CALGARY BIRD BANDING SOCIETY

2010 ANNUAL TECHNICAL REPORT

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Custodire aves
Keep watch on birds

Calgary Bird Banding Society Code of Ethics

1. **Members are jointly responsible for the safety and welfare of the birds they capture and study. Stress, injuries and mortalities must be minimized. The following guidelines must be adhered to:**
    - handle each bird carefully, gently, quietly, and with respect
    - capture only as many birds as you can safely process
    - close traps or nets when predators in the area result in unacceptable risk to bird safety
    - do not open nets in inclement weather
    - assess the condition of nets frequently and repair or replace them quickly
    - members must be properly trained and supervised
    - check nets at least every 30 minutes
    - close and properly furl all nets at the end of each banding day
    - do not double bag birds
    - use the correct band size and banding pliers for each bird
    - treat all bird injuries in the most humane way

2. **Members must continually assess their own work to ensure that the highest standards possible are maintained. The following guidelines must be adhered to:**
    - reassess methods and your approach whenever an injury or mortality occurs
    - accept constructive and positive criticism from peers

3. **Members must offer honest and constructive assessment of other member's work to help develop and maintain the highest standards possible. The following guidelines must be adhered to:**
    - provide criticism to other members in a constructive and positive manner
    - inform members and others of innovations and improvements in capture, handling and banding techniques
    - report any mistreatment of birds or improper conduct by a member to the BIC and/or a member of the CBBS executive

Inglewood Bird Sanctuary

(Photo by Pat Mitchell)

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Cypress Hills Interprovincial Park

(Photo by Greg Holmes)

EXECUTIVE SUMMARY

The Calgary Bird Banding Society (CBBS) was incorporated in March 1995. The primary objective of CBBS is to conduct migration monitoring and other banding-based studies at Inglewood Bird Sanctuary (IBS), a federal Migratory Bird Sanctuary. IBS has long been known as an important migration site for Neotropical migrants. Located within 80-km of the Rocky Mountains in southwestern Alberta, the site is a unique component of the Canadian Migration Monitoring Network.

During 2010, in addition to membership dues and member donations CBBS received support from the Alberta Gaming and Liquor Commission, a Community Spirit Grant, the Suncor Volunteer Grant Fund and the Baillie Birdathon.

Spring migration monitoring was undertaken at IBS for the 9th consecutive year since 2002. The 2010 fall program marks the 16th year of migration monitoring and follows pilot programs in 1992 and 1994 and full fall programs in 1995 through 2009. Mist-nets were operated on 32 of the 37 days between 1 May and 6 June (2240 net-hrs) and 68 of the 72 days between 28 July and 7 October (4682 net-hrs). Total new bandings of 573 and 1949 were achieved for the spring and fall programs, respectively. An Eastern Kingbird (at least 10-years old) was recaptured. A White-throated Sparrow banded in 1995 was recaptured in 2010 for the first time setting a new North American longevity record.

The IBS Monitoring Avian Productivity and Survival (MAPS) site was operated again in 2010, the 18th replicate since 1992. An analysis of IBS MAPS results through 2008 was undertaken in 2009 (Smith et al. 2009 – see body of this report and website).

MoSi and migration monitoring were discontinued during 2010 at Las Caletas, Costa Rica on the Osa Peninsula along the Pacific coast.

2010 marked the 6th year of full Northern Saw-whet Owl migration monitoring at a site in the foothills southwest of Calgary. A total of 94 Northern Saw-whet Owls were captured and banded on 33 evenings between 15 September and 31 October. Only 29% were HY suggesting poor recruitment and 55% were female. New owls per net-hour since inception are 0.25, 0.29, 0.27, 0.23, 0.21 and 0.14 in 2004, 2005, 2006, 2007, 2008 and 2010 respectively. An owl banded as HY-F at Millet, AB on 10 October 2010 was captured on 22 October 2010 having travelled 256-km SSW (196°) in 9 days.

Pilot migration monitoring (2 sites), MAPS (3 sites) and Northern Saw-whet Owl monitoring (2 sites) was initiated in 2010 at Cypress Hills Interprovincial Park. Mist-nets were operated on 29 of the 41 days between 1 May and 10 June (1907 net-hrs) and 68 of the 80 days between 29 July and 16 October (3377 net-hrs). Total new bandings of 839 and 1390 were achieved for the spring and fall programs, respectively. Three MAPS stations were established but greater than normal rainfall in June and missing the last MAPS period resulted in suboptimal results. However all three sites had encouragingly high capture rates of adults. A total of 94 Northern Saw-whet Owls and one Long-eared Owl were captured and banded on 39 evenings between

15 September and 31 October. Capture rates were relatively low averaging 7 NSWOs/100 net-hours.

Trend analysis was undertaken by Bird Studies Canada (Tara Crewe) on all species occurring as migrants at IBS and captured in sufficient quantity to allow analysis. During fall migration from 1995-2010 four species appear to have a significant positive trend and 7 species a significant negative trend. During fall migration from 2000-2010 two species appear to have a significant positive trend and 3 species a significant negative trend. During spring migration from 2002-2010 no species evidenced a significant positive or negative trend.

Banders-in-Charge and volunteers contributed 614 person-days or approximately 4912 hours to CBBS projects during 2010.

The number of mortalities during 2010 CBBS banding projects was relatively high at 0.41% primarily due to predation while the injury rate in 2010 was the lowest ever at 0.56%.

Lincoln's Sparrow – Cypress Hills Interprovincial Park

(Photo by Marcel Gahbauer)

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;
- Promote involvement and expertise in bird banding; and
- Promote conservation of Neotropical migratory birds by fostering public awareness and understanding of Neotropical migratory birds.

Although the primary project of the CBBS is monitoring of migratory birds at Inglewood Bird Sanctuary (IBS) in Calgary, other complementary projects have also been undertaken:

- a Monitoring Avian Productivity and Survivorship (MAPS) station was established at IBS in 1992 and continued in 1993 and 1995-2004 and 2006-2010;
- spring banding was initiated in 1997 at Dunbow Road approximately 22-km SSE of the City of Calgary and continued in 1998 and 1999;
- spring and fall banding/migration monitoring was initiated at the Cominco Natural Area in 2000 with spring banding continued in 2001;
- colour-banding and relocation of Red-tailed and Swainson's Hawks at Calgary International Airport was initiated in cooperation with the Calgary Airport Authority in 2000 and continued through 2004;
- pilot spring migration monitoring was initiated at Las Caletas on the Osa Peninsula, Costa Rica in 2002, continued in 2003 and full migration monitoring initiated in 2004 and continued in 2005, 2007 and 2008;
- pilot spring migration monitoring, MAPS (3 sites) and Northern Saw-whet Owl migration monitoring (2 sites) was initiated in 2010 at Cypress Hills Interprovincial Park (CHIP);
- pilot Monitereo de Sobrevivercia Invernal (MoSI) was undertaken in Costa Rica both at Las Caletas and another site on Isla Violin in 2006 and continued at Las Caletas 2007-2008;
- a pilot Northern Saw-whet Owl migration monitoring pilot program was carried out at Inglewood Bird Sanctuary in 2000;
- pilot Northern Saw-whet Owl migration monitoring was carried out in 2003 and full migration monitoring was initiated in 2004 and has continued through 2010 at the De Wit ranch in the foothills southwest of Calgary;
- pilot MAPS was undertaken at Dinosaur Provincial Park (DPP) in 2006; and
- pilot spring migration monitoring was undertaken at DPP in 2007.

As of 1998 the Calgary Bird Banding Society's Inglewood Bird Sanctuary site is a fully designated member of the Canadian Migration Monitoring Network (CMMN) a cooperative initiative of the member stations, Canadian Wildlife Service and Bird Studies Canada. This formal association of migrant monitoring sites across Canada significantly enhances the value of the work conducted at each site. The Calgary Bird Banding Society and Inglewood Bird Sanctuary hosted the 2003 CMMN national meeting and the initial face-to-face meeting of the CMMN Steering Committee in November 2006 as well as sending delegates to all other biennial national meetings..

Canadian Migration Monitoring Network (CMMN)

CMMN Stations

1, Rocky Point
2, Teslin Lake
3, Mackenzie
4, Vaseaux Lake
5, Inglewood
6, Lesser Slave Lake
7, Beaverhill
8, Last Mountain
9, Delta Marsh
10, Thunder Cape
11, Whitefish Point
12, Bruce Peninsula
13, Pelee Island
14, Long Point
15, Haldimand
16, Tommy Thompson Park
17, Prince Edward Point
18, Innis Point
19, McGill
20, Tadoussac
21, St. Andrew's
22, Atlantic
23, Brier Island
24, Point Lepreau
25, Gros Morne

FUNDING AND ACKNOWLEDGEMENTS

Funding sources other than membership dues and member donations during 2010:

- funds raised by the CBBS through participation in the Baillie Birdathon;
- proceeds from Alberta Gaming and Liquor Commission arising from CBBS sponsored casinos;
- a Community Spirit Grant; and
- a grant from the Suncor Volunteer Grant Program.

Funds were used to provide a per diem to Banders-in-Charge (BICs), purchase mist-nets, produce the Annual Technical Report, fund the pilot program at CHIP, assess a potential new site in Costa Rica and cover migration monitoring miscellaneous costs (field data sheets, batteries, film and processing, storage etc.).

Thanks to West Canadian Digital Imaging Inc. for generous sharing of conference room facilities for CBBS Board meetings and Introduction to Banding seminars.

Sincere appreciation goes out to all CBBS members who have helped make 2010 successful for CBBS. In addition, many non-members have helped immensely by volunteering at our casino, participating in the Baillie Birdathon and providing expertise such as carpentry and electrical.

White-crowned Sparrow – Cypress Hills Interprovincial Park

(Photo by Marcel Gahbauer)

PROGRAMS AT INGLEWOOD BIRD SANCTUARY

Migration Monitoring

Background

Neotropical migrants are birds that breed in the Nearctic biogeographic realm and winter in the Neotropics. The Neotropical migratory bird system involves some 5-10 billion birds of over 150 species (Greenberg 1992). Trends in data from the Breeding Bird Survey indicate that populations of many Neotropical migrants in North America may be decreasing. Although destruction of tropical forests on the wintering grounds has been implicated in declines, increasing concern is being raised about the potential effect of accelerated land-use changes on breeding grounds.

Inglewood Bird Sanctuary (IBS) is a federal Migratory Bird Sanctuary and is an important site for migrating passerines. IBS is strategically located within 80-km of the Rocky Mountains (Figure 1) and is a unique and valuable member of the Canadian Migration Monitoring Network. IBS is located within Calgary which greatly facilitates member involvement. Pilot monitoring, covering only a portion of the fall migration, was undertaken in 1992 and 1994. Full spring and fall migration monitoring have occurred since 2002 and 1995, respectively, and 2010 marks the Calgary Bird Banding Society's 16th anniversary. Monitoring songbird population change based on fall mist-netting has been shown to be an effective technique (Dunn *et al*. 1997).

Methods and Study Site

Spring and fall migration of Neotropical migrants were monitored in 2010 at Inglewood Bird Sanctuary (IBS). IBS's 35 hectares includes mature riverine balsam poplar forest known for its number and diversity of songbirds during spring and fall migration (Sherrington 1975; Elphinstone 1990). 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 (e.g. age, sex, wing chord, weight, fat reserves, capture net, time of capture) from each bird captured was carried out each day, weather permitting, during spring and fall migration. Twelve 12-m long x 2.6-m high x 30-mm mesh mist-nets were operated in permanent net lanes for approximately 6 hours each day beginning at sunrise.

The migration monitoring protocol used at IBS was developed from procedures outlined in McCracken et al. (1993) (*A Manual for Monitoring Bird Migration*), Hagan et al. (1994) (*Recommended Methods for Monitoring Bird Migration*) and Hussell and Ralph (1996) (*Recommended Methods for Monitoring Bird Populations by Counting and Capture of Migrants*). Net locations and the daily census route are shown on Figure 2.

Schedule and Coverage

Spring

Spring migration monitoring at IBS was conducted from 1 May to 6 June 2010. This was the 9th year of full spring migration monitoring at IBS. Mist-netting occurred on 32 of the 37 target days (86% coverage) for a total of 2240 net-hours (Table 1a, Figure 3a). Inclement weather resulted in 5 days of the monitoring period without banding. Three other days had a reduced number of net-hours from the daily target of approximately 72.

Fall

Fall migration monitoring at IBS was conducted from 28 July to 7 October 2010. In addition to standardized constant-effort mist-netting, observations of other birds present in the reserve were noted. Mist-netting occurred on 68 of the 72 target days (94% coverage) for a total of 4682 net-hours (Table 1b, Figure 3b). Inclement weather (3 days) and no volunteer (1 day) resulted in 4 days of the monitoring period without banding. In addition there were 10 days with a reduced number of net-hours from the daily target of approximately 72.

New Bandings

Spring

A total of 573 new bands were placed on birds of 41 species (Table 2a, Appendix 1a). At least 30, 40 and 50 new bandings occurred on 7, 4, and 2 days respectively (Figure 3a). New banding totals by species at IBS are presented in Table 2a.

The 20 most frequently banded species over all years, and during 2010, are identified in Appendix 2. The top five in 2010 in descending order were Swainson's Thrush, Cedar Waxwing, Clay-colored Sparrow, Lincoln's Sparrow and Yellow Warbler. Yellow-rumped Warbler, Swainson's Thrush, Lincoln's Sparrow, American Robin, and Clay-colored Sparrow are the top five species since 2002.

Fall

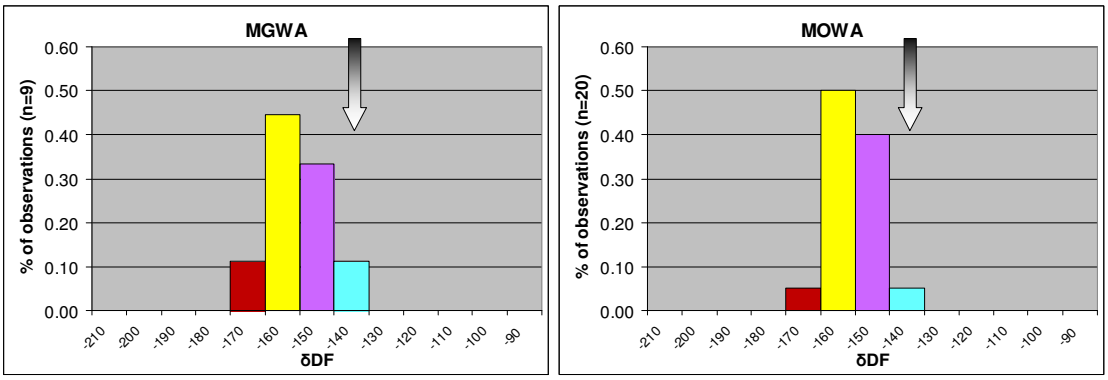
A total of 1949 new bands were placed on birds of 60 species (Table 2b, Appendix 1b). At least 60, 80 and 100 new bandings occurred on 8, 3 and 2 days, respectively (Figure 3b). Approximately 39% of new bandings occurred in August and 57% in September. The level of new bandings that occur in August versus September at IBS varies from year to year. For example during 2006 new bandings were equally weighted between August and September (44% in each month) compared to the heavy weighting in August in 2009 and the heavy weighting in September this year. New bandings at IBS from 1992-2008 are presented in Table 2b.

The 20 most frequently banded species over all years, and during 2010, are identified in Appendix 2. The top five during fall 2010 in descending order were Orange-crowned warbler, Wilson's Warbler, Yellow-rumped Warbler, Yellow Warbler and Cedar Waxwing. Yellow-rumped Warbler, Wilson's Warbler, Orange-crowned Warbler, Yellow Warbler and Cedar Waxwing are the top five species since 1995.

Insight from Mist-netting

Mist-netting can substantially add to understanding the avifauna at a site particularly in detection of rare or elusive species. A Connecticut Warbler during spring was a first banding at IBS of a species rarely observed.

The *Oporornis* warblers are often difficult to detect and identify with binoculars. During 2007 migration monitoring at IBS, four Connecticut Warblers, six Mourning Warblers and three MacGillivray's Warblers were banded. Although the expectation might be that Mourning Warblers banded at IBS might be from areas farther north than MacGillivray's Warblers, stable isotope analysis of rectrices collected at IBS in 2003, 2004 and 2008 suggests similar geographic origins. IBS is in an area of hybridization of these species (Hall 1979) and the similarity of their apparent origin may be an artifact of the difficulty in speciating hybrids.



Origin of MacGillivray's (MGWA) and Mourning (MOWA) Warbler feather samples obtained at IBS in 2003, 2004 and 2008. More negative δDF values indicate a more northerly origin. The arrow points to the expected value of feather material obtained at IBS.

Other areas of research have involved, or have the potential to involve, data from IBS. Banding data were provided to Erica Dunn of CWS as part of a cooperative study on mass gain among migrating songbirds at Canadian stopover sites. Her analysis (Dunn 2002) provided insight that IBS appears to be an important refueling stop for Neotropical migrants. A copy of her paper appeared in Appendix 4 of the 2003 ATR and is available on the CBBS website.

Stable Isotope Ecology

Stable isotope ecology, through identifying the geographic origin of birds captured, offers the possibility of confirming the hypothesis that CMMN sites, including IBS, monitor birds from a wide area north-west of their respective locations. Preliminary results involving 1999 samples from Delta Marsh Bird Observatory and Atlantic Bird Observatory indeed indicated that CMMN stations are capturing birds from a broad area, not simply from a small region close to the station. To investigate the origin of birds captured at IBS during the fall migration, feather samples were collected from 54 resident and migrant birds of six species during 2003. A total of 919 feather samples were collected from 28 species at IBS during 2004 while an additional 1028 were collected from 33 species in 2008. The majority of these samples have been analyzed and interpretation is underway in an effort to characterize the breeding and/or natal geographic areas of origin for species monitored at IBS.

Recaptures

Recaptures at IBS during migration monitoring totaled 721 of at least 513 different birds of 41 species (see table on following page). Recapture rates were highest in two resident species, House Wren and Yellow Warbler and two migrants, Orange-crowned Warbler and Wilson's Warbler. Migrants with high recapture rates may be using IBS for moulting or extended "re-fuelling".

Forty-nine (49) birds banded at IBS in previous years were recaptured in 2010. Year-to-year recaptures from 1992-2010 are presented in Appendix 3. Most year-to-year recaptures occur in the year following banding. However in a few cases birds are recaptured in several subsequent years and occasionally re-appear a number of years after banding. For example an Eastern Kinbird banded in 2001 was recaptured in 2010 after not being detected in 2009 and a White-throated Sparrow banded in 1995 was recaptured in 2010 for the first time setting a new North American longevity record.

Gray Catbird – Cypress Hills Interprovincial Park

(Photo by Marcel Gahbauer)

Individuals Recaptured at Inglewood Bird Sanctuary during Spring and Fall MM 2010					
Species	**Recap**	**Banded**	**Species**	**Recap**	**Banded**
Belted Kingfisher	3	7	Magnolia Warbler	4	3
Downy Woodpecker	18	19	Yellow-rumped Warbler	21	232
Hairy Woodpecker	1	1	Townsend's Warbler	1	3
Traill's Flycatcher	14	67	Blackpoll Warbler	8	22
Least Flycatcher	19	60	Black-and-white Warbler	2	1
Eastern Kingbird	3	5	American Redstart	6	22
Warbling Vireo	14	23	Ovenbird	12	18
Tree Swallow	10	19	Northern Waterthrush	32	47
Northern Rough-winged Swallow	1	6	MacGillivray's Warbler	2	5
Black-capped Chickadee	31	10	Common Yellowthroat	19	30
White-breasted Nuthatch	4	4	Wilson's Warbler	80	342
House Wren	87	88	Chipping Sparrow	7	86
Townsend's Solitaire	1	1	Clay-colored Sparrow	17	66
Swainson's Thrush	19	117	Savannah Sparrow	2	3
Hermit Thrush	1	9	Song Sparrow	12	22
American Robin	18	53	Lincoln's Sparrow	30	81
Gray Catbird	18	21	White-throated Sparrow	10	33
Cedar Waxwing	31	183	White-crowned Sparrow	8	32
Tennessee Warbler	16	59	Brown-headed Cowbird	3	9
Orange-crowned Warbler	68	417	Baltimore Oriole	2	3
Yellow Warbler	66	198			

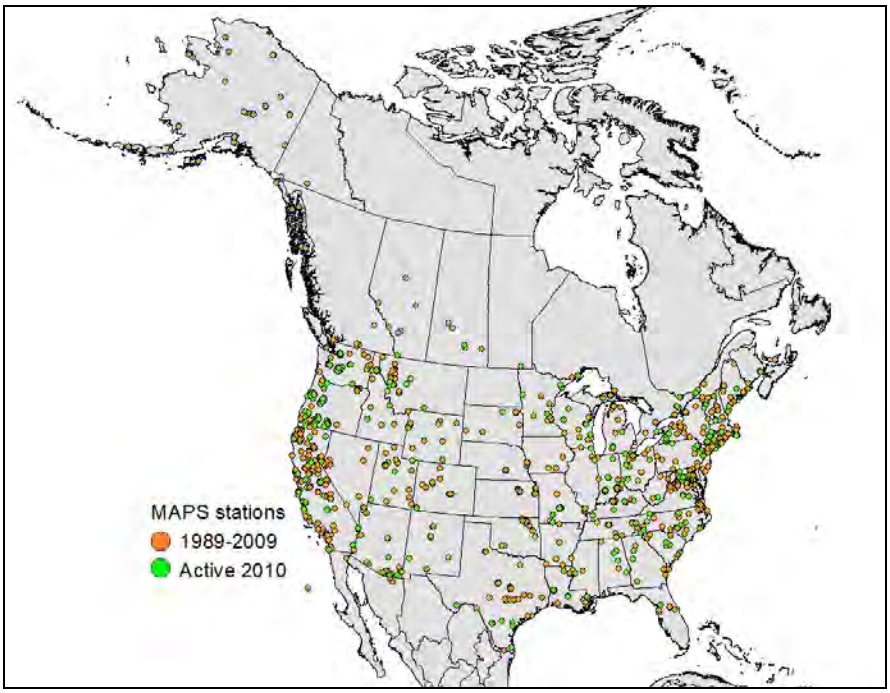
Hammond's Flycatcher - Inglewood Bird Sanctuary

(Photo by Doug Collister)

Monitoring Avian Productivity and Survivorship (MAPS)

Background

The Monitoring Avian Productivity and Survivorship (MAPS) Program is a cooperative effort among public agencies, private organizations, and bird banders of North America. It provides long-term data on population and demographic parameters for target landbird species throughout the continent. The 2010 field season was MAPS 22nd year of North American operation.



MAPS utilizes standardized, constant-effort mist-netting 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.

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

Dusky Flycatcher	Yellow Warbler;
Western Flycatcher complex	MacGillivray's Warbler;
Swainson's Thrush	Wilson's Warbler;
American Robin	Song Sparrow;
Warbling Vireo	Lincoln's Sparrow;
Orange-crowned Warbler	"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. IBS MAPS data is provided to the Institute for Bird Populations in Point Reyes, CA where it is integrated with data from more than 500 other North American stations.

Objectives

The overall objective of the MAPS Program is to contribute to an integrated avian population monitoring system for selected North American landbirds. The indices and estimates obtained:

- 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 during the breeding season. The breeding season is considered to extend from May through mid-August and is divided into 10 ten-day periods. Mist-netting commences the first ten-day period during which the majority of breeding adults of the target species have established territories and migrant individuals of these species are no longer passing through the area. Ten 12-m long x 2.6-m high x 30-mm mesh mist-nets were operated for 6 hours from sunrise on one day in each of the ten-day periods. The operation of the mist-nests must continue for a minimum of three periods in the adult "super-period" and two periods in the young "super-period". At IBS, MAPS initiates during period 4 (31 May - 9 June) and coverage entails the last 7 of the 10 ten-day periods. In recent years period 10 has been operated during fall migration monitoring. During 2003 period 9 was also operated during fall migration monitoring.

An additional requirement is to record the type and distribution of vegetation present at the MAPS station. Because changes in the vegetation at a station can cause changes in breeding populations and demographic parameters, the habitat is assessed every 5 years. CBBS conducted an initial habitat assessment in 2001 and another in 2007.

Schedule and Coverage

2010 marked the 18th year of the MAPS Program at IBS since 1992. A shortage of qualified personnel precluded gathering data in 1994. Record rainfall and flooding in 2005 limited effort to 121 net-hours, all during the first two periods and precluded further access to the site until late July. Although MAPS during period 4 is no longer required at stations at the latitude of IBS we have continued with it in most years out of tradition.

Results

The number of each species banded, by date, during 2010 are summarized in Table 3. The number of each species that was banded is presented in Table 4 and Figure 4 for 2010 as well as the 17 previous years. Note that 7 of the 10 MAPS nets are also MM nets and therefore many new bandings are both MM and MAPS birds and included in tables and appendices in this report for both projects. New MAPS bandings totaled 124 individuals of 25 species. Year-to-year recaptures are an important part of MAPS. In 2010 there were a total of 44 recaptures many of which were birds banded in previous years (see Appendix 3).

Discussion

Lack of regeneration of balsam poplar is an ongoing issue at IBS. The heavy flooding that occurred during 2005 stimulated some poplar seedling recruitment and may have helped to alleviate this problem. The habitat assessment scheduled for 2012 should identify if regeneration is occurring.

An analysis of IBS MAPS results through 2008 was undertaken in 2009 (Smith et al. 2009 – see website). The objective of the analysis was to detect and compare trends in populations, productivity and survival of target species.

A total of 1642 captures of 52 species were recorded at IBS between 1992 and 2008. There were 1048 new bandings of adult birds. Newly banded birds comprised 64% of the total captures. The most abundant species, with overall capture rates greater than 4.0 adults/600 net-hours were, in descending order: American Robin, Yellow Warbler, Cedar Waxwing, House Wren, Gray Catbird, Warbling Vireo, Baltimore Oriole and Least Flycatcher. Total species richness was 48 species, while the mean number of adults captured was 114 per 600 net-hours, and the mean reproductive index was 0.55 young per adult over the entire period.

Populations of adult birds of nine species pooled indicated a nearly-substantial, highly fluctuating but not significant increasing population trend. All nine species showed substantially fluctuating trends (SE of the slope $\geq$ 0.021). Adult populations of three (Warbling Vireo, Black-capped Chickadee and Least Flycatcher) of nine target species showed substantially declining trends, which was offset by substantially increasing trends in three (House Wren, American Robin and Gray Catbird) other species.

Short-term (same 1992-2008 period as IBS operation) population trends of the same nine target species, taken from Breeding Bird Survey (BBS) routes in Alberta, were compared to the IBS results. Two (Least Flycatcher and Warbling Vireo) of the three species showing declining populations at IBS also showed declines on the BBS routes, while the trend for Black-capped Chickadee was opposite, with the BBS showing an increasing trend. Two (House Wren and Gray Catbird) of the three species showing increasing populations at IBS also showed an increase on the BBS routes, while one species (American Robin) had an opposite trend, although the BBS decline was insignificant. Cedar Waxwing, Yellow Warbler and Baltimore Oriole all showed no trends at IBS, but declining trends (-11.03, -1.79 and -6.27, respectively) on BBS routes.

Productivity trends were assessed for nine species. Only American Robin showed a substantially declining trend ($r \leq -0.3$), but it was not significant ($P > 0.05$). Both Black-capped Chickadee and House Wren showed substantially increasing trends ($r \geq 0.3$), but the former was significant and the latter was not significant. Populations of Gray Catbird, Cedar Waxwing, Yellow Warbler and Baltimore Oriole showed non-substantial (absolute $r < 0.3$) and substantially fluctuating (SE of the slope $\geq$ 0.021) trends, while Least Flycatcher and Warbling Vireo trends were not substantially fluctuating. Overall, only one of the nine species showed a negative trend, two showed positive trends, and six trends were flat. The 17-year trend of all species pooled represented an average annual substantial ($r = 0.368$) fluctuating increase in productivity of 0.022 (SE = 0.016) per year.

Estimates of annual adult survival rate ranged from a low of 0.320 for Baltimore Oriole to a high of 0.781 for Black-capped Chickadee, with a mean of 0.553. Estimated annual survival for Yellow Warbler (0.349) was below the mean, while estimates for Least Flycatcher (0.612) and American Robin (0.703) were above the mean. The estimates for survival probability for Least Flycatcher and Baltimore Oriole should be viewed with caution because they are based on fewer than five between-year recaptures or the estimate is very imprecise ($SE(\varphi) \geq 0.200$ or $CV(\varphi) \geq 50\%$).

