrush													
American Robin													
Gray Catbird	1		1										
Cedar Waxwing													
Warbling Vireo	1		1										
Red-eyed Vireo			1										
Tennessee Warbler													
Orange-crowned Warbler	3					1							
Yellow Warbler													
Magnolia Warbler													
Yellow-rumped Warbler													
Blackpoll Warbler								1					
Ovenbird	1												
Northern Waterthrush													
Connecticut Warbler													
Mourning Warbler								1		1			
MacGillivray's Warbler													
Wilson's Warbler	5	4	4	2			1	3	3		2		
Chipping Sparrow													
Song Sparrow													
Lincoln's Sparrow							1		1				
White-throated Sparrow	1	1					1		2				
White-crowned Sparrow	1							1					1
Dark-eyed Junco													
Total		14	7	6	3	4	6	8	8	2	3	0	1

Table 4. Recaptures at Inglewood Bird Sanctuary - Fall 1996

Species	Date	19-Sep	20-Sep	21-Sep	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	27-Sep	28-Sep	29-Sep	30-Sep
Solitary Sandpiper													
Belted Kingfisher													
Downy Woodpecker													
Northern Flicker													
Trail's Flycatcher													
Eastern Kingbird													
Black-capped Chickadee			3	1	4					1			3
House Wren					1								
Ruby-crowned Kinglet									1		1		
Swainson's Thrush													
Hermit Thrush							1			1			
American Robin													
Gray Catbird													
Cedar Waxwing													
Warbling Vireo										1			
Red-eyed Vireo													
Tennessee Warbler													
Orange-crowned Warbler			2	3	1	1				3	1		
Yellow Warbler													
Magnolia Warbler													
Yellow-rumped Warbler										1			
Blackpoll Warbler													
Ovenbird													
Northern Waterthrush													
Connecticut Warbler										1			
Mourning Warbler			1										
MacGillivray's Warbler			1										
Wilson's Warbler			5	3	3		1			1			
Chipping Sparrow									1				
Song Sparrow													
Lincoln's Sparrow				1									
White-throated Sparrow						5	2						
White-crowned Sparrow			1		1				1				
Dark-eyed Junco													
Total		0	13	8	10	6	4	1	2	9	2	1	3

Table 4. Recaptures at Inglewood Bird Sanctuary - Fall 1996

Species	Date	01-Oct	02-Oct	03-Oct	04-Oct	05-Oct	06-Oct	07-Oct	08-Oct	09-Oct	10-Oct	11-Oct	12-Oct	Total
Solitary Sandpiper														3
Belted Kingfisher														1
Downy Woodpecker					1					1				6
Northern Flicker														4
Trail's Flycatcher														3
Eastern Kingbird														4
Black-capped Chickadee				1	1		3			1	2			46
House Wren														45
Ruby-crowned Kinglet														3
Swainson's Thrush														15
Hermit Thrush				2		1								5
American Robin														4
Gray Catbird														4
Gray Catbird														3
Cedar Waxwing														3
Warbling Vireo				1										1
Warbling Vireo														15
Red-eyed Vireo														1
Tennessee Warbler														14
Orange-crowned Warbler				1	1		1							22
Yellow Warbler														14
Magnolia Warbler														2
Yellow-rumped Warbler							2							2
Blackpoll Warbler														3
Ovenbird														1
Northern Waterthrush														12
Northern Waterthrush														25
Connecticut Warbler														1
Mourning Warbler														12
MacGillivray's Warbler														10
Wilson's Warbler					1				2					58
Chipping Sparrow														1
Song Sparrow														2
Lincoln's Sparrow				1			1							6
White-throated Sparrow				3	1									10
White-crowned Sparrow														5
Dark-eyed Junco						1	1							2
Total		0	1	8	5	3	7	0	2	0	2	2	0	368

Table 5. Migrants at Inglewood Bird Sanctuary - Fall 1996

Species	31-Jul	01-Aug	02-Aug	03-Aug	04-Aug	05-Aug	06-Aug	07-Aug	08-Aug	09-Aug	10-Aug	11-Aug	12-Aug	13-Aug	14-Aug	15-Aug	16-Aug	17-Aug	18-Aug	
Common Loon																				
Horned Grebe	1																			
Grebe sp.																				1
White-fronted Goose																				
Green-winged Teal															2					
Northern Pintail																				
Blue-winged Teal																				
Northern Shoveler																				
Hooded Merganser																				1
Bald Eagle																				
Northern Harrier																				
Sharp-shinned Hawk																				
Cooper's Hawk																				
Northern Goshawk																				
Accipiter sp.																				
Broad-winged Hawk																				
Rough-legged Hawk																				
Prairie Falcon																				
Sora																				
Killdeer																				1
Greater Yellowlegs																				
Lesser Yellowlegs																				
Solitary Sandpiper																				3
Spotted Sandpiper	2	1	2	1	2	1	1	1	3	2	3	1	3	4	2	5	1	2		1
Upland Sandpiper																				
Least Sandpiper																				
Sandpiper sp.																				
Common Snipe																				4
Bonaparte's Gull																				
Common Tern																				
Tern sp.																				
Mourning Dove																				
Common Nighthawk																				1
Hummingbird sp.																				
Belted Kingfisher																				1
Olive-sided Flycatcher																				
Western Wood-Pewee	4	6	4	2	1	2	1	4	2	3	2	1	7	3	3	2	4			2
Dusky Flycatcher																				
Traill's Flycatcher																				2
Least Flycatcher																				
Empidonax sp.																				
Flycatcher sp.																				
Eastern Kingbird	19	16	19	12	16	15	10	12	18	14	16	24	36	19	26	31	22	20		21
Purple Martin																				1
Tree Swallow																				
Northern Rough-winged Swallow																				3
Cliff Swallow																				
Barn Swallow																				
Swallow sp.																				
Blue Jay																				6
Red-breasted Nuthatch																				1
Nuthatch sp.																				
House Wren																				2
Golden-crowned Kinglet	15	13	12	3	10	8	4	10	14	8	6	6	0	7	13	13	9	4		10
Ruby-crowned Kinglet																				
Townsend's Solitaire																				
Swinson's Thrush																				1
Hensel Thrush																				4
Thrush sp.																				
American Robin	14	56	27	15	39	19	13	33	24	40	16	44	40	58	52	95	81	44		35

Table 5. Migrants at Inglewood Bird Sanctuary - Fall 1996

Species	21-Jul	01-Aug	02-Aug	03-Aug	04-Aug	05-Aug	06-Aug	07-Aug	08-Aug	09-Aug	10-Aug	11-Aug	12-Aug	13-Aug	14-Aug	15-Aug	16-Aug	17-Aug	18-Aug			
Gray Catbird			1																			
Cedar Waxwing	20	16	11	8	8	8	8	18	13	6	16	12	30	5	15	6	31	3	17			
Northern Shrike																						
Solitary Tico	4	2	1	3	2	3			1	2	2	1	3		3	3	2		2			
Warbling Vireo																						
Red-eyed Vireo	2	2	1			2	1			1	4	1	1	1	1	10	5	1	6			
Tennessee Warbler																						
Orange-crowned Warbler	1											2										
Nashville Warbler																						
Yellow Warbler	2	7	6		1	1	5	2	4	8	6	4	14	17	19	36	10		10			
Chestnut-sided Warbler																						
Magnolia Warbler									1		1											
Yellow-rumped Warbler																						
Townsend's Warbler																						
Palm Warbler																						
Blackpoll Warbler																						
Black-and-white Warbler																						
American Redstart																						
Ovenbird																						
Northern Waterthrush																						
Connecticut Warbler																						
Mourning Warbler																						
MacGillivray's Warbler																						
Common Yellowthroat																						
Wilson's Warbler																						
Canada Warbler																						
Warbler sp.																						
Western Tanager																						
Ross-breasted Grosbeak																						
American Tree Sparrow																						
Chipping Sparrow	7	6	1					2	2	4	10	10		11		1	2					
Clay-colored Sparrow	1	1						2	1													
Song Sparrow	1	2	3	1	1	2	1	2	1	2	3	2	4	2	5	5	4	3		5		
Lincoln's Sparrow	2																					
Swamp Sparrow																						
White-throated Sparrow																						
White-crowned Sparrow	2	2																				
Harris' Sparrow																						
Dark-eyed Junco																						
Sparrow sp.																						
Western Meadowlark																						
Brewer's Blackbird																						
Rusty Blackbird																						
Common Grackle																						
Blackbird sp.																						
Baltimore Oriole																						
Common Redpoll	2	6	3	3	2	3		2	2	3	5	2	4	3	4	12					2	
Pine Siskin																						
American Goldfinch	4	6	1	2	2																	
Total Birds	101	153	88	61	96	82	41	99	89	104	101	132	158	165	273	264	202	119			159	
Total Species	17	21	19	16	17	17	12	14	16	17	19	21	19	24	30	23	24	22			28	
Notes																						

Note #1 - No census performed this day
 Note #2 - Census only, no banding or observations this day
 Note #3 - No incidental observations performed this day
 Note #4 - No migration monitoring this day

Table 5. Migrants at Inglewood Bird Sanctuary - Fall 1996

Species	19-Aug	20-Aug	21-Aug	22-Aug	23-Aug	24-Aug	25-Aug	26-Aug	27-Aug	28-Aug	29-Aug	30-Aug	31-Aug	01-Sep	02-Sep	03-Sep	04-Sep	05-Sep	06-Sep	
Common Loon																				
Horned Grebe																				
Grebe sp.																				
White-fronted Goose																				
Green-winged Teal																2				
Northern Pintail																				
Blue-winged Teal																				
Northern Shoveler	4															2				
Hooded Merganser																				
Bald Eagle																				
Northern Harrier																				
Sharp-shinned Hawk	1															1				
Cooper's Hawk																				
Northern Goshawk																				
Accipiter sp.																				
Broad-winged Hawk																				
Rough-legged Hawk																				
Prairie Falcon																				
Sora																				
Killdeer																				
Greater Yellowlegs	2																			
Lesser Yellowlegs	2																			
Solitary Sandpiper	8																			
Spotted Sandpiper	1																			
Upland Sandpiper																				
Least Sandpiper																				
Sandpiper sp.																				
Common Snipe																				
Bonaparte's Gull																				
Common Tern																				
Tern sp.																				
Mourning Dove																				
Common Nighthawk																				
Hummingbird sp.																				
Belted Kingfisher	1																			
Olive-sided Flycatcher	1																			
Western Wood-Pewee	3																			
Dusky Flycatcher																				
Traill's Flycatcher	2																			
Least Flycatcher	3																			
Empidonax sp.																				
Flycatcher sp.	2																			
Eastern Kingbird	15																			
Purple Martin																				
Tree Swallow																				
Northern Rough-winged Swallow																				
Cliff Swallow																				
Barn Swallow																				
Swallow sp.																				
Blue Jay																				
Red-breasted Nuthatch	2																			
Nuthatch sp.	3																			
House Wren	6																			
Golden-crowned Kinglet																				
Ruby-crowned Kinglet																				
Tennessee Solitaire																				
Tennessee's Thrush	5																			
Hermit Thrush																				
Thrush sp.																				
American Robin	33																			

Table 5. Migrants at Inglewood Bird Sanctuary - Fall 1996

Species	19-Aug	20-Aug	21-Aug	22-Aug	23-Aug	24-Aug	25-Aug	26-Aug	27-Aug	28-Aug	29-Aug	30-Aug	31-Aug	01-Sep	02-Sep	03-Sep	04-Sep	05-Sep	06-Sep		
Gray Catbird	1						1						1								
Cedar Waxwing	26	6	13	35	8	15	15	12	12	6	12	6	0	2	0	3					
Northern Shrike																					
Solitary Vireo																					
Warbling Vireo	1		3	2	1	1	1		2				1		2	1	1			1	
Red-eyed Vireo																					
Tennessee Warbler	3	2	2	2	2	2									1	1	2			2	
Orange-crowned Warbler								1													
Nashville Warbler																					
Yellow Warbler	11	1	1	1	1		2	5	6	2	1	2	5							2	
Chastnut-sided Warbler																					
Magnolia Warbler						3														2	
Yellow-rumped Warbler	1	1	6			1							8							1	
Townsend's Warbler																				2	
Palm Warbler																					
Blackpoll Warbler								1	1											1	
Black-and-white Warbler																					
American Redstart					1	1	1	1	1											3	
Ovenbird	2				2	2	2	1	2	6		4	2	1	2	1	1			1	
Northern Waterthrush	6	6	3	2		4			2	3					2	1	2			1	
Connecticut Warbler							3													3	
Mourning Warbler					1	1	3	3	2												
MacGillivray's Warbler																					
Common Yellowthroat							3														
Wilson's Warbler	3	28	24	15	1	4		2		2	1	2	3	1	10	5	9	9		59	
Canada Warbler																					
Warbler sp.																					
Western Tanager	5												5								
Rose-breasted Grosbeak																					
American Tree Sparrow																					
Chipping Sparrow	1					4															
Clay-colored Sparrow	1																				
Song Sparrow	3	1				1	1														
Lincoln's Sparrow																					
Swamp Sparrow																					
White-throated Sparrow																					
White-crowned Sparrow																					
Harris' Sparrow																					
Dark-eyed Junco																					
Sparrow sp.																					
Western Meadowlark																					
Brewer's Blackbird																					
Rusty Blackbird																					
Common Grackle																					
Blackbird sp.																					
Baltimore Oriole	10	4	3		1	2	2	1													
Common Redpoll																					
Fine Siskin																					
American Goldfinch	3				14	4	4	6	3	3	2		1	3	3	3	1	2		6	
Total Birds	458	412	430	437	49	80	95	87	68	53	37	44	72	50	59	88	60	68		413	
Total Species	27	20	21	22	18	20	21	22	21	21	21	17	21	26	12	18	23	26	25		23
Notes																					

Note #1 - No census performed this day
 Note #2 - Census only, no banding or observations this day
 Note #3 - No incidental observations performed this day
 Note #4 - No migration monitoring this day

Table 5. Migrants at Inglewood Bird Sanctuary - Fall 1996

Species	07-Sep	08-Sep	09-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	16-Sep	17-Sep	18-Sep	19-Sep	20-Sep	21-Sep	22-Sep	23-Sep	24-Sep
Common Loon																		
Horned Grebe																		
Grebe sp.																		
White-fronted Goose																		
Green-winged Teal																		
Northern Pintail																		
Blue-winged Teal																		
Northern Shoveler																		
Hooded Merganser																		
Bald Eagle																		
Northern Harrier																		
Sharp-shinned Hawk																		
Cooper's Hawk																		
Northern Goshawk																		
Accipiter sp.																		
Broad-winged Hawk																		
Rough-legged Hawk																		
Prairie Falcon																		
Sora																		
Killdeer																		
Greater Yellowlegs																		
Lesser Yellowlegs																		
Solitary Sandpiper																		
Spotted Sandpiper																		
Upland Sandpiper																		
Least Sandpiper																		
Sandpiper sp.																		
Common Snipe																		
Bonaparte's Gull																		
Common Tern																		
Tern sp.																		
Mourning Dove																		
Common Nighthawk																		
Hummingbird sp.																		
Red-tailed Kingfisher																		
Olive-sided Flycatcher																		
Western Wood-Peece																		
Dusky Flycatcher																		
Traill's Flycatcher																		
Least Flycatcher																		
Empidonax sp.																		
Flycatcher sp.																		
Eastern Kingbird																		
Purple Martin																		
Tree Swallow																		
Northern Rough-winged Swallow																		
CEJ Swallow																		
Barn Swallow																		
Swallow sp.																		
Blue Jay																		
Red-breasted Nuthatch																		
Nuthatch sp.																		
House Wren																		
Golden-crowned Kinglet																		
Ruby-crowned Kinglet																		
Townsend's Solitaire																		
Swainson's Thrush																		
Hermit Thrush																		
Thrush sp.																		
American Robin																		

Table 5. Migrants at Inglewood Bird Sanctuary - Fall 1996

Species	07-Sep	08-Sep	09-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	16-Sep	17-Sep	18-Sep	19-Sep	20-Sep	21-Sep	22-Sep	23-Sep	24-Sep		
Gray Catbird	1	1			1		1	1					1	6						
Cedar Waxwing	2	18	5		6	2	1	2			2	2	2	2	12			1		
Northern Shrike																				
Song Sparrow	1	1												1						
Warbling Vireo	1	1																		
Red-eyed Vireo																				
Tennessee Warbler																				
Orange-crowned Warbler	3	2	1	1	1	3	5	5			2	12	6	11	30	7	20	18	3	
Nashville Warbler																				
Yellow Warbler	1					1	9													
Chestnut-sided Warbler																				
Magnolia Warbler						5	3	48	25	8	52	123		20	1	22	8	4		
Yellow-rumped Warbler																				
Townsend's Warbler																				
Palm Warbler	1						1													
Blackpoll Warbler	8				3						1	1							1	
Black-and-white Warbler																				
American Redstart																				
Ovenbird	1																			
Northern Waterthrush				1	3	5	2				2									
Connecticut Warbler																				
Mourning Warbler							1												1	
MacGillivray's Warbler											1									
Common Yellowthroat																				
Wilson's Warbler	10	8	4	3	1	2	12	20	2	9	1	2	1	7	7	3	1			
Canada Warbler																				
Warbler sp.															35				49	
Western Tanager																				
Rose-breasted Grosbeak																				
American Tree Sparrow																				
Chipping Sparrow						2		2			1								2	
Clay-colored Sparrow											4									
Song Sparrow	1																			
Lincoln's Sparrow				2	1	2	9				3			2	2	1				
Svein's Sparrow																				
White-throated Sparrow	3	3			3	3	12	3	1	2	6	6	2	2	2	2	1		1	
White-crowned Sparrow	4	6			6						1	1	7	7	2	1	3			
Harris' Sparrow																				
Dark-eyed Junco					1		1			1	7	1			1				1	
Sparrow sp.											5								1	
Western Meadowlark																				
Brewer's Blackbird	8						2													
Rusty Blackbird																				
Common Grackle						8														
Blackbird sp.																				
Baltimore Oriole																				
Common Redpoll																				
Pine Siskin																				
American Goldfinch	5				4	3	3		1						1	2				
Total Birds	68	82	33	34	55	57	126	82	33	23	114	160	32	100	77	87	80	96		
Total Species	22	18	13	15	16	17	21	15	13	8	14	17	8	21	17	20	17	15	16	
Notes																				

Note #1 - No census performed this day
 Note #2 - Census only, no banding or observations this day
 Note #3 - No incidental observations performed this day
 Note #4 - No migration monitoring this day

Table 5. Migrants at Inglewood Bird Sanctuary - Fall 1996

Species	25-Sep	26-Sep	27-Sep	28-Sep	29-Sep	30-Sep	01-Oct	02-Oct	03-Oct	04-Oct	05-Oct	06-Oct	07-Oct	08-Oct	09-Oct	10-Oct	11-Oct	12-Oct	Total
Common Loon																			4
Horned Grebe		1																	1
Grebe sp.																			1
White-fronted Goose													12						12
Green-winged Teal																			2
Northern Pintail																			2
Blue-winged Teal																			5
Northern Shoveler																			6
Hooded Merganser																			9
Bald Eagle																			1
Northern Harrier																			1
Sharp-shinned Hawk	1																		32
Couper's Hawk	1																		11
Northern Goshawk																			8
Accipiter sp.																			3
Broad-winged Hawk																			2
Rough-legged Hawk																			3
Prairie Falcon																			1
Falco sp.																			5
Sora																			10
Killdeer																			1
Greater Yellowlegs	1		6																53
Lesser Yellowlegs	1		1	3															43
Solitary Sandpiper																			115
Spotted Sandpiper																			68
Upland Sandpiper																			1
Least Sandpiper																			1
Sandpiper sp.																			4
Common Scaup																			9
Bonaparte's Gull																			1
Common Tern																			3
Tern sp.																			1
Mourning Dove																			1
Common Nighthawk																			1
Hummingbird sp.																			2
Belted Kingfisher																			2
Olive-sided Flycatcher	2	2	1	2	1	1	1	1	1	1	1	1	1	2	1	1			78
Western Wood-Pewee																			2
Dusky Flycatcher																			65
Traill's Flycatcher																			1
Least Flycatcher																			28
Empidonax sp.																			19
Flycatcher sp.																			2
Eastern Kingbird																			470
Purple Martin																			1
Tree Swallow																			1
Northern Rough-winged Swallow																			17
Cliff Swallow																			1
Barn Swallow																			8
Swallow sp.																			25
Blue Jay	1	2																	11
Red-breasted Nuthatch	1																		34
Nuthatch sp.																			5
House Wren																			233
Golden-crowned Kinglet																			1
Ruby-crowned Kinglet	2	2	2																40
Townsend's Solitaire																			2
Swainson's Thrush	3	2																	70
Hermia Thrush																			18
Thrush sp.																			1
American Robin	20	25	25																1232

Table 5. Migrants at Ingleswood Bird Sanctuary - Fall 1996

Species	Date	25-Sep	26-Sep	27-Sep	28-Sep	29-Sep	30-Sep	01-Oct	02-Oct	03-Oct	04-Oct	05-Oct	06-Oct	07-Oct	08-Oct	09-Oct	10-Oct	11-Oct	12-Oct	Total
Gray Catbird																				26
Cedar Waxwing																			2	486
Northern Shrike		1																		2
Solitary Vireo																				2
Warbling Vireo																				61
Red-eyed Vireo																				10
Tennessee Warbler																				65
Orange-crowned Warbler		4	4	8			5													100
Heavily Warbler		1																		1
Yellow Warbler																				200
Chestnut-sided Warbler																				1
Magnolia Warbler																				1
Yellow-rumped Warbler		5	6	25	9	3	2		4	14	12	16	40		1					8
Towhees Warbler																				479
Pain Warbler																				4
Blackpoll Warbler																				5
Black-and-white Warbler																				18
American Redstart																				9
Ovenbird																				11
Northern Waterthrush																				38
Connecticut Warbler																				10
Mourning Warbler																				13
MacGillivray's Warbler																				10
Common Yellowthroat																				4
Common Warbler																				4
Wilson's Warbler																				275
Canada Warbler																				11
Warbler sp.		1																		202
Western Tanager																				3
Rose-breasted Grosbeak																				3
American Tree Sparrow																				102
Chipping Sparrow																				60
City-colored Sparrow																				13
Song Sparrow																				55
Lincoln's Sparrow																				4
Swamp Sparrow																				4
White-throated Sparrow																				122
White-crowned Sparrow																				80
Harris' Sparrow																				3
Dark-eyed Junco																				75
Sparrow sp.																				9
Western Meadowlark																				1
Brewer's Blackbird																				14
Rusty Blackbird																				5
Common Grackle																				17
Blackbird sp.																				2
Baltimore Oriole																				89
Common Nighthawk																				1
Pine Siskin																				2
American Goldfinch																				148
Total Birds		57	63	98	29	7	50	0	34	51	43	40	76	34	34	12	23	1	5	5928
Total Species		18	15	17	10	5	14	0	12	20	14	11	14	14	10	8	4	1	3	108

Note #1 - No census performed this day
 Note #2 - Census only, no banding or observations this day
 Note #3 - No incidental observations performed this day
 Note #4 - No migration monitoring this day

Figure 4. Migration at Inglewood Bird Sanctuary - Fall 1996

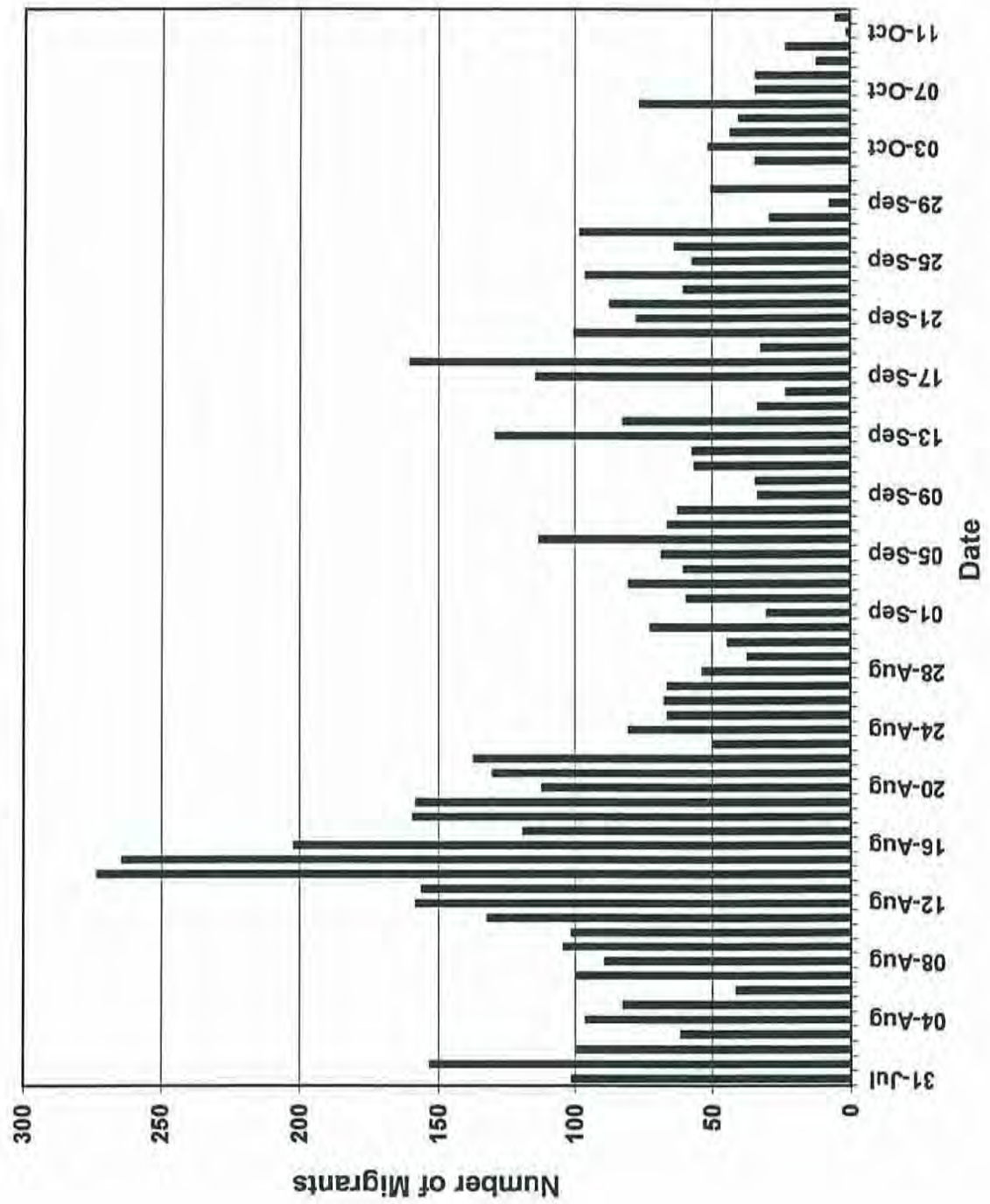


Table 6. Probable and Known Stopovers at Inglewood Bird Sanctuary - Fall 1996

Species	Date	31-Jul	01-Aug	02-Aug	03-Aug	04-Aug	05-Aug	06-Aug	07-Aug	08-Aug	09-Aug	10-Aug	11-Aug	12-Aug	13-Aug	14-Aug
Common Loon																
American White Pelican			3		1	2			5			1		1		1
Double-crested Cormorant		2	2	1	1	1	8	1	3	3	2	2	7		2	
Great Blue Heron									1				1			1
Canada Goose		8	17	25	4	10	9	4	4	8	20	3	16	12		15
Wood Duck		7	12	19	10	3	5	3	15	10	13	10	16	8	10	16
Mallard		37	35	12	15	19	20	10	36	5	24	18	50	21	9	23
Gadwall				9												
American Wigeon			7			5	10									3
Common Goldeneye		8	7	8	7	2	4		10	8		2	5	5	5	8
Common Merganser		1	6	16	2	4	49		2	22	20	14	20	2	3	1
Hooded Merganser									1							
Osprey		1				1										
Swainson's Hawk		2		1												
Red-tailed Hawk							2		1	1						1
Buteo sp.																
American Kestrel			3	1	3	3	4	2	2		2	7	6	4	1	3
Merlin				1	1											
Peregrine Falcon																
Ring-necked Pheasant			1	1					1		1					
Solitary Sandpiper																
Franklin's Gull																
Ring-billed Gull		45	50	75					25	43	58			50	42	54
California Gull								4						50	56	50
Herring Gull																
Gull sp.					24	20					10	500	160			
Rock Dove		21	6	57				8	6	1	6	8	10			
Great Horned Owl																1
Belted Kingfisher																
Downy Woodpecker		3	4	1			3		2			5		2	4	5
Hairy Woodpecker				1		2	1	1			1	1	1			1
Northern Flicker		8	10	9	3	8	3		6	5	7	7	8	1	3	17
Pileated Woodpecker																
Trill's Flycatcher																
Eastern Kingbird																1
Black-billed Magpie		5	8		11	9		3	16	7	6	6	8	3	3	8
American Crow		3	2		2	1	3		4	3	2	8	1			1
Common Raven														1	1	1
Black-capped Chickadee		5	8	4	3	12	10	2	7	3	4	2	6	2	2	17
White-breasted Nuthatch			2		3	2		1	2	1	2	1		1	3	4
House Wren		1	1	1			3	1		1	4	2	2	2		1
Ruby-crowned Kinglet																
Swainson's Thrush														1		
Hermit Thrush																
American Robin						1										
Gray Catbird																
European Starling		50	110	100	22	60	200	57	220	36	300	120	93	200	263	50
Warbling Vireo												1	2	1		
Red-eyed Vireo																
Tennessee Warbler		1	1				2	1								
Orange-crowned Warbler																
Yellow Warbler			1	1							2		1	1		
Blackpoll Warbler																
Ovenbird																1
Northern Waterthrush														1		1
Connecticut Warbler																
Mourning Warbler																
MacGillivray's Warbler																
Wilson's Warbler																
Song Sparrow																1
Lincoln's Sparrow																
White-throated Sparrow																1
White-crowned Sparrow																
Dark-eyed Junco																
Red-winged Blackbird			5	2	2	1										
Brown-headed Cowbird			2					1			1	1	1			4
House Sparrow		36	35	100		43	12	30	4				50	24	12	22
Total Birds		244	340	443	114	208	347	127	375	157	485	717	467	392	422	307
Total Species		19	25	22	17	21	18	18	22	18	20	21	22	21	18	27
Notes					2											