The estimated mean survival rate for adults at IBS (0.553) appears to be similar compared with values for the Northwest MAPS region (1992-2003; see http://www.birdpop.org/nbii/surv/default.asp), but 8.6% higher than that of the North-central Region (0.467). Three species showed substantially higher (>10%) values for IBS than in the North-central Region (Least Flycatcher, Black-capped Chickadee and American Robin), while only the latter two showed substantially higher values for IBS than in the Northwest Region. Yellow Warbler and Baltimore Oriole showed substantially lower (<10%) survival at IBS than in the North-central Region, while Yellow Warbler and Least Flycatcher showed lower survival values for IBS than in the Northwest Region.

Recapture probability varied from a low of 0.033 for American Robin to a high of 0.415 for Yellow Warbler, with a mean of 0.167. Recapture probability for Least Flycatcher (0.073) and

Baltimore Oriole (0.137) were below the mean, while the estimate for Black-capped Chickadee (0.175) was above the mean. There were many fewer between-year recaptures at IBS than would be expected for a data set including this many years of operation. Because of the lack of between-year recaptures there were only seven species for which we could attempt survival analysis, and for two of these (House Wren and Gray Catbird) program MARK could not produce estimates. Once at the site, the birds are remaining for entire breeding season as demonstrated by large numbers of within-year recaptures. However, birds are not recaptured in subsequent seasons. We are not sure why this is the case, because the habitat appears to be of good quality. The use of MAPS net locations during spring migration probably has some effect on what is captured during the MAPS season (i.e. net avoidance). Further seasons of data or correlation of these data to weather or habitat variables may answer this question.

Of three substantially decreasing species at IBS, two (Least Flycatcher and Warbling Vireo) had a slightly lower population trend, while one (Black-capped Chickadee) had a slightly higher trend than that for the two MAPS regions; productivity was variable but showing a stable or increasing trend; and survival rate was higher for two species (Least Flycatcher and Black-capped Chickadee) and unavailable for comparison for Warbling Vireo. The evidence suggests that for Least Flycatcher and Warbling Vireo low productivity may be the driving factor of the decline, but that this could improve over time if the positive trend continues, while for Black-capped Chickadee the evidence suggests that both productivity and survival are increasing. Higher-than-expected productivity may also be driving the population trend for two (House Wren and American Robin) of the three significantly increasing species. Assessment is compromised by the unavailability of survival rates for three of the four species.

The 15 years of operation of the Inglewood Bird Sanctuary MAPS Station offers a unique opportunity to look at long-term trends. The two gaps in operation offered challenges for data analysis, though, as did the operation of migration monitoring nets in the same location. As a result we were only able to assess vital rates for eight target species. For some species, the general stability or increase in productivity would suggest that the habitat quality is improving because the adults that are present on the stations can produce more young per adult even as adult population levels are increasing. Looking at the age structure of the population may shed more light on this question. An adult population that is composed mostly of after-second year birds suggests that the habitat is of good quality because these birds "know" and can defend good territories. However, if the adult population is composed mostly of second year birds it suggests that after a single year of occupying a territory the birds are leaving Inglewood to find better habitat. After-second year birds are also assumed to be able to produce more young than inexperienced second year birds and a population high in after-second year birds would therefore have higher productivity.

NORTHERN SAW-WHET OWL MM NEAR BRAGG CREEK

Background

During 2003 a site in the foothills southwest of Calgary was identified as having potential for monitoring migrating Northern Saw-whet Owls (Figure 1). After disappointing results at Inglewood Bird Sanctuary in 2000, the CBBS was pleased to have another opportunity to initiate a Northern Saw-whet Owl migration monitoring program. Pilot monitoring was undertaken in 2003 from 7 October to 18 November with encouraging results. A full monitoring program was implemented in 2004 and has continued in each year since excluding 2009.

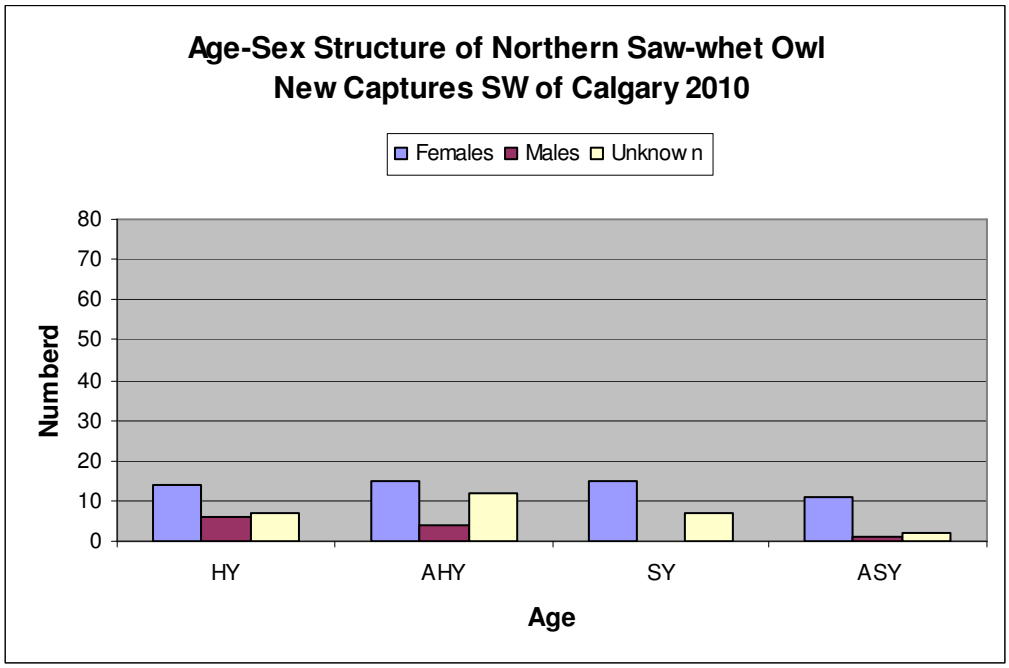
Methods

Monitoring began 15 September and continued through 29 October when the majority of Northern Saw-whet Owl movement occurs. A continuous recording of Northern Saw-whet Owl calls was played at 80% volume in a portable CD "boom box" from the center of an array (double H) of five 12-m long x 2.6-m high x 60-mm mesh mist-nets. The array was placed beneath a thick canopy of mature spruce trees. The area has been subject to cattle grazing and the understory and tree branches as high as a cow can rub are absent. Call playback commenced approximately 0.5-hrs after sunset and continued for 4-hrs, weather and other factors permitting. Nets were checked at least every 0.75-hrs by a Bander-in-Charge (BIC) and one or more volunteers. Sex, age and morphometric data were collected on all owls captured. Basic weather data (wind direction and speed, sky conditions and temperature) were noted at start and finish each evening.

Results

A total of 94 Northern Saw-whet Owls were captured and banded during 663 luring hours on 33 of 45 possible evenings between 15 September and 29 October (Figure 5). The 12 evenings when monitoring did not occur were due to access being denied by the landowner (N=12). Peak movement occurred between 27 September and 22 October although owls were captured as early as 15 September and as late as 28 October.

Of the 94 new Northern Saw-whet Owl bandings, HY, AHY, SY and ASY age birds comprised 29%, 33%, 23% and 15%, respectively (see histogram below). Females comprised 55% and males 11%, while 28% could not be sexed with confidence. The number of Northern Saw-whet Owls per net-hour since inception is **0.25, 0.29, 0.27, 0.23, 0.21 and 0.14** in 2004, 2005, 2006, 2007, 2008 and 2010 respectively. Monitoring did not occur in 2009. The low per net-hour in 2010 almost certainly reflects a poor breeding season as evidenced by the low numbers of HY birds encountered.



One owl that was originally banded in 2008 as an HY-F was recaptured (see Significant Re-encounters section). An owl banded as HY-F at Millet, AB on 13 October 2010 was captured on 22 October 2010 having travelled 256-km SSW (196°) in 9 days.

Discussion

This site, southwest of Calgary, has proven itself a good location for monitoring migration of Northern Saw-whet Owls. Monitoring sites for this species are well established in eastern North America but sparse in western North America (Figure 6). CBBS intends to continue a full monitoring program at this location. CBBS will continue to strive for full coverage during the monitoring period subject to restrictions by the landowner.

PROGRAMS AT CYPRESS HILLS INTERPROVINCIAL PARK

Cypress Hills Interprovincial Park is strategically located to compliment the array of migration monitoring member stations across Canada and has been the object of CBBS interest for a number of years. During 2010 CBBS decided to undertake, on a pilot basis, several bird monitoring programs within CHIP.

Migration Monitoring

Spring

Spring Migration at CHIP began on 1 May at the Rodeo Grounds location (Figure 7) for 20 mornings of coverage with 10 mornings lost to weather including 8 of the first 10. Up to 16 nets contributed a total of 1671 net hours and captured 404 new birds of 46 species and forms. The monitoring moved to the Elkwater Lake location (Figure 7) from 31 May – 10 June for 9 mornings of coverage with 2 mornings lost to weather. Five nets contributed an additional 236 net hours and captured 435 birds of 43 species. Capture rates at Elkwater Lake and Rodeo Grounds were 185 birds/100 net-hours and 28 birds/100 net-hours respectively (Table 5a, 6a Appendix 4a). A total of 191 birds were recaptured at the two stations combined. The ease of accessibility, bird numbers and habitat at Elkwater Lake make it more suitable for long-term migration monitoring. Above average snowfall early in the spring and heavy rainfall later in the season may have affected bird numbers. The Cypress Hills appear to be an important stopover location for species that typically move further east in the spring. This was evidenced by captures and observations of species such as Gray-cheeked Thrush, Magnolia, Bay-breasted, Blackburnian, and Canada Warbler. The lower elevations seem to be an important pre-dispersal location for birds breeding in the park like Dusky Flycatcher, "Audubon's" Warbler, White-crowned Sparrow and "Pink-sided" Junco.

Fall

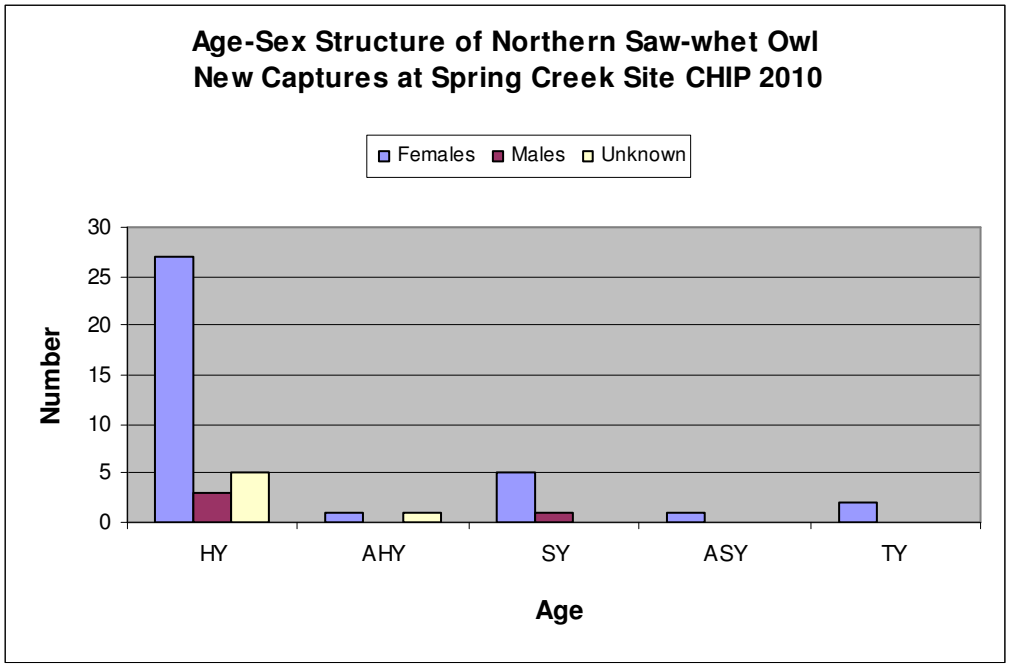
Fall migration monitoring began on 29 July and continued through 16 October at the Elkwater Lake site (Figure 7) for 68 days of coverage. A maximum of 11 nets resulted in 1390 birds of 64 species/forms being banded in 3377 net-hrs (Figure 8b Tables 5b, 6b Appendix 4b). A total of 317 birds were recaptured. Interesting to note is the low numbers during fall of many local breeding species which were sampled in the spring such as "Audubon's" Warbler and American Redstart. For example "Traill's" Flycatcher, one of the species banded in the highest numbers during fall, was not detected breeding in the park and all fall captures presumably represent migrants. Although wind was a problem late in the fall it is hoped that it will not significantly impact the results long-term.

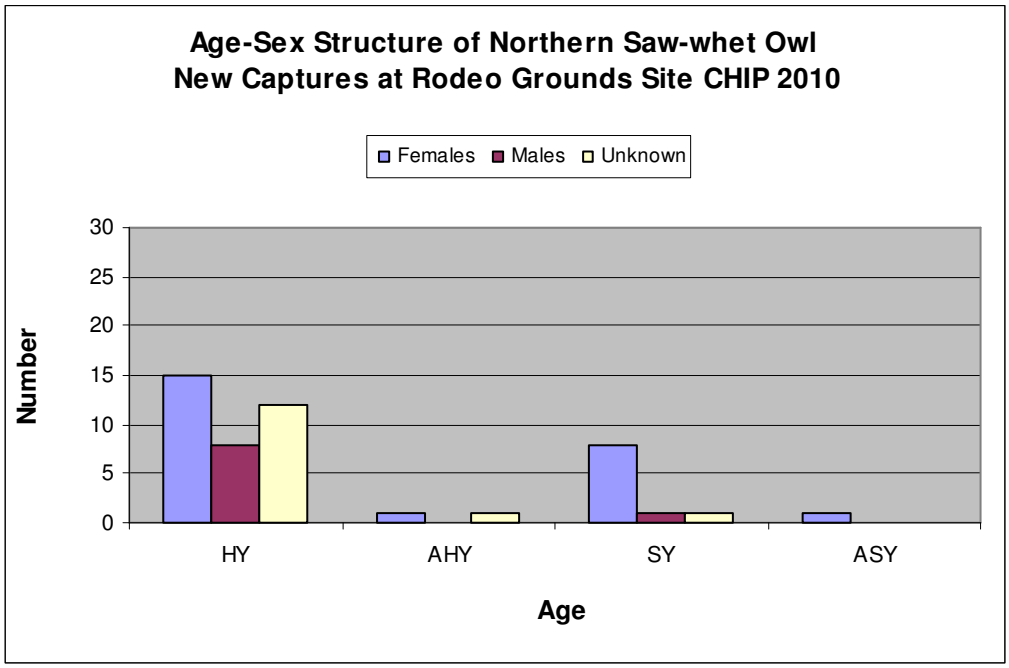
Monitoring Avian Productivity and Survivorship (MAPS)

Three locations along the north slope of the Cypress Hills were selected for MAPS with 7 – 8 nets being used at each site (Figure 7). The Rodeo Grounds and Old Baldy location were situated at approximately 1200-m. The Spruce Coulee site is at 1300-m with a similar habitat to Old Baldy but receives more moisture. Coverage on the MAPS project was affected by a greater than normal rainfall in late June which made the sites inaccessible. The resultant delayed breeding season exacerbated by missing the last period resulted in little data on productivity. Despite this, all three locations had encouragingly high levels of adult captures (Table 7).

Northern Saw-whet Owl Migration Monitoring

Northern Saw-whet Owl Monitoring was undertaken from 15 September and 20 September through 31 October at two sites, Spring Creek and Rodeo Grounds respectively. A total of 46 Northern Saw-whet Owls and 1 Long-eared Owl were captured in 5 nets and 564 net-hours at Spring Creek (8.2 NSWOs/100 net-hours) while a total of 48 Northern Saw-whet Owls were captured in 6 nets and 762 net-hours at Rodeo Grounds (6.3 NSWOs/100 net-hours). Percentage of HYs, AHYs, SYs and ASYs totaled 76, 4, 23, 2 and 73, 4, 21, 2 at Spring Creek and Rodeo Grounds respectively. Percentage of Fs, Ms, and Us totaled 78, 9, 13 and 52,19, 29 at Spring Creek and Rodeo Grounds respectively.





"Pink-sided" Junco – Cypress Hills Interprovincial Park

(Photo by Yousif Attia)

SIGNIFICANT RE-ENCOUNTERS

All recaptures of birds at CBBS study sites and banded prior to 2010 are indicated in Appendix 3. No recaptures of migrants evidencing stopover site fidelity were recorded. The choice of which recaptures to include below is somewhat arbitrary, although species for which there are many recaptures over the years (e.g. Yellow Warbler, House Wren) are not included unless inferred age is > 5 years. Other species that are recaptured infrequently and for which longevity data are be lacking may be included even if inferred age is < 5 years. The Northern Waterthrush is a rare foreign recapture of what would appear to be an Alberta breeder banded in Colorado during its southward migration in August 2009. The White-throated Sparrow, presumably a breeding bird in the vicinity of IBS, was banded in 1995 and not seen again until recaptured in 2010! It is the new age record for this species.

Northern Saw-whet Owl 924-45655 Banded as HY-F SW of Calgary on 30 September 2008. Recaptured at the same location on 14 October 2010. 2-years old.

… 924-69066 Banded as HY-F at Millet, AB by Hardy Pletz on 13 October 2010. Recaptured SW of Calgary on 22 October 2010. 256-km SSW (196^{o}).

… 1014-17541 Banded as ASY-F SW of Calgary on 4 October 2010. Recaptured near Lindbrook, AB by Bob Gehlert on 1 November 2010. 310-km NNE (23^{o}) in 28 days.

Eastern Kingbird 1791-21021 Banded as AHY-F at Inglewood Bird Sanctuary on 15 August 2001. Recaptured there in 2003, 2004, 2008 and 30 July 2010. At least 10-years 2-months old.

…1871-73181 Banded as SY-M at Inglewood Bird Sanctuary on 30 May 2005. Recaptured there in 2006, 2007, 2008 and 2 August 2010. At least 6-years 2-months old.

Black-capped Chickadee 2290-88658 Banded as AHY-U at Inglewood Bird Sanctuary on 9 August 2004. Recaptured there on 5 August 2010. At least 7-years 2-months old.

Northern Waterthrush 2280-94108 banded as AHY-U at Allegra Collister Nature Preserve, CO on 25 August 2009. Recaptured at Inglewood Bird Sanctuary on 30 May 2010. 1384-km NW (334^{o}).

Northern Waterthrush foreign recapture - Inglewood Bird Sanctuary
(Photo by Mike Potter)

White-throated Sparrow 1461-79092 Banded as HY-U at Inglewood Bird Sanctuary on 11 September 1995. Recaptured there on 17 May 2010. 15-years 2-months old.

TREND ANALYSES

Table 8 and Appendix 5 present the results of trend analysis on species monitored at Inglewood Bird Sanctuary during spring (green dots) and fall migration (orange triangles). During fall migration from 1995-2010 four species appear to have a significant positive trend (Least Flycatcher, House Wren, Cedar Waxwing and Wilson's Warbler) and 7 species a significant negative trend (Belted Kingfisher, Red-eyed Vireo, MacGillivray's Warbler, Mourning Warbler, Palm Warbler, American Tree Sparrow and American Goldfinch). During fall migration from 2000-2010 two species appear to have a significant positive trend (Solitary Sandpiper, Cedar Waxwing) and 3 species a significant negative trend (MacGillivray's Warbler, Mourning Warbler and American Goldfinch). During spring migration from 2002-2010 two species evidenced a significant positive trend (House Wren and Clay-coloured Sparrow).

Trend analysis is based on total captures from 1995-2010 and 2000-2010 for fall migration and 2002-2010 for spring migration and was performed by Bird Studies Canada (Tara Crewe). Note that scientific investigation normally requires a P level of <0.05 and preferably <0.01 in order to consider results significant. A P level of <0.10 can be considered nearly significant. For each species analyses are based on migration "windows" that have been statistically calculated to reflect the period within which 95% of the birds were detected in a particular migration season. Restricting analyses to these windows eliminates birds that are counted very early and/or very late in the season (e.g., outliers that can include wintering birds and/or local breeders. Annual indices and trends were estimated using Generalized Additive Models with Poisson distribution in R-Project. Because the p-value of the trend based on an analysis of all data is overly optimistic, a Monte Carlo style re-sampling (1000 times for each species) was used, with years randomized to estimate a p-value for the trend. The charts in Appendix 5 show the estimated annual indices of abundance with a Loess curve plotted for those sites/seasons with 10 or more years of data.

Although the trends with $P<0.05$ and even <0.10 are likely real, the cause behind them is open to interpretation. Only time and comparison to other CMMN stations and interpretation in the context of other data sets will indicate whether significant trends are due to changes in regional populations or to other confounding variables such as weather or local habitat change.

Further scientific advances in migration monitoring are underway with the development of new analytical approaches and a large collaborative isotope project that will help investigate the geographic origins of birds sampled at migration stopover sites.

Crewe et al. (2008) (see PDF on CBBS website) examined annual population indices through 2006 at 14 CMMN stations with at least 10 years of migration data during at least one migration season. Using migration data, annual population indices were estimated using a generalized linear model which controls for effects of date. Population trajectories (trends) in annual indices were then modeled for each species and station using linear models for stations having less than 10 years of data, and polynomial models for stations having 10 or more years of data.

Broad regional similarities in population trends were supported by positive between-station correlations of annual indices at relatively short inter-station distances. However, correlations were zero or even negative beyond about 2000 km. Furthermore, trends within a region were more similar than trends among regions, with more positive trends in Ontario (spring and fall) and Western (fall) regions and more negative trends in Prairie (spring and fall) and Eastern (fall) regions. Taken together across the country, population trends were not affected by migration strategy (temperate vs neotropical migrant) or by ecoregional association (boreal vs non-boreal). Hence, at the national level, roughly equal proportions of neotropical migrants and temperate migrants were declining or increasing. However, regional differences did occur in these patterns. For example, more species in the Prairie region exhibited negative trends in spring and fall for both neotropical and temperate migrants (including species breeding in the boreal forest) than other regions of Canada.

Breeding Bird Survey (BBS) coverage in Canada is primarily restricted to the southern part of the country. For species that have ranges that are predominantly within areas of high BBS coverage, good correlations would be expected between BBS regional trend statistics and those developed from migration monitoring. However, correlations would be expected to be weak or non-existent for species that breed predominantly in northern areas outside the main area of BBS coverage. To investigate this, long-term annual indices and trends (1968-2006) were compared at Long Point Bird Observatory with BBS statistics from Ontario. The analysis indicated that migration monitoring is indeed measuring a similar population signal to BBS for species breeding primarily in the south, particularly in spring. However, this relationship breaks down for species breeding primarily north of BBS coverage. By inference, these results further support the notion that migration monitoring may effectively monitor the status of boreal/northern breeding birds where BBS coverage is weak.

PERSONNEL

Volunteers

Volunteer participation in all of the CBBS projects continues to be the key to the success of research efforts. Banding at IBS is done in an area of the sanctuary designated "reserve" and off-limits to the public. A condition of operation is that a limited number of people are in the reserve at one time, in order to minimize impact. Thus, on any given day, a Bander-in-Charge and from 1-4 volunteers carry out the banding. CBBS projects not based in IBS are not subject to this restriction. All participants in CBBS projects at IBS are required to complete the IBS orientation each year. In addition before participating in any CBBS project including those at IBS, members are required to complete the CBBS orientation each year.

Without donated time, primarily by members of the Calgary Bird Banding Society, the high degree of success of CBBS projects would not have been possible. Sincere appreciation is extended to all of the Banders-in-Charge (BICs) and volunteers listed in Table 9 who contributed approximately 8 hours in the field on each day indicated (614 person-days or 4912 hours).

Banders-in-Charge (BIC)

CBBS has no salaried staff. However, a per diem is available to all Banders-in-Charge during most CBBS projects (a contract bander was hired to carry out pilot migration monitoring at CHIP). This arrangement provides an incentive for qualified individuals to assume the BIC duties and imposes accountability on the BIC to complete field data sheets and input data to computer files. No per diems or the final payment due on a contract are paid until all duties of the BIC, including data entry, have been fully completed.

Wild Turkeys – Cypress Hills Interprovincial Park

(Photo by Greg Holmes)

MORTALITIES AND INJURIES

The goal of the CBBS is to achieve as low a rate of casualties as possible during all banding projects. Casualties refer to all injuries, minor and serious, including fatalities. Our goal, of course, is to come as close to zero as possible.

Table 10 presents all casualties during 2010 for all programs, including IBS, Northern Saw-whet Owl, MAPS and Cypress Hills Interprovincial Park. Note that the number captured, by species, is only given where that species experienced injury or mortality. The number of mortalities during CBBS banding projects was 0.41% primarily (56%) due to predation. The injury rate in 2010 was 0.56% the lowest to date (Figure 9).

Increases through 1997 were in part due to an increased awareness of banding personnel to record even slight abrasions. In other words, the data pre-1998 likely underestimates the rate of injury. CBBS BICs and volunteers take each mortality and injury very seriously and continuously endeavour to identify potential for reduction or avoidance of similar occurrences in the future.

Brown Thrasher - Inglewood Bird Sanctuary

(Photo by Shonna McLeod)

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See website

www.calgarybirdbandingsociety.org

SY-U Northern Shrike – Cypress Hills Interprovincial Park
(Photo by Yousif Attia)

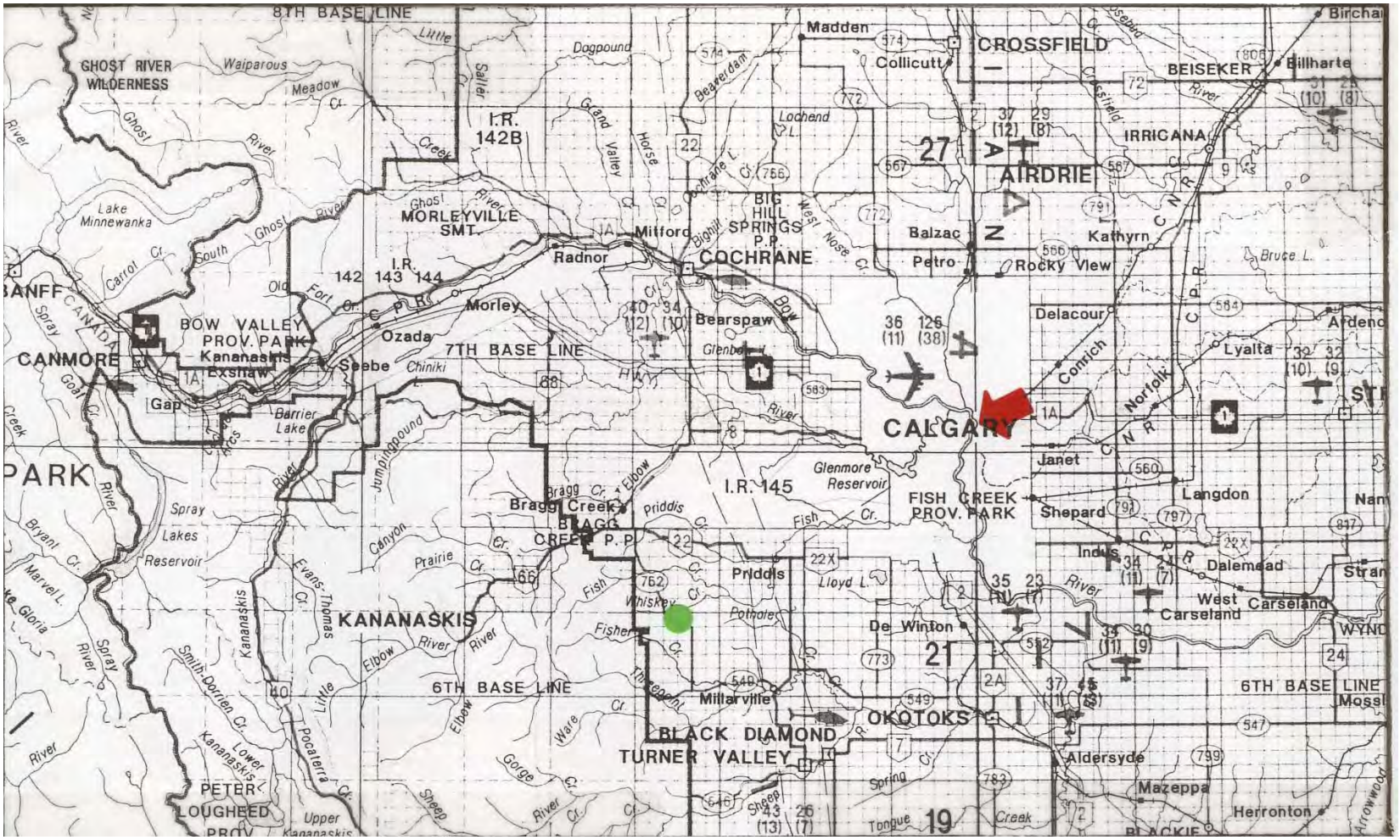


Figure 1: 1:250,000 NTS topographic map segment showing regional context of Inglewood Bird Sanctuary (red arrow) and the CBBS Northern Saw-whet Owl migration monitoring site (green dot)

Figure 2. Location of net locations (see legend) and banding area (**X**) in the southern reserve area of Inglewood Bird Sanctuary.