Note #1 - No census performed this day
 Note #2 - Census only, no banding or observations this day
 Note #3 - No incidental observations performed this day
 Note #4 - No migration monitoring this day

Table 6. Probable and Known Stopovers at Inglewood Bird Sanctuary - Fall 1996

Species	Date	15-Aug	16-Aug	17-Aug	18-Aug	19-Aug	20-Aug	21-Aug	22-Aug	23-Aug	24-Aug	25-Aug	26-Aug	27-Aug	28-Aug	29-Aug
Common Loon																
American White Pelican		1			2	1										
Double-crested Cormorant		3	4	7	4	3	3	4	8	1	1	3	2	1	1	
Great Blue Heron		1						1	1							
Canada Goose			8	3	6	2	9	8	10	9	11	30	7	18	12	4
Wood Duck		11	14	12	6	12	9	9	25	26	19	18	21	16	24	7
Mallard		35	27	7	10	35	25	24	25	21	47	34	17	80	36	43
Gadwall		1														
American Wigeon						1										
Common Goldeneye		4	5		5	4		8	6	8	4	4	8	8	2	1
Common Merganser		49		3	20	5	24	41	2	25	1	18	48	15	20	
Hooded Merganser																
Osprey												1	1	1		
Swainson's Hawk								1		1	2		1		1	
Red-tailed Hawk			1	1					1	1	1		1		1	
Buteo sp.																
American Kestrel			5	1	2			2	2	1	1	2	2	2	1	
Martin			1			1			1				1	2		
Peregrine Falcon																
Ring-necked Pheasant					1				2					1		
Solitary Sandpiper							1				1	2				
Franklin's Gull				1												
Ring-billed Gull			300	200		150	70	430	15	785	250	250	200			220
California Gull					20	100	7									120
Herring Gull													50			
Gull sp.		450			200		12		1000					370	415	
Rock Dove		8				3		5	5	11	13	15		1	1	
Great Horned Owl														1		
Belted Kingfisher								1								
Downy Woodpecker		4	5	2	4	6	3	7	3	1	2	1		2	3	2
Hairy Woodpecker			1	1												1
Northern Flicker		9	8	8	6	7	8	8	3	2	1		3	6	2	5
Pileated Woodpecker																
Trill's Flycatcher			1													
Eastern Kingbird					1	1	1									1
Black-billed Magpie		8	12		3	3	2	3	8	4	7	3	7	10	18	12
American Crow			4		2	2	2	8	8	5	5	3		2		8
Common Raven					2	2										10
Black-capped Chickadee		10	9	14	5	20	9	12	11	8	8	8	8	16	10	18
White-breasted Nuthatch		4	1		3	1	1	4	8					2	1	
House Wren		1	4	1	1		2	2		1	2					
Ruby-crowned Kinglet																
Swainson's Thrush								1	1							
Hermit Thrush																
American Robin					1	1	2									
Gray Catbird																
European Starling		150	190	110	70		41	65	20	38	20	27	8	40	25	12
Warbling Vireo																
Red-eyed Vireo																
Tennessee Warbler							1	1	1	1						
Orange-crowned Warbler																
Yellow Warbler		3	1									1				
Blackpoll Warbler																
Ovenbird							1			1			1	1		1
Northern Waterthrush		5	4	2	2	3	1		1							
Connecticut Warbler													3			
Mourning Warbler					1		1					3	1			1
MacGillivray's Warbler									1	1		1				
Wilson's Warbler								2	2	1						
Song Sparrow				1												
Lincoln's Sparrow																
White-throated Sparrow																
White-crowned Sparrow																
Dark-eyed Junco																
Red-winged Blackbird															1	
Brown-headed Cowbird					1											
House Sparrow		6		1	3	13		3	11		4		10	4	4	
Total Birds		750	803	373	381	377	215	642	1181	827	400	426	397	577	575	487
Total Species		20	21	18	26	24	23	24	27	21	20	21	21	22	18	17
Notes																

Note #1 - No census performed this day
 Note #2 - Census only, no banding or observations this day
 Note #3 - No incidental observations performed this day
 Note #4 - No migration monitoring this day

Table 6. Probable and Known Stopovers at Inglewood Bird Sanctuary - Fall 1996

Species	Date	30-Aug	31-Aug	01-Sep	02-Sep	03-Sep	04-Sep	05-Sep	06-Sep	07-Sep	08-Sep	09-Sep	10-Sep	11-Sep	12-Sep	13-Sep
Common Loon																1
American White Pelican						2										
Double-crested Cormorant			7		2	17	1		1		5		2		4	
Great Blue Heron		1		2	1	2	1	1	1	1		1				
Canada Goose		15	10		1	42	0	50	16	34	5	81	37	38	10	18
Wood Duck		8	35	22	18	4	23	12	16	24	18	26	21	31	45	30
Mallard		13	53	35	36	18	56	35	25	40	49	42	20	81	23	58
Gadwall			1			2										
American Wigeon		1				10	2	2		2	1	1		1		
Common Goldeneye		1	2	2	1	4			2			1				1
Common Merganser		22	18	21	4	8	14	14	4	18	11	6	2	12	27	10
Hooded Merganser																
Osprey		2	1	1	1	1	1	1		1	1	1		1		1
Swainson's Hawk			1	1												1
Red-tailed Hawk				1		1		1								
Buteo sp.								1								
American Kestrel			4	2	1			2					2		2	
Merlin			1	1	1				1	1				1		
Peregrine Falcon																
Ring-necked Pheasant		1			1			2		1	1	1				
Solitary Sandpiper																
Franklin's Gull							1					4				
Ring-billed Gull		400	385	820	278		500	275	240	475	300	142	88	405	564	
California Gull		25					50	10				1				
Herring Gull																
Gull sp.						230		10						10		300
Rock Dove			22	9	15	11	9	30		10	4			55	9	1
Great Horned Owl										1						
Belted Kingfisher																
Downy Woodpecker		2	2	2	1	3		2	1	2	2	1		1	2	
Hairy Woodpecker		1				1					1	1			1	2
Northern Flicker			4	2	5	2	3	4		3	3	2	2	4	4	
Pileated Woodpecker																
Traill's Flycatcher															1	
Eastern Kingbird																
Black-billed Magpie		4	6	7	19	21	24	24	12	11	22	7	7	18	5	4
American Crow		2	18	21	3	8	2	4		3	2	1	1	3	6	3
Common Raven													2			
Black-capped Chickadee		5	18	7	18	12	14	22	18	12	19	9	10	15	8	25
White-breasted Nuthatch		1		1	1			1	2	1	2	1		1		1
House Wren					1		1		1							
Ruby-crowned Kinglet																
Swainson's Thrush						1		1	1	1		1		2	3	1
Hermit Thrush																
American Robin																
Gray Catbird								1		1		1				
European Starling			29	24	22	20	30	100	60	89	125	38	32	140	30	40
Warbling Vireo								2	3	1	1					
Red-eyed Vireo											1					
Tennessee Warbler			1													
Orange-crowned Warbler							1		2	3				1		
Yellow Warbler																
Blackpoll Warbler																1
Ovenbird		2				1		1		1						
Northern Waterthrush			1				1	1	1							
Connecticut Warbler																
Mourning Warbler							1									
MacGillivray's Warbler				1			2									
Wilson's Warbler			1		2		3	1	1	5	4	3	2		1	2
Song Sparrow																
Lincoln's Sparrow																1
White-throated Sparrow							1			1	1				1	
White-crowned Sparrow										1						1
Dark-eyed Junco																
Red-winged Blackbird									1							
Brown-headed Cowbird																
House Sparrow			5							1		2				
Total Birds		506	603	782	432	421	750	810	407	750	578	374	226	798	748	500
Total Species		18	23	20	22	23	24	28	21	28	22	24	14	19	21	18
Notes																

Note #1 - No census performed this day
 Note #2 - Census only, no banding or observations this day
 Note #3 - No incidental observations performed this day
 Note #4 - No migration monitoring this day

Table 6. Probable and Known Stopovers at Inglewood Bird Sanctuary - Fall 1996

Species	Date	14-Sep	15-Sep	16-Sep	17-Sep	18-Sep	19-Sep	20-Sep	21-Sep	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	27-Sep	28-Sep
Common Loon		1	1													
American White Pelican																
Double-crested Cormorant			4		6	6			2	2					1	2
Great Blue Heron		1			1		1	1				1				
Canada Goose		27	78	17	188	4	748	200	41	10	120	140	90	100	300	65
Wood Duck		30	18	28	7	7	6	20	20	18		21	25	24	1	17
Mallard		58	46	49	55	26	12	20	38	15	80	61	30	130	23	36
Gadwall					1	1		1	2	4			12	10	6	2
American Wigeon		1			1	1	1	3	3	2	1					3
Common Goldeneye												4			1	
Common Merganser		18	10	11	22	1	7	2	11	20	28	7	16	21	5	2
Hooded Merganser																
Osprey		1	1	1					1							
Swainson's Hawk																
Red-tailed Hawk		1	1	1	1	1					1		1			
Buteo sp.																
American Kestrel				2		3	1									
Merlin		1						1							2	
Peregrine Falcon						1	1			1						
Ring-necked Pheasant		1	1						1						1	
Solitary Sandpiper																
Franklin's Gull						1	1									1
Ring-billed Gull		227	289	310	300	75	509		300	120		500	820	1500		318
California Gull							3						10	10		
Herring Gull																
Gull sp.				25	3			280			300		50			
Rock Dove			3		8	3		7	3	14	2	10	17	11	8	15
Great Horned Owl															1	1
Belted Kingfisher																
Downy Woodpecker			2	1	1	1		2	1		2	2	1	3	1	1
Hairy Woodpecker			2				1		2		3	1				
Northern Flicker		4	4	2	2			1	1	1	1	1	2		4	
Pileated Woodpecker																
Traill's Flycatcher																
Eastern Kingbird																
Black-billed Magpie		17	15	9	10	21	15	10	17	5	12	18	20	35	19	12
American Crow		4	3	1	17	2	5	7	3	1	5	2	5	8	1	3
Common Raven									1							
Black-capped Chickadee		11	11	20	4	10	7	6	10	10	4	16	7	12	17	10
White-breasted Nuthatch		2	2	1	1	1		1	1					2		
House Wren																
Ruby-crowned Kinglet																1
Swainson's Thrush																
Hermit Thrush												1				
American Robin																
Gray Catbird																
European Starling		121	79	8	32	18	383	50	45	9	230	21	180	230	200	42
Warbling Vireo																1
Red-eyed Vireo																
Tennessee Warbler																
Orange-crowned Warbler			1						3		1				2	1
Yellow Warbler																
Blackpoll Warbler																
Ovenbird																
Northern Waterthrush																
Connecticut Warbler																
Mourning Warbler								1								
MacGillivray's Warbler																
Wilson's Warbler		1						5	3	3	5	1			1	
Song Sparrow																
Lincoln's Sparrow		1							1							
White-throated Sparrow		2						1				2				
White-crowned Sparrow						1		1		1						
Dark-eyed Junco																
Red-winged Blackbird																
Brown-headed Cowbird																
House Sparrow		2			2											
Total Birds		532	571	486	662	184	1698	800	510	234	793	810	1288	2100	593	530
Total Species		22	20	16	20	20	16	21	23	17	16	18	16	17	19	16
Notes					2		2									

Note #1 - No census performed this day
 Note #2 - Census only, no banding or observations this day
 Note #3 - No incidental observations performed this day
 Note #4 - No migration monitoring this day

Table 6. Probable and Known Stopovers at Inglewood Bird Sanctuary - Fall 1996

Species	Date	29-Sep	30-Sep	01-Oct	02-Oct	03-Oct	04-Oct	05-Oct	06-Oct	07-Oct	08-Oct	09-Oct	10-Oct	11-Oct	12-Oct	Total
Common Loon																3
American White Pelican																20
Double-crested Cormorant		1				1										144
Great Blue Heron							1								2	26
Canada Goose		550	18		34	8	80	104	1026	85	33	40	58	50	28	4848
Wood Duck		17	25		8	10	38	21	22	25	17	8	15	18	20	1205
W. Mallard		148	35		25	43	42	44	32	80	107	44	18		18	2867
Gadwall			5			4										61
American Wigeon																62
Common Goldeneye							1	1	7			1			2	168
Common Merganser		1				5	12	8	9	9	25	1		17	2	890
Hooded Merganser																1
Osprey																22
Swainson's Hawk																12
Red-tailed Hawk		1										1				23
Buteo sp.																1
American Kestrel																81
Merlin												1				19
Peregrine Falcon																3
Ring-necked Pheasant								2	1			1	1	1	1	26
Solitary Sandpiper																4
Franklin's Gull		1				1										11
Ring-billed Gull		387	232			1087		97	21		135	703	240	200	300	18600
California Gull							1									517
Herring Gull																50
Gull sp.					500	1087	179	200	200	80						6595
Rock Dove		9	2			12	5	5	10	1	10		10		2	529
Great Horned Owl																5
Belted Kingfisher																1
Dawny Woodpecker		1	1		2		2	1	3	1	1	1	1	1	1	129
Hairy Woodpecker						1	1	1				1		1		33
Northern Flicker		1	1		1		2		1	2	1	1		1	1	238
Pileated Woodpecker							1									1
Trail's Flycatcher																2
Eastern Kingbird																5
Black-billed Magpie		7	7		12	15	23	12	17	19	15	9	18	7	27	803
American Crow		18	1		4	1		2	7	4	2	2		2	1	285
Common Raven															2	22
Black-capped Chickadee		12	14		6	9	25	4	20	4	8	11	15	4	21	768
White-breasted Nuthatch			1		2	1	2	2	2		2	4	2	1	1	90
House Wren																36
Ruby-crowned Kinglet		1														2
Swainson's Thrush																14
Hermit Thrush																1
American Robin																5
Gray Catbird																3
European Starling		28	9		100	14	88	15	10	25	28	15	85		84	5804
Warbling Vireo																12
Red-eyed Vireo																1
Tennessee Warbler																11
Orange-crowned Warbler																15
Yellow Warbler																11
Blackpoll Warbler																1
Ovenbird																11
Northern Waterthrush																24
Connecticut Warbler																3
Mourning Warbler																9
MacGillivray's Warbler																6
Wilson's Warbler												2				51
Song Sparrow																2
Lincoln's Sparrow																3
White-throated Sparrow							3									13
White-crowned Sparrow																5
Dark-eyed Junco									1							1
Red-winged Blackbird																12
Brown-headed Cowbird																11
House Sparrow								3					10			452
Total Birds		1183	351	0	694	2301	485	518	1369	345	397	838	455	308	508	43278
Total Species		16	13	0	11	18	18	15	17	12	15	16	12	13	16	67
Notes				4										1		

Note #1 - No census performed this day
 Note #2 - Census only, no banding or observations this day
 Note #3 - No incidental observations performed this day
 Note #4 - No migration monitoring this day

flycatcher and 13 sparrow and other finch species. Of the 132 species, many were only single sightings of one individual bird. Some of the more interesting of the 18 bird observations were 2 Broad-winged Hawks on 15 September, an Upland Sandpiper on 18 August, a Purple Martin on 16 August, single Northern Shrikes on 25 September and 4 October and a Chestnut-sided Warbler on 28 August.

References

- Greenberg, R. 1982. The nonbreeding season: Introduction. Pages 175-177 *In* Hagan, J.M. and Johnston, D.W. editors. Ecology and conservation of Neotropical migrant landbirds. Smithsonian Institution Press, Washington. Proceedings of a symposium hosted by Manomet Bird Observatory, 6-9 December, 1989.
- Hagan, J.M., K.A. Hobson, D.J.T. Hussell, N. Nur and C.J. Ralph. 1994. Recommended methods for monitoring bird migration. Draft prepared by the Intensive Sites Technical Committee of the Migration Monitoring Council. 22 pp.
- McCracken, J.D., D.J.T. Hussell, and E. Dunn. 1993. A manual for monitoring bird migration. Long Point Bird Observatory, Port Rowan, Ontario. 65 pp.
- Sauer, J.R. and S. Droege. 1992. Geographic patterns in population trends of Neotropical migrants in North America. Pages 26-42 *In* Hagan, J.M. and Johnston, D.W. editors. Ecology and conservation of Neotropical migrant landbirds. Smithsonian Institution Press, Washington. Proceedings of a symposium hosted by Manomet Bird Observatory, 6-9 December, 1989.

MONITORING AVIAN PRODUCTIVITY AND SURVIVAL (MAPS)

Background

The Monitoring Avian Productivity and Survivorship (MAPS) project is a cooperative effort among public agencies, private organizations, and the bird banders of North America. It provides critical, long-term data on population and demographic parameters for target landbird species throughout the continent. The 1996 field season was MAPS eighth year of operation.

MAPS utilizes standardized, constant-effort mist-netting and standardized point counts during the breeding season at a continent-wide network of stations. Annual regional indices of adult population size and post-fledging productivity are estimated from capture data during the breeding season. Annual regional estimates are made of adult survivorship, adult population size and recruitment into the adult population from capture-recapture data. Additional independent estimates of adult population size are inferred from point-count data collected.

The continent is divided into eight major regions based on biogeographical and meteorological considerations, and each region has target species identified within it. IBS falls into the Northwest Region whose target species are:

- Dusky Flycatcher;
- Western Flycatcher complex;
- Swainson's Thrush;
- American Robin;
- Warbling Vireo;
- Orange-crowned warbler;
- Yellow warbler;
- MacGillivray's Warbler;
- Wilson's Warbler;
- Song Sparrow;
- Lincoln's Sparrow;
- "Oregon" Dark-eyed Junco.

All of these species have been captured at IBS although only American Robin, Warbling Vireo, Yellow Warbler, Song Sparrow, and Lincoln's Sparrow are breeders. MAPS data is provided to the Institute for Bird Populations in Point Reyes, California where it is integrated with data from the other stations across North America.

Objectives

The main objective of the MAPS Program is to contribute to an integrated avian population monitoring system for selected North American landbirds. The indices and estimates described above are to be used to:

- determine annual changes and, ultimately, longer-term trends in population and demographic parameters of target species in each region;
- relate these trends to readily-measured environmental co-variates such as climatic factors, habitat type, and management practice; and
- refine current population models and develop new ones.

Methods

The MAPS Program consists of standardized constant-effort mist-netting and standardized point counts during the breeding season. The breeding season is considered to extend from May through August and is divided into 12 ten-day periods. Ten 30-mm mist-nets are operated for 6 hours from sunrise on one day during each of the ten-day periods. Mist-netting commences the first ten-day period during which the great majority of the breeding adults of the target species have established territories and migrant individuals of these species are no longer passing through the area. The operation of the mist-nets must continue for at least 6 of the 12 periods. At IBS MAPS begins with period 4 (31 May-9 June). Mist-netting, other than MAPS, is not permitted during the breeding season. At IBS, MAPS coverage entails 7 of the 12 ten-day periods. Additional data collected includes point count data taken during the first three periods of mist-netting, and a habitat description.

Coverage

1996 marked the fourth year of participation in the MAPS project and for the fourth year 100% coverage of the 7 possible periods was achieved. Total effort totalled 434 net-hours. The three standardized point count surveys were also completed. Due to major changes within the sanctuary which included upgrading of existing paths and establishing of new paths, as well as construction and opening of a new Visitor's Centre, we were unable to effectively describe habitat. It is anticipated that the changes will be completed before the commencing of the 1997 MAPS project.

Results

The number of each species captured, by date, during 1996 are summarized in Table 7. The number of each species that were banded, recaptured, or escaped before banding are summarized in Table 8 for 1996 as well as the three previous years during which MAPS was conducted. The number of each species that were detected on the point counts during each of the four years of operation are presented in table 9. Significant recaptures during MAPS are included in Appendix 2.

The first confirmed breeding by White-throated Sparrow at IBS was documented during 1996. Unusual tail-feather moult was observed in Tennessee Warblers. Of 8 apparent floaters banded prior to the onset of migration monitoring, 5 were missing all rectrices when initially captured.

Discussion

A steadily declining total number of captures from 1992 through 1995 was reversed in 1996. 1997 results will be most interesting. Although the total number of captures decreased over the three years prior to 1996, a careful examination by species will show a variety of trends. For example, Cedar Waxwings, Yellow Warblers, Least Flycatchers, Swainson's Thrush, and Western Wood-Pewee all have declined steadily. House Wrens and American Robins both appear to be fairly constant, while Baltimore Orioles seem to fluctuate.

The number of migrants detected during MAPS can vary significantly from year to year, probably most affected by weather conditions. In both 1993 and 1996 several migrant sparrows and warblers were captured. Both 1993 and 1996 experienced late spring migrations due to cold temperatures and precipitation persisting well into May.

References

- DeSante, D.F. and K.M. Burton. 1994. 1994 M.A.P.S. Manual - Instructions For The Establishment And Operation Of Stations As Part Of The Monitoring Avian Productivity and Survivorship Program.
- DeSante, D.F. and K.M. Burton. 1994. The Monitoring Avian Productivity and Survivorship (MAPS) Program Third Annual Report (1992). *Bird Populations* 2:62-89.

Table 7. Inglewood Bird Sanctuary MAPS Summary -1996

Species	Date		8 June		16 June		23 June		6 July		13 July		21 July		31 July		Total
	Banded	Other	Banded	Other	Banded	Other	Banded	Other	Banded	Other	Banded	Other	Banded	Other	Banded	Other	
Downy Woodpecker					1	3					2	1	2	1			10
Northern Flicker		1									2						3
Western Wood-Pewee				1									1				1
Trail's Flycatcher	2																3
Least Flycatcher	1								1								2
Black-billed Magpie									1	1							2
Black-capped Chickadee					5	1					2				2		10
White-breasted Nuthatch					2	1											4
House Wren	2			1						1	1	2	2	1	4	3	18
Swainson's Thrush	2										2						4
American Robin									2	1	8	1	11		4		27
Gray Catbird					1												1
Cedar Waxwing					1						4				1		6
European Starling												1					1
Warbling Vireo	1												1		2		4
Tennessee Warbler											2		3		2	1	8
Yellow Warbler				1						1		1					5
Wilson's Warbler	2																2
Ovenbird														1			1
Western Tanager														1			1
Rose-breasted Grosbeak														1			1
Song Sparrow						1											2
Lincoln's Sparrow	1						1							1			4
White-throated Sparrow							1							1			3
Baltimore Oriole							1		1	1	3	1	3	2			12
American Goldfinch							1										1
Total	11	1	2	2	14	8			6	4	26	7	28	8	15	4	136
Species	7	1	2	2	8	6			5	4	9	6	12	7	6	2	25
Net hours	65		60		59				60		68		61		60		434
Captures/100 net hours	18		7		37				17		48		59		32		31

Note: Other = recaptures + escapes

Table 8. Inglewood Bird Sanctuary MAPS Summary - 1992-1996

Species	1992		1993		1995			1996		
	Banded	Recap	Banded	Recap	Banded	Recap	Esc	Banded	Recap	Esc
American Kestrel					1					
Rufous Hummingbird							1			
Downy Woodpecker	1	2	3	1	1			5	5	
Hairy Woodpecker	1		1		1					
Northern Flicker	1		1		3			2	1	
Western Wood-Pewee	6	2	1	3	1			1		
Traill's Flycatcher								3		
Least Flycatcher	14	9	8	4	3	1	1	2		
Eastern Kingbird	2		1							
Tree Swallow	3									
Bank Swallow	1									
Black-billed Magpie								1		1
Black-capped Chickadee	5	3	7	2	5	5		9	1	
White-breasted Nuthatch	3		4	1				2	2	
House Wren	5	1	11	3	9	11	2	9	7	2
Swainson's Thrush	10	1	8		6	2		4		
Veery	2	4								
American Robin	21		6		26		2	25		2
Gray Catbird	3	1						1		
Cedar Waxwing	27	2	8	3				6		
European Starling					1		2			1
Red-eyed Vireo	1									
Warbling Vireo	7	1	7		1	1		4		
Tennessee Warbler	1		6	1				7	1	
Yellow Warbler	20	16	14	16	7	5		2	3	
Myrtle Warbler	10									
American Redstart			1							
Ovenbird	3	1						1		
Mourning Warbler	1									
Wilson's Warbler								2		
Western Tanager			1		3		1	1		
Rose-breasted Grosbeak								1		
Chipping Sparrow			7							
Clay-coloured Sparrow			1							
Song Sparrow			1					1		1
Lincoln's Sparrow			3	2	1			2	1	1
White-throated Sparrow							1	2	1	
Common Grackle					1					
Brown-headed Cowbird	6	2		2						
Baltimore Oriole	3		7	1	2			8	4	
Purple Finch			1							
American Goldfinch	2		2					1		
House Sparrow	2									
TOTAL	181	45	110	39	72	25	10	102	26	8

Table 9. Inglewood Bird Sanctuary MAPS Point Count Summary

Species	Year	1992	1993	1995	1996	1996		
	3 Day Ave	3 Day Ave	3 Day Ave	3 Day Ave	3 Day Ave	Jun-02	Jun-14	Jun-28
Double-crested Cormorant			0.3	0.7	7.0	10	7	4
Great-blue Heron			0.3	0.3	1.0	2	1	
Canada Goose		10.3	9.0	9.3	11.0	30	3	
Wood Duck		0.3	0.7	1.0	6.3	5	3	11
Mallard		5.7	7.0	13.3	8.7	16	3	7
Blue-winged Teal		0.3	0.3	1.3				
Gadwall		0.7	1.0					
American Wigeon				2.0	1.7	2	2	1
Common Goldeneye		3.3	6.0	6.7	12.0	13	6	17
Common Merganser		2.3	2.0	4.3	3.3	4	6	
Osprey				0.3				
Swainson's Hawk		0.3		0.3	0.7	1	1	
Red-tailed Hawk		1.0	1.0	0.3	0.7	2		
American Kestrel		2.3	1.0	2.3	1.7	3	1	1
Ring-necked Pheasant		0.3	0.7	1.0	1.7	1	2	2
Killdeer		0.7						
Spotted Sandpiper		1.3	0.7					
Long-billed Curlew				0.7				
Franklin's Gull				24.3	1.3			4
Ring-billed Gull		18.3	10.3	6.0	9.3	16	8	4
California Gull		0.3						
Rock Dove		5.7	15.7	14.3	10.0	14	14	2
Belted Kingfisher			0.3	1.7	0.3	1		
Downy Woodpecker		0.7	0.3	0.3	1.0		1	2
Hairy Woodpecker					0.7	1		1
Nothern Flicker		2.3	3.7	3.3	4.0	4	5	3
Western Wood-Pewee		3.7	4.0	5.7	5.0	4	7	4
Least Flycatcher		3.3	4.0	1.7	1.0	2	1	
Eastern Kingbird		5.3	6.0	7.3	9.3	10	9	9
Tree Swallow		5.0	7.3	7.0	14.7	13	20	11
Northern Rough-winged Swallow		0.3						
Bank Swallow		43.0	111.7	32.7	81.7	143	66	36
Barn Swallow					0.7		2	
Black-billed Magpie		13.3	11.3	18.3	22.7	25	21	22
American Crow		3.0	1.7	6.3	3.3	7	3	
Common Raven			2.7					
Black-capped Chickadee		0.3	3.0	4.3	6.3	5	1	13
Red-breasted Nuthatch		0.7						
White-breasted Nuthatch			0.3					
House Wren		9.7	11.0	11.7	11.3	7	13	14
Swainson's Thrush					0.3	1		
American Robin		5.3	7.0	5.0	6.3	7	3	9
Gray Catbird		1.0	0.3	0.7	0.3		1	
Brown Thrasher			0.7					
Cedar Waxwing		6.3	2.7	7.7	1.3	1	1	2
European Starling		45.3	48.3	48.0	49.0	70	25	52
Warbling Vireo		3.7	3.3	3.3	4.0	5	5	2
Tennessee Warbler		0.7						
Yellow Warbler		8.7	11.0	9.7	12.0	12	13	11
Chipping Sparrow				0.3				
Clay-coloured Sparrow		4.3	1.3	1.3	1.7	3	1	1
Song Sparrow		2.3	1.7	0.7	1.3	1	1	2
Lincoln's Sparrow		0.3	0.3		1.3	2	1	1
White-throated Sparrow					1.3	3		1
Red-winged Blackbird		2.7	5.7	6.0	6.3	6	9	4
Brewer's Blackbird					11.7	35		
Common Grackle				2.0				
Brown-headed Cowbird		8.0	11.3	6.0	0.7			2
Baltimore Oriole		5.3	6.7	5.7	10.7	14	9	9
House Sparrow		0.7	1.0					
American Goldfinch		0.7	2.7	0.7				
TOTAL		239.3	327.3	286.0	346.7	501	275	264

PERSONNEL

Volunteer participation in both the MAPS and migration monitoring projects was the key to the success of our research efforts. Banding at IBS is done in an area of the sanctuary designated reserve and off-limits to the public. The Area Manager has made it a condition of operation that no more than 3 people are in the reserve at one time, in order to minimize impact. Thus, on any given day, a Bander-in-Charge and 2 volunteers will be carrying out the banding.

Without donated time, primarily by members of the Calgary Bird Banding Society, the high degree of success achieved would not have been possible. Sincere appreciation is extended to all of the people listed in Table 10 who donated approximately 8 hours on each day indicated.

Banders-in-Charge (BIC)

No salaried staff are involved in any CBBS projects. However, in order to attract out-of-town Banders-in-Charge (BIC), a daily per diem is provided each day during migration monitoring. Such an arrangement provides a modest incentive for qualified individuals to assume the BIC duties and imposes an accountability on the BIC to complete field data sheets and input and validate the data promptly. In order to cover as many days as possible during the migration monitoring season it is necessary to bring in several BICs from outside Calgary. This requirement is anticipated to persist into the foreseeable future. The per diem decided upon by the general membership for the 1996 migration monitoring field season was \$90/day, conditional upon availability of funds. No per diems are paid until all duties of the BIC, including data input, have been fully discharged.

Table 10. Number of days of effort contributed by various individuals during the MAPS and migration monitoring projects at Inglewood Bird Sanctuary in 1996.