Figure 3a. New bandings at Inglewood Bird Sanctuary - Spring 2010

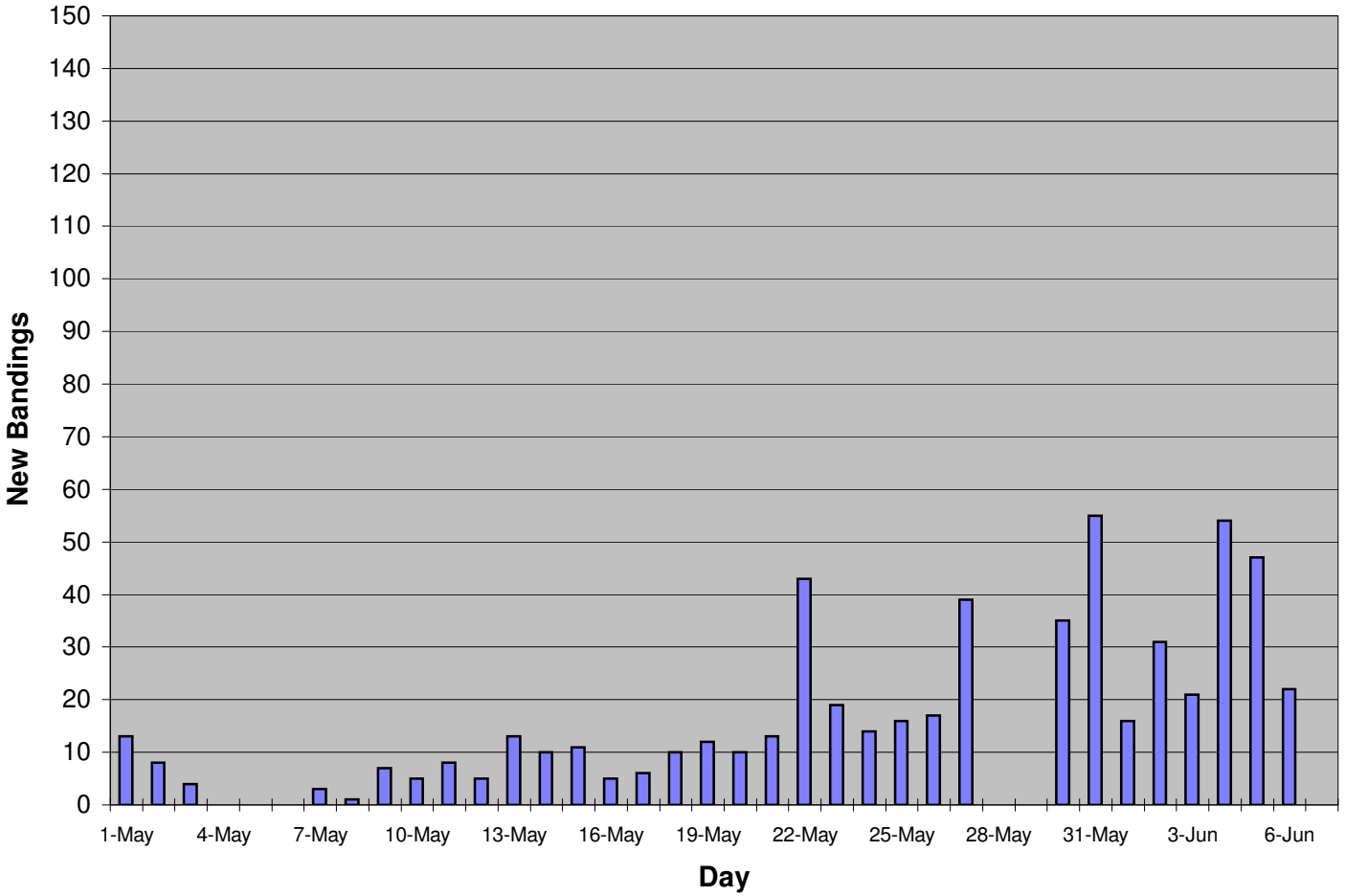


Figure 3b. New Bandings at Inglewood Bird Sanctuary - Fall 2010

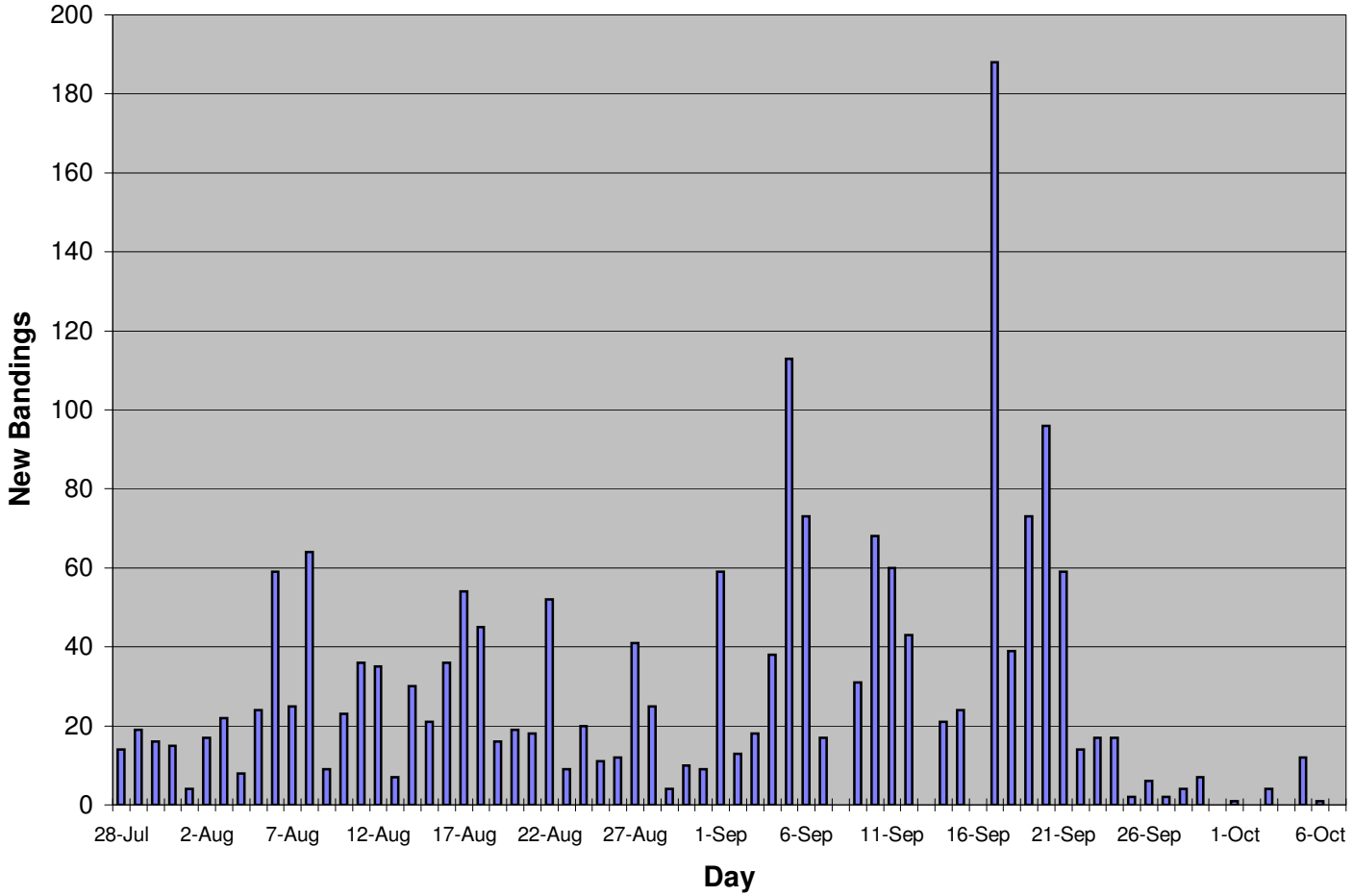


Figure 4. MAPS at Inglewood Bird Sanctuary

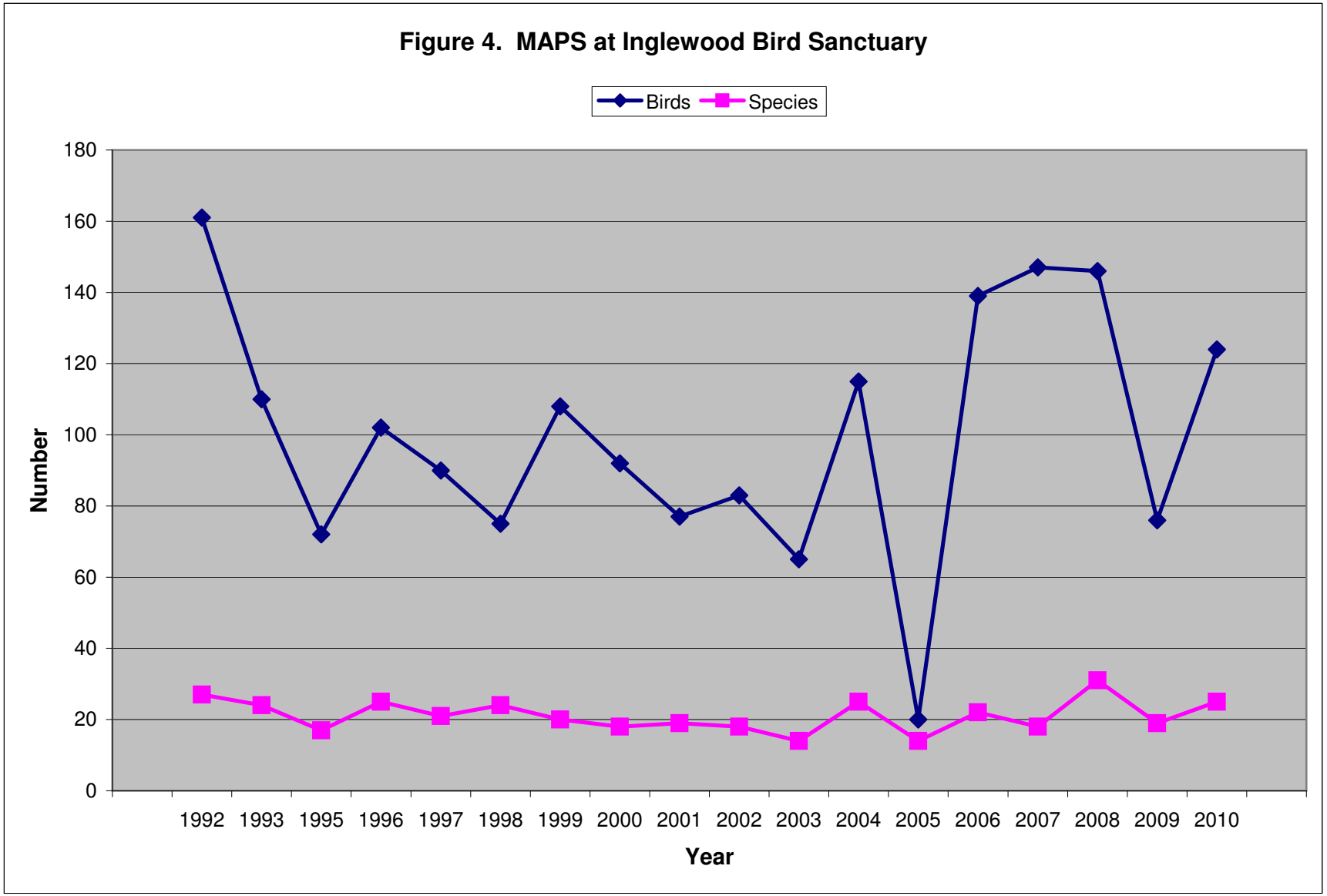
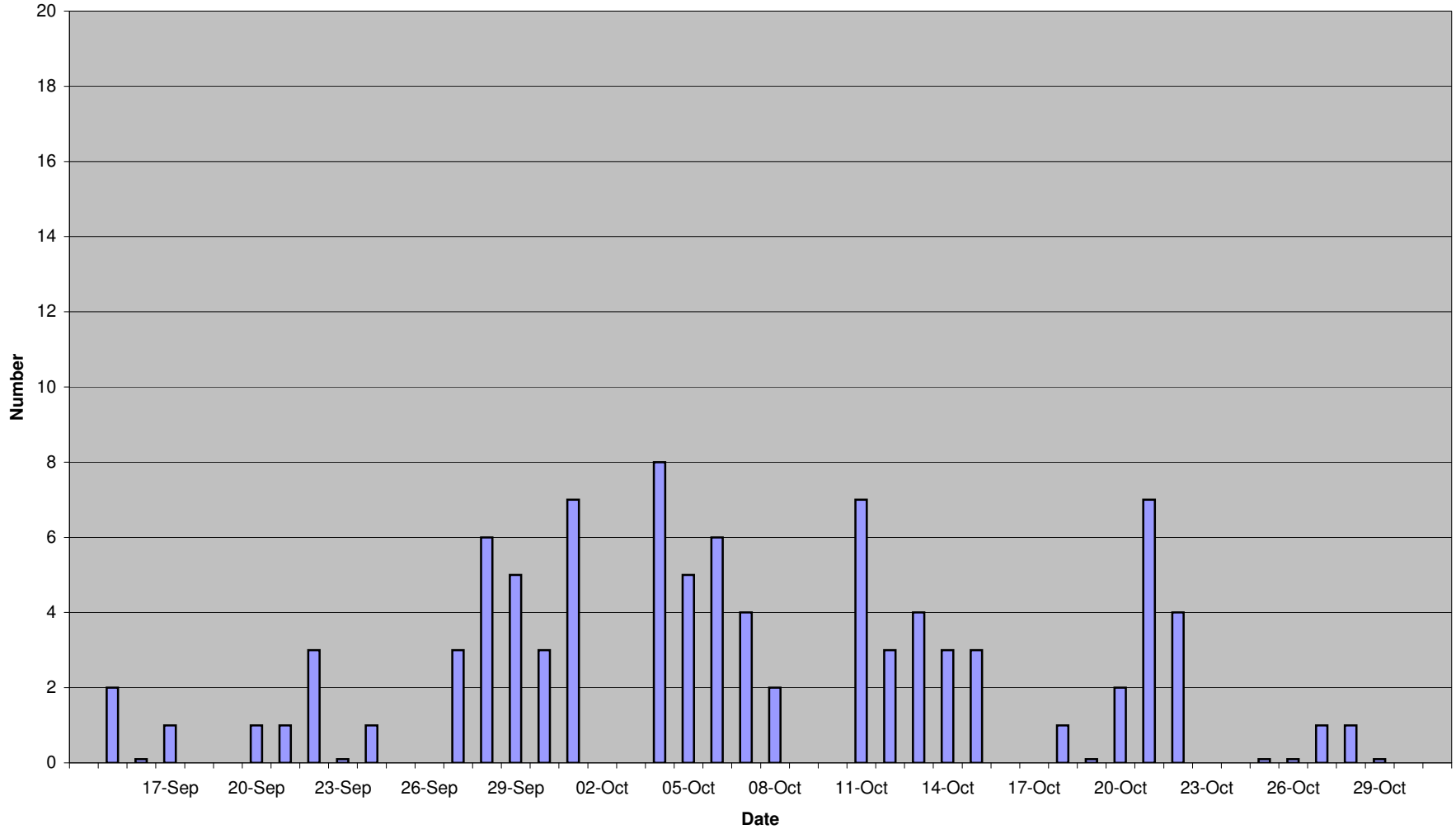


Figure 5. Northern Saw-whet Owl New Captures 2010
(new bands=93, unbanded=1)
Number = 0.1 indicates nets up but no owls captured



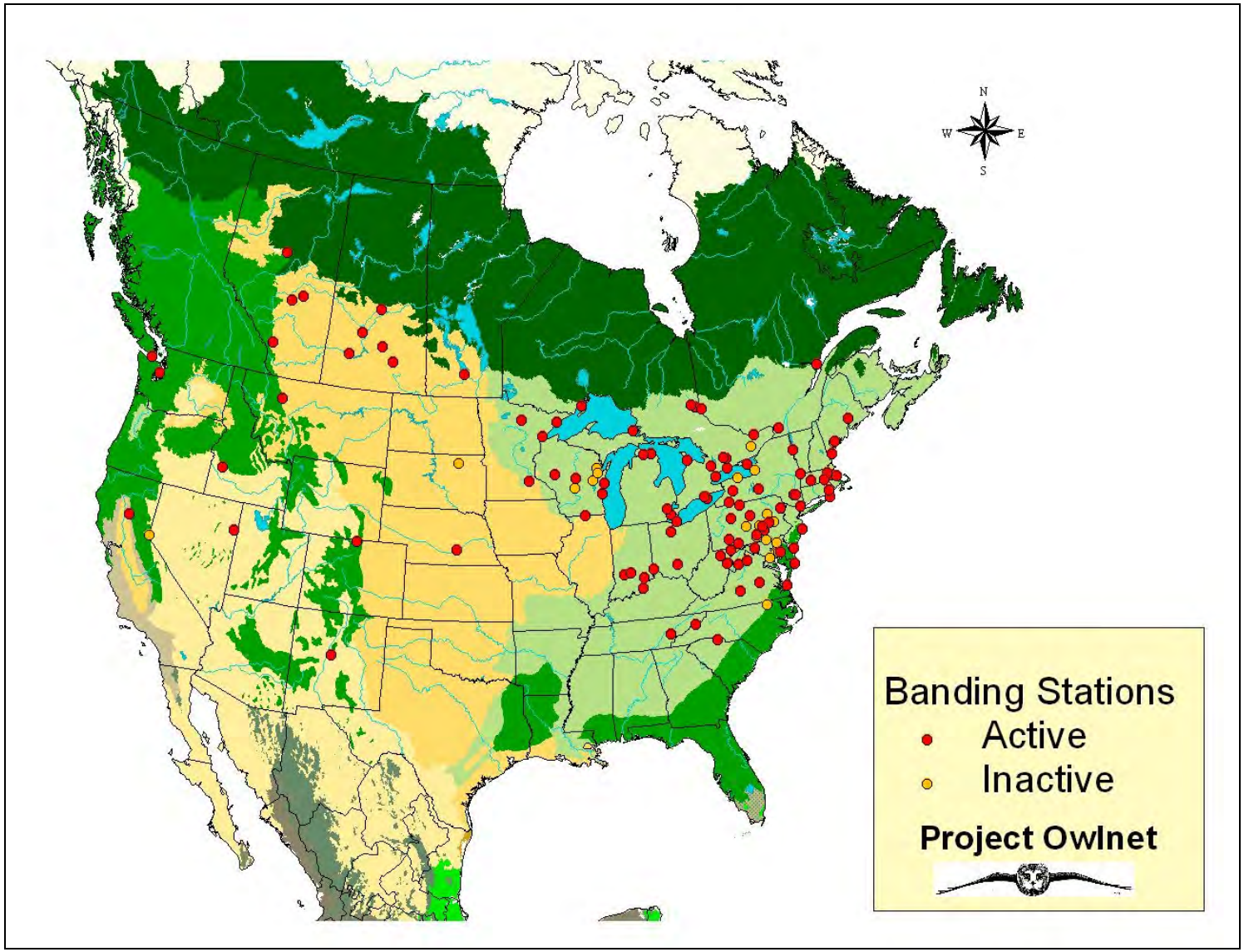


Figure 6. Northern Saw-whet Owl Migration Monitoring Stations Across North America