Individual	Migration Monitoring		MAPS	
	BIC	Vol	BIC	Vol
Grahame Booth	23 ¹		4	
Michelle Boutin		5		
Bill Brown		3		
Doug Collister	6.5 ¹	1		
Alyson Comack		2		
Brian Couronne		9		2
Rainer Ebel	9 ²			
Barb Johnston				1
Stefan Jungkin	11 ²			
Dwight Knapik		9		
Jennifer Lane		6		2
Steve Lane		18		1
Shonna MacLeod		17		1
Greg Meyer	15.5 ¹	6	3	
Pat Mitchell		9		
Dale Paton		11		
El Peterson		13		1
John Pollock	9 ²			
Gwen Smiley		12		2
Cyndi Smith		1		
Don Stiles		8		1
Alexandra Torn		13		1
Catherine Watson-McDonald		9		1
Linda Wiggins		8		1
Total	74	160	7	13

¹ donated ² received per diem

MORTALITIES AND INJURIES

It is a goal of the CBBS to achieve as low a rate of mortalities and injuries as possible during all banding projects. While we recognize that it may not be achievable, we aim to come as close to zero as possible. Casualties here refers to all injuries, minor and serious, and fatalities.

Two factors contributed significantly to the casualty rate this year. Wing abrasion was common especially among the thrushes. We believe this is due to the use of low quality nets purchased from Spider Technologies in 1995. It is anticipated that with the use of the new, high-quality Avinet nets, purchased this year, that the frequency of wing abrasions will significantly diminish in the future. Predation of captured birds by Mule Deer was a serious problem in 1996, amounting for 6 of the 12 fatalities. Despite increasing the frequency of net rounds we were unable to deter the deer. Options are being investigated as to how to eliminate this problem.

Documented below are the casualties incurred during the spring banding, MAPS and migration monitoring projects combined. Note that the number captured, by species, is only given where that species experienced injury or mortality.

Species	Number Captured	Injuries		Mortalities	
		Number	Type	Number	Cause
Hairy Woodpecker	1	1	wing abrasion		
Traill's Flycatcher	33	1	wing abrasion		
White-breasted Nuthatch	5	1	wing abrasion		
		1	cut under left wing pit		
House Wren	121	2	wing abrasion	1	predation by Mule Deer
				1	shock
Swainson's Thrush	79	1	leg abrasion	1	shock
		1	wing abrasion		
American Robin	115	6	wing abrasion		
		1	leg abrasion		
		2	cut tongue		
Red-eyed Vireo	6			1	predation by Sharp-shinned Hawk
Yellow Warbler				1	shock
Ovenbird	45	1	broken leg	1	strangled
Wilson's Warbler	244			1	shock
				4	predation by Mule Deer
Lincoln's Sparrow	45	1	broken leg		
White-throated Sparrow	53	1	wing abrasion		
Unknown				1	predation by Mule Deer
Total	1740	20	(1.15%)	12	(0.69%)

EQUIPMENT

Mist-nets

Of the 15 mist-nets purchased from Spider Technologies in 1995, 12 were in good condition at the beginning of the 1996 banding season following a spring hole sewing session. Three were determined to be beyond repair and were destroyed. A further 16 nets were purchased from Avinet with funds from the Baillie Fund and The Friends of the Environment Foundation.

During 1996, the nets at 9 of the 11 standard net locations were furled at the end of each banding day. This was a change from 1995 when each net was completely taken down due to fear that trespassers would damage the furled nets. Reserve perimeter fencing enhancements occurred during the summer of 1996 reducing the risk of vandalism. No trespassers were seen and no nets were damaged during migration monitoring.

Of the Spider Technology nets, 8 are in good condition while 12 of the Avinet nets are unused and 3 are in good condition.

Mule deer posed our biggest net damage problem. Four nets were rendered unusable in 1996 due to damage caused by the deer.

Net Poles and Re-bar Stakes

Net poles (0.5" electrical conduit) and the rebar used as support staking is readily available at relatively low cost from hardware stores. Although new poles were not required this year, extensions were added at some of the Spider Technologies net lanes in an attempt to reduce the huge pocket size. Spare rebar was purchased for tie-back stakes as required. It is anticipated that several new sets of net poles and rebar will be required for the 1997 banding season.

Banding Equipment

The Bander-in-Charge (BIC) is responsible for providing his/her own banding pliers, circlip pliers, wing rule, etc. This system continued to work well and will be utilized again during 1997. An AC/DC powered weigh scale was purchased prior to the 1996 banding season to eliminate the inconsistencies between BIC owned spring scales. This new acquisition proved invaluable and increased the accuracy and efficiency of the banding operations.

Lab Equipment

Once again our banding lab during 1996 was in the field. Initially, equipment (table, chairs, tarp, etc.) were supplied by the members of CBBS. However, after several chair breakages 3 PVC patio chairs were purchased with society funds. Although this arrangement continues to be satisfactory, the City of Calgary has approved use of space inside the Colonel Walker House for the 1997 banding season. It is anticipated that both the indoor and outside lab alternatives will be used dependent upon weather and other factors.

A camera was donated to the society at the commencing of 1996 fall migration monitoring to ensure documentation of rare or uncommon species or plumage abnormalities, etc. However the quality of the slides and prints from the camera proved unreliable. Subsequently, a Canon EOS Rebel G complete with a 35-80 mm zoom lens was purchased with the balance of the funds received from The Friends of the Environment Foundation. Preliminary tests with the camera indicate its capabilities will be more than adequate for our needs.

With the approval of an indoor lab for future years, a request has been made for the donation of a 386 IBM-compatible personal computer. Plans are to equip the computer with Windows and Access/Excel software and locate it in the indoor lab during fall migration monitoring. This would allow for immediate entry of banding data and data summaries.

Loney Dickson and Brenda Dale of the Canadian Wildlife Service in Edmonton provided us with two optical devices for aiding during skulling. Both of these devices were well utilized over the year.

A first aid kit was donated from Mountain Equipment Co-op and now remains a permanent article in our banding equipment supplies.

Summary

Due to the current supply of mist-nets on hand it is unlikely that we will need to purchase any replacements for at least a couple of years. Our current equipment supply allows us to continue with our projects with only small purchases necessary to repair or replace. It is anticipated that large funding requirements for equipment will not be necessary in the near term.

FUNDING AND ACKNOWLEDGEMENTS

Funding for migration monitoring at IBS during 1996 was provided by:

- a grant through The James L. Baillie Memorial Fund from a contribution by Environment Canada, supplemented with funds raised through the annual Baillie Birdathon (\$1,000);
- funds raised by the CBBS through participation in the Baillie Birdathon (approximately \$2800) including a \$1,000 gross pledge from Imperial Oil Resources Limited;
- a grant from Canadian Wildlife Service through Loney Dickson (\$2,000);
- a grant from The Friends of the Environment Foundation (\$2,856); and
- a grant from Manning Diversified Forest Products (approximately \$1,000).

Additional contributions in kind were made by Mountain Equipment Co-op (50 toggles for bird bags and a first aid kit), CWS-Brenda Dale and Loney Dickson (desk-top and head-mounted skulling magnifiers) and Calgary Co-operative Association Limited (20 cloth shopping bags suitable for storing mist-nets).

Part of the grant from the Baillie Fund was used to purchase an electronic weigh scale. The grant from The Friends of the Environment went towards purchase of mist-nets and a macro-focus camera required to document rarities and difficult-to-identify species. Robinson's Camera Centre also contributed to our acquisition of a camera through an \$85 discount. The remainder of the funds were either used to provide an honorarium to Banders-in-Charge brought in from Edmonton, AB and Whitewood, SK to optimize coverage of the fall migration or were carried over to 1997.

Field data forms for migration monitoring were modified from forms designed for the Last Mountain Lake Observatory in Saskatchewan. We acknowledge John Pollock's spirit of cooperation in sharing digital copies of these forms for our use.

We are optimistic that the IBS migration monitoring project will become part of a Canada-wide system of monitoring sites and thereby qualify for enhanced funding through the Baillie Birdathon. Annual funding requirements for this project are in the \$7,000 range. The majority of this annual funding requirement could be raised through the Baillie Birdathon if the CBBS received a full 50% of the proceeds.

FATAL LIGHT AWARENESS PROGRAM (FLAP) CALGARY

Many of Canada's 250 species of migratory birds are in decline. Habitat destruction and pollution threaten them on their breeding grounds in Canada and on their wintering grounds in the U.S. and South America. In addition to these threats, millions of birds die or suffer injuries from collisions with buildings at night as they journey north and south.

More birds are killed in collisions each year than died in the Exxon Valdez oil spill and many of the species involved are known to be in long-term decline, with some already designated as threatened. Collision of migrating birds with human built structures and windows is a continent-wide problem. Since the majority of such bird injuries and mortalities goes unreported, one can only speculate as to their magnitude.

It is estimated that approximately one hundred million to one billion birds are killed annually. Much of this mortality is preventable through construction design or operational changes to human-built structures. We feel that in Calgary mortality could be reduced by 50% or more simply by extinguishing the interior lights of buildings at night during the migration season.

During the 1996 monitoring period we found some interesting trends compared to the 1995 monitoring period. We compiled information from both spring (50 mortalities) and fall (186 mortalities). The total was significantly higher than 1995, likely due to our program being more organized and the knowledgeable obtained the previous year of problem locations.

Details of all recorded collisions are given in Appendix 5 while summaries by building, species and date are presented in Tables 11, 12 and 13 respectively. The most frequent species for 1996 was the Chipping Sparrow at 29% of the total mortalities. Following were the Red-breasted Nuthatch at 12%, Yellow-rumped Warbler at 6.4%, Wilson's Warbler at 4.3% and Dark-eyed Junco also at 4.2%. Interestingly only 1.7% were raptors versus 21% in 1995.

We found that a number of buildings have recorded a higher number of collisions than others, apparently mostly related to the exterior reflective mirror finish on the buildings. Of total collisions 173 (74%) occurred on building faces with mirrored finishes. One reflective finished building recorded just under half of the mortalities during the fall migration. Approximately 30% of the bird mortalities were day-time hits.

Interestingly, the buildings closer to the river received a higher number of bird collisions. This emphasizes the importance of the river habitat as a corridor

Table 11. Bird Collisions in Downtown Calgary by Building - 1996

Alphabetical	
Building	Birds
520 Fifth Avenue	2
555 - 4th Avenue SW	1
8th Avenue Parkade	2
Altus Centre	1
Amoco Building	1
Bankers Hall	4
Bow Valley Square	1
Can Oxy Tower	1
Canada Place	1
Canada Trust Tower	10
Canterra Tower	25
Centennial Parkade	1
Chevron Plaza	6
Chevron Tower	1
Eaton's Centre	2
Elveden Centre	16
Encor Place	4
Energy Exchange	1
Energy Plaza	5
ERCB Building	2
Esso Plaza	2
Fifth & Fifth	2
Fifth Avenue Place	89
First Canadian Place	7
Gulf Canada Square	8
J.J. Bowlen Building	1
Life Plaza	1
Norcen Tower	6
Nova Building	2
Royal Bank Tower	1
Shell Centre	6
Stock Exchange Tower	7
Sun Life Plaza	2
Trimac House	1
Western Canadian Place	12
Western Gas Tower	1
Total	235

Decreasing Frequency	
Building	Birds
Fifth Avenue Place	89
Canterra Tower	25
Elveden Centre	16
Western Canadian Place	12
Canada Trust Tower	10
Gulf Canada Square	8
First Canadian Place	7
Stock Exchange Tower	7
Chevron Plaza	6
Norcen Tower	6
Shell Centre	6
Energy Plaza	5
Bankers Hall	4
Encor Place	4
520 Fifth Avenue	2
8th Avenue Parkade	2
Eaton's Centre	2
ERCB Building	2
Esso Plaza	2
Fifth & Fifth	2
Nova Building	2
Sun Life Plaza	2
555 - 4th Avenue SW	1
Altus Centre	1
Amoco Building	1
Bow Valley Square	1
Can Oxy Tower	1
Canada Place	1
Centennial Parkade	1
Chevron Tower	1
Energy Exchange	1
J.J. Bowlen Building	1
Life Plaza	1
Royal Bank Tower	1
Trimac House	1
Western Gas Tower	1
Total	235

Table 12. Bird Collisions in Downtown Calgary by Species - 1996

AOU Order	
Species	Number
Cooper's Hawk	1
Northern Goshawk	1
Peregrine Falcon	2
Rock Dove	7
Mourning Dove	1
Downy Woodpecker	2
Hairy Woodpecker	1
Northern Flicker	2
Trill's Flycatcher	1
Least Flycatcher	1
Eastern Kingbird	1
American Crow	1
Black-capped Chickadee	3
Boreal Chickadee	1
Red-breasted Nuthatch	28
White-breasted Nuthatch	2
Brown Creeper	1
House Wren	1
Ruby-crowned Kinglet	1
Mountain Bluebird	1
Townsend's Solitaire	3
Swainson's Thrush	2
American Robin	4
Varied Thrush	2
Cedar Waxwing	3
Orange-crowned Warbler	1
Yellow Warbler	8
Yellow-rumped Warbler	15
Northern Waterthrush	2
Wilson's Warbler	10
Canada Warbler	1
Warbler sp.	7
American Tree Sparrow	1
Chipping Sparrow	68
Clay-coloured Sparrow	8
Savannah Sparrow	1
Song Sparrow	3
Lincoln's Sparrow	4
White-throated Sparrow	2
Dark-eyed Junco	10
Baltimore Oriole	1
White-winged Crossbill	9
Common Redpoll	2
Pine Siskin	2
House Sparrow	6
Little Brown Bat	1

Decreasing Frequency	
Species	Number
Chipping Sparrow	68
Red-breasted Nuthatch	28
Yellow-rumped Warbler	15
Wilson's Warbler	10
Dark-eyed Junco	10
White-winged Crossbill	9
Yellow Warbler	8
Clay-coloured Sparrow	8
Rock Dove	7
Warbler sp.	7
House Sparrow	6
American Robin	4
Lincoln's Sparrow	4
Black-capped Chickadee	3
Townsend's Solitaire	3
Cedar Waxwing	3
Song Sparrow	3
Peregrine Falcon	2
Downy Woodpecker	2
Northern Flicker	2
White-breasted Nuthatch	2
Swainson's Thrush	2
Varied Thrush	2
Northern Waterthrush	2
White-throated Sparrow	2
Common Redpoll	2
Pine Siskin	2
Cooper's Hawk	1
Northern Goshawk	1
Mourning Dove	1
Hairy Woodpecker	1
Trill's Flycatcher	1
Least Flycatcher	1
Eastern Kingbird	1
American Crow	1
Boreal Chickadee	1
Brown Creeper	1
House Wren	1
Ruby-crowned Kinglet	1
Mountain Bluebird	1
Orange-crowned Warbler	1
Canada Warbler	1
American Tree Sparrow	1
Savannah Sparrow	1
Baltimore Oriole	1
Little Brown Bat	1

through the downtown core.

Not all of the collisions ended with the bird dead or fatally injured. Seven birds were rehabilitated and released including 2 Peregrine Falcons, 2 Red-breasted Nuthatches, 1 Yellow Warbler, 1 Chipping Sparrow and 1 House Sparrow.

During the 1996 period we formed an alliance with the Building Owners & Manager Association (BOMA Calgary) to help us with educating Property Managers regarding the FLAP program. BOMA will publish the spring and fall migration periods in their newsletter to remind building managers to extinguish their lights whenever possible.

Reference

Fatal Light Awareness Program. 1996. Collision Course: The hazards of lighted structures and windows to migrating birds. Special report prepared for World Wildlife Fund Canada. 46 pp.

Table 13. Bird Collisions in Downtown Calgary by Date - 1996

Date	Birds	Date	Birds	Date	Birds	Date	Birds
7 Feb	1	4 Jun	1	23 Aug	10	20 Sep	3
20 Feb	1	13 Jun	1	25 Aug	1	22 Sep	1
25 Feb	1	15 Jun	2	27 Aug	4	23 Sep	2
4 Apr	1	20 Jun	1	28 Aug	1	24 Sep	1
8 Apr	3	21 Jun	1	2 Sep	2	25 Sep	3
9 Apr	1	9 Jul	1	3 Sep	1	29 Sep	1
10 Apr	2	29 Jul	1	4 Sep	1	5 Oct	2
15 Apr	1	6 Aug	3	5 Sep	1	7 Oct	8
21 Apr	1	8 Aug	1	6 Sep	4	8 Oct	2
2 May	1	9 Aug	5	7 Sep	2	10 Oct	1
3 May	1	10 Aug	2	8 Sep	5	11 Oct	10
10 May	1	12 Aug	19	9 Sep	4	15 Oct	3
11 May	1	13 Aug	3	10 Sep	3	16 Oct	1
14 May	2	14 Aug	1	11 Sep	2	17 Oct	1
16 May	1	15 Aug	1	12 Sep	5	23 Oct	1
20 May	2	17 Aug	5	13 Sep	5	28 Oct	1
21 May	4	18 Aug	3	14 Sep	1	29 Oct	1
22 May	12	19 Aug	7	16 Sep	5	31 Oct	1
23 May	5	20 Aug	2	17 Sep	4	11 Nov	1
27 May	1	21 Aug	11	18 Sep	2		
31 May	1	22 Aug	12	19 Sep	1		



MIGRATION MONITORING PROTOCOL

Inglewood Bird Sanctuary

This migration monitoring protocol is based on methods described in section 6.9 of Hagan *et al.* (1994) and reflects modifications required to optimize migration monitoring at Inglewood Bird Sanctuary in Calgary.

Goals and Objectives

The Calgary Bird Banding Society (CBBS) will conduct intensive monitoring of fall bird migration at the Inglewood Bird Sanctuary (IBS) during the months of July-October. The intent of the CBBS is to maintain an ongoing long-term commitment to this project. Migration data will be collected in a standardized manner and will be integrated with similar data from other monitoring projects as part of a continent-wide analysis of population trends.

Definition of Monitored Area

The monitored area will include the entire Inglewood Bird Sanctuary, located adjacent to the Bow River in the City of Calgary, Alberta (Figure 2). Birds seen or heard, on or above adjacent lands and the Bow River will be included.

Definition of Count Period

The daily count period will start at sunrise and continue for the first six hours following sunrise.

Personnel Requirements

There will be at least two participants present each day, weather permitting, during the migration monitoring period. This will include a Bander-in-Charge (BIC) and one other participant capable of completing a daily census. Due to constraints imposed by the Area Manager, a maximum of three persons may participate within the restricted area of the sanctuary at one time on any given day. The third person may be a trainee, participant or other observer.

Migration Count Methods

Three sources of data will be integrated into an estimated daily total (EDT) of migrants at IBS. These sources of data are a daily census, birds captured, mortalities and incidental observations.

Daily Census

A daily census will be taken along a predetermined route (Figure 2). The census should begin one or two hours after sunrise, although weather conditions or numbers of captured birds may force it to be delayed until later in the morning. This census will cover the majority of the sanctuary and should take approximately 1 hour to complete. All birds seen or heard on or above IBS and adjacent lands will be counted and recorded (see data form). The census taker must be an experienced birder with the ability to identify all or most of the expected species by sight and sound. More than one census taker may participate with this fact noted.

Mist-Netting

The CBBS will operate a minimum of ten 12-m x 30-mm mist-nets at standardized locations in the reserve portion of IBS (Figure 2). Mist-nets will be open each day for six hours starting at sunrise. This requirement will only be waived when dictated by adverse weather conditions, potential for capture of more birds than can be handled safely or the unavailability of a qualified bander-in-charge. All birds captured, recaptured, repeating (same day) or killed will be recorded. Closure and opening times must be recorded (see data form).

The minimum data taken from each captured bird will be species, age and sex (See record-keeping procedures below). Wing chord, body mass, skull ossification, fat condition and moult condition will also be measured unless there are more birds being captured than can be processed in a reasonable amount of time or other extenuating circumstances. An attempt to band all birds captured will be maintained although no individual bird will be held for more than one hour. This requirement creates the possibility of releasing unprocessed birds. In this unusual circumstance, an entry will be made on a "rapid release form" (see data form).

Checking for trapped birds should take place at least every 30 minutes. The order in which the nets are checked is not critical although the usual sequence is: 8, 10, 15, 12, 13, 7, 5, 4, 1, and 17. Nets 7, 13, 12, and 15 are re-checked on the return trip.

Incidental Observations

Throughout the day, personnel will make note of any birds in the station area or near net lanes, apart from the ones counted on census or captured in banding operations. These observations must be written down at or near the times they take place (see data form). Data collected will include species, number of birds, time seen and other comments such as location, direction of travel and behaviour. Care should be taken not to duplicate entries although the length of time observed may be helpful in estimating numbers of probable or known stopovers and residents.

Probable and Known Stopovers (PKS)

It is desirable to separate birds that are resident or which have remained at the migration site for more than one day. These birds are termed probable and known stopovers (PKS) (Hussell and Ralph 1996). Including PKS in the estimated daily total of migrants can mask the true profile of migration. In the case of IBS, a number of species that occur in large numbers during the migration monitoring period fall into this category.

Retraps of birds banded previously are obvious stopovers and can easily be separated when tallying the estimated daily total. Other individual birds can also be assigned to the PKS category with confidence. These include previously-banded birds that are seen but not captured, birds of rare species that are highly unlikely to be new birds each day, birds that can be identified as individuals, and known resident species regularly present in specific locations.

A number of species at IBS are both resident in small numbers and occur as migrants to a greater or lesser degree. Other species are migrants but use IBS as a roosting or loafing area. In both these cases differentiating PKS from migrants on any given day is problematic. Further compounding this uncertainty is the fact that contract banders, lacking intimate knowledge of IBS and its avifauna, are used for a sizeable portion of the migration monitoring period. Thus identification of PKS appears destined to be inconsistent, perhaps seriously so, if subjective assessment is entertained.

In order to limit the uncertainty associated with identification of PKS at IBS, members of the CBBS have categorized species as primarily migrants or PKS. All individuals of a PKS species are deemed PKS unless definitive evidence dictates otherwise (e.g. banded individuals). It is recognized that a small number of individuals will be incorrectly classified under this scheme. However the "known" error associated with this scheme may be preferable to the unknown error of "guesstimating" PKS for migratory species. At least it will be consistent.

Below is a current list of species deemed PKS at IBS:

American White Pelican	Swainson's Hawk
Double-crested Cormorant	Red-tailed Hawk
Great Blue Heron	American Kestrel
Canada Goose	Merlin
Wood Duck	Peregrine Falcon
Mallard	Ring-necked Pheasant
Gadwall	Franklin's Gull
American Wigeon	Ring-billed Gull
Common Goldeneye	California Gull
Common Merganser	Herring Gull
Osprey	Rock Dove

Great Horned Owl
Downy Woodpecker
Hairy Woodpecker
Northern Flicker
Pileated Woodpecker
Black-billed Magpie
American Crow

Common Raven
Black-capped Chickadee
White-breasted Nuthatch
European Starling
Red-winged Blackbird
Brown-headed Cowbird
House Sparrow

Estimated Daily Total (EDT)

An estimated daily total number of individuals of each species present in the station area will be made at the end of each day. Totals should be compiled by all personnel present after all other record-keeping for the day has been completed. Personnel should try to arrive at a consensus for each species. The method for arriving at the EDT is taken directly from McCracken *et al.* 1993, section 6.4. This publication should be referred to for detailed specifications. A brief summary follows:

- on log sheets (see data form), record the numbers of species banded, retrapped, seen on census and incidentally observed;
- run down the list on the log sheet asking for other observations. Some judgements must be made and can include good estimates but not extrapolations. It should not include repeated counts of the same birds. Take behaviour, time of day, and other relevant circumstances into account; and
- the estimated daily total is derived from data that appear in the four columns of the log sheet. Inspect all of these numbers together, and along with all other participants, try to derive the best estimate of the number of birds present that day.
- the number of each species deemed PKS are indicated in parentheses behind the estimated daily total.

Record-Keeping Procedures

Clear and concise records must be kept for all activities performed during normal operation of the bird banding station at IBS. The following data forms are expected to be filled out for every day, before leaving the field, with the exception of the "rapid release form":

- *Daily Log* - includes the names of all participants present including Bander-in-Charge (BIC), census taker and volunteer helpers. A short narrative is included focusing on bird migration, bird injuries and mortalities, non-avian fauna and flora, and any management of the

station that had to be performed;

- *Field Banding Sheet* - contains space for all data taken from individual birds captured by mist-netting. The minimum data recorded on these sheets for banded birds must include disposition code, band number, species, age, sex, time banded, trap number and bander. Secondary data, listed in order of importance, will also be collected whenever possible - wing chord, skull ossification, mass, cloacal protuberance (CP), brood patch (BP), fat condition and primary moult;
- *Net Log* - this form contains columns for the opening and closing times for each net, total amount of time each net is up, as well as space to write a brief weather report at specific times during the day;
- *Incidental Observations* - this form is intended for any incidental observations made during the day. The data recorded will include species, number seen, time of day and as well as additional comments such as location, direction of flight, behaviour etc;
- *Rapid Release Form* - this form is intended for use when there is a very large influx of birds which cannot be processed in a normal way without compromising safety. It will be used as a last resort to collect a minimum amount of information (see above) on as many birds as possible. This form contains columns for net number, species, sex, age, time and recorders name; and
- *Estimated Daily Totals* - this form is the end result of each day's effort from all personnel involved at the migration monitoring station. It contains columns for each species of bird likely to occur during fall migration at IBS. Next to the species names are columns for numbers of newly banded birds, repeat captures, census tally and incidental observations. From this data and discussion amongst the days participants, a daily estimated daily total is arrived at.

Knowledge, Skills and Experience Required

The most stringent criteria in this section applies to the Bander-in-Charge (BIC). The BIC must be a qualified bird bander holding mist-netting authorization. The BIC must have good identification skills and be able to use the age and sex keys contained in the CWS bird banding manual. The BIC must exercise good judgement as to when mist-nets should be closed for weather related reasons or other extenuating circumstances that may endanger the birds and must also be willing to provide training.

The census taker must be an experienced birder who is able to identify all or most species of birds by sight and sound. Training will be provided by the CBBS

to ensure an adequate supply of research volunteers capable of maintaining the migrant monitoring project. This training will consist of hands-on experience taking birds out of nets, record keeping, and census taking. An emphasis will be placed on bird identification by sight and sound as well as increasing the participants ability to recognize situations which may compromise the safety of the birds.

Potential Habitat Changes

The habitat at IBS consists of mature riparian balsam poplar forest with a well developed shrub understorey. The CBBS does not anticipate any significant habitat changes during the foreseeable future.

Site-specific Field Procedures

The Area Manager has placed some restraints on field procedures. These restraints reduce human impact within the environmentally sensitive reserve portion of IBS where all bird-banding will be performed.

A maximum of three persons will be in the reserve at any one time. Personnel must stay on the established pathways. Personnel must minimize their exposure to the general public while in the reserve and should wear low-visibility clothing. All questions and enquiries should be referred to the Area Manager. Spring migration monitoring is currently not authorized in the reserve due to the potential for increased environmental impact. The Area Manager requires that all captured European Starlings and House Sparrows be destroyed.

References

- Hagan, J.M., K.A. Hobson, D.J.T. Hussell, N. Nur and C.J. Ralph. 1994. Recommended methods for monitoring bird migration. Draft prepared by the Intensive Sites Technical Committee of the Migration Monitoring Council. 22 pp.
- Hussell, D.J.T. and C.J. Ralph. 1996. Recommended methods for monitoring bird populations by counting and capture of migrants. Report of the Intensive Sites Technical Committee of the Migration Monitoring Council. 13 pp.
- McCracken, J.D., D.J.T. Hussell, and E. Dunn. 1993. A manual for monitoring bird migration. Long Point Bird Observatory, Port Rowan, Ontario. 65 pp.



SIGNIFICANT RECAPTURES

Downy Woodpecker 1451-67033 Banded as HY-U by Grahame Booth at Inglewood Bird Sanctuary on 29 July 1995. Recaptured there as AHY-M on 23 June and 13 July 1996. 1 year old.

Northern Flicker 1453-31301 Banded as AHY-M by Grahame Booth at Inglewood Bird Sanctuary on 25 June 1995. Recaptured there as ASY-M on 8 June 1996. At least 2 years old.

Black-capped Chickadee 1950-45186 Banded as HY-U by Doug Collister at Inglewood Bird Sanctuary on 31 August 1994. Recaptured there as AHY-U on 11 August and 26 September 1995 as well as 4&26 August, 20&30 September and 11 October 1996. 2 years old.

... 1950-45254 Banded as HY-U by Doug Collister at Inglewood Bird Sanctuary on 6 September 1994. Recaptured there as AHY-U on 17 June and 17 September 1995 as well as 1&26 August and 4&21 September 1996. 2 years old.

... 1950-45256 Banded as AHY-U by Doug Collister at Inglewood Bird Sanctuary on 6 September 1994. Recaptured there as AHY-U on 4 September 1995 and 20 August 1996. At least 3 years old.

White-breasted Nuthatch 1461-84757 Banded as AHY-M by Doug Collister at Inglewood Bird Sanctuary on 12 August 1995. Recaptured there as AHY-M on 23 June and 21 July 1996. At least 2 years old.

House Wren 1910-52261 Banded as AHY-U by Ross Dickson at Inglewood Bird Sanctuary on 21 July 1992. Recaptured there as AHY-M on 31 May 1993, 17 June and 9 September 1995, as well as 16 June, 6 July and 13 July 1996. At least 5 years old.

Swainson's Thrush 1461-63682 Banded as AHY-U by Doug Collister at Inglewood Bird Sanctuary on 21 August 1994. Recaptured there as AHY-M on 11 August and 3 September 1996. At least 3 years old.

Warbling Vireo 1910-52290 Banded as AHY-F by Ross Dickson at Inglewood Bird Sanctuary on 28 July 1992. Recaptured there as AHY-U on 4 August 1995 and 7 September 1996. At least 5 years old.

... 1950-45076 Banded as AHY-U by Doug Collister at Inglewood Bird Sanctuary on 20 August 1994. Recaptured there as AHY-U on 11 August and 4 September 1996. At least 3 years old.

Yellow Warbler 1950-45519 Banded as AHY-F by Doug Collister at Inglewood Bird Sanctuary on 16 August 1995. Recaptured there as AHY-F on 23 June and 25 August 1996. At least 2 years old.

... 1950-48129 Banded as AHY-M by Ross Dickson at Inglewood Bird Sanctuary on 25 June 1993. Recaptured there as ASY-M on 7 July 1995 and 15 August 1996. At least 4 years old.