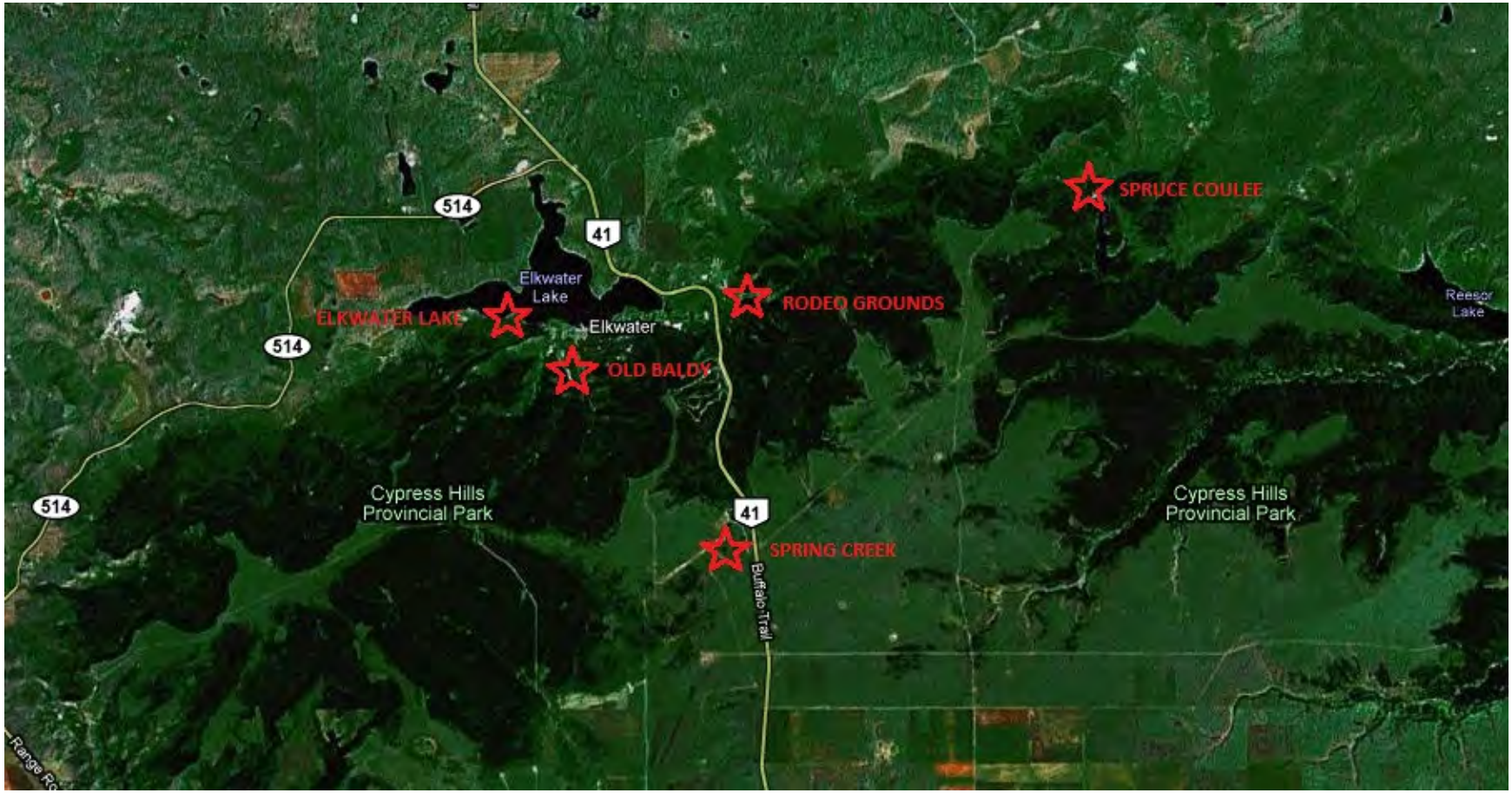


Figure 7. Cypress Hills Interprovincial Park Monitoring Locations

Figure 8a. New bandings at Cypress Hills Interprovincial Park - Spring 2010

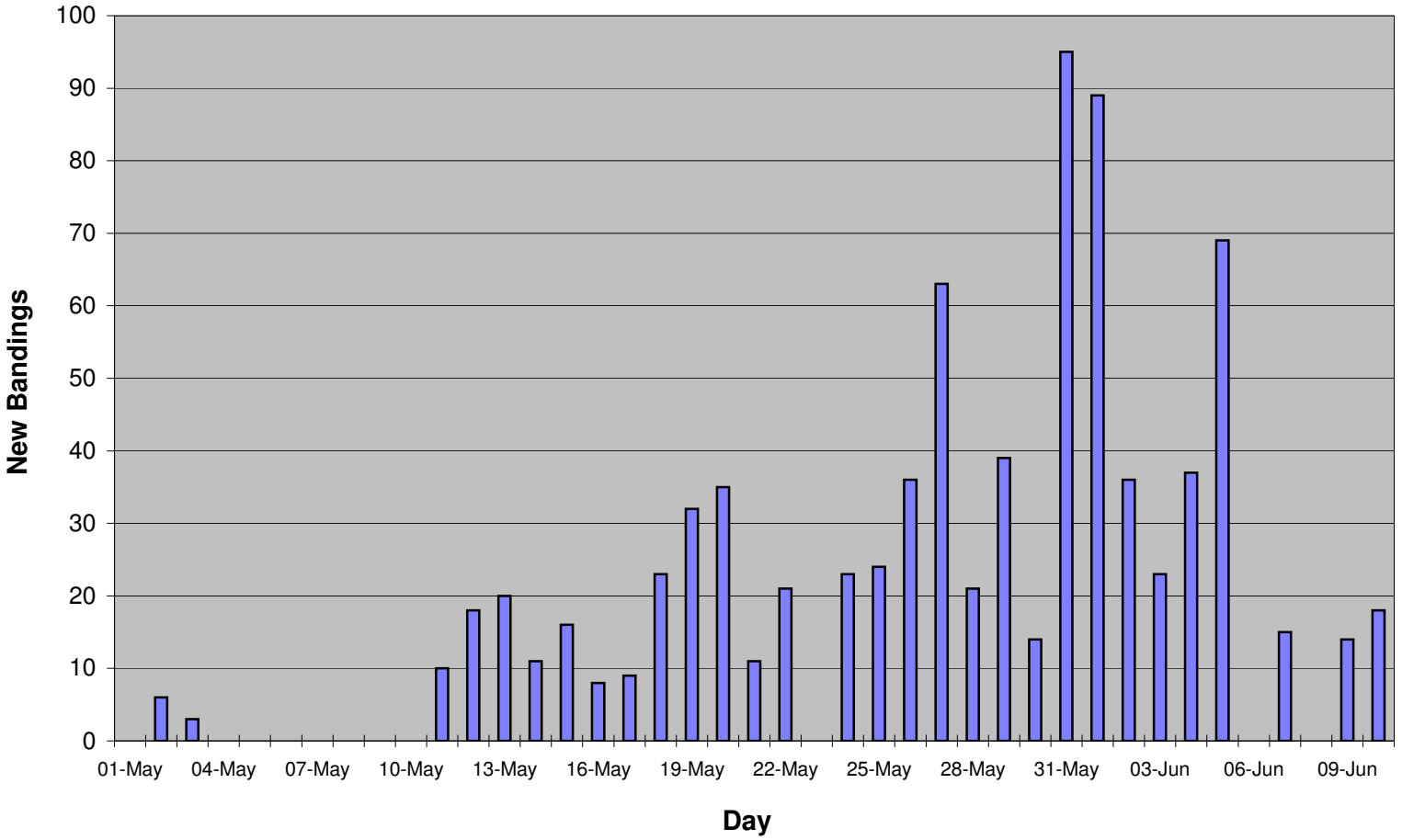


Figure 8b. New Bandings at Cypress Hills Interprovincial Park- Fall 2010

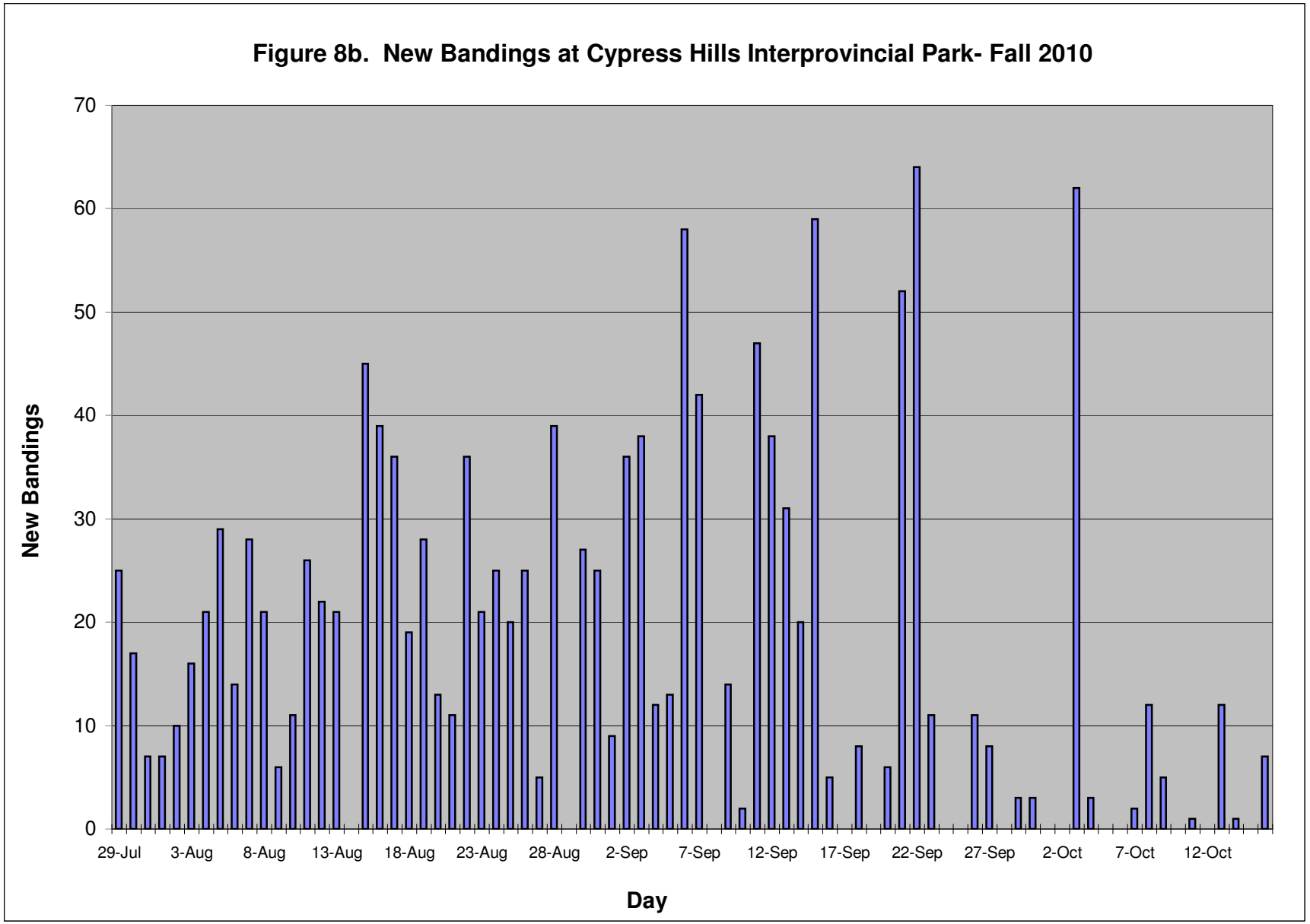


Figure 9. Casualty Rates for all CBBS Projects

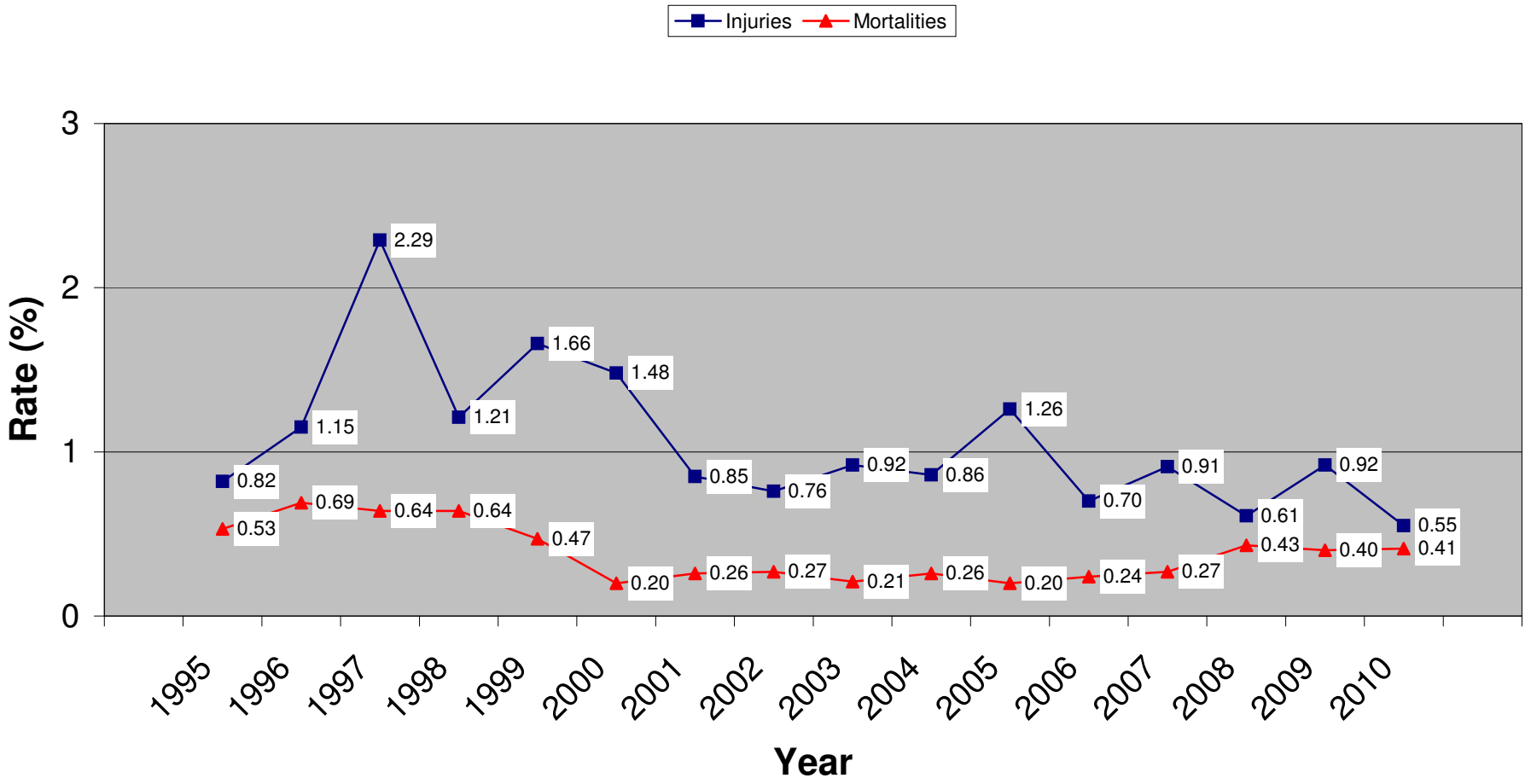


Table 1a. Coverage and Capture Rates During 2010 Spring MM at IBS

Date	Net-hours	Captures				Total	Captures/100 Net-hours
		New Bandings	Recaptures	Escapes/ unbanded	Mortalities		
01-May	72.0	13	1			14	19.4
02-May	72.3	8	1	1		10	13.8
03-May	72.3	4	2			6	8.3
04-May	weather					0	
05-May	weather					0	
06-May	weather					0	
07-May	47.7	3	3			6	12.6
08-May	74.2	1	1			2	2.7
09-May	74.4	7	3			10	13.4
10-May	72.8	5	5		1	11	15.1
11-May	74.1	8	6	1		15	20.2
12-May	72.6	5	3			8	11.0
13-May	72.0	13		2		15	20.8
14-May	72.0	10		2		12	16.7
15-May	73.0	11	3			14	19.2
16-May	74.1	5	4			9	12.1
17-May	72.3	6	2			8	11.1
18-May	72.4	10	1			11	15.2
19-May	73.5	12	3			15	20.4
20-May	72.3	10	7			17	23.5
21-May	72.9	13	7			20	27.4
22-May	73.6	43	18	1		62	84.2
23-May	72.3	19	6	2		27	37.3
24-May	72.3	14	2			16	22.1
25-May	72.8	16	7	1		24	33.0
26-May	72.1	17	4	2		23	31.9
27-May	47.4	39	5	5		49	103.4
28-May	weather					0	
29-May	weather					0	
30-May	72.4	35	13			48	66.3
31-May	72.4	55	24	1		80	110.5
01-Jun	72.7	16	8	2		26	35.8
02-Jun	74.0	31	10			41	55.4
03-Jun	34.6	21	14	2		37	106.9
04-Jun	71.0	54	15	1		70	98.6
05-Jun	73.6	47	12	1		60	81.5
06-Jun	72.0	22	15	3		40	55.6
Total	**2240**	**573**	**205**	**27**	**1**	**806**	36.0

< 72 net-hrs

Table 1b. Coverage and Capture Rates During 2010 Fall MM at IBS

Date	Net-hours	Captures				Total	Captures/100 Net-hours
		New Bandings	Recaptures	Escapes	Mortalities		
28-Jul	72.3	14	6		1	21	29
29-Jul	72.0	19	4	1		24	33
30-Jul	73.1	16	7			23	31
31-Jul	73.1	15	9			24	33
01-Aug	72.0	4	1			5	7
02-Aug	72.7	17	3	3		23	32
03-Aug	75.2	22	7			29	39
04-Aug	72.4	8	4			12	17
05-Aug	72.3	24	8	1		33	46
06-Aug	61.7	59	14			73	118
07-Aug	72.3	25	9			34	47
08-Aug	72.9	64	9			73	100
09-Aug	72.7	9	7			16	22
10-Aug	72.1	23	6			29	40
11-Aug	72.7	36	6	1		43	59
12-Aug	72.1	35	8			43	60
13-Aug	17.9	7	1			8	45
14-Aug	73.6	30	10	2		42	57
15-Aug	73.9	21	10			31	42
16-Aug	73.3	36	6			42	57
17-Aug	71.3	54	15	3		72	101
18-Aug	72.6	45	16	1	2	64	88
19-Aug	72.8	16	11			27	37
20-Aug	72.4	19	9			28	39
21-Aug	73.2	18	7			25	34
22-Aug	74.2	52	16			68	92
23-Aug	72.4	9	2	1		12	17
24-Aug	72.4	20	7	2	1	30	41
25-Aug	71.9	11	5	1		17	24
26-Aug	72.4	12	3	1		16	22
27-Aug	73.3	41	16	2		59	80
28-Aug	73.2	25	7			32	44
29-Aug	72.0	4	9			13	18
30-Aug	72.5	10	11			21	29
31-Aug	72.6	9	2	2		13	18
01-Sep	71.6	59	8	3		70	98
02-Sep	72.5	13	3			16	22
03-Sep	69.9	18	9	1		28	40
04-Sep	72.0	38	4	1		43	60
05-Sep	75.3	113	14	3		130	173

Table 1b. Coverage and Capture Rates During 2010 Fall MM at IBS

Date	Net-hours	Captures				Total	Captures/100 Net-hours
		New Bandings	Recaptures	Escapes	Mortalities		
06-Sep	72.7	73	14	1	1	89	122
07-Sep	72.4	17	7	1		25	35
08-Sep	adverse weather					0	
09-Sep	62.3	31	11	2		44	71
10-Sep	50.7	68	7	6		81	160
11-Sep	73.5	60	4	1		65	88
12-Sep	72.6	43	10			53	73
13-Sep	adverse weather					0	
14-Sep	73.2	21	9	1		31	42
15-Sep	72.0	24	8	1	1	34	47
16-Sep	adverse weather					0	
17-Sep	26.7	188	1	2	7	198	742
18-Sep	72.4	39	18			57	79
19-Sep	73.6	73	18	3		94	128
20-Sep	75.1	96	37		2	135	180
21-Sep	61.2	59	29			88	144
22-Sep	72.1	14	15	2		31	43
23-Sep	71.3	17	11			28	39
24-Sep	72.7	17	1			18	25
25-Sep	72.0	2	1			3	4
26-Sep	72.0	6	2	1		9	13
27-Sep	72.3	2	1	1		4	6
28-Sep	54.7	4		1		5	9
29-Sep	71.6	7				7	10
30-Sep	66.8			1		1	1
01-Oct	43.4	1	1			2	5
02-Oct	72.0					0	0
03-Oct	72.0	4	2			6	8
04-Oct	no volunteer					0	
05-Oct	72.2	12	3			15	21
06-Oct	70.8	1				1	1
07-Oct	27.1					0	0
Total	**4682**	**1949**	**519**	**53**	**15**	**2536**	54

< 72 net-hrs

Table 2a. New Bandings at Inglewood Bird Sanctuary - Spring

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Start	01-May	01-May	01-May	01-May	01-May	01-May	01-May	01-May	01-May	
Finish	07-Jun	07-Jun	07-Jun	07-Jun	07-Jun	05-Jun	06-Jun	05-Jun	06-Jun	
# Days	27	31	31	31	33	32	30	33	32	
Total	597	230	440	370	311	528	589	700	573	4338
Species	46	36	41	41	41	44	46	45	41	57
Net-hours	1884	2138	2177	2248	2273	2113	1744	2374	2240	19192
Bandings/100 Net-hours	31.7	10.8	20.2	16.5	13.7	25.0	33.8	29.5	25.6	22.6
Wilson's Snipe									1	1
Sharp-shinned Hawk			1	1	1					3
Cooper's Hawk				1			1			2
American Kestrel	1									1
Killdeer						1				1
Solitary Sandpiper	1						1	4		6
Spotted Sandpiper	2		2		1			2	2	9
Belted Kingfisher	1			1	3	1	3			9
Red-naped Sapsucker				1						1
Downy Woodpecker	5	1	1	4	1	4	1	3	4	24
Hairy Woodpecker							1	1		2
Northern Flicker	1		1	1			2	2		7
Olive-sided Flycatcher			1							1
Western Wood-Pewee	5	1	5		4	4	1	13	1	34
Alder Flycatcher	6	4	6	5	1	8	5	11	32	78
Willow Flycatcher				1		1		1	3	6
Least Flycatcher	16	6	6	7	5	16	20	25	13	114
Eastern Phoebe	1									1
Eastern Kingbird		3	1	2	3	2			1	12
Blue-headed Vireo	2	1								3
Warbling Vireo	4	2			1	3	3	4	5	22
Red-eyed Vireo		1								1
Black-billed Magpie			2	1		2	1		1	7
Tree Swallow	18	6	11	18	14	12	25	36	19	159
N Rough-winged Swallow	5		4	5	4	3	5	9	6	41
Bank Swallow		1	1	1			2			5

Table 2a. New Bandings at Inglewood Bird Sanctuary - Spring

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Barn Swallow	1									1
Black-capped Chickadee	3		2	2	1	2	2			12
Red-breasted Nuthatch	1		4	1		1		1		8
White-breasted Nuthatch	2				2	1			1	6
House Wren	13	15	8	13	10	18	28	18	21	144
Ruby-crowned Kinglet		2			3	1	3	1		10
Golden-crowned Kinglet					1					1
Gray-cheeked Thrush					1	2	1			4
Swainson's Thrush	54	38	5	25	46	44	44	54	80	390
Hermit Thrush	2	2	1	2		2		2	2	13
Veery		1					1			2
American Robin	28	35	32	4	37	38	26	40	27	267
Varied Thrush							1			1
Gray Catbird	13	13	11	1	15	9	19	13	6	100
Brown Thrasher					1			1	1	3
Cedar Waxwing	3		12	8	8	1	4	3	59	98
Tennessee Warbler									3	3
Orange-crowned Warbler	19	6	12	18	1	18	24	11	10	119
Yellow Warbler	33	2	13	2	21	23	10	23	44	171
Magnolia Warbler						1				1
Yellow-rumped Warbler	249	1	136	43	45	61	231	210	32	1008
Blackpoll Warbler	3	2	1	1			4	7	6	24
Black-and-white Warbler								1		1
American Redstart	2	1			2	2	7	2	3	19
Ovenbird			1	1	1		1			4
Northern Waterthrush	8	3	7	2	3	4	1	5	3	36
Connecticut Warbler									1	1
MacGillivray's Warbler			1		1	1				3
Common Yellowthroat	21	6	12	4	6	2	7	4	17	79
Wilson's Warbler	4	1	3		3	3	2	3	3	22
Western Tanager	1		6	1		4	3	1	1	17
Chipping Sparrow	3	6	1		6	108	14	30	26	194
Clay-colored Sparrow	15	9	1	1	6	63	16	45	54	210
Brewer's Sparrow								1		1

Table 2a. New Bandings at Inglewood Bird Sanctuary - Spring

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Savannah Sparrow	3		2	2	2		5	15	3	32
Fox Sparrow		1								1
Song Sparrow	3	1	8	7		2	1	3	6	31
Lincoln's Sparrow	19	31	37	42	16	20	32	62	52	311
White-throated Sparrow	5	2	7	7	2	2	13	7	6	51
White-crowned Sparrow	6	7	7	42	16	17	12	10	9	126
Dark-eyed Junco	1						1	2		4
Rose-breasted Grosbeak	1					1	1	1	2	6
Lazuli Bunting				1				1		2
Red-winged Blackbird	3	5	1	8	5	4	1	1	1	29
Brewer's Blackbird									1	1
Common Grackle				1	2	3		1		7
Brown-headed Cowbird	5	3	7	8	4	8	2	4	5	46
Baltimore Oriole	4	7	6		6	3	1	6		33
American Goldfinch	1	4		2		2				9

*Note: Traill's Flycatcher includes both Willow and Alder

New species in 2010

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

Year	1992	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Start	03-Aug	18-Aug	01-Aug	31-Jul	31-Jul	25-Jul	26-Jul	01-Aug	25-Jul	27-Jul	28-Jul	28-Jul	29-Jul	28-Jul	28-Jul	28-Jul	28-Jul	28-Jul	all
Total	841	466	1549	1121	1455	1898	1276	1262	1402	1466	1452	1872	1335	1625	1670	1679	1066	1949	25384
Species	52	48	61	59	64	64	66	68	64	66	60	73	67	64	68	69	58	60	105
Net-hours	934	1078	3456	4547	4608	4371	4426	3842	5152	4838	4928	4944	4387	4509	4665	4789	4662	4682	74818
Bandings/100 Net-hours	90.0	43.2	44.8	24.7	31.6	43.4	28.8	32.8	27.2	30.3	29.5	37.9	30.4	36.0	35.8	35.1	22.9	41.6	33.9
Wood Duck			1																1
Mallard							1												1
Green Heron												1							1
Sharp-shinned Hawk	2	2		1	5	4	3	1	1	3		1	2	3	1	3	6	2	40
Cooper's Hawk				1	1			1		1									4
Northern Goshawk				1															1
Broad-winged Hawk						1									1				2
Solitary Sandpiper	3	2	3	14	13	14	2	8	4	12	5	8	11	7	7	8	8	3	132
Spotted Sandpiper		1	2		3	3	2			5	1	4	4	3	6	1	7		42
Common Snipe								1		1								1	3
Mourning Dove												1							1
Belted Kingfisher	2	2	8	8	6	8	10	7	2	5	6	7	4	15	7	11	7	7	122
Yellow-bellied Sapsucker			1							1						1			3
Downy Woodpecker		1	2	3	5	7	3	9	9	13	12	16	9	7	13	18	11	15	153
Hairy Woodpecker								1		1		2		1		1		1	7
Northern Flicker	2	1	4	8	7	3	11	2		4	7	6	3	3	1	2	1	2	67
Olive-sided Flycatcher	3		3		5	2		2		2		2	3	1	3	1	1	1	29
Western Wood-Pewee	6	4	11	2	33	8	10	7	14	14	11	16	17	11	18	19	9	11	221
Yellow-bellied Flycatcher			1				1					2			2			1	7
Traill's Flycatcher*	24	16	29	25	50	36	24	40	46	45	32	197	173	71	99	26	15	35	983
Least Flycatcher	16	5	16	9	30	14	11	21	20	21	9	40	45	43	51	20	16	44	431
Hammond's Flycatcher																1		1	2
Dusky Flycatcher			2	1									2				1		6
Pacific-slope Flycatcher			1		1							1							3
Eastern Phoebe		1						1			1		1				1		5
Great Crested Flycatcher									1										1
Eastern Kingbird	1	2	7	18	17	19	2	7	17	7	15	17	11	17	15	7	4	4	187
Yellow-throated Vireo											1								1
Blue-headed Vireo	1		1	1	2			1		2		2		1	1	1		2	15
Warbling Vireo	8	15	13	18	27	18	8	7	12	9	17	12	1	17	25	24	10	18	259
Philadelphia Vireo	1							1	1		1	1			2		2		9
Red-eyed Vireo	3	1	2	4	3	12	2	4	2	2	4		3	4	5	2		2	55
Blue Jay				1				1											2

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

Year	1992	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Start	03-Aug	18-Aug	01-Aug	31-Jul	31-Jul	25-Jul	26-Jul	01-Aug	25-Jul	27-Jul	28-Jul	28-Jul	29-Jul	28-Jul	28-Jul	28-Jul	28-Jul	28-Jul	all
Black-billed Magpie			2	1	8	2	2	1	3	1	3	3	3		2	3	3	1	38
Tree Swallow										1			7		5	7			20
N Rough-winged Swallow					2							1	2		2	3			10
Bank Swallow													1		1	1			3
Black-capped Chickadee	9	12	7	17	5	19	10	19	14	13	19	20	28	27	20	13	19	10	281
Red-breasted Nuthatch		3		2		4	2	20	7	1	2	4	2	3	3	15	1	3	72
White-breasted Nuthatch	1	1	6		4	4	4	5	5	5	7	5	2	2	5	6	5	3	70
Brown Creeper	1						1	1				1	1	6					11
House Wren	3	3	50	45	52	49	33	57	59	72	58	138	96	59	99	100	107	67	1147
Winter Wren								1				2		1					4
Golden-crowned Kinglet	2		2	1	1	1	2	1		2		1	2	5					20
Ruby-crowned Kinglet	3	1	10	18	20	14	5	11	15	14	24	18	11	29	20	13	3	11	240
Townsend's Solitaire				1					1		1			1				1	5
Veery	2					1						1							4
Gray-cheeked Thrush	1					1		1											3
Swainson's Thrush	34	13	17	52	10	28	19	13	30	13	19	31	27	17	34	29	15	37	438
Hermit Thrush	4		3	14	6	9	9	4	11	11	5	8	4	3	4	9	3	7	114
American Robin	5	11	114	81	81	31	60	32	105	37	89	28	43	29	46	56	57	26	931
Varied Thrush									1			5							6
Gray Catbird		1		5	7	6	5	4	14	8	19	14	14	13	12	14	15	15	166
Brown Thrasher					3						1		1						5
European Starling			2						4						1				7
Bohemian Waxwing							1												1
Cedar Waxwing	12	1	42	14	67	11	25	26	49	27	21	43	22	24	71	153	71	124	803
Tennessee Warbler	43	5	33	30	52	74	106	167	46	76	147	98	58	43	87	96	56	56	1273
Orange-crowned Warbler	24	36	177	116	86	207	91	84	58	71	115	45	45	154	163	123	32	407	2034
Nashville Warbler				1	2	1	1	2	1	1			1	3		1			14
Yellow Warbler	56	19	44	62	137	91	138	89	101	119	82	165	126	75	154	113	60	154	1785
Chestnut-sided Warbler	1						1				1	1			1		1		6
Magnolia Warbler	9	4	2	2	4	4	2	2	1	9	6	4	5	6	5	3		3	71
Cape May Warbler											2								2
Yellow-rumped Warbler	293	171	496	92	191	638	195	200	246	248	223	148	73	412	207	256	100	200	4389
Black-throated Green Warbler					1	1	1												3
Townsend's Warbler	1				1	2	3	1	2	2		1	2	2	1	1	1	3	23
Palm Warbler		3	7	4	3	8	7	1	6	4	1	2	1	4				3	54
Bay-breasted Warbler			1				1	1			1								4
Blackpoll Warbler	17	5	17	8	6	30	5	8	11	7	7	1	11	7	12	14	2	16	184
Black-and-white Warbler	4	1	1	2		3			2	3	3	1	2	1	2	3	2	1	31

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

Year	1992	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Start	03-Aug	18-Aug	01-Aug	31-Jul	31-Jul	25-Jul	26-Jul	01-Aug	25-Jul	27-Jul	28-Jul	28-Jul	29-Jul	28-Jul	28-Jul	28-Jul	28-Jul	28-Jul	all
American Redstart	19	4	3	6	4	20	5	3	16	27	18	19	7	16	14	7	8	19	215
Ovenbird	22	6	10	30	11	38	11	11	24	7	18	37	16	26	28	16	8	18	337
Northern Waterthrush	22	8	23	56	46	26	41	34	44	33	29	78	67	43	53	39	50	44	736
Connecticut Warbler	2	2	4	4	1	3	3	3	4	1		6	1	5	4	2	1	1	47
Mourning Warbler	4	2	5	10	3	9	1	4	5	7	10	7	5	5	6	3	3	3	92
MacGillivray's Warbler	2		3	8	10	6	2	5	4	4	5	6	4	4	2	1	3	5	74
Common Yellowthroat		1	6	1	8	10	8	4	12	8	9	7	2	9	7	5	6	13	116
Wilson's Warbler	121	68	102	175	119	113	100	167	152	145	224	251	12	168	136	159	114	339	2665
Canada Warbler	1			2	1	3	1	1	1	2		8		1	4	2		2	29
Western Tanager	1	1	12	1	3	2	4	1	5	6	3	5	3		4	8	1	9	69
American Tree Sparrow			10	3	3	7	2	1	1	2	4	4	3	5	2	3	1	2	53
Chipping Sparrow	4	1	29	14	151	27	83	50	47	92	23	155	34	1	34	43	80	60	928
Clay-colored Sparrow		1	1	6	21	37	26	9	30	26	6	12	14	15	10	11	23	12	260
Brewer's Sparrow							1												1
Savannah Sparrow		1			2			1	1					1			3		9
Fox Sparrow	1	1	1			2	1		2	1	1	2			1	4			17
Song Sparrow		1	9	9	15	18	21	9	3	13	5	15	21	14	13	10	11	16	203
Lincoln's Sparrow	9	7	53	28	13	59	48	30	39	88	43	30	44	58	45	65	25	29	713
Swamp Sparrow				2		7	3		1	2	1	2		2	1	3			24
White-throated Sparrow	13	11	73	28	39	77	54	18	35	51	25	40	34	67	24	27	14	27	657
Harris' Sparrow			1						1			1	1						4
White-crowned Sparrow	5	4	20	24	22	21	22	23	27	30	18	31	36	17	11	14	20	23	368
Dark-eyed Junco	5	3	15	15	3	10	8	6	1	6	3	11	4	14		5	2	6	117
Rose-breasted Grosbeak	6				1	3	2	3	1	3	7	5	3	2	1	5		5	47
Red-winged Blackbird			4				2			3		1			1				11
Rusty Blackbird															1	1			2
Common Grackle			3								1		2	4		5	5		20
Brown-headed Cowbird			1	2	2	1		2	4	5	1	4	3			4	2	4	35
Baltimore Oriole	4		21	12	12	8	5	1	8	9	20	7	11	2	11	7	12	3	153
Purple Finch		1			2	1	1	2	6				2	1	1	2			19
House Finch													9	2	35	45	12	11	114
Pine Siskin					2							1			2	2	6		13
American Goldfinch	3			2	4	2	2	1	4	2		2	1	2	5		4		34
House Sparrow									3							4			7

*Note: Traill's Flycatcher includes both Willow and Alder

Table 3. Inglewood Bird Sanctuary MAPS New Bandings - 2010

Species	08-Jun	18-Jun	27-Jun	07-Jul	17-Jul	27-Jul	08-Aug	Total
Downy Woodpecker		1			3	2		**6**
Traill's Flycatcher	1							**1**
Least Flycatcher				1	1		1	**3**
Eastern Kingbird					1			**1**
Warbling Vireo		1						**1**
Philadelphia Vireo			1					**1**
Tree Swallow				1	2			**3**
Northern Rough-winged Swallow			1					**1**
House Wren	2	2	1	1		9	8	**23**
Swainson's Thrush						1		**1**
American Robin				2	1	3	1	**7**
Gray Catbird	3	2	1	1				**7**
Cedar Waxwing	7	8	3	4	10	1	2	**35**
Tennessee Warbler						2		**2**
Yellow Warbler	3		1		1		8	**13**
Yellow-rumped Warbler					1			**1**
Northern Waterthrush							1	**1**
Common Yellowthroat	2							**2**
Wilson's Warbler							1	**1**
Chipping Sparrow							1	**1**
Clay Coloured Sparrow				2	2			**4**
Song Sparrow					1			**1**
Brown-headed Cowbird			1					**1**
Baltimore Oriole					1			**1**
House Finch					5	1		**6**
Total birds	**18**	**14**	**9**	**12**	**29**	**19**	**23**	**124**
Total species	**6**	**5**	**7**	**7**	**12**	**7**	**8**	**25**