... 2050-70144 Banded as ASY-M by Grahame Booth at Inglewood Bird Sanctuary on 25 August 1995. Recaptured there as ASY-M on 1 August 1996. At least 4 years old.

... 1980-79983 Banded as ASY-M by Grahame Booth at Inglewood Bird Sanctuary on 7 July 1995. Recaptured there as AHY-M on 13 July 1996. At least 2 years old.

... 1950-45519 Banded as AHY-F by Doug Collister at Inglewood Bird Sanctuary on 16 August 1995. Recaptured there as AHY-F on 21 July 1996. At least 2 years old.

Lincoln's Sparrow 2161-14607 Banded as HY-U by Grahame Booth at Inglewood Bird Sanctuary on 16 September 1995. Recaptured there as AHY-U on 16 June 1996. 1 year old.



SPRING BANDING

Inglewood Bird Sanctuary (IBS), as previously mentioned, is long known for its impressive fall migration of passerines. Spring migration through IBS is significantly less dramatic and reliable. An attempt was made this year to sample the spring movement by following MAPS protocol during the month of May. This allowed us to band 1 day on each weekend for a total of 4 days and 201.9 net-hours coverage.

A total of 64 birds were captured of 16 species. The total captures consisted of 51 new bandings, 6 repeats, and 7 escapes. Indications of appreciable movement occurred on 10 and 18 May when Myrtle Warblers and other migrant species were present.

Our limited spring sample may not be representative. May was cold and snowy in Calgary such that spring migration was generally considered to be at least two weeks. Major movement did not appear to occur until early June. This is confirmed in the MAPS data by the addition of two new species, Traill's Flycatcher and Wilson's Warbler, neither of which breeds at IBS.

**1996 Spring Banding
at Inglewood Bird Sanctuary**

Species	01-May		10-May		18-May		26-May		Total	
	New	Recaps	New	Recaps	New	Recaps	New	Recaps	New	Recaps
Hairy Woodpecker						1			0	1
Black-capped Chickadee		2		1					0	3
Red-breasted Nuthatch					2				2	0
Ruby-crowned Kinglet					1				1	0
Swainson's Thrush					4		2		6	0
American Robin	3								3	0
Yellow-rumped Warbler			12	2	15				27	2
Blackpoll Warbler					1				1	0
Northern Waterthrush					1				1	0
Western Tanager					1				1	0
Clay-coloured Sparrow					1				1	0
Savannah Sparrow			3						3	0
Lincoln's Sparrow					4				4	0
White-crowned Sparrow					1				1	0
Total	3	2	15	3	31	1	2	0	51	6
Escapes		2		2		3				7
Total captures		7		20		35				64
Net hours		57.1		59.6		61.3				201.9
Captures/100 Net hours		12.3		33.6		57.1				31.7



1996 Bird Collisions in Downtown Calgary

Date	Time	Species	Building	Face		Conditions
7 Feb	0845	Common Redpoll	Elveden Centre	east		sun +3
20 Feb		White-winged Crossbill	Bankers Hall	east	mirrored	sun +4
25 Feb		White-winged Crossbill	Canada Trust Tower	south	mirrored	sun +4
4 Apr	0815	Mountain Bluebird	Canada Trust Tower	east	mirrored	sun -6
8 Apr		White-winged Crossbill	First Canadian Place	north		sun +18
8 Apr		White-winged Crossbill	Elveden Centre	north		sun +18
8 Apr		White-winged Crossbill	Elveden Centre	north		sun +18
9 Apr		White-winged Crossbill	Energy Plaza	north	mirrored	sun +18
10 Apr	1030	White-winged Crossbill	Gulf Canada Square	east	mirrored	cloud/snow -1
10 Apr	1030	White-winged Crossbill	Gulf Canada Square	east	mirrored	cloud/snow -1
15 Apr	1030	Townsend's Solitaire	Can Oxy Tower	east		sun +20
21 Apr		Cooper's Hawk	Chevon Plaza	southeast	mirrored	cloud/rain
2 May	1005	Red-breasted Nuthatch	Encor Place	northwest	mirrored	overcast +2
3 May		Red-breasted Nuthatch	Canada Trust Tower	south	mirrored	overcast +2
10 May	0700	Savannah Sparrow	Elveden Centre	east		overcast -1
11 May		Northern Flicker	Gulf Canada Square	west	mirrored	cloud +3
14 May	0700	Song Sparrow	Energy Plaza	south	mirrored	cloud +8
14 May		Warbler sp.	Bankers Hall	south		cloud +8
16 May		Red-breasted Nuthatch	Stock Exchange Tower	east	mirrored	cloud +5
20 May		Brown Creeper	Elveden Centre	north		sun/cloud +4
20 May		Warbler sp.	Elveden Centre	north		sun/cloud +4
21 May	0915	Red-breasted Nuthatch	Western Canadian Place	east	mirrored	sun/cloud +10
21 May	0030	Red-breasted Nuthatch	Royal Bank Tower	west		sun/cloud +10
21 May		Red-breasted Nuthatch	Energy Plaza	north	mirrored	sun/cloud +10
21 May		Red-breasted Nuthatch	Elveden Centre	north		sun/cloud +10
22 May	1100	Chipping Sparrow	Chevon Plaza	south	mirrored	cloud/rain +9
22 May	1100	Chipping Sparrow	Chevon Plaza	southwest		cloud/rain +9
22 May	1100	Chipping Sparrow	Chevon Plaza	southwest		cloud/rain +9
22 May	1100	Chipping Sparrow	Fifth Avenue Place	south	mirrored	cloud/rain +9
22 May	1100	Chipping Sparrow	Fifth Avenue Place	south	mirrored	cloud/rain +9
22 May	1100	Chipping Sparrow	Fifth Avenue Place	south	mirrored	cloud/rain +9
22 May	1100	Chipping Sparrow	Fifth Avenue Place	south	mirrored	cloud/rain +9
22 May	1100	Chipping Sparrow	Esso Plaza	north	mirrored	cloud/rain +9
22 May	1100	Northern Goshawk	Esso Plaza	north	mirrored	cloud/rain +9
22 May		Chipping Sparrow	Canada Trust Tower	north	mirrored	cloud/rain +9
22 May		Red-breasted Nuthatch	Bow Valley Square	north		cloud/rain +9
22 May		Rock Dove	Eaton's Centre	south	mirrored	cloud/rain +9
23 May		Swainson's Thrush	Elveden Centre	north		cloud/rain +9
23 May	0645	Chipping Sparrow	Trimac House	south	mirrored	cloud/rain +9
23 May	0700	Yellow Warbler	Sun Life Plaza	south		cloud/rain +9
23 May		House Sparrow	Canada Place	north		cloud/rain +9
23 May		Chipping Sparrow	Norcen Tower	west		cloud/rain +9
27 May		Red-breasted Nuthatch	Bankers Hall	west		cloud/rain +9
31 May	0930	Baltimore Oriole	Elveden Centre	north		sun +10
4 Jun		Red-breasted Nuthatch	Norcen Tower	south		sun/cloud +20
13 Jun	0800	White-winged Crossbill	Energy Plaza	east	mirrored	sun +20
15 Jun		Yellow-rumped Warbler	Elveden Centre	west		sun +18
15 Jun		Yellow-rumped Warbler	Elveden Centre	east		sun +18
20 Jun	0800	House Sparrow	Fifth & Fifth	north		sun/cloud +12

1996 Bird Collisions in Downtown Calgary

Date	Time	Species	Building	Face		Conditions
21 Jun	1100	House Sparrow	Energy Plaza	north	mirrored	sun/cloud +15
9 Jul		Rock Dove	First Canadian Place	east		sun/cloud +20
29 Jul	1400	Chipping Sparrow	Norcen Tower	south		sun/cloud +28
6 Aug	1100	Peregrine Falcon	First Canadian Place	north		sun +28
6 Aug		Chipping Sparrow	Stock Exchange Tower	south	mirrored	sun +28
6 Aug		Red-breasted Nuthatch	Stock Exchange Tower	east	mirrored	sun +28
8 Aug		Chipping Sparrow	Chevon Plaza	southeast	mirrored	sun +28
9 Aug		Chipping Sparrow	Canterra Tower	south	mirrored	sun +28
9 Aug		Chipping Sparrow	Canterra Tower	south	mirrored	sun +28
9 Aug		Chipping Sparrow	Canterra Tower	west	mirrored	sun +28
9 Aug		Chipping Sparrow	Canterra Tower	south	mirrored	sun +28
9 Aug	1005	Chipping Sparrow	Elveden Centre	west		sun +30
10 Aug	1030	Chipping Sparrow	Elveden Centre	east		sun +28
10 Aug		American Crow	Stock Exchange Tower	east	mirrored	sun +28
12 Aug	1100	Chipping Sparrow	Norcen Tower	south		sun/cloud +28
12 Aug	1030	Chipping Sparrow	520 Fifth Avenue	south	mirrored	sun/cloud +28
12 Aug	1005	Red-breasted Nuthatch	Chevon Plaza	southeast	mirrored	sun/cloud +28
12 Aug	1115	Chipping Sparrow	Shell Centre	east		sun/cloud +28
12 Aug	1215	Chipping Sparrow	Shell Centre	east		sun/cloud +28
12 Aug		Red-breasted Nuthatch	Fifth Avenue Place	north	mirrored	sun/cloud +28
12 Aug		Red-breasted Nuthatch	Fifth Avenue Place	north	mirrored	sun/cloud +28
12 Aug		Chipping Sparrow	Fifth Avenue Place	north	mirrored	sun/cloud +28
12 Aug		Chipping Sparrow	Fifth Avenue Place	north	mirrored	sun/cloud +28
12 Aug		Chipping Sparrow	Fifth Avenue Place	north	mirrored	sun/cloud +28
12 Aug		Chipping Sparrow	Fifth Avenue Place	north	mirrored	sun/cloud +28
12 Aug		Red-breasted Nuthatch	Fifth Avenue Place	east	mirrored	sun/cloud +28
12 Aug	0045	Chipping Sparrow	Canada Trust Tower	north	mirrored	sun/cloud +28
12 Aug	0915	Red-breasted Nuthatch	Centennial Parkade	west	mirrored	sun/cloud +28
12 Aug	1630	Red-breasted Nuthatch	First Canadian Place	west		sun/cloud +28
12 Aug		Chipping Sparrow	First Canadian Place	west		
12 Aug		Yellow Warbler	Stock Exchange Tower	south	mirrored	sun/cloud +28
12 Aug		Least Flycatcher	Stock Exchange Tower	south	mirrored	
12 Aug		Yellow Warbler	Stock Exchange Tower	north	mirrored	
13 Aug		Chipping Sparrow	Fifth Avenue Place	north	mirrored	sun/cloud +25
13 Aug		Chipping Sparrow	Fifth Avenue Place	north	mirrored	
13 Aug		Trail's Flycatcher	Fifth Avenue Place	north	mirrored	
14 Aug	0700	House Sparrow	8th Avenue Parkade	south		sun +28
15 Aug	1310	Red-breasted Nuthatch	Fifth Avenue Place	north	mirrored	sun/cloud +21
17 Aug		Chipping Sparrow	Gulf Canada Square	north	mirrored	sun/cloud +24
17 Aug		Chipping Sparrow	Gulf Canada Square	north	mirrored	
17 Aug		Chipping Sparrow	Canterra Tower	south	mirrored	sun/cloud +24
17 Aug		Chipping Sparrow	Canterra Tower	south	mirrored	
17 Aug		Yellow Warbler	Canterra Tower	south	mirrored	
18 Aug	1310	Yellow Warbler	Fifth Avenue Place	north	mirrored	sun/cloud +21
18 Aug	0730	House Sparrow	Encor Place	west	mirrored	sun/cloud +21
18 Aug	0730	Wilson's Warbler	Western Canadian Place	south	mirrored	sun/cloud +21
19 Aug	0710	Chipping Sparrow	Fifth Avenue Place	west	mirrored	sun/cloud +21
19 Aug		Chipping Sparrow	Fifth Avenue Place	west	mirrored	
19 Aug		Chipping Sparrow	Fifth Avenue Place	north	mirrored	

1996 Bird Collisions in Downtown Calgary

Date	Time	Species	Building	Face		Conditions
19 Aug		Red-breasted Nuthatch	Fifth Avenue Place	south	mirrored	
19 Aug	0830	Chipping Sparrow	Energy Exchange	north	mirrored	sun/cloud +21
19 Aug		Chipping Sparrow	Canada Trust Tower	north	mirrored	sun/cloud +21
19 Aug	0630	Chipping Sparrow	Shell Centre	south		sun/cloud +21
20 Aug	0700	Red-breasted Nuthatch	Fifth Avenue Place	north	mirrored	sun/cloud +24
20 Aug		Clay-coloured Sparrow	Fifth Avenue Place	east	mirrored	
21 Aug	0700	Chipping Sparrow	Fifth Avenue Place	west	mirrored	sun/cloud +18
21 Aug		Chipping Sparrow	Fifth Avenue Place	west	mirrored	
21 Aug		Chipping Sparrow	Fifth Avenue Place	west	mirrored	
21 Aug		Yellow Warbler	Fifth Avenue Place	west	mirrored	
21 Aug	1330	Clay-coloured Sparrow	Fifth Avenue Place	north	mirrored	
21 Aug		Clay-coloured Sparrow	Fifth Avenue Place	north	mirrored	
21 Aug		Clay-coloured Sparrow	Fifth Avenue Place	south	mirrored	
21 Aug	1415	Rock Dove	Fifth Avenue Place	south	mirrored	
21 Aug		Rock Dove	Fifth Avenue Place	south	mirrored	
21 Aug	1415	Red-breasted Nuthatch	Western Canadian Place	north	mirrored	sun/cloud +18
21 Aug	2030	House Sparrow	Gulf Canada Square	north	mirrored	sun/cloud +18
22 Aug	0700	Chipping Sparrow	Fifth Avenue Place	north	mirrored	sun/cloud +24
22 Aug		Chipping Sparrow	Fifth Avenue Place	west	mirrored	
22 Aug		Chipping Sparrow	Fifth Avenue Place	west	mirrored	
22 Aug		Chipping Sparrow	Fifth Avenue Place	west	mirrored	
22 Aug		Clay-coloured Sparrow	Fifth Avenue Place	west	mirrored	
22 Aug		Clay-coloured Sparrow	Fifth Avenue Place	west	mirrored	
22 Aug		Yellow Warbler	Fifth Avenue Place	east	mirrored	
22 Aug	1000	Red-breasted Nuthatch	Fifth Avenue Place	north	mirrored	
22 Aug	1000	Chipping Sparrow	Amoco Building	west		sun/cloud +24
22 Aug	1815	Northern Waterthrush	Western Canadian Place	inside	mirrored	sun/cloud +18
22 Aug	0045	Chipping Sparrow	Fifth Avenue Place	east	mirrored	sun/cloud +24
22 Aug		Red-breasted Nuthatch	Fifth Avenue Place	east	mirrored	
23 Aug	0700	Chipping Sparrow	Fifth Avenue Place	north	mirrored	sun/cloud +24
23 Aug		Chipping Sparrow	Fifth Avenue Place	north	mirrored	
23 Aug		Chipping Sparrow	Fifth Avenue Place	north	mirrored	
23 Aug		Chipping Sparrow	Fifth Avenue Place	north	mirrored	
23 Aug		Chipping Sparrow	Fifth Avenue Place	north	mirrored	
23 Aug		Chipping Sparrow	Fifth Avenue Place	north	mirrored	
23 Aug	0730	Chipping Sparrow	Canterra Tower	north	mirrored	sun/cloud +24
23 Aug		Chipping Sparrow	Fifth & Fifth	north		sun/cloud +24
23 Aug		Chipping Sparrow	Canada Trust Tower	north	mirrored	sun/cloud +24
25 Aug		Red-breasted Nuthatch	Canterra Tower	north	mirrored	sun +30
27 Aug		Clay-coloured Sparrow	Canterra Tower	north	mirrored	sun +27
27 Aug		Yellow Warbler	Gulf Canada Square	south	mirrored	sun +27
27 Aug	0930	Wilson's Warbler	Norcen Tower	south		sun +27
27 Aug		Little Brown Bat	8th Avenue Parkade	inside		sun +27
28 Aug	0545	Canada Warbler	Fifth Avenue Place	east	mirrored	sun +34
2 Sep		House Wren	Canterra Tower	north	mirrored	sun/cloud +24
2 Sep		Northern Waterthrush	Canterra Tower	north	mirrored	sun/cloud +24
3 Sep	1330	Warbler sp.	First Canadian Place	west		cloud/rain +8
4 Sep	0645	Warbler sp.	Fifth Avenue Place	west	mirrored	cloud/rain.+8