Table 4. Inglewood Bird Sanctuary MAPS Summary

Species	New Bandings																		Total
	1992	1993	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
American Kestrel			1																**1**
Downy Woodpecker	1	3	1	5	4	1			1		1	3		5		6	5	6	**42**
Hairy Woodpecker	1	1	1			1													**4**
Northern Flicker	1	1	3	2			2							2	3	1			**15**
Western Wood-Pewee	6	1	1	1	1	2		1	3			3		2		1	1		**23**
Traill's Flycatcher				3	3		1	1	4	1	1	2	3	2		2	2	1	**26**
Least Flycatcher	14	8	3	2	3	4	2	1	2	1			1	5	9	3		3	**61**
Eastern Kingbird	2	1			3	1	3		2	1		3	1	1		1		1	**20**
Warbling Vireo	7	7	1	4	2		2	2	1	4	3		1	2	1	2	3	1	**43**
Philadelphia Vireo																		1	**1**
Red-eyed Vireo	1																		**1**
Black-billed Magpie				1	2							2							**5**
Tree Swallow	3						2					4		8		2		3	**22**
Northern Rough-winged Swallow																1		1	**2**
Bank Swallow	1																		**1**
Black-capped Chickadee	5	7	5	9	2	3	5	4	4	2	4	10	2	8	5	11	1		**87**
White-breasted Nuthatch	3	4		2						1		2		2	1		1		**16**
House Wren	5	11	9	9	13	8	9	18	11	2	11	9	1	15	30	26	9	23	**219**
Veery	2					1													**3**
Swainson's Thrush	10	8	6	4	3	1	4		3	1	1	4	1	4		7	4	1	**62**
Hermit Thrush								1											**1**
American Robin	21	6	26	25	23	10	8	14	20	19	19	21	1	45	18	21	7	7	**311**
Gray Catbird	3			1	1	4	8	1	6	16	9	12	1	4	8	6	5	7	**92**
European Starling			1																**1**
Cedar Waxwing	27	8		6	1	9	5	7	5	13	3	17	3	8	20	9	19	35	**195**
Tennessee Warbler	1	6		7	1	3	4	22	1	1	1	5		5	11	13	2	2	**85**
Orange-crowned Warbler						1						1							**2**
Yellow Warbler	20	14	7	2	6	9	24	13	4	7	9	4	2	10	26	6	8	13	**184**
Yellow-rumped Warbler	10					2		2	1		1	1			3	3		1	**24**
American Redstart		1									1			2		1	1		**6**

Table 4. Inglewood Bird Sanctuary MAPS Summary

Species	New Bandings																		Total
	1992	1993	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Ovenbird	3			1		1										1	1		**7**
Northern Waterthrush						1	1		1							1		1	**5**
Mourning Warbler	1																		**1**
Common Yellowthroat												1	1			1		2	**5**
Wilson's Warbler				2		1	1					1						1	**6**
Western Tanager		1	3	1	2		4					1							**12**
Chipping Sparrow		7			1							1		1	2			1	**13**
Clay-colored Sparrow		1				6	17	1	2						1	2	1	4	**35**
Song Sparrow		1		1		1	4				1		1		1	1		1	**12**
Lincoln's Sparrow		3	1	2	5	2		1				2				4	2		**22**
White-throated Sparrow				2						1		2				2			**7**
White-crowned Sparrow																1			**1**
Rose-breasted Grosbeak				1															**1**
Red-winged Blackbird															1				**1**
Common Grackle			1		2					1									**4**
Brown-headed Cowbird	6				3			1	1	2		2	1	2		3		1	**22**
Baltimore Oriole	3	7	2	8	9	1	2	1	5	9		2			3	1	3	1	**57**
Purple Finch		1						1											**2**
House Finch														5	4	6	1	6	**22**
American Goldfinch	2	2		1						1				1		1			**8**
House Sparrow	2					2													**4**
Total	**161**	**110**	**72**	**102**	**90**	**75**	**108**	**92**	**77**	**83**	**65**	**115**	**20**	**139**	**147**	**146**	**76**	**124**	**1802**
Species	**27**	**24**	**17**	**25**	**21**	**24**	**20**	**18**	**19**	**18**	**14**	**25**	**14**	**22**	**18**	**31**	**19**	**25**	**47**

Table 5a. Coverage and Capture Rates During 2010 Spring MM at CHIP

Date	Net-hours	Captures				Total	Captures/100 Net-hours
		New Bandings	Recaptures	Escapes/ unbanded	Mortalities		
01-May	weather					0	
02-May	41.3	6	1			7	17
03-May	7.0	3				3	43
04-May	weather					0	
05-May	weather					0	
06-May	weather					0	
07-May	weather					0	
08-May	weather					0	
09-May	weather					0	
10-May	weather					0	
11-May	47.0	10	2			12	26
12-May	51.3	18	6			24	47
13-May	61.2	20	4			24	39
14-May	71.0	11	5			16	23
15-May	84.0	16	9			25	30
16-May	84.0	8	4	1		13	15
17-May	80.5	9	4			13	16
18-May	84.0	23	3			26	31
19-May	96.0	32	8			40	42
20-May	88.8	35	8			43	48
21-May	65.0	11	2	1	1	15	23
22-May	40.0	21	5			26	65
23-May	weather					0	
24-May	96.0	23	10	1		34	35
25-May	96.0	24	13	1		38	40
26-May	98.7	36	8	1		45	46
27-May	80.0	63	11	1		75	94
28-May	99.2	21	13			34	34
29-May	1.5	39				39	2600
30-May	64.0	14	13			27	42
31-May	24.0	95	10	1		106	442
01-Jun	20.0	89	13	1		103	515
02-Jun	36.0	36	8	1		45	125
03-Jun	27.3	23	3			26	95
04-Jun	30.0	37	6	1		44	147
05-Jun	30.0	69	9			78	260
06-Jun	weather					0	
07-Jun	20.0	15	2			17	85
08-Jun	weather					0	
09-Jun	22.0	14	4			18	82
10-Jun	25.0	18	7			25	100
Total	**1671**	**839**	**191**	**10**	**1**	**1041**	**62**

Rodeo Grounds (RO)
Elkwater Lake (EL)

Table 5b. Coverage and Capture Rates During 2010 Fall MM at CHIP

Date	Net-hours	Captures				Total	Captures/100 Net-hours
		New Bandings	Recaptures	Escapes	Mortalities		
29-Jul	30.0	25	4			29	97
30-Jul	35.0	17	5			22	63
31-Jul	30.0	7	3			10	33
01-Aug	36.0	7	2			9	25
02-Aug	42.0	10	5			15	36
03-Aug	42.0	16	6			22	52
04-Aug	42.0	21	1			22	52
05-Aug	47.7	29	4	1		34	71
06-Aug	30.0	14	2			16	53
07-Aug	48.0	28	5			33	69
08-Aug	48.0	21	1			22	46
09-Aug	48.0	6	5			11	23
10-Aug	60.0	11	1		1	13	22
11-Aug	60.0	26	5			31	52
12-Aug	60.0	22	3			25	42
13-Aug	23.1	21	1			22	95
14-Aug	weather					0	
15-Aug	60.0	45	9			54	90
16-Aug	60.0	39	4			43	72
17-Aug	60.0	36	10			46	77
18-Aug	18.0	19	6			25	139
19-Aug	60.0	28	5			33	55
20-Aug	60.0	13	3			16	27
21-Aug	57.0	11	3			14	25
22-Aug	60.0	36	7			43	72
23-Aug	42.0	21	4			25	60
24-Aug	60.0	25	6			31	52
25-Aug	60.0	20	8			28	47
26-Aug	60.0	25	11			36	60
27-Aug	40.0	5				5	13
28-Aug	60.0	39	3			42	70
29-Aug	weather					0	
30-Aug	60.0	27	5			32	53
31-Aug	60.0	25	7		1	33	55
01-Sep	55.5	9	3			12	22
02-Sep	60.0	36	4	1		41	68
03-Sep	60.0	38	5			43	72
04-Sep	60.0	12	1			13	22
05-Sep	57.0	13	2			15	26
06-Sep	53.7	58	14			72	134
07-Sep	60.0	42	8	1		51	85

Table 5b. Coverage and Capture Rates During 2010 Fall MM at CHIP

Date	Net-hours	Captures				Total	Captures/100 Net-hours
		New Bandings	Recaptures	Escapes	Mortalities		
08-Sep	weather					0	
09-Sep	60.0	14	3			17	28
10-Sep	15.0	2				2	13
11-Sep	59.0	47	4			51	86
12-Sep	60.0	38	12	2		52	87
13-Sep	60.0	31	10			41	
14-Sep	61.7	20	9	1		30	49
15-Sep	66.0	59	34			93	141
16-Sep	44.0	5	7			12	
17-Sep	weather					0	
18-Sep	20.4	8		1		9	44
19-Sep	weather					0	
20-Sep	28.2	6	2			8	28
21-Sep	66.0	52	5		2	59	89
22-Sep	66.0	64	23			87	132
23-Sep	66.0	11	4			15	23
24-Sep	weather					0	
25-Sep	17.5					0	0
26-Sep	46.0	11	4			15	33
27-Sep	48.0	8	2			10	21
28-Sep	weather					0	
29-Sep	66.0	3	1			4	6
30-Sep	66.0	3	1			4	6
01-Oct	33.0					0	0
02-Oct	weather					0	
03-Oct	66.0	62	2	1	2	67	102
04-Oct	66.0	3	3			6	9
05-Oct	weather					0	
06-Oct	weather					0	
07-Oct	42.0	2				2	5
08-Oct	50.0	12	2			14	28
09-Oct	55.0	5	3	1		9	16
10-Oct	weather					0	
11-Oct	16.5	1				1	6
12-Oct	weather					0	
13-Oct	55.0	12				12	22
14-Oct	36.0	1				1	3
15-Oct	33.0					0	0
16-Oct	44.0	7				7	16
Total	**3377**	**1390**	**312**	**9**	**6**	**1717**	51

Table 6a. New Bandings at Cypress Hills Interprovincial Park - Spring

Year	2010	Total
Start	01-May	
Finish	10-Jun	
# Days	30	
Total	**839**	**839**
Species & Forms	**41**	**41**
Net-hours	**1671**	**1671**
Bandings/100 Net-hours	**50.2**	**50.2**
Red-naped Sapsucker	17	17
Downy Woodpecker	1	1
Hairy Woodpecker	2	2
"Red-shafted" Flicker	1	1
Olive-sided Flycatcher	1	1
Western Wood-Pewee	9	9
Yellow-bellied Flycatcher	1	1
"Traill's" Flycatcher	44	44
Least Flycatcher	125	125
Dusky Flycatcher	13	13
Western Kingbird	1	1
Eastern Kingbird	3	3
Warbling Vireo	1	1
Red-eyed Vireo	8	8
Tree Swallow	1	1
Black-capped Chickadee	5	5
House Wren	8	8
Ruby-crowned Kinglet	7	7
Mountain Bluebird	1	1
Veery	3	3
Swainson's Thrush	25	25
Hermit Thrush	1	1
American Robin	26	26
Gray Catbird	22	22
Cedar Waxwing	44	44
Tennessee Warbler	6	6
Orange-crowned Warbler	30	30
Yellow Warbler	84	84
Magnolia Warbler	1	1
Cape May Warbler	1	1
"Myrtle" Warbler	15	15

Table 6a. New Bandings at Cypress Hills Interprovincial Park - Spring

Year	2010	Total
Start	01-May	
Finish	10-Jun	
# Days	30	
"Audubon's" Warbler	45	45
"Unidentified" Yellow-rumped Warbler	2	2
Townsend's Warbler	1	1
Bay-breasted Warbler	1	1
Blackpoll Warbler	16	16
American Redstart	30	30
Ovenbird	3	3
Northern Waterthrush	1	1
Mourning Warbler	4	4
MacGillivray's Warbler	17	17
Common Yellowthroat	25	25
Wilson's Warbler	1	1
Yellow-breasted Chat	1	1
Western Tanager	7	7
Spotted Towhee	5	5
Chipping Sparrow	44	44
Clay-colored Sparrow	16	16
Savannah Sparrow	7	7
Song Sparrow	4	4
Lincoln's Sparrow	12	12
White-throated Sparrow	8	8
"Eastern" White-crowned Sparrow	30	30
"Gambel's" White-crowned Sparrow	2	2
"Pink-sided" Junco	5	5
"Unidentified" Dark-eyed Junco	1	1
Rose-breasted Grosbeak	3	3
Black-headed Grosbeak	2	2
Brown-headed Cowbird	15	15
Red-winged Blackbird	11	11
Pine Siskin	4	4
American Goldfinch	9	9

Table 6b. New Bandings at Cypress Hills Interprovincial Park - Fall

Year	2010	Total
Start	29-Jul	
Finish	16-Oct	
# Days	68	
Total	1390	1390
Species & Forms	64	64
Net-hours	3377	3377
Bandings/100 Net-hours	41.2	41.2
Sharp-shinned Hawk	3	3
Spotted Sandpiper	1	1
Belted Kingfisher	2	2
Yellow-bellied Sapsucker	1	1
Red-naped Sapsucker	11	11
Downy Woodpecker	5	5
"Yellow-shafted" Flicker	1	1
"Red-shafted" Flicker	1	1
Flicker Intergrade	1	1
Western Wood-Pewee	14	14
"Traill's" Flycatcher	151	151
Dusky Flycatcher	8	8
Least Flycatcher	155	155
Northern Shrike	1	1
Warbling Vireo	6	6
Red-eyed Vireo	6	6
Black-capped Chickadee	85	85
Red-breasted Nuthatch	4	4
House Wren	32	32
Ruby-crowned Kinglet	6	6
Veery	3	3
Swainson's Thrush	21	21
American Robin	41	41
Gray Catbird	31	31
Brown Thrasher	1	1
Cedar Waxwing	29	29
Tennessee Warbler	6	6
Orange-crowned Warbler	203	203
Yellow Warbler	124	124
Magnolia Warbler	1	1
"Myrtle" Warbler	108	108

Table 6b. New Bandings at Cypress Hills Interprovincial Park - Fall

Year	2010	Total
Start	29-Jul	
Finish	16-Oct	
# Days	68	
"Audubon's" Warbler	3	3
"Unidentified" Yellow-rumped Warbler	2	2
Black-and-white Warbler	3	3
"Western" Palm Warbler	1	1
Blackpoll Warbler	6	6
American Redstart	5	5
Ovenbird	4	4
Northern Waterthrush	9	9
Mourning Warbler	4	4
MacGillivray's Warbler	4	4
Common Yellowthroat	21	21
Wilson's Warbler	51	51
Canada Warbler	1	1
American Tree Sparrow	6	6
Chipping Sparrow	19	19
Clay-colored Sparrow	21	21
Savannah Sparrow	2	2
Song Sparrow	20	20
Lincoln's Sparrow	13	13
White-throated Sparrow	10	10
"Eastern" White-crowned Sparrow	9	9
"Gambel's" White-crowned Sparrow	2	2
White-crowned Sparrow	53	53
"Slate-colored" Junco	7	7
"Pink-sided" Junco	3	3
"Unidentified" Dark-eyed Junco	16	16
Rose-breasted Grosbeak	1	1
Baltimore Oriole	1	1
Red-winged Blackbird	4	4
Purple Finch	1	1
White-winged Crossbill	4	4
Pine Siskin	14	14
American Goldfinch	8	8

Table 7. New Bandings During MAPS at CHIP

Species/Forms	Locations			Total
	Rodeo Grounds	Old Baldy	Spruce Coulee	
Sharp-shinned Hawk	1			**1**
Red-naped Sapsucker	11	2		**13**
Hairy Woodpecker	1			**1**
Western Wood-Pewee	3	2		**5**
Least Flycatcher	3	6	4	**13**
Dusky Flycatcher	1	7	9	**17**
Pacific-slope Flycatcher		1		**1**
Warbling Vireo	3	3	6	**12**
Red-eyed Vireo		2		**2**
Black-capped Chickadee		3	2	**5**
House Wren	2	4	4	**10**
Veery	2	2	5	**9**
Swainson's Thrush		1	1	**2**
American Robin		3	3	**6**
Gray Catbird	2	5		**7**
Cedar Waxwing		6	3	**9**
Tennessee Warbler	3	1	4	**8**
Orange-crowned Warbler	1		1	**2**
Yellow Warbler	3	5	8	**16**
“Audubon’s” Warbler			1	**1**
American Redstart	9	5	7	**21**
Ovenbird	2		1	**3**
MacGillivray's Warbler	2	3		**5**
Common Yellowthroat	4	3		**7**
Western Tanager		2		**2**
Chipping Sparrow		1	3	**4**
Clay-colored Sparrow	2	11	3	**16**
Savannah Sparrow	1			**1**
Song Sparrow	3			**3**
"Eastern" White-crowned Sparrow	3	8	4	**15**
"Gambel's" White-crowned Sparrow	1			**1**
White-crowned Sparrow		3	1	**4**
Brown-headed Cowbird		1	2	**3**
Pine Siskin	2			**2**
American Goldfinch	2	1		**3**
Totals	**67**	**91**	**72**	**230**

Table 8. PopulationTrend Analysis of Species Monitored at Inglewood Bird Sanctuary 1995-2010

Species	Trend %/year	P	Trend %/year	P
Fall	1995-2010		2000-2010	
Sharp-shinned Hawk	-3.7%	0.47	2.2%	0.77
Solitary Sandpiper	13.2%	0.15	37.6%	0.03
Belted Kingfisher	-5.6%	0.03	0.4%	0.92
Olive-sided Flycatcher	-9.4%	0.12	-3.9%	0.66
Western Wood-Pewee	-1.2%	0.72	-0.6%	0.85
Traill's Flycatcher	4.3%	0.42	-2.9%	0.75
Least Flycatcher	6.4%	0.04	6.0%	0.24
Eastern Kingbird	-4.3%	0.13	-6.9%	0.12
Blue-headed Vireo	3.4%	0.64	2.9%	0.77
Warbling Vireo	2.0%	0.49	9.0%	0.04
Red-eyed Vireo	-11.5%	0.02	-12.3%	0.13
House Wren	5.3%	0.04	4.4%	0.32
Ruby-crowned Kinglet	0.5%	0.80	-1.4%	0.78
Swainson's Thrush	1.0%	0.72	5.0%	0.22
Hermit Thrush	-5.1%	0.07	-7.4%	0.16
American Robin	0.6%	0.88	3.9%	0.65
Gray Catbird	3.9%	0.10	-1.0%	0.75
Cedar Waxwing	10.6%	0.01	18.4%	0.02
Ovenbird	0.2%	0.94	1.0%	0.83
Northern Waterthrush	0.8%	0.70	-0.7%	0.87
Black-and-white Warbler	-3.5%	0.48	0.4%	0.95
Tennessee Warbler	0.5%	0.89	-6.2%	0.21
Orange-crowned Warbler	4.8%	0.31	18.0%	0.07
Connecticut Warbler	-6.1%	0.08	-8.0%	0.32
MacGillivray's Warbler	-10.1%	0.00	-11.3%	0.01
Mourning Warbler	-7.4%	0.01	-10.2%	0.00
Common Yellowthroat	-3.2%	0.30	-4.3%	0.47
American Redstart	1.2%	0.72	-4.0%	0.34
Magnolia Warbler	-2.5%	0.37	-5.7%	0.27
Yellow Warbler	2.0%	0.30	1.5%	0.64
Blackpoll Warbler	-2.1%	0.61	4.4%	0.44
Palm Warbler	-13.5%	0.01	-17.1%	0.17
Yellow-rumped Warbler	-0.2%	0.96	-1.1%	0.79
Canada Warbler	-4.7%	0.44	-7.6%	0.64
Wilson's Warbler	4.4%	0.04	3.3%	0.41
American Tree Sparrow	-10.7%	0.03	-1.2%	0.82

Table 8. PopulationTrend Analysis of Species Monitored at Inglewood Bird Sanctuary 1995-2010

Chipping Sparrow	-1.0%	0.81	-1.6%	0.81
Clay-colored Sparrow	-0.8%	0.81	-3.8%	0.38
Song Sparrow	0.6%	0.87	4.9%	0.42
Lincoln's Sparrow	1.6%	0.55	-1.5%	0.72
Swamp Sparrow	-8.2%	0.27	-2.7%	0.73
White-throated Sparrow	-3.8%	0.18	-1.1%	0.84
White-crowned Sparrow	0.4%	0.77	-2.4%	0.39
Dark-eyed Junco	-4.0%	0.31	0.4%	0.95
Western Tanager	-10.1%	0.30	12.1%	0.61
Rose-breasted Grosbeak	2.0%	0.62	-4.0%	0.48
Baltimore Oriole	-5.3%	0.13	-1.1%	0.87
American Goldfinch	-19.5%	0.01	-50.8%	0.01
Spring			2002-2010	
Western Wood-Pewee			20.0%	0.47
Traill's Flycatcher			34.9%	0.06
Least Flycatcher			13.2%	0.12
House Wren			9.1%	0.04
Swainson's Thrush			6.5%	0.19
American Robin			-1.4%	0.74
Gray Catbird			-1.8%	0.64
Northern Waterthrush			-11.8%	0.75
Orange-crowned Warbler			-2.9%	0.61
Common Yellowthroat			-12.1%	0.19
Yellow Warbler			3.9%	0.46
Yellow-rumped Warbler			-8.8%	0.15
Clay-colored Sparrow			23.7%	0.07
Lincoln's Sparrow			8.1%	0.28
White-throated Sparrow			3.6%	0.76
White-crowned Sparrow			4.5%	0.30

P Values (significance of trend)
<0.1
<0.05

Table 9. Bander-in-Charge and Volunteer Effort 2010

Member/Guest	Bander-in-Charge (days)					Volunteer (days)				
	Inglewood			NSWO	CHIP	Inglewood			NSWO	CHIP
	Spring MM	MAPS	Fall MM			Spring MM	MAPS	Fall MM		
Peter Achuff										3
Lynda Alderman							1			
Yousif Attia					148					
Christine Bennett						1		1		
Grahame Booth									2	
Liz Brennan								1		
Vivian Brissette*									3	
Doug Collister			7							2
Dave Cousins						3		2		
Tanya Dale								3		
Erin Dann						6		7	2	
Nancy Davis						3		4	1	
Kelly Day						1			2	
Marty Drut										15
Alexandra Dubrovna								1	4	
Dick Flynn									2	2
Lenora Flynn									2	2
Ken Foster						4		5		12
Marcel Gahbauer			1		2		1			1
Anne Gerencher						4	1			
Matt Ginn								2	1	
Christine Godwin-Sheppard						2		2		5
Jim Gregg						8	1	8		
Carole Hachey								3		
Steve Herrero								1		
Steven Hildebrand									1	
Greg Holmes						2	2	7		5
Garry Hornbeck								1		
Mary Jane Hunter								4	2	
Dani Kaschube*										1
Carol Knox						2	1	9		3
Sue Konopnicki								4		
Ursula Krol						2			4	
Steve Lane	11	2	19					2		

Table 9. Bander-in-Charge and Volunteer Effort 2010

Member/Guest	Bander-in-Charge (days)					Volunteer (days)				
	Inglewood			NSWO	CHIP	Inglewood			NSWO	CHIP
	Spring MM	MAPS	Fall MM			Spring MM	MAPS	Fall MM		
Kathryn Manry								13	2	2
Christine McDonald						1		2	1	
Shonna McLeod	5		8	17				1		
Greg Meyer	8	2	13				1			2
Pat Mitchell	4	1	10	16						
Mike Mulligan						3		4		
David Musto						1				
Susan Patey-LeDrew						1				
El Peterson						2		1		
Maddy Pinto						1		4	1	
Jane Potter						2		1		
Michael Potter						3	1	4	1	2
Jen Sipkens						7		5	2	
Gwen Smiley								1		
Cyndi Smith									1	3
Elaine Spitzer										2
Milt Spitzer										2
Dick Stauffer						1				
Don Stiles								5		1
Jennifer Stroh										5
Bill Taylor	4	2	10				1			
Clarisse Thornton						1				
Gwen Tietz									1	4
Barry Trakalo						1				
Mike Truch								1	1	
Celina Waight								7	1	
Anne Weerstra						3		4	2	
Linda Wiggins						1		1	1	
Bruce Wilson						4		4		2
Mark Zimmerman								3		
Total	**32**	**7**	**68**	**33**	**150**	**70**	**10**	**128**	**40**	**76**

* guest volunteer

Table 10. Injuries and Mortalities During 2010 CBBS Projects

Species	Captures	Injuries		Mortalities	
		Number	Type	Number	Cause
Red-naped Sapsucker	41	1	wing abrasion		
Least Flycatcher	376	2	wing abrasion		
Black-capped Chickadee	137			1	died during banding
House Wren	214	1	broken leg		
		1	wing strain		
				1	dead in net
Townsend's Solitaire	1	1	shoulder abrasion		
Veery	15	1	wing abrasion		
Swainson's Thrush	187	1	wing strain		
American Robin	159	5	cut tongue		
		1	wing abrasion		
		1	dislocated leg		
Cedar Waxwing	257	1	leg abrasion		
		1	shoulder abrasion		
				1	SSHA predation
Northern Waterthrush	79	1	leg abrasion		
Orange-crowned Warbler	729			2	dead in holding bag
				1	FLIN aggression
		1	toe abrasion		
				2	dead in net
				2	SSHA predation
		1	wing strain		
Common Yellowthroat	106	1	broken leg		
American Redstart	28	1	wing strain		
Blackpoll Warbler	30	1	wing strain		
Palm Warbler	3	1	wing strain		
Yellow-rumped Warbler	417	1	cut wingpit		
Wilson's Warbler	432	1	broken leg		
				1	dead in net
				2	deer predation
		2	wing strain		
Warbler spp.				1	unknown predation
				1	marten predation
Chipping Sparrow	161			1	red squirrel predation
Clay-coloured Sparrow	145			1	dead in bag
Song Sparrow	66	1	dislocated leg		
Lincoln's Sparrow	119			1	weasel predation
		1	neck abrasion		
White-throated Sparrow	45	2	broken leg		
White-crowned Sparrow	157	1	wing strain		
Pine Siskin	20			1	died during banding
Spp.				6	deer predation
		1	wing abrasion		
Total	**6137**	**34**	**0.55%**	**25**	**0.41%**

TABLE 11. CALGARY BIRD BANDING SOCIETY
2010 MEMBERSHIP LIST

Achuff, Peter
Alderman, Lynda
Andrews, Sidney
Arrau, Maria
Attia, Yousif
Belyea, Lisa
Bennett, Christine
Booth, Grahame
Brennan, Liz
Cole, Amanda
Collister, Doug
Cousins, David
Dale, Tanya
Dann, Erin
Davis, Nancy
Day, Kelly
Drut, Marty
Dubrovna, Alexandra
Ebel, Rainer
Flynn, Lenora
Flynn, Richard
Foster, Ken
Gahbauer, Marcel
Gardner, Corlaine
Gerencher, Anne
Gibbins, Shelley
Gibbins, Stefan
Ginn, Matt
Godwin-Sheppard, Christine
Gregg, Jim
Hachey, Carole
Heaney, Kevin
Herrero, Steve
Hildebrand, Steven
Hilborne, Jennifer
Holmes, Greg
Hornbeck, Garry
Hunter, Mary Jane
Kissinger, Bev
Kissinger, Maryanne
Knox, Carol
Koch, Michelle
Konopnicki, Sue
Krol, Ursula
Lamb, Tamara
Lane, Stephen
Manry, Kathryn
McDonald, Christine
McLeod, Shonna
Meyer, Greg
Mitchell, Pat
Mulligan, Mike
Musto, David
Newton, Eric
Patey Ledrew, Susan
Peterson, El
Peterson, Kevin
Pinto, Madalena
Potter, Jane
Potter, Michael
Sims, Lisa
Seneviratne, Melanie
Sipkens, Jennifer
Smiley, Gwen
Smith, Cyndi
Spitzer, Elaine and Milt
Stan, Michelle
Stauffer, Dick
Stiles, Don
Stroh, Jennifer
Taylor, Bill
Thornton, Clarisse
Tietz, Gwen
Trakalo, Barry
Truch, Mike
Waight, Celina (Praymak)
Weerstra, Anne
Wiggins, Linda
Wieckowski, Donna
Wilson, Amy
Wilson, Bruce
Wilson, Rhea
Wilson, Scott
Young, Colin
Zimmerman, Mark

Executive

President – Doug Collister
Vice President – Don Stiles
Treasurer – El Peterson
Secretary – Bill Taylor
Annual Report – Doug Collister
Director-at-Large – Christine Godwin-Sheppard
Director-at-Large – Marcel Gahbauer
Director-at-Large – Bev Kissinger
Director-at-Large – Steve Lane

Appendix 1

Appendix 1a. New Bandings at Inglewood Bird Sanctuary - Spring 2010

Species	May													May												May					June						Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	
Wilson's Snipe	1																																					**1**
Spotted Sandpiper																																		1			1	**2**
Downy Woodpecker	1	1							1			1																										**4**
Western Wood-Pewee																																			1			**1**
Alder Flycatcher																											8			7	4	4	3		3	2	1	**32**
Willow Flycatcher																															3							**3**
Least Flycatcher																					1		4	1			1			2				2	2			**13**
Eastern Kingbird																																1						**1**
Warbling Vireo																								1	1						1						2	**5**
Black-billed Magpie																				1																		**1**
Tree Swallow											1			1	1			2						1		3					1		3	4	1	1		**19**
N Rough-winged Swallow																1											2					2	1					**6**
White-breasted Nuthatch									1																													**1**
House Wren																1	1	1	2	1	1	1		2	2							2			2	3	2	**21**
Swainson's Thrush											1				1		1		3	2	5	1			1		5			11	19	4	4	4	7	10	1	**80**
Hermit Thrush			1																			1																**2**
American Robin	3		1						2						1	1	2		1			1		1	3	6					2		1	1	1			**27**
Gray Catbird																						1										2	1		2			**6**
Brown Thrasher																															1							**1**
Cedar Waxwing																																	7	2	17	22	11	**59**
Tennessee Warbler																						1								1	1							**3**
Orange-crowned Warbler														3						1	1	2					1								2			**10**
Yellow Warbler																						3	1		1	3	4			9	7	1	5	3	2	2	3	**44**
Yellow-rumped Warbler	4	5					1	1			1	3	6	1							1	3	5													1		**32**
Blackpoll Warbler																											1				2		1		2			**6**
American Redstart																										1					1				1			**3**
Northern Waterthrush																	1	1	1																			**3**
Connecticut Warbler																																				1		**1**
Common Yellowthroat															1		1			2	1						1			3	1		1	1	5			**17**
Wilson's Warbler																																		1	1	1		**3**
Western Tanager																															1							**1**
Chipping Sparrow																						12	4				9				1							**26**
Clay-colored Sparrow														1				2	1			14	1	5	5	2	6			2	7			1	4	3		**54**
Savannah Sparrow							1		1	1																												**3**
Song Sparrow	1	1							1			1																			1						1	**6**
Lincoln's Sparrow	1		2				1			3	4		7	4	4	2		1	2	3	3	1	3	1	2	2	1				1		2	1	1			**52**
White-throated Sparrow	2	1													1							1	1															**6**
White-crowned Sparrow									1	1	1				2				1					2							1							**9**
Rose-breasted Grosbeak																			1																	1		**2**
Red-winged Blackbird																									1													**1**
Brewer's Blackbird																		1																				**1**
Brown-headed Cowbird																		2				1											2					**5**

Appendix 1b. New Bandings at Inglewood Bird Sanctuary - Fall 2010

Species	July				August																						August										September														September																October							Total
	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	
Sharp-shinned Hawk																											1																																1														2
Solitary Sandpiper						1					1								1																																																												3
Wilson's Snipe																																																								1																			1
Belted Kingfisher		1		1		1		1	1																												1																														1										7
Downy Woodpecker		2							2	1											2	1													1								1	2			1	1												1																	15
Hairy Woodpecker																																								1																																			1
Northern Flicker																																										1																				1													2
Olive-sided Flycatcher														1																																																																	1
Western Wood-Pewee	1			1										1	2			1		1				1										1									1														1																		11
Yellow-bellied Flycatcher																								1																																																										1
Alder Flycatcher							1								2	1		3			4	2			2	2	1				2	1		1						1	6	1					1				1			1			1																		34
Willow Flycatcher	1																																																																										1
Least Flycatcher		1		1			2			1	2	3		1	3	6	1			3		1		1	2	2		1	1		3			2	2			1			2			1	1																															44
Hammond's Flycatcher																																																					1																							1
Eastern Kingbird											1										1					2																																																						4
Blue-headed Vireo																																	1											1																																			2
Warbling Vireo			1			1							1		2	1	1				1		1			1		1	1	1	1	1							1			1									1																									18
Red-eyed Vireo																		1																																					1																							2
Black-billed Magpie																																																																	1											1
Black-capped Chickadee	2	4																1																																		3																													10
Red-breasted Nuthatch												2			1																																																																	3
White-breasted Nuthatch												1																											1																		1																			3
House Wren	1	4	4	6	2		6	1	2	1	7	3	1	3		2		1			1	3	4	2		2		2			1	1								2						1													1			1	1	1												67
Ruby-crowned Kinglet																																											1											2		2	1				2										1		2			11
Townsend's Solitaire																																															1																														1
Swainson's Thrush				1		1																										1										3		1		1	1		1		3	2		4	5		3	4	2	1	1			1		1										37
Hermit Thrush																																																								1			1		1					4										7
American Robin		1	3							1	2			1		1				3			1																	2									3							4					3		1											26
Gray Catbird									1								1					2		1		1					2	1				1			1		1	1		1					1																								15
Cedar Waxwing	6	1	4		1	8	4		3	7	1	10	2	6	5	7		1	2	1	10	16		4	3	4	1	5		3		3				1			2					2																1														124
Tennessee Warbler		1		3			1			3					2	1		5	1	2	5	2	1		3	15			1	2										2	1			1			1		1	1								1														56
Orange-crowned Warbler																				1								1			5			1		1	3	1	1	42	38	2		18	41	15	5		2	6		85	17	44	43	20	6	4	2					1				2					407
Yellow Warbler		2		1		1	4	5	11	14	7	17	4	2	11	9	1	4	6	10	7	8	6	2	4	4	2	2	2	3	1	1				2									1																													154
Magnolia Warbler																		1	1																															1																											3
Yellow-rumped Warbler							1		1	1	1	2			1		1		3	5	1	5		1	2	2	1	2			2	5	1			4	1	5	13	13	17			1	10	2	5		1	1		42		11	19	7	1	1	2											6			200
Townsend's Warbler						1																2																																																							3
Palm Warbler																																																					2			1																			3
Blackpoll Warbler																					3	1				2		1			1					1						1					1				3		2																			16
Black-and-white Warbler																																																								1																			1
American Redstart														1	1			3	1	1	3	1				2	1				2						1				1													1																						19
Ovenbird												1								1	4				1	5			1			1		2																				1			1																				18
Northern Waterthrush			1				1		1	6	1	2		3	4	5	2	5	3	3	4	1						1																									1																						44
Connecticut Warbler																																															1																														1
Mourning Warbler																																	1												1						1																												3
MacGillivray's Warbler																			1											1	1																							1							1														5
Common Yellowthroat																						1																				1			1			1	1									2	2			1	1									1		1			13
Wilson's Warbler												3			1			4		1						4	2	4	2	3	11	3	1		7	44	6	7	13	42	4				9	30	17		7	11		40	9	9	18	11	4	3	7	1			1												339
Canada Warbler																							1																											1																													2
Western Tanager						1													1	2		1								1											1	1															1																			9
American Tree Sparrow																																												1																							1							2
Chipping Sparrow			1						2	14	2	18		4	1					1	1			2		1		1			9			1						1			1																																	60
Clay-colored Sparrow			1			1														2	1			1	1						2		1		1			1																																							12
Song Sparrow	1	1	1				1					1								1				1	2									1	1		1	1																																	1							2			16
Lincoln's Sparrow	1	1				1	1	1		1														1					1				1	1		1	1		2		1	3		3	1		1			1			1		1	2						1												29
White-throated Sparrow																																							1			2	3		1	1	1	5						1		1	4	4		3																27
White-crowned Sparrow																																															6	3		1	1		2	3	1	1	3		1														1		23
Dark-eyed Junco																																											1				2						1								1									1			6
Rose-breasted Grosbeak					1					1														1		2																																																					5
Brown-headed Cowbird	1			1									1			1																																																															4
Baltimore Oriole																			1	2																																																									3
House Finch										8		1				1					1																																																										11

Appendix 2

Appendix 2. Top 20 New Bandings at Inglewood Bird Sanctuary

Spring				
Species	Total 2002-2010		2010	2010
	Rank	Number	Rank	Number
Yellow-rumped Warbler	1	1008	6-7	32
Swainson's Thrush	2	390	1	80
Lincoln's Sparrow	3	311	4	52
American Robin	4	267	8	27
Clay-colored Sparrow	5	210	3	54
Chipping Sparrow	6	194	9	26
Yellow Warbler	7	171	5	44
Tree Swallow	8	159	11	19
House Wren	9	144	10	21
White-crowned Sparrow	10	126	15	9
Orange-crowned Warbler	11	119	14	10
Least Flycatcher	12	114	13	13
Gray Catbird	13	100	16-20	6
Cedar Waxwing	14	98	2	59
Common Yellowthroat	15	79	12	17
Traill's Flycatcher*	16	78	6-7	32
White-throated Sparrow	17	51	16-20	6
Brown-headed Cowbird	18	46		
N Rough-winged Swallow	19	41	16-20	6
Northern Waterthrush	20	36		
Blackpoll Warbler			16-20	6
Song Sparrow			16-20	6

Fall				
Species	Total 1995-2010		2010	2010
	Rank	Number	Rank	Number
Yellow-rumped Warbler	1	4389	3	200
Wilson's Warbler	2	2665	2	339
Orange-crowned Warbler	3	2034	1	407
Yellow Warbler	4	1785	4	154
Tennessee Warbler	5	1273	8	56
House Wren	6	1147	6	67
Traill's Flycatcher	7	983	12	35
American Robin	8	931	15	26
Chipping Sparrow	9	928	7	60
Cedar Waxwing	10	803	5	124
Northern Waterthrush	11	736	9-10	44
Lincoln's Sparrow	12	713	13	29
White-throated Sparrow	13	657	14	27
Swainson's Thrush	14	438	37	11
Least Flycatcher	15	431	9-10	44
White-crowned Sparrow	16	368	16	23
Ovenbird	17	337	18-19	18
Black-capped Chickadee	18	281		
Clay-colored Sparrow	19	260		
Warbling Vireo	20	259	18-19	18
Blackpoll Warbler			20-21	16
American Redstart			17	19
Song Sparrow			20-21	16

* includes Alder and Willow Flycatcher

Appendix 3

Appendix 3. Year-to-Year Recaptures at Inglewood Bird Sanctuary, Dunbow Road, Cominco Natural Area, Dinosaur Provincial Park and De Wit Ranch

B year banded
r recaptured
d bird dead or remains found
x not detected but survival deduced from re-encounter in subsequent year

first record for each species
banding location different than recapture location

Species	Band	Location	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Northern Saw-whet Owl	1204-23480	De Wit ranch													B	d		FD in next L-L N			
Northern Saw-whet Owl	1204-25371	De Wit ranch													B	x	r				
Northern Saw-whet Owl	0924-21506	De Wit ranch														B	r				
Northern Saw-whet Owl	0924-21813	De Wit ranch														B	x	x	r		
Northern Saw-whet Owl	1204-25383	De Wit ranch													B	x	x	r			
Northern Saw-whet Owl	092445655	De Wit ranch																	B	x	r
Belted Kingfisher	1283-88929	IBS															B	r			
Belted Kingfisher	1363-70918	IBS			B	r															
Belted Kingfisher	1363-70961	IBS												B	r						
Belted Kingfisher	1363-71000	IBS															B	r			
Belted Kingfisher	200346139	IBS																		B	r
Yellow-bellied Sapsucker	8051-65119	Dunbow						B	r												
Yellow-bellied Sapsucker	8001-77959	DPP															B	r			
Yellow-bellied Sapsucker	8001-77960	DPP															B	r			
Red-naped Sapsucker	8041-54901	Dunbow							B	r											
Downy Woodpecker	1451-67033	IBS				B	r	r	x	x	x	r									
Downy Woodpecker	1461-02314	IBS					B	r	r	r											
Downy Woodpecker	1461-05307	Dunbow						B	x	r											
Downy Woodpecker	1461-50837	Cominco									B	r									
Downy Woodpecker	1461-63690	IBS			B	r															
Downy Woodpecker	1461-84563	Cominco									B	r									
Downy Woodpecker	1761-28014	Cominco									B	r									
Downy Woodpecker	1791-28009	IBS											B	r	r						
Downy Woodpecker	1791-28131	IBS										B	r	r	r						
Downy Woodpecker	1811-73700	IBS													B	x	r				
Downy Woodpecker	1871-73165	IBS														B	r				
Downy Woodpecker	1871-73196	IBS														B	r				
Downy Woodpecker	1871-73382	IBS														B	r				
Downy Woodpecker	1871-73457	IBS													B	r	r	r			

Appendix 3. Year-to-Year Recaptures at Inglewood Bird Sanctuary, Dunbow Road, Cominco Natural Area, Dinosaur Provincial Park and De Wit Ranch

Species	Band	Location	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Downy Woodpecker	1901-94964	IBS																B	x	r	
Downy Woodpecker	1901-94973	IBS																B	r	r	
Downy Woodpecker	2201-45482	IBS																	B	r	
Downy Woodpecker	2291-32298	IBS																	B	r	
Hairy Woodpecker	0962-90911	IBS				B	x	x	x	x	r	x	r								
Hairy Woodpecker	1152-38713	IBS							B	x	r	x	r								
Hairy Woodpecker	8041-83240	IBS													B	x	r				
Northern Flicker	1383-76804	IBS							B	x	x	r									
Northern Flicker	1383-76830	IBS											B	r	r	x	x	x	x	r	
Northern Flicker	1453-31301	IBS				B	r														
Western Wood-Pewee	2160-19068	IBS							B	x	x	r									
Western Wood-Pewee	2160-19487	IBS								B	x	r									
Western Wood-Pewee	2190-10406	IBS										B	r								
Western Wood-Pewee	2200-47351	IBS										B	r	r	r	r					
Western Wood-Pewee	2290-37207	IBS															B	r			
Western Wood-Pewee	2290-88513	IBS													B	r					
Western Wood-Pewee	2500-72334	IBS																	B	r	
Least Flycatcher	2050-70767	Dunbow						B	x	r											
Least Flycatcher	2290-37714	DPP															B	r			
Least Flycatcher	2290-37255	IBS															B	r			
Least Flycatcher	2430-31064	IBS															B	r			
Least Flycatcher	2490-22361	IBS																B	r		
Least Flycatcher	2490-22502	IBS																B	x	x	r
Eastern Kingbird	1451-38640	IBS	B	x	x	r															
Eastern Kingbird	1461-31482	IBS							B	x	x	x	r								
Eastern Kingbird	1461-50853	Cominco									B	r			recaptured at IBS						
Eastern Kingbird	1461-50898	Cominco									B	r			recaptured at IBS						
Eastern Kingbird	1461-50899	Cominco									B	r									
Eastern Kingbird	1461-63719	IBS					B	r	x	r	x	x	r								
Eastern Kingbird	1461-63727	IBS					B	x	x	x	r										
Eastern Kingbird	1461-63750	IBS						B	r	r	x	x	r								
Eastern Kingbird	1761-28292	IBS										B	r								
Eastern Kingbird	1791-21021	IBS										B	x	r	r	x	x	x	r	x	r

Appendix 3. Year-to-Year Recaptures at Inglewood Bird Sanctuary, Dunbow Road, Cominco Natural Area, Dinosaur Provincial Park and De Wit Ranch

Species	Band	Location	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Eastern Kingbird	1811-73189	IBS												B	x	x	r				
Eastern Kingbird	1871-73181	IBS														B	r	r	r	x	r
Eastern Kingbird	1871-73452	IBS													B	r					
Eastern Kingbird	1901-94517	IBS															B	r			
Warbling Vireo	1950-45045	IBS			B	r															
Warbling Vireo	1950-45076	IBS			B	x	r	r	r												
Warbling Vireo	1950-48110	IBS		B	x	r															
Warbling Vireo	1990-57936	IBS									B	x	r	r							
Warbling Vireo	2050-70837	IBS						B	r												
Warbling Vireo	2050-70961	IBS					B	x	r												
Warbling Vireo	2091-55780	IBS														B	r	r			
Warbling Vireo	2161-14605	IBS				B	x	x	r												
Warbling Vireo	2171-56330	Cominco									B	r									
Warbling Vireo	2190-10445	IBS										B	r								
Warbling Vireo	2220-34455	Cominco									B	r									
Warbling Vireo	2270-23115	IBS											B	x	r	r					
Warbling Vireo	2270-80426	IBS												B	r						
Warbling Vireo	2290-22442	IBS																B	x	r	
Warbling Vireo	2490-22596	IBS																B	r		
Warbling Vireo	2500-72037	IBS																	B	r	
Warbling Vireo	2500-72125	IBS																	B	r	r
Warbling Vireo	2580-26745	IBS																		B	r
Warbling Vireo	3101-45254	IBS								B	r										
Warbling Vireo	3101-89999	IBS								B	x	x	r								
Warbling Vireo	3121-21265	Cominco									B	r									
Black-billed Magpie	0624-79522	IBS												B	x	x	x	r			
Black-billed Magpie	1363-70976	IBS													B	x	x	r			
Tree Swallow	1671-56106	IBS												B	r						
Tree Swallow	1671-56108	IBS												B	x	x	r				
Tree Swallow	1671-56126	IBS												B	r	r	x	x	r		
Tree Swallow	2161-08849	IBS													B	x	x	r			
Tree Swallow	2161-08859	IBS													B	r	r				
Tree Swallow	2161-08860	IBS													B	r					

Appendix 3. Year-to-Year Recaptures at Inglewood Bird Sanctuary, Dunbow Road, Cominco Natural Area, Dinosaur Provincial Park and De Wit Ranch

Species	Band	Location	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Tree Swallow	2161-08869	IBS													B	r					
Tree Swallow	2161-08872	IBS													B	r					
Tree Swallow	2171-56486	IBS											B	x	r						
Tree Swallow	2171-56493	IBS											B	x	r						
Tree Swallow	2181-72921	IBS															B	r			
Tree Swallow	2181-72922	IBS															B	r			
Tree Swallow	2181-72930	IBS															B	r			
Tree Swallow	2181-72931	IBS															B	x	x	r	
Tree Swallow	2181-72952	IBS															B	r			
Tree Swallow	2181-72955	IBS															B	r			
Tree Swallow	2221-30533	IBS																B	r	r	
Tree Swallow	2221-82420	IBS																	B	r	
Tree Swallow	2221-82460	IBS																	B	r	
Tree Swallow	2221-82471	IBS																	B	r	
Tree Swallow	2221-82545	IBS																		B	r
Northern Rough-winged Swallow	2290-88401	IBS													B	r					
Northern Rough-winged Swallow	2290-37070	IBS														B	x	r			
Northern Rough-winged Swallow	2290-37386	IBS														B	r				
Northern Rough-winged Swallow	2580-26717	IBS																		B	r
Black-capped Chickadee	1950-45065	IBS			B	r															
Black-capped Chickadee	1950-45186	IBS			B	r	r	r													
Black-capped Chickadee	1950-45254	IBS			B	r	r	x	x	r	r	r									
Black-capped Chickadee	1950-45255	IBS			B	x	x	x	x	x	r	r									
Black-capped Chickadee	1950-45256	IBS			B	r	r														
Black-capped Chickadee	1950-45258	IBS			B	r	r	r	r												
Black-capped Chickadee	1950-45786	IBS					B	r													
Black-capped Chickadee	1980-79991	IBS				B	r	r	r	r	r	r									
Black-capped Chickadee	1990-57154	IBS						B	r												
Black-capped Chickadee	2050-70142	IBS				B	x	r													
Black-capped Chickadee	2050-70427	IBS					B	r													
Black-capped Chickadee	2050-70848	IBS						B	x	x	x	x	x	x	x	x	x	r			
Black-capped Chickadee	2050-70849	IBS						B	r												
Black-capped Chickadee	2120-00102	Dunbow						B	r	r											

Appendix 3. Year-to-Year Recaptures at Inglewood Bird Sanctuary, Dunbow Road, Cominco Natural Area, Dinosaur Provincial Park and De Wit Ranch

Species	Band	Location	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Black-capped Chickadee	2120-00103	Dunbow						B	r												
Black-capped Chickadee	2120-00105	Dunbow						B	r	r											
Black-capped Chickadee	2120-00107	Dunbow						B	r	r											
Black-capped Chickadee	2120-00109	Dunbow						B	r	r											
Black-capped Chickadee	2120-00110	Dunbow						B	r												
Black-capped Chickadee	2120-00113	Dunbow						B	r												
Black-capped Chickadee	2120-00114	Dunbow						B	r												
Black-capped Chickadee	2120-00117	Dunbow						B	r	r											
Black-capped Chickadee	2120-00124	Dunbow						B	x	r											
Black-capped Chickadee	2120-00125	Dunbow						B	r												
Black-capped Chickadee	2120-00128	Dunbow						B	r												
Black-capped Chickadee	2120-00197	Dunbow						B	r												
Black-capped Chickadee	2160-18085	Dunbow							B	r											
Black-capped Chickadee	2160-18119	IBS							B	x	x	x	x	x	x	x	x	r			
Black-capped Chickadee	2160-18180	IBS						B	r												
Black-capped Chickadee	2160-18704	IBS							B	r											
Black-capped Chickadee	2160-19059	IBS							B	r											
Black-capped Chickadee	2160-19120	IBS							B	r	r	r	r	r							
Black-capped Chickadee	2160-19174	IBS							B	r											
Black-capped Chickadee	2160-19522	IBS								B	r	r	r	r	r						
Black-capped Chickadee	2190-10126	IBS									B	r	r								
Black-capped Chickadee	2190-10128	IBS									B	x	r								
Black-capped Chickadee	2200-47365	IBS										B	r								
Black-capped Chickadee	2220-13397	IBS											B	x	x	x	x	x	r		
Black-capped Chickadee	2220-34017	Cominco									B	r									
Black-capped Chickadee	2220-34132	Cominco									B	r									
Black-capped Chickadee	2220-34593	Cominco									B	r									
Black-capped Chickadee	2270-23454	IBS											B	r	r	r	r				
Black-capped Chickadee	2270-80108	IBS											B	r	r	r					
Black-capped Chickadee	2270-80454	IBS												B	r	r	r	r			
Black-capped Chickadee	2270-80480	IBS												B	r						
Black-capped Chickadee	2270-80687	IBS												B	r						
Black-capped Chickadee	2270-80989	IBS													B	r					

Appendix 3. Year-to-Year Recaptures at Inglewood Bird Sanctuary, Dunbow Road, Cominco Natural Area, Dinosaur Provincial Park and De Wit Ranch

Species	Band	Location	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Black-capped Chickadee	2270-81230	IBS														B	r				
Black-capped Chickadee	2270-81297	IBS														B	x	r			
Black-capped Chickadee	2270-81338	IBS															B	r			
Black-capped Chickadee	2290-37241	IBS															B	r			
Black-capped Chickadee	2290-37640	IBS															B	r			
Black-capped Chickadee	2290-37793	DPP															B	r			
Black-capped Chickadee	2290-88414	IBS													B	x	x	r			
Black-capped Chickadee	2290-88658	IBS													B	r	r	r	r	x	r
Black-capped Chickadee	2290-92058	IBS												B	r						
Black-capped Chickadee	2290-92141	IBS												B	r	r	r	x	r		
Black-capped Chickadee	2290-92174	IBS												B	r						
Black-capped Chickadee	2290-37242	IBS															B	r			
Black-capped Chickadee	2290-37348	IBS														B	r				
Black-capped Chickadee	2390-30780	IBS										B	r								
Black-capped Chickadee	2390-30780	IBS										B	x	r							
Black-capped Chickadee	2390-30962	IBS											B	r							
Black-capped Chickadee	2430-31003	IBS															B	r			
Black-capped Chickadee	2430-31738	IBS																B	x	r	
Black-capped Chickadee	2490-22455	IBS																B	r	r	r
Black-capped Chickadee	2490-22713	IBS																B	r		
Black-capped Chickadee	2500-72065	IBS																	B	r	
Black-capped Chickadee	2500-72501	IBS																B	r	r	r
Black-capped Chickadee	2500-72065	IBS																	B	r	
Black-capped Chickadee	2500-72088	IBS																	B	r	
Black-capped Chickadee	2580-26801	IBS																		B	r
Black-capped Chickadee	2580-26827	IBS																		B	r
Black-capped Chickadee	2580-26831	IBS																		B	r
Black-capped Chickadee	2580-26934	IBS																		B	r
Black-capped Chickadee	3500-89670	Dunbow						B	r	r											
White-breasted Nuthatch	1461-31479	IBS							B	r	r										
White-breasted Nuthatch	1461-84757	IBS				B	r	x	r												
White-breasted Nuthatch	1761-15767	IBS											B	r							
White-breasted Nuthatch	1761-28100	IBS																			

Appendix 3. Year-to-Year Recaptures at Inglewood Bird Sanctuary, Dunbow Road, Cominco Natural Area, Dinosaur Provincial Park and De Wit Ranch

Species	Band	Location	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
White-breasted Nuthatch	1791-28150	IBS										B	r								
White-breasted Nuthatch	1811-73193	IBS												B	x	r					
White-breasted Nuthatch	1901-94527	IBS															B	r	r		
White-breasted Nuthatch	2221-45958	IBS																B	r		
White-breasted Nuthatch	2291-32012	IBS																	B	r	
House Wren	1910-52261	IBS	B	r	x	r	r	r	r												
House Wren	1950-45790	IBS					B	r													
House Wren	1950-45886	IBS					B	r													
House Wren	1950-48126	IBS		B	x	r															
House Wren	1990-57803	Cominco									B	r									
House Wren	1990-57943	IBS									B	r									
House Wren	1990-57981	IBS									B	r	r	r	r	r					
House Wren	2060-28447	IBS						B	r												
House Wren	2160-18063	Dunbow							B	r											
House Wren	2160-18082	Dunbow							B	r											
House Wren	2160-19002	Dunbow							B	r											
House Wren	2190-10308	IBS									B	r									
House Wren	2190-10325	IBS										B	r								
House Wren	2200-47352	IBS										B	r								
House Wren	2200-47377	IBS										B	r	r	r						
House Wren	2220-13252	IBS											B	x	r	x	r				
House Wren	2220-13258	IBS											B	x	r						
House Wren	2270-23312	IBS											B	r							
House Wren	2270-23375	IBS											B	r							
House Wren	2270-23485	IBS											B	r							
House Wren	2270-80132	IBS											B	r							
House Wren	2270-80192	IBS												B	r						
House Wren	2270-80296	IBS												B	x	x	r				
House Wren	2270-80297	IBS												B	r	r					
House Wren	2270-80314	IBS												B	x	r					
House Wren	2270-80336	IBS												B	r						
House Wren	2270-80346	IBS												B	r						
House Wren	2270-80400	IBS												B	r						

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Species	Band	Location	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
House Wren	2270-80454	IBS												B	r						
House Wren	2270-81375	IBS															B	r			
House Wren	2270-81418	IBS													B	x	r				
House Wren	2270-81468	IBS													B	x	x	x	x	r	
House Wren	2290-37017	IBS														B	r				
House Wren	2290-37184	IBS														B	r				
House Wren	2290-37206	IBS															B	x	r		
House Wren	2290-37286	IBS															B	r			
House Wren	2290-37293	IBS															B	r			
House Wren	2290-37313	IBS														B	x	r			
House Wren	2290-37331	IBS														B	r				
House Wren	2290-37483	IBS														B	r				
House Wren	2290-37489	IBS														B	r	r			
House Wren	2290-37638	IBS																B	r		
House Wren	2290-37710	DPP															B	r			
House Wren	2290-37724	DPP															B	r			
House Wren	2290-37732	DPP															B	r			
House Wren	2290-37748	DPP															B	r			
House Wren	2290-37762	DPP															B	r			
House Wren	2290-37770	DPP															B	r			
House Wren	2290-88409	IBS													B	r					
House Wren	2290-88460	IBS													B	r					
House Wren	2290-88533	IBS													B	x	x	r	r		
House Wren	2290-92112	IBS												B	r						
House Wren	2290-92203	IBS												B	r						
House Wren	2430-31067	IBS															B	r	r		
House Wren	2490-22377	IBS																B	r		
House Wren	2490-22484	IBS																B	r	r	
House Wren	2490-22526	IBS																B	r		
House Wren	2500-72030	IBS																	B	r	
House Wren	2500-72047	IBS																	B	r	
House Wren	2500-72097	IBS																	B	r	
House Wren	2500-72525	IBS																B	r	r	