1996 Bird Collisions in Downtown Calgary

Date	Time	Species	Building	Face		Conditions
5 Sep		Wilson's Warbler	J.J. Bowlen Building	south		rain/fog +12
6 Sep	0630	Wilson's Warbler	Fifth Avenue Place	north	mirrored	sun +12
6 Sep	0630	Lincoln's Sparrow	Canterra Tower	east	mirrored	sun +12
6 Sep		Warbler sp.	Canterra Tower	east	mirrored	
6 Sep	0930	Wilson's Warbler	Western Canadian Place	east	mirrored	sun +12
7 Sep	0545	American Robin	Fifth Avenue Place	north	mirrored	cloud +8
7 Sep		White-throated Sparrow	Fifth Avenue Place	south	mirrored	
8 Sep	1030	Cedar Waxwing	Fifth Avenue Place	west	mirrored	sun/cloud +12
8 Sep		Cedar Waxwing	Canada Trust Tower	north	mirrored	sun/cloud +12
8 Sep	1030	Lincoln's Sparrow	Canterra Tower	east	mirrored	sun/cloud +12
8 Sep	1030	Yellow-rumped Warbler	Eaton's Centre	south		sun/cloud +12
8 Sep	1030	Lincoln's Sparrow	Western Gas Tower	south		sun/cloud +12
9 Sep	0030	Yellow-rumped Warbler	Fifth Avenue Place	west	mirrored	sun/cloud +14
9 Sep		Wilson's Warbler	Fifth Avenue Place	west	mirrored	
9 Sep		Clay-coloured Sparrow	Bankers Hall	north		sun/cloud +14
9 Sep	0030	Lincoln's Sparrow	First Canadian Place	west		sun/cloud +14
10 Sep	1030	Wilson's Warbler	Western Canadian Place	north	mirrored	sun/cloud +14
10 Sep	0030	Boreal Chickadee	Fifth Avenue Place	north	mirrored	sun/cloud +14
10 Sep	1030	Mourning Dove	Shell Centre	west		sun/cloud +14
11 Sep	0030	Wilson's Warbler	Fifth Avenue Place	east	mirrored	clear +23
11 Sep	0030	Downy Woodpecker	Gulf Canada Square	south	mirrored	clear +23
12 Sep	0630	Swainson's Thrush	Fifth Avenue Place	west	mirrored	clear +8
12 Sep	0630	Chipping Sparrow	Canterra Tower	north	mirrored	clear +8
12 Sep	1015	Chipping Sparrow	Elveden Centre	west		clear +8
12 Sep	1330	White-breasted Nuthatch	Fifth Avenue Place	north	mirrored	clear +20
12 Sep	1330	Song Sparrow	Canterra Tower	north	mirrored	clear +20
13 Sep	0630	Song Sparrow	Fifth Avenue Place	west	mirrored	clear +13
13 Sep	0630	Wilson's Warbler	Fifth Avenue Place	west	mirrored	clear +13
13 Sep	1330	Yellow-rumped Warbler	Fifth Avenue Place	north	mirrored	clear +13
13 Sep		Red-breasted Nuthatch	Canterra Tower	west	mirrored	clear +13
13 Sep		Yellow-rumped Warbler	Life Plaza	west		clear +13
14 Sep	0630	Yellow-rumped Warbler	Fifth Avenue Place	west	mirrored	clear +13
16 Sep	1045	American Robin	Fifth Avenue Place	south	mirrored	cloud +10
16 Sep	1045	American Robin	Canterra Tower	north	mirrored	cloud +10
16 Sep		Chipping Sparrow	Canterra Tower	west	mirrored	
16 Sep		Chipping Sparrow	Canada Trust Tower	west	mirrored	cloud +10
16 Sep	1045	Chipping Sparrow	Shell Centre	north		cloud +10
17 Sep	1145	Peregrine Falcon	Nova Building	west		cloud/rain +10
17 Sep	1030	Pine Siskin	Shell Centre	south		cloud/rain +10
17 Sep		Black-capped Chickadee	Canada Trust Tower	north	mirrored	cloud/rain +10
17 Sep	1145	Warbler sp.	Encor Place	north		cloud/rain +10
18 Sep		Yellow-rumped Warbler	ERCB Building	south		cloud/rain +10
18 Sep		Hairy Woodpecker	ERCB Building	south		
19 Sep	1030	Wilson's Warbler	Western Canadian Place	north	mirrored	rain +8
20 Sep		Yellow-rumped Warbler	Canterra Tower	north	mirrored	rain +8
22 Sep		Yellow-rumped Warbler	Fifth Avenue Place	east	mirrored	snow/rain +4
23 Sep	0030	Northern Flicker	Western Canadian Place	north	mirrored	sun +10
23 Sep	0030	Red-breasted Nuthatch	Fifth Avenue Place	west	mirrored	sun +10
24 Sep	1030	Red-breasted Nuthatch	Norcen Tower	south		sun +10

1996 Bird Collisions in Downtown Calgary

Date	Time	Species	Building	Face		Conditions
25 Sep	0030	Yellow-rumped Warbler	Fifth Avenue Place	north	mirrored	cloud +8
25 Sep		Orange-crowned Warbler	Fifth Avenue Place	north	mirrored	
25 Sep		Dark-eyed Junco	Fifth Avenue Place	north	mirrored	
20 Sep	1045	Yellow-rumped Warbler	Canterra Tower	north	mirrored	sun/cloud +15
20 Sep		Yellow-rumped Warbler	Canterra Tower	west	mirrored	
29 Sep	1045	White-throated Sparrow	Western Canadian Place	north	mirrored	cloud +15
5 Oct		American Tree Sparrow	Elveden Centre	north		sun/cloud +15
5 Oct		Dark-eyed Junco	Nova Building	west		sun/cloud +15
7 Oct	0030	Dark-eyed Junco	Fifth Avenue Place	north	mirrored	cloud +8
7 Oct	1030	Dark-eyed Junco	Fifth Avenue Place	west	mirrored	sun +13
7 Oct		Dark-eyed Junco	Fifth Avenue Place	west	mirrored	
7 Oct	1030	Yellow-rumped Warbler	Chevron Tower	east	mirrored	sun +13
7 Oct	0030	Dark-eyed Junco	Canterra Tower	north	mirrored	sun +13
7 Oct		Dark-eyed Junco	Canterra Tower	south	mirrored	
7 Oct		Warbler sp.	555 - 4th Avenue SW	north	mirrored	sun +13
7 Oct	1400	American Robin	Elveden Centre	south		sun +13
8 Oct		Yellow-rumped Warbler	Fifth Avenue Place	west	mirrored	sun +13
8 Oct	0800	Ruby-crowned Kinglet	Sun Life Plaza	west		sun +13
10 Oct	1030	Black-capped Chickadee	Western Canadian Place	north	mirrored	sun/cloud +14
11 Oct		Dark-eyed Junco	Fifth Avenue Place	west	mirrored	sun/cloud +14
11 Oct		Dark-eyed Junco	Fifth Avenue Place	west	mirrored	
11 Oct		Eastern Kingbird	Fifth Avenue Place	west	mirrored	
11 Oct		Rock Dove	Fifth Avenue Place	roof	mirrored	
11 Oct		Rock Dove	Fifth Avenue Place	roof	mirrored	
11 Oct		Chipping Sparrow	Fifth Avenue Place	roof	mirrored	
11 Oct		Chipping Sparrow	Fifth Avenue Place	roof	mirrored	
11 Oct		Black-capped Chickadee	Fifth Avenue Place	roof	mirrored	
11 Oct		White-breasted Nuthatch	Fifth Avenue Place	roof	mirrored	
11 Oct		Varied Thrush	Fifth Avenue Place	roof	mirrored	
15 Oct	1030	Downy Woodpecker	Western Canadian Place	north	mirrored	sun/cloud +14
15 Oct		Dark-eyed Junco	Fifth Avenue Place	west	mirrored	sun/cloud +14
15 Oct		Red-breasted Nuthatch	Fifth Avenue Place	west	mirrored	
16 Oct	1030	Pine Siskin	Fifth Avenue Place	east	mirrored	cloud/snow +8
17 Oct		Townsend's Solitaire	520 Fifth Avenue	north		cloud +2
23 Oct		Townsend's Solitaire	Fifth Avenue Place	north	mirrored	cloud +8
28 Oct		Cedar Waxwing	Fifth Avenue Place	north	mirrored	cloud/snow +2
29 Oct	0930	Varied Thrush	Western Canadian Place	east	mirrored	sun 0
31 Oct	1400	Common Redpoll	Encor Place	north	mirrored	sun 0
11 Nov	1600	Rock Dove	Altus Centre	east		cloud/snow -20



Weather Conditions at Inglewood Bird Sanctuary - 1996 Fall Migration

Date	Nets Opened				Midpoint				Nets Closed			
	Temp deg C	Wind		Sky	Temp deg C	Wind		Sky	Temp deg C	Wind		Sky
		Beaufort	Direction			Beaufort	Direction			Beaufort	Direction	
31 Jul	15	5	N	1	19.6	5	N	0	24.5	2		0
1 Aug	10	2		0	19.6	1		0		2		0
2 Aug	12	0		0	19	0		0	24	0		1
3 Aug				8								
4 Aug	8	3	W	2	18	2	W	0	20	2	W	1
5 Aug	7	0		5	10	2	W	2	14	0		1
6 Aug	11	0		2	18	0		0	21	0		0
7 Aug	9	0		0	15	0		0	19	1	SE	0
8 Aug	9	0		0	18	0		0	21	2		0
9 Aug	12	0		0	20	0		0	27	0		0
10 Aug	12	0		2	17	0		2	25	0		2
11 Aug	14	0			19				24			
12 Aug	15	1	W	0	18	1	W	0	23	1	W	0
13 Aug	10	0		0	22	2	W	1	30	1	W	0
14 Aug	10	0		0	15	0		0	24	0		0
15 Aug	14	0		0	19	0		0	26	2	S	0
16 Aug	12	0		0	16	1	SSW	0	22	2	SSW	1
17 Aug	11	1	SW	0	16	2	SW	0	23	1	SW	0
18 Aug	7	0		0	12	0		0	23	0		0
19 Aug	5	0		0	13	0		1	18	1	SW	1
20 Aug	10	1	SW	1	14	1	SW	1	23	1	SW	0
21 Aug	6	0		0	16	1		0	19	1		0
22 Aug	7	0		0	19	1	E	0	21	0		0
23 Aug	9.4	0		0	22	0		0	25	2	W	0
24 Aug	15.5	0		0	22	0		0	26	S3	S	0
25 Aug	10	0		0	20	1		0	28	0		0
26 Aug	9	0		0	18.6	2	W	0	29	0		0
27 Aug	13	0		0	20	0		0	26	0		0
28 Aug	12	0		4	20	0		4	28	2	S	0
29 Aug	12	0		0	19	0		0	27	3	W	1
30 Aug	16	0		0	21	2	W	0	26	2	SW	0
31 Aug	11	0		0	16.5	2	SW	1	23.5	4	W	1

Weather Conditions at Inglewood Bird Sanctuary - 1996 Fall Migration

Date	Nets Opened				Midpoint				Nets Closed			
	Temp deg C	Wind		Sky	Temp deg C	Wind		Sky	Temp deg C	Wind		Sky
		Beaufort	Direction			Beaufort	Direction			Beaufort	Direction	
1 Sep	8	0		0	15.5	5	W	0	22.5	3	W	2
2 Sep	9.5	0		2	14.5	1		2	22	2	SW	1
3 Sep	7	1	NW	5	10	1	W	8				
4 Sep	4	3	NE	2	7.5	1		5	5	1		2
5 Sep	6	1	NW	2	11	1	NW	2	15	1	NW	2
6 Sep	1	0		0	6	0		0	12	1	W	1
7 Sep	4	0		1	13.5	0		1	15	2		2
8 Sep	5.5	0		0	13	1		2	18	0		1
9 Sep	7	0		1	11	1		2	15.5	1		2
10 Sep	7	0		0	15	3	SE	0	18	4	SE	0
11 Sep	4.5	0		0	15	3	SE	0	24	5	SE	0
12 Sep	6	0		0					28	3	SE	0
13 Sep	9	0		0					23	0		1
14 Sep	11	0		0	15	0		1	23	0		1
15 Sep	4	0		1	9	0		1	14	2	NW	2
16 Sep	10	4	SW	2	11	4	SW	2	16	2	W	2
17 Sep				8								
18 Sep	9	2	W	2					9	0		5
19 Sep				8								
20 Sep	4	1	N	2	10	3	NW	2	9	3	NW	2
21 Sep	0	0		4	7	2		1	13.5	1		1
22 Sep	3	3	NW	5	2.5	4	NW	7	4.5	4	NW	8
23 Sep	0	0		0	2	0		0	5	0		0
24 Sep	1	0		0	5.5	2	W	0	12.5	2	W	0
25 Sep	5	2	WNW	2	4	2	WNW	1	4	3	WNW	2
26 Sep	0	0		0	3	0		2	5	0		2
27 Sep	8	0		0	12	0		0	18	0		0
28 Sep	6.5	2	NE	4	6.5	1	NE	5	7	1	NE	2
29 Sep	7	3	S	2	8.5	6	NW	1	9.5	6	NW	2
30 Sep	2.5	2	E	2	1.5	2	E	7	1.5	2	E	7
1 Oct				7								
2 Oct	-1	0		2					-4	2	SE	2
3 Oct	6.5	0		0					16	2	NW	0
4 Oct	8.5								20.5			
5 Oct	8.5	0	0	2	14	2	W	0				
6 Oct	7.5			2	13.5	2	SE	2	13			5
7 Oct	5			0	20	3	S	0				
8 Oct	4.5			0					17.5	2	E	0
9 Oct	1			0					19.5	2	S	0
10 Oct	5			1					22.5	3	NW	0
11 Oct	3.5			0	17	1	W	2				
12 Oct	4.5	0		2	11.5	0		1		3		1



**CALGARY BIRD BANDING SOCIETY
1996 MEMBER LIST**

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