Appendix 3. Year-to-Year Recaptures at Inglewood Bird Sanctuary, Dunbow Road, Cominco Natural Area, Dinosaur Provincial Park and De Wit Ranch

Species	Band	Location	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
House Wren	2500-72564	IBS																B	r		
House Wren	2500-72584	IBS																B	r		
House Wren	2580-26681	IBS																		B	r
House Wren	2580-26683	IBS																		B	r
House Wren	2580-26759	IBS																		B	r
House Wren	2580-26768	IBS																		B	r
House Wren	2580-26841	IBS																		B	r
House Wren	2580-26881	IBS																		B	r
Swainson's Thrush	1451-67159	IBS					B	x	r												
Swainson's Thrush	1461-63572	IBS						B	r												
Swainson's Thrush	1461-63682	IBS			B	x	r														
Swainson's Thrush	1461-63692	IBS			B	x	x	r													
Swainson's Thrush	1461-63741	IBS					B	r													
Swainson's Thrush	1461-69595	IBS					B	r													
Swainson's Thrush	1541-17673	IBS								B	r	x	r								
Swainson's Thrush	1871-73214	IBS														B	x	r			
American Robin	0942-93625	IBS											B	d							
American Robin	0942-93635	IBS											B	r							
American Robin	0942-93643	IBS											B	r							
American Robin	0942-93654	IBS												B	r						
American Robin	0942-93655	IBS												B	r	x	r				
American Robin	0942-93660	IBS												B	r						
American Robin	0942-93686	IBS												B	x	x	x	d			
American Robin	0942-93694	IBS												B	x	d					
American Robin	0942-93747	IBS												B	r						
American Robin	0942-93786	IBS												B	x	r					
American Robin	0962-90991	IBS				B	x	r													
American Robin	0972-30082	IBS										B	r								
American Robin	0972-30083	IBS										B	r	r							
American Robin	0972-30087	IBS										B	r								
American Robin	0972-30095	IBS										B	x	r							
American Robin	0972-30466	IBS				B	x	r													
American Robin	0942-93731	IBS												B	x	x	r				

Appendix 3. Year-to-Year Recaptures at Inglewood Bird Sanctuary, Dunbow Road, Cominco Natural Area, Dinosaur Provincial Park and De Wit Ranch

Species	Band	Location	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
American Robin	1142-49046	IBS						B	r												
American Robin	1142-49201	Dunbow						B	r												
American Robin	1142-49212	Dunbow						B	x	r											
American Robin	1142-49217	Dunbow						B	r												
American Robin	1142-49221	Dunbow						B	r												
American Robin	1142-49261	IBS											B	r		r					
American Robin	1142-49270	IBS											B	x	r						
American Robin	1142-49272	IBS											B	x	x	x	r				
American Robin	1142-55013	IBS										B	x	x	x	x	r				
American Robin	1142-55058	IBS										B	x	x	x	x	r	x	x	r	
American Robin	1152-38703	Dunbow							B	r											
American Robin	1152-38721	IBS							B	x	x	x	x	x	r	r	r				
American Robin	1152-38740	IBS							B	r	x	r	x	r							
American Robin	1152-38773	IBS								B	x	x	x	x	x	x	x	x	x	r	
American Robin	1152-38887	IBS									B	r									
American Robin	1202-13232	IBS													B	r					
American Robin	1202-13233	IBS														B	r				
American Robin	1202-13232	IBS													B	r					
American Robin	1202-13243	IBS													B	r					
American Robin	1202-13272	IBS													B	r	r				
American Robin	1202-13302	IBS														B	r	r	x	r	
American Robin	1202-13308	IBS														B	r				
American Robin	1202-13333	IBS														B	r				
American Robin	1202-13337	IBS														B	r				
American Robin	1202-13338	IBS														B	r				
American Robin	1202-13340	IBS														B	x	r			
American Robin	1202-13345	IBS														B	r				
American Robin	1202-13368	IBS														B	r				
American Robin	1202-13384	IBS														B	r				
American Robin	1202-13386	IBS														B	r	r	r		
American Robin	1202-13389	IBS														B	x	x	x	x	r
American Robin	1202-13431	IBS															B	r	x	x	r
American Robin	1202-13475	IBS															B	r			

Appendix 3. Year-to-Year Recaptures at Inglewood Bird Sanctuary, Dunbow Road, Cominco Natural Area, Dinosaur Provincial Park and De Wit Ranch

Species	Band	Location	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
American Robin	1202-13476	IBS															B	r			
American Robin	1202-13520	IBS																B	r		
American Robin	1202-13521	IBS																B	r		
American Robin	1202-13524	IBS																B	r		
American Robin	1202-13528	IBS																B	r		
American Robin	1202-13530	IBS																B	x	x	r
American Robin	1202-13570	IBS																B	x	x	r
American Robin	1202-13571	IBS																B	r		
American Robin	1202-13572	IBS																B	r		
American Robin	1202-13576	IBS																B	r		
American Robin	1202-13581	IBS																B	r		
American Robin	1202-13617	IBS																	B	x	r
American Robin	1202-13634	IBS																	B	d	
American Robin	1202-13649	IBS																	B	r	
American Robin	1202-13656	IBS																	B	r	r
American Robin	0922-89575	IBS																		B	r
Gray Catbird	1681-67028	Cominco									B	r									
Gray Catbird	1681-67080	IBS										B	r								
Gray Catbird	1681-67087	IBS										B	r			r					
Gray Catbird	1871-73213	IBS														B	r				
Gray Catbird	2231-66314	IBS																	B	r	r
Gray Catbird	2231-66335	IBS																	B	r	
Gray Catbird	2231-66398	IBS																	B	x	r
Gray Catbird	8001-77934	DPP															B	r			
Gray Catbird	8001-77944	DPP															B	r			
Gray Catbird	8001-77952	DPP															B	r			
Gray Catbird	8001-77955	DPP															B	r			
Gray Catbird	8041-54948	IBS							B	r											
Gray Catbird	8041-54987	IBS								B	x	r	x	r							
Gray Catbird	8041-59443	Cominco										B	x	x	x	x	r				
Gray Catbird	8041-83021	Cominco									B	r									
Gray Catbird	8041-83028	Cominco									B	r			recaptured at IBS						
Gray Catbird	8041-83041	Cominco									B	r									

Appendix 3. Year-to-Year Recaptures at Inglewood Bird Sanctuary, Dunbow Road, Cominco Natural Area, Dinosaur Provincial Park and De Wit Ranch

Species	Band	Location	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Gray Catbird	8041-83086	IBS											B	r							
Gray Catbird	8041-83101	IBS												B	r						
Gray Catbird	8041-83211	IBS													B	x	x	r			
Gray Catbird	8041-83301	IBS														B	x	r	r		
Gray Catbird	8041-83314	IBS															B	x	r	r	
Gray Catbird	8041-83348	IBS															B	x	x	r	
Gray Catbird	8041-83381	IBS																B	r	r	
Gray Catbird	8041-83383	IBS																		B	r
Gray Catbird	8041-83447	IBS																		B	r
Cedar Waxwing	1461-50802	Cominco									B	r									
Cedar Waxwing	1461-63733	IBS					B	r													
Cedar Waxwing	2291-32386	IBS																		B	r
Cedar Waxwing	2291-32417	IBS																		B	r
Cedar Waxwing	2291-32386	IBS																		B	r
Cedar Waxwing	2291-32423	IBS																		B	r
Tennessee Warbler	2300-06276	IBS														B	r				
Tennessee Warbler	2410-05077	IBS																B	x	r	
Orange-crowned Warbler	2160-18542	IBS							B	r											
Yellow Warbler	1910-52230	IBS	B	x	x	r															
Yellow Warbler	1950-45519	IBS				B	r	x	r												
Yellow Warbler	1950-45878	IBS					B	r	r												
Yellow Warbler	1950-48086	IBS		B	x	r															
Yellow Warbler	1950-48129	IBS		B	x	r	r														
Yellow Warbler	1950-48133	IBS		B	x	r															
Yellow Warbler	1980-79983	IBS				B	r	r	r	r											
Yellow Warbler	1990-57104	Dunbow						B	r												
Yellow Warbler	1990-57734	Cominco									B	r									
Yellow Warbler	1990-57738	Cominco									B	r									
Yellow Warbler	1990-57802	Cominco									B	r									
Yellow Warbler	1990-57864	Cominco									B	r									
Yellow Warbler	1990-57898	Cominco									B	r									
Yellow Warbler	1990-57916	Cominco									B	r									
Yellow Warbler	1990-57935	IBS									B	x	r								

Appendix 3. Year-to-Year Recaptures at Inglewood Bird Sanctuary, Dunbow Road, Cominco Natural Area, Dinosaur Provincial Park and De Wit Ranch

Species	Band	Location	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Yellow Warbler	2050-70144	IBS				B	r														
Yellow Warbler	2070-42756	IBS						B	r												
Yellow Warbler	2120-00181	Dunbow						B	r												
Yellow Warbler	2160-19158	IBS							B	r											
Yellow Warbler	2160-18045	Dunbow							B	r											
Yellow Warbler	2160-18068	Dunbow							B	r											
Yellow Warbler	2160-18077	Dunbow							B	r											
Yellow Warbler	2160-19059	IBS							B	r											
Yellow Warbler	2160-19576	IBS								B	x	r									
Yellow Warbler	2160-19766	IBS								B	r	r									
Yellow Warbler	2190-10407	IBS										B	x	r							
Yellow Warbler	2200-47358	Cominco										B	x	r							
Yellow Warbler	2200-47371	IBS										B	x	x	r						
Yellow Warbler	2200-47400	IBS										B	r								
Yellow Warbler	2220-13037	IBS											B	r							
Yellow Warbler	2220-13250	IBS											B	r							
Yellow Warbler	2220-13252	IBS											B	x	x	x	r	r			
Yellow Warbler	2220-13258	IBS											B	r							
Yellow Warbler	2220-13262	IBS											B	r							
Yellow Warbler	2220-13397	IBS											B	r							
Yellow Warbler	2220-34098	Cominco									B	r									
Yellow Warbler	2220-34171	Cominco									B	r									
Yellow Warbler	2220-34293	Cominco									B	r									
Yellow Warbler	2220-34320	Cominco									B	r									
Yellow Warbler	2220-34370	Cominco									B	x	x	x	x	x	r				
Yellow Warbler	2220-34423	Cominco									B	r									
Yellow Warbler	2220-34438	Cominco									B	r									
Yellow Warbler	2270-23132	IBS											B	r							
Yellow Warbler	2270-23288	IBS											B	r							
Yellow Warbler	2270-23333	IBS											B	r							
Yellow Warbler	2270-23346	IBS											B	r							
Yellow Warbler	2270-23419	IBS											B	x	x	r	x	r	r		
Yellow Warbler	2270-80288	IBS												B	r	r					

Appendix 3. Year-to-Year Recaptures at Inglewood Bird Sanctuary, Dunbow Road, Cominco Natural Area, Dinosaur Provincial Park and De Wit Ranch

Species	Band	Location	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Yellow Warbler	2270-80303	IBS												B	x	x	r				
Yellow Warbler	2270-80307	IBS												B	r						
Yellow Warbler	2270-80319	IBS												B	x	x	x	r			
Yellow Warbler	2270-80347	IBS												B	x	r					
Yellow Warbler	2270-80421	IBS												B	r						
Yellow Warbler	2270-80447	IBS												B	x	x	r				
Yellow Warbler	2270-80596	IBS													B	x	r				
Yellow Warbler	2270-80777	IBS													B	r	r				
Yellow Warbler	2270-80781	IBS													B	r					
Yellow Warbler	2270-80785	IBS													B	x	r				
Yellow Warbler	2270-80861	IBS													B	r					
Yellow Warbler	2270-81400	IBS															B	r			
Yellow Warbler	2290-37023	IBS														B	r				
Yellow Warbler	2290-37050	IBS														B	r				
Yellow Warbler	2290-37231	IBS															B	r			
Yellow Warbler	2290-37253	IBS															B	r			
Yellow Warbler	2290-37258	IBS															B	r			
Yellow Warbler	2290-37297	IBS															B	r			
Yellow Warbler	2290-37311	IBS														B	r				
Yellow Warbler	2290-37383	IBS														B	r				
Yellow Warbler	2290-37757	DPP															B	r			
Yellow Warbler	2290-37761	DPP															B	r			
Yellow Warbler	2290-88365	IBS													B	x	r	r	r	r	
Yellow Warbler	2290-88550	IBS													B	r	r	r			
Yellow Warbler	2290-92164	IBS												B	x	x	r				
Yellow Warbler	2290-92197	IBS												B	r	r					
Yellow Warbler	2390-30570	IBS										B	r	x	r	x	x	r			
Yellow Warbler	2430-31256	IBS															B	x	r		
Yellow Warbler	2440-33222	Cominco															B	x	x	x	r
Yellow Warbler	2490-22209	IBS																B	r	r	r
Yellow Warbler	2490-22320	IBS																B	x	r	
Yellow Warbler	2490-22329	IBS																B	r		
Yellow Warbler	2490-22344	IBS																B	r		

Appendix 3. Year-to-Year Recaptures at Inglewood Bird Sanctuary, Dunbow Road, Cominco Natural Area, Dinosaur Provincial Park and De Wit Ranch

Species	Band	Location	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Yellow Warbler	2490-22349	IBS																B	r		
Yellow Warbler	2490-22356	IBS																B	r	r	
Yellow Warbler	2490-22383	IBS																B	r	x	x
Yellow Warbler	2490-22424	IBS																B	r		
Yellow Warbler	2500-72401	IBS																	B	r	
Yellow Warbler	2500-72435	IBS																	B	r	
Yellow Warbler	2500-72504	IBS																B	x	d	
Yellow Warbler	2500-72656	IBS																B	r		
Yellow Warbler	2500-72604	IBS																B	r	r	
Yellow Warbler	2580-26816	IBS																		B	r
Yellow Warbler	2580-26883	IBS																		B	r
Yellow Warbler	3500-89667	Dunbow						B	x	r											
Yellow-rumped Warbler	1910-52603	IBS	B	r																	
Yellow-rumped Warbler	2290-37137	IBS														B	r				
Yellow-rumped Warbler	2490-22589	IBS																B	x	r	
Spotted Towhee	8001-77974	DPP															B	r			
Clay-colored Sparrow	1990-57805	Cominco									B	x	x	r							
Clay-colored Sparrow	2050-70675	Dunbow						B	x	r											
Clay-colored Sparrow	2120-00157	Dunbow						B	r	r											
Clay-colored Sparrow	2120-00170	Dunbow						B	x	r											
Clay-colored Sparrow	2120-00176	Dunbow						B	r												
Clay-colored Sparrow	2160-18022	Dunbow							B	r											
Clay-colored Sparrow	2160-18028	Dunbow							B	r											
Clay-colored Sparrow	2160-18030	Dunbow							B	r											
Clay-colored Sparrow	2160-19504	IBS								B	x	x	r								
Clay-colored Sparrow	2220-34456	Cominco									B	r									
Clay-colored Sparrow	2220-34615	Cominco									B	r									
Clay-colored Sparrow	2270-23483	IBS									B	r									
Clay-colored Sparrow	2270-81350	IBS															B	r			
Clay-colored Sparrow	2390-30503	IBS										B	x	r							
Clay-colored Sparrow	250072705	IBS																B	x	x	r
Vesper Sparrow	1461-05331	Dunbow						B	r												
Vesper Sparrow	1461-31412	Dunbow							B	r											

Appendix 3. Year-to-Year Recaptures at Inglewood Bird Sanctuary, Dunbow Road, Cominco Natural Area, Dinosaur Provincial Park and De Wit Ranch

Species	Band	Location	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Savannah Sparrow	2171-56304	Cominco									B	r									
Song Sparrow	1541-17836	Cominco									B	r									
Song Sparrow	1541-17895	Cominco									B	r									
Song Sparrow	1861-68929	IBS													B	r					
Song Sparrow	1871-73157	IBS														B	r				
Song Sparrow	1871-73227	IBS														B	r				
Song Sparrow	1901-94717	IBS															B	r			
Lincoln's Sparrow	1671-56128	IBS												B	r						
Lincoln's Sparrow	2091-55732	IBS														B	r				
Lincoln's Sparrow	2161-14607	IBS				B	r														
Lincoln's Sparrow	2221-82428	IBS																	B	r	
Lincoln's Sparrow	2221-82466	IBS																	B	x	r
Lincoln's Sparrow	3121-21261	Cominco									B	r									
White-throated Sparrow	1791-28046	IBS											B	r							
White-throated Sparrow	1871-73465	IBS													B	r					
White-throated Sparrow	146179092	IBS				B	x	x	x	x	x	x	x	x	x	x	x	x	x	x	r
Red-winged Blackbird	8041-83032	Cominco									B	r									
Brown-headed Cowbird	1461-05333	Dunbow						B	r												
Brown-headed Cowbird	1461-31414	Dunbow							B	r											
Brown-headed Cowbird	1541-17842	Cominco									B	r									
Brown-headed Cowbird	1681-67124	IBS											B	x	x	x	x	r			
Brown-headed Cowbird	1761-28251	IBS										B	r								
Brown-headed Cowbird	1791-28013	IBS											B	r	r	r	r				
Brown-headed Cowbird	1811-73610	IBS													B	x	x	x	x	r	
Brown-headed Cowbird	1811-73648	IBS													B	r					
Brown-headed Cowbird	1871-73167	IBS														B	r				
Brown-headed Cowbird	1871-73199	IBS														B	r				
Brown-headed Cowbird	1901-94903	IBS																B	r	r	r
Brown-headed Cowbird	1901-94914	IBS																B	r		
Brown-headed Cowbird	8041-54991	Cominco									B	r									
Brown-headed Cowbird	8041-54992	Cominco									B	r									
Brown-headed Cowbird	8041-83003	Cominco									B	r									
Brown-headed Cowbird	8041-83005	Cominco									B	r									

Appendix 3. Year-to-Year Recaptures at Inglewood Bird Sanctuary, Dunbow Road, Cominco Natural Area, Dinosaur Provincial Park and De Wit Ranch

Species	Band	Location	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Brown-headed Cowbird	8041-83019	Cominco									B	r									
Brown-headed Cowbird	8041-83245	Cominco														B	x	r			
Baltimore Oriole	8041-54908	IBS							B	r											
Baltimore Oriole	8041-83030	Cominco									B	r									
Baltimore Oriole	8041-83090	IBS											B	r	r						
Baltimore Oriole	8041-83201	IBS													B	r					
Baltimore Oriole	8041-83221	IBS													B	r	x	x	r	r	
Baltimore Oriole	8041-83222	IBS													B	x	r				
Baltimore Oriole	8041-83274	IBS														B	r	r			
Baltimore Oriole	8041-83312	IBS															B	x	x	x	r
Baltimore Oriole	8041-83326	IBS															B	x	r	r	
Baltimore Oriole	8041-83383	IBS																B	x	x	r
Baltimore Oriole	8041-83384	IBS																B	x	r	
Baltimore Oriole	8041-83388	IBS																B	r		
Baltimore Oriole	8051-65131	IBS						B	r												
House Finch	2291-32198	IBS																	B	x	d
American Goldfinch	1990-57875	Cominco									B	r									
American Goldfinch	2120-00188	Dunbow						B	x	r											
American Goldfinch	2190-10309	IBS										B	x	r	r	r					
American Goldfinch	2220-34131	Cominco									B	r									
American Goldfinch	2220-34245	Cominco									B	r									
American Goldfinch	2270-23364	IBS											B	x	r						
American Goldfinch	2270-80350	Cominco												B	r						
American Goldfinch	2270-80353	Cominco												B	r						
American Goldfinch	2290-37381	IBS														B	r				
American Goldfinch	2490-22598	IBS																B	x	r	
American Goldfinch	2500-72519	IBS																B	r	r	
American Goldfinch	2500-72588	IBS																B	r		

Appendix 4

Appendix 4a. New Bandings at Cypress Hills Interprovincial Park - Spring 2010

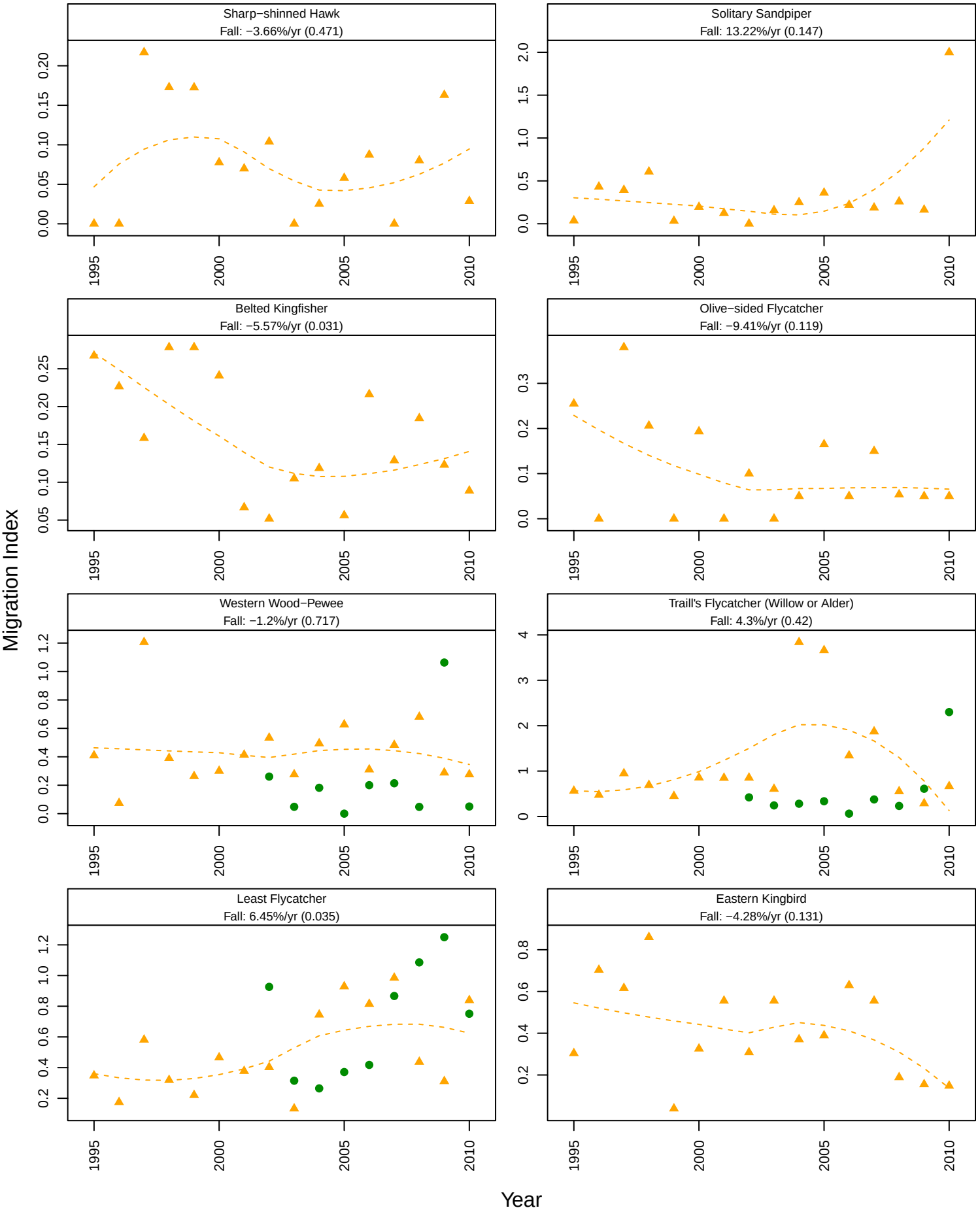
Species/Forms	May													May												May					June										Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	
Red-naped Sapsucker												2	1		1			1	2							2				2	1	1	1	1	1							**17**
Downy Woodpecker													1																														**1**
Hairy Woodpecker																	1									1																	**2**
"Red-shafted" Flicker																																				1						**1**
Olive-sided Flycatcher																										1																	**1**
Western Wood-Pewee																																								2	7		**9**
Yellow-bellied Flycatcher																																				1						**1**
"Traill's" Flycatcher																			2								10	3	3	1	6	7	3		3	2		2		2		**44**
Least Flycatcher												1	2			1	1	3	3	6	4	6		5	7	3	23	3	5	3	13	12	6	2	4	2		5		2	3	**125**
Dusky Flycatcher																				1		1				1	1			1	1	2	2		1						2	**13**
Western Kingbird																																				1							**1**
Eastern Kingbird																																				2	1						**3**
Warbling Vireo																															1												**1**
Red-eyed Vireo																											1		1			1		2	2	1							**8**
Tree Swallow																			1																									**1**
Black-capped Chickadee												1	1					3																										**5**
House Wren																						1		1	2		1	1			1								1				**8**
Ruby-crowned Kinglet											1		1		1		1					2					1												1				**8**
Mountain Bluebird																				1																								**1**
Veery																					1								1														**2**
Swainson's Thrush											1	2						1	1	1		1		4	2	3				1	2	3			2	1						**25**
Hermit Thrush		1																																									**1**
American Robin		1	3								2				4		3	1		2				2	1		1	1		1			3		1							**26**
Gray Catbird														1								1				2	1	3	1		1	2	3	4	3							**22**
Cedar Waxwing																																	3	4	2	34		1					**44**
Tennessee Warbler																									1	2				1	1			1									**6**
Orange-crowned Warbler											3	6	2	3	4	2		4		2		1				2	1																**30**
Yellow Warbler																		2	3	3	1			1		12	8	2	10		15	16	3	1	2	2		2		1		**84**
Magnolia Warbler																																1										**1**
Cape May Warbler																											1															**1**
"Myrtle" Warbler																1		1	3										1			5		1	1	2						**15**
"Audubon's" Warbler													2				1		5	2					1		1		3		10	17		1	1	1						**45**
"Unidentified" Yellow-rumped Warbler																																1			1							**2**
Townsend's Warbler																																1										**1**
Bay-breasted Warbler																																1										**1**
Blackpoll Warbler															2				2						1		1			1	5	3	1		1							**16**
American Redstart																		2		4	1	1				4	2	1		1	4		1	2	3	1		2		1		**30**
Ovenbird																				1				1				1														**3**
Northern Waterthrush																									1																	**1**
Mourning Warbler																											1	1				2										**4**
MacGillivray's Warbler																			2	1	1					2	2	3			1	2	2			1						**17**
Common Yellowthroat													1	1					1	3		3		7	1		3								2	1		2				**25**
Wilson's Warbler																														1												**1**
Yellow-breasted Chat																																			1							**1**
Western Tanager																																1	1		1	2				2		**7**
Spotted Towhee												1	3												1																	**5**
Chipping Sparrow																		2							1				10		16	8	2	1		4						**44**
Clay-colored Sparrow																		1	1	3		2		1	1				1		6											**16**
Savannah Sparrow															1	1		1							2			1					1									**7**
Song Sparrow														1	1															2												**4**
Lincoln's Sparrow		1										3	2	2	1		1				1	1																					**12**
White-throated Sparrow												2	4	1										1																			**8**
"Eastern" White-crowned Sparrow											2			1		3	1		3	1	1	1			3		3	1	2	2	1	1	1			1				2		**30**
"Gambel's" White-crowned Sparrow															1			1																									**2**
"Pink-sided" Junco		2									1								1		1																						**5**
"Unidentified" Dark-eyed Junco		1																																									**1**
Rose-breasted Grosbeak																			1	1							1																**3**
Black-headed Grosbeak														1																					2							**3**
Brown-headed Cowbird																			1	1											2				2	6		1		1		**14**
Red-winged Blackbird																													1		5	1	1	1	1	1						**11**
Pine Siskin																																1		2							1	**4**
American Goldfinch																				2						1							2							3	1	**9**

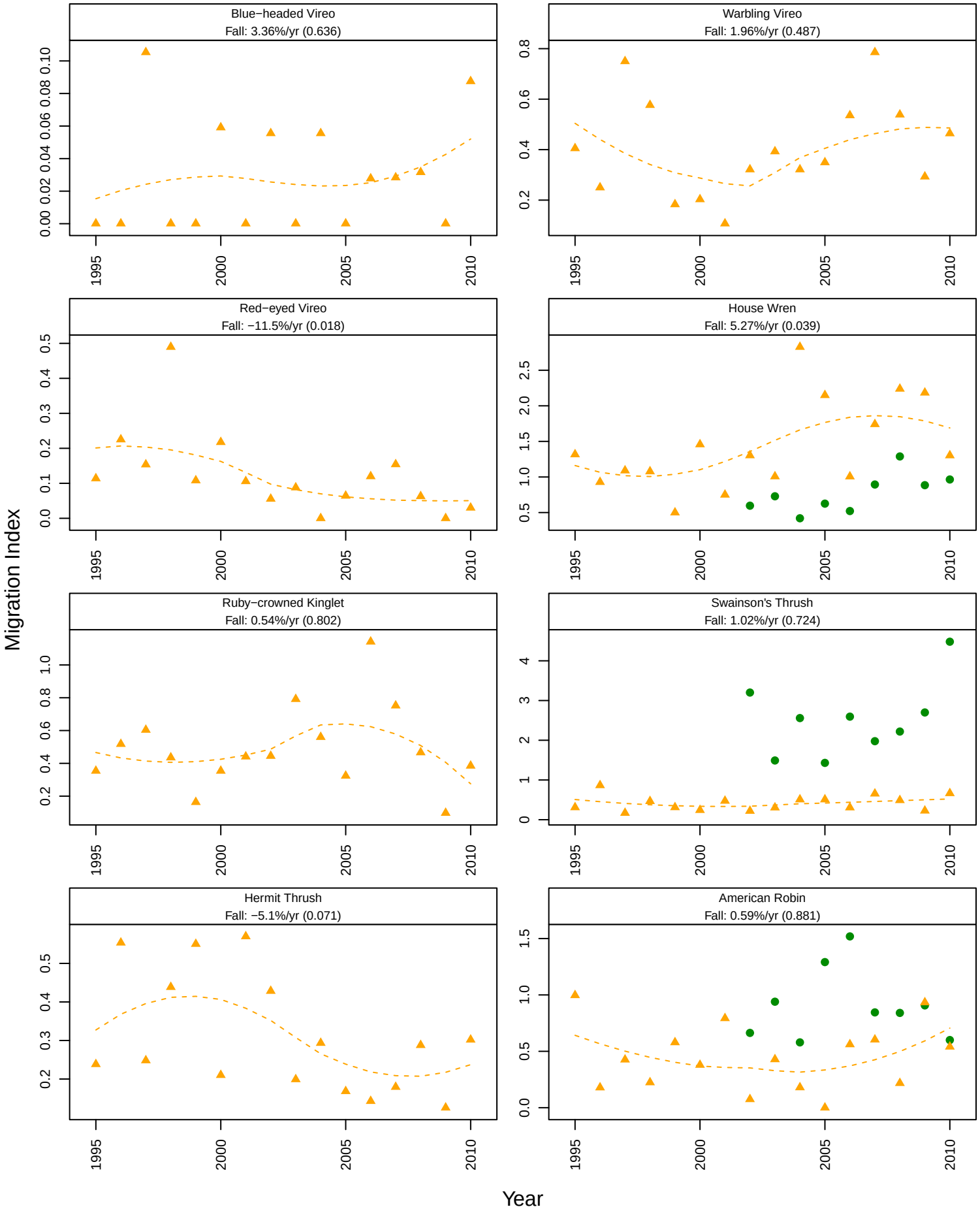
Appendix 4b. New Bandings at Cypress Hills Interprovincial Park - Fall 2010

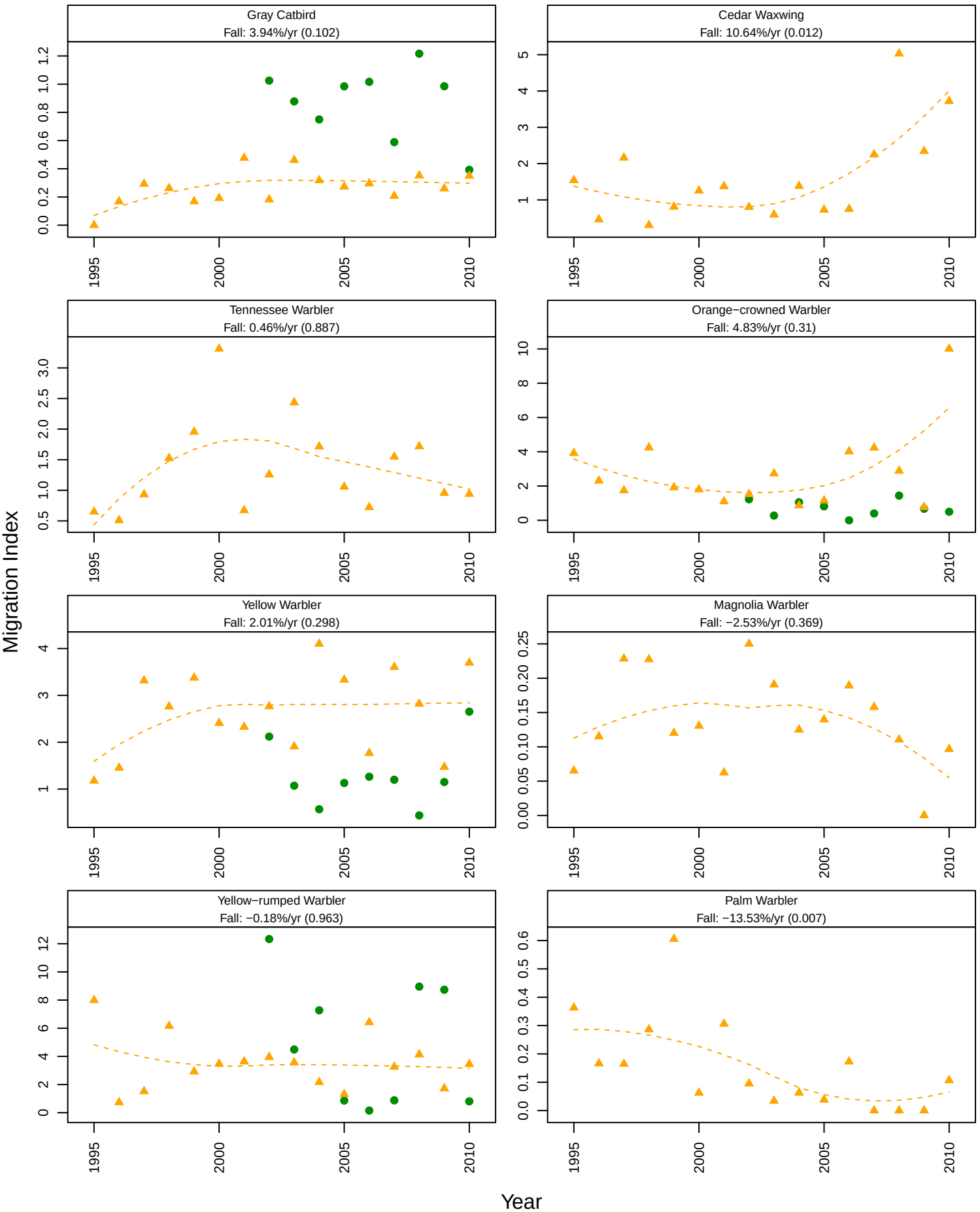
Species	Jul 29	Jul 30	Jul 31	Aug 1	Aug 2	Aug 3	Aug 4	Aug 5	Aug 6	Aug 7	Aug 8	Aug 9	Aug 10	Aug 11	Aug 12	Aug 13	Aug 14	Aug 15	Aug 16	Aug 17	Aug 18	Aug 19	Aug 20	Aug 21	Aug 22	Aug 23	Aug 24	Aug 25	Aug 26	Aug 27	Aug 28	Aug 29	Aug 30	Aug 31
Sharp-shinned Hawk																																		1
Spotted Sandpiper																																		
Belted Kingfisher				1																														
Yellow-bellied Sapsucker																																		
Red-naped Sapsucker	2				1			2		1	1											1							1					
Downy Woodpecker	1																	1																
"Yellow-shafted" Flicker																																		
"Red-shafted" Flicker																																		
Flicker Intergrade																																		
Western Wood-Pewee	1											1									1	1			1	2	1						3	2
"Traill's" Flycatcher		2	1	2	6	5	8	8	1	2	3		6	10	9	11		9	5	12	2	4	1	1	5		7	2					1	1
Dusky Flycatcher							1												2	2			1						1					
Least Flycatcher	1	4				4	3	5	6	4	3	2	1	2	3	2		9	11	6	7	8	4	3	3	6	5	9	5	1	7		5	7
Northern Shrike																																		
Warbling Vireo																				1							2						1	1
Red-eyed Vireo	1				1																			1										
Black-capped Chickadee	1		3			2	1	2	1	3	2				4							1					2	2	3		2			
Red-breasted Nuthatch																																		
House Wren	1			1			1	1	1	1		2		1				2	2		1	3	1	1	1						1			1
Ruby-crowned Kinglet																																		
Veery																							1										1	1
Swainson's Thrush		1	1			1		1		1			1	1				1		1		2		1		1	1				2		2	1
American Robin	1	1				1	1	3	2	6	1							2	1	7					1	2			1		1			1
Gray Catbird					1		2						1	1				1	2	1			2		1		1		3		5		6	1
Brown Thrasher																																		
Cedar Waxwing	10		1	1		1		2					1	1	3				1		1		1		2			2	1		1			
Tennessee Warbler																		1		1							1							
Orange-crowned Warbler																															1			
Yellow Warbler	1	5	1	2	1	2	2	3	2	6	2		1	1	1	4		12	6	3	3	6	1	2	18	5			1		1		1	1
Magnolia Warbler																																		
"Myrtle" Warbler																																		
"Audubon's" Warbler											1																							
"Unidentified" Yellow-rumped Warbler																																		
Black-and-white Warbler																				1		1												
"Western" Palm Warbler																																		
Blackpoll Warbler																												1			1			
American Redstart										1					1			1								2								
Ovenbird											1							1		1				1										
Northern Waterthrush														1		2			2		1		1								1			
Mourning Warbler																			1					1	1									
MacGillivray's Warbler																		1								1		1						1
Common Yellowthroat														2											1						3			1
Wilson's Warbler																			3		1					1			2		1		1	
Canada Warbler																																		
American Tree Sparrow																																		
Chipping Sparrow																1																	1	
Clay-colored Sparrow	1									1						1		3							1	1			2					
Savannah Sparrow																											1	1						
Song Sparrow	1													2								1					1	1	3		3		2	
Lincoln's Sparrow																															1		1	
White-throated Sparrow																																	1	
"Eastern" White-crowned Sparrow		2									1																			1	1			
"Gambel's" White-crowned Sparrow																																		
White-crowned Sparrow										1	4	1		2					3						1		3		1	3	6		1	4
"Slate-colored" Junco																																		
"Pink-sided" Junco																																		
"Unidentified" Dark-eyed Junco																																		
Rose-breasted Grosbeak																		1																
Baltimore Oriole											1																							
Red-winged Blackbird	1									1				1	1																			
Purple Finch																					1													
White-winged Crossbill																																		
Pine Siskin		2					2	2	1					1														1	1					1
American Goldfinch	2										1										1										1			

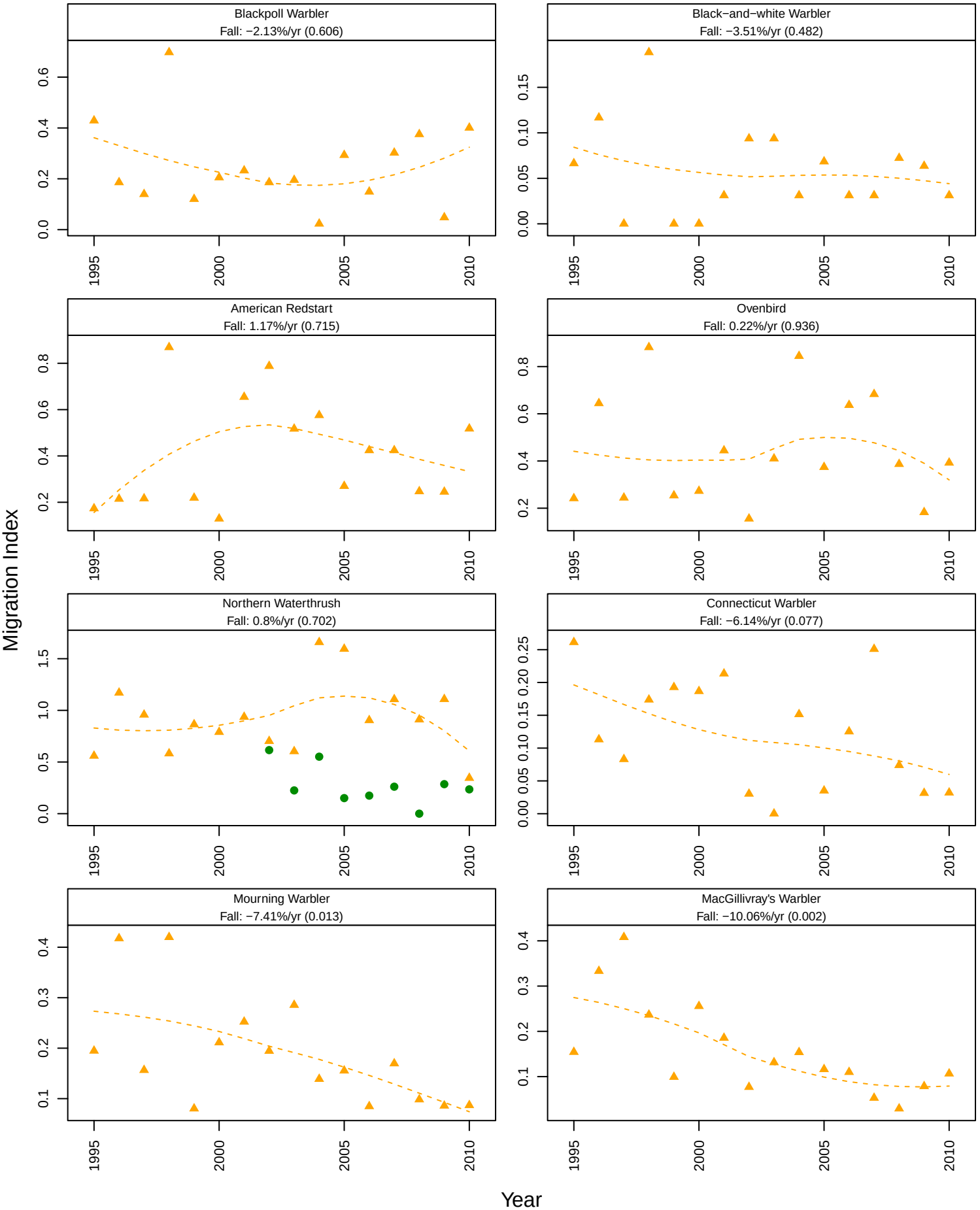
Species	Sep 1	Sep 2	Sep 3	Sep 4	Sep 5	Sep 6	Sep 7	Sep 8	Sep 9	Sep 10	Sep 11	Sep 12	Sep 13	Sep 14	Sep 15	Sep 16	Sep 17	Sep 18	Sep 19	Sep 20	Sep 21	Sep 22	Sep 23	Sep 24	Sep 25	Sep 26	Sep 27	Sep 28	Sep 29	Sep 30	Oct 1	Oct 2	Oct 3	Oct 4	Oct 5	Oct 6	Oct 7	Oct 8	Oct 9	Oct 10	Oct 11	Oct 12	Oct 13	Oct 14	Oct 15	Oct 16	Total
Sharp-shinned Hawk																					1																1										**3**
Spotted Sandpiper																		1																													**1**
Belted Kingfisher													1																																		**2**
Yellow-bellied Sapsucker															1																																**1**
Red-naped Sapsucker							1					1																																			**11**
Downy Woodpecker		1					1																																				1				**5**
"Yellow-shafted" Flicker																				1																											**1**
"Red-shafted" Flicker																				1																											**1**
Flicker Intergrade																																	1														**1**
Western Wood-Pewee																		1																													**14**
"Traill's" Flycatcher	2	9	3	2	1	5					4							1																													**151**
Dusky Flycatcher																				1																											**8**
Least Flycatcher			1	2		7	3		4		1				1																																**155**
Northern Shrike																																											1				**1**
Warbling Vireo							1																																								**6**
Red-eyed Vireo														1							1	1																									**6**
Black-capped Chickadee		1	5			3	3			1	5	4			3							4				5	1		2	1			5	3				4	1				2			3	**85**
Red-breasted Nuthatch												1			3																																**4**
House Wren		2	1			3	1				1	1										1																									**32**
Ruby-crowned Kinglet				1																							3											1					1				**6**
Veery																																															**3**
Swainson's Thrush																		1		1																											**21**
American Robin		1																		1													7														**41**
Gray Catbird							1		1														1																								**31**
Brown Thrasher																					1																										**1**
Cedar Waxwing																																															**29**
Tennessee Warbler				1									1		1																																**6**
Orange-crowned Warbler		4	5	1	1	22	11		3	1	13	22	12	8	11	4		2			32	39	5			3			1	1			1														**203**
Yellow Warbler		5	9		1	2	1				4	1	3	2	1						1																										**124**
Magnolia Warbler			1																																												**1**
"Myrtle" Warbler			1		2	5	7				10	3	10	4	21			1			3	8	1				3			1			27				1										**108**
"Audubon's" Warbler							1								1																																**3**
"Unidentified" Yellow-rumped Warbler															1											1																					**2**
Black-and-white Warbler			1																																												**3**
"Western" Palm Warbler																					1																										**1**
Blackpoll Warbler												1			3																																**6**
American Redstart																																															**5**
Ovenbird																																															**4**
Northern Waterthrush												1																																			**9**
Mourning Warbler							1																																								**4**
MacGillivray's Warbler																																															**4**
Common Yellowthroat	1		2	1			3		1					2							1	1	1										1														**21**
Wilson's Warbler	3	2	1	3		3	1		1		2	1	1	2	6	1		1		1	6	5	1			1																					**51**
Canada Warbler						1																																									**1**
American Tree Sparrow																																									1			1		4	**6**
Chipping Sparrow		5	4			1			1		2											1											3														**19**
Clay-colored Sparrow		4		1	4	1															1																										**21**
Savannah Sparrow																																															**2**
Song Sparrow					1	1							2																				1										1				**20**
Lincoln's Sparrow			2		3										1						1		2										2														**13**
White-throated Sparrow							1				3				2																		1						2								**10**
"Eastern" White-crowned Sparrow			1				2				1																																				**9**
"Gambel's" White-crowned Sparrow															1							1																									**2**
White-crowned Sparrow	3	2	1			3	3		2		1	2	1	1	2						2																										**53**
"Slate-colored" Junco																					1						1						5														**7**
"Pink-sided" Junco																																	2						1								**3**
"Unidentified" Dark-eyed Junco																																	5					4	1				6				**16**
Rose-breasted Grosbeak																																															**1**
Baltimore Oriole																																															**1**
Red-winged Blackbird																																															**4**
Purple Finch																																															**1**
White-winged Crossbill																										1												3									**4**
Pine Siskin						1			1																								1														**14**
American Goldfinch																						3																									**8**

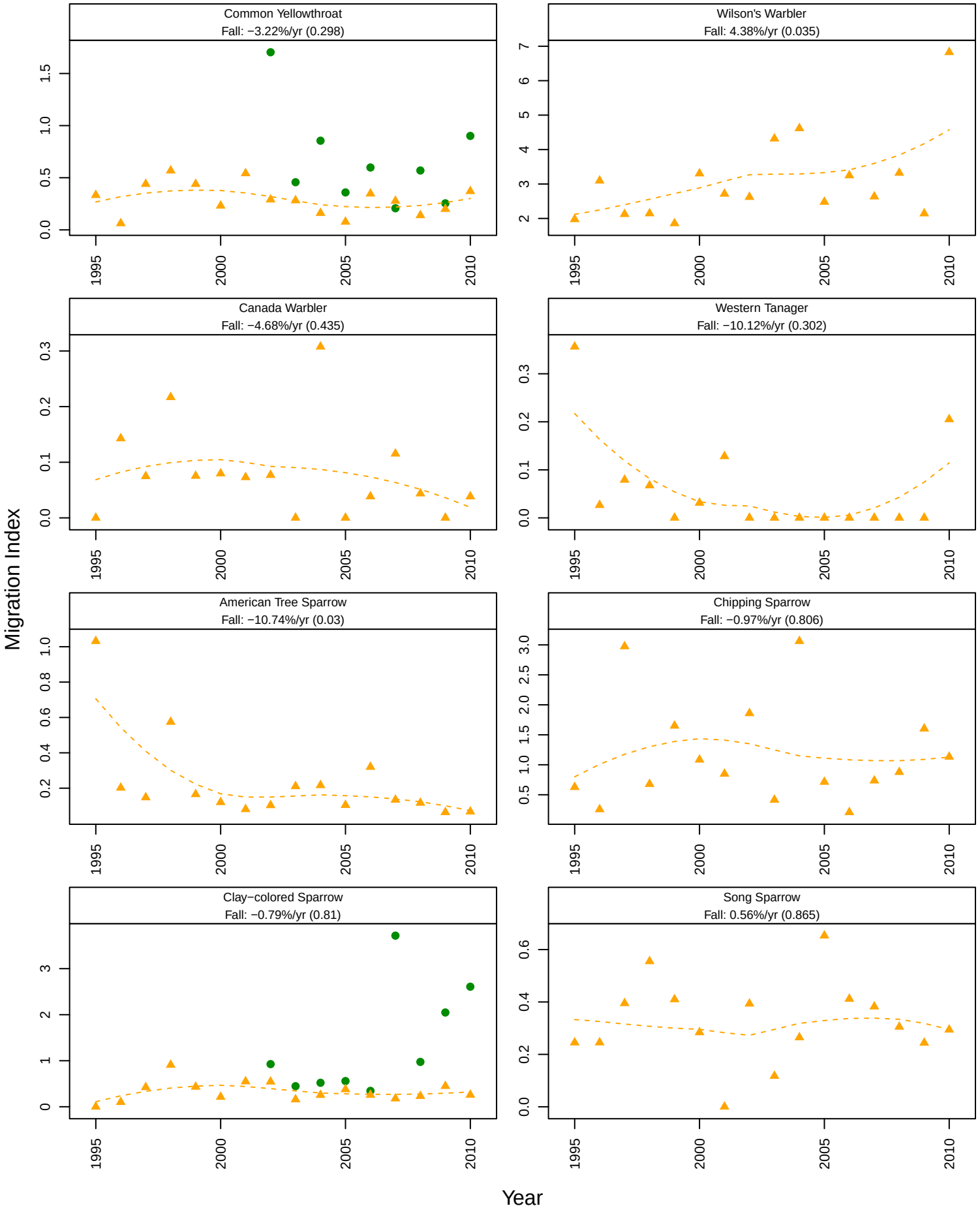
Appendix 5

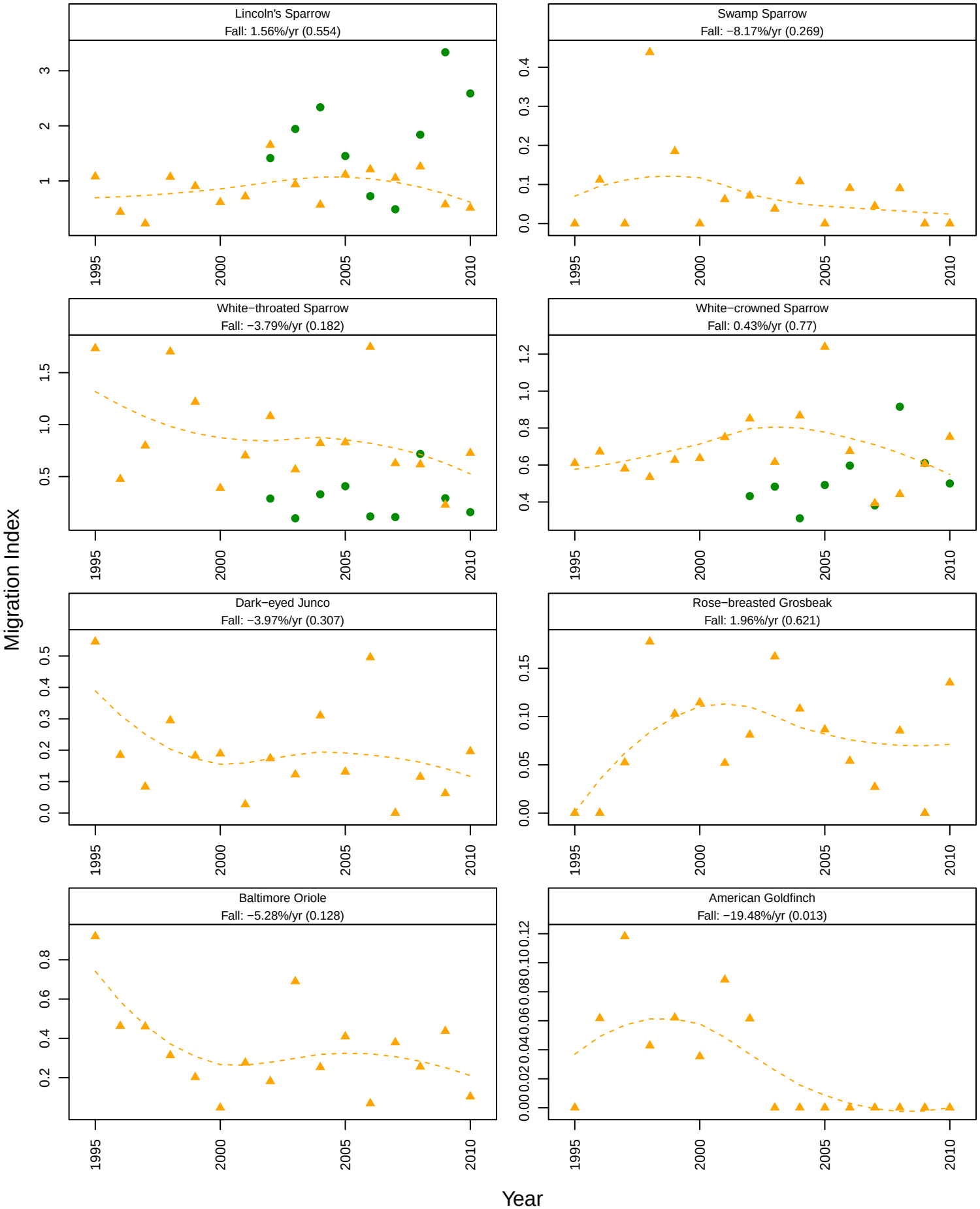

Sharp−shinned Hawk
Fall: −3.66%/yr (0.471)
Solitary Sandpiper
Fall: 13.22%/yr (0.147)
Belted Kingfisher
Fall: −5.57%/yr (0.031)
Olive−sided Flycatcher
Fall: −9.41%/yr (0.119)
Western Wood−Pewee
Fall: −1.2%/yr (0.717)
Traill's Flycatcher (Willow or Alder)
Fall: 4.3%/yr (0.42)
Least Flycatcher
Fall: 6.45%/yr (0.035)
Eastern Kingbird
Fall: −4.28%/yr (0.131)
Migration Index
Year


Blue−headed Vireo
Fall: 3.36%/yr (0.636)
Warbling Vireo
Fall: 1.96%/yr (0.487)
Red−eyed Vireo
Fall: −11.5%/yr (0.018)
House Wren
Fall: 5.27%/yr (0.039)
Ruby−crowned Kinglet
Fall: 0.54%/yr (0.802)
Swainson's Thrush
Fall: 1.02%/yr (0.724)
Hermit Thrush
Fall: −5.1%/yr (0.071)
American Robin
Fall: 0.59%/yr (0.881)
Migration Index
Year


Gray Catbird
Fall: 3.94%/yr (0.102)
Cedar Waxwing
Fall: 10.64%/yr (0.012)
Tennessee Warbler
Fall: 0.46%/yr (0.887)
Orange−crowned Warbler
Fall: 4.83%/yr (0.31)
Yellow Warbler
Fall: 2.01%/yr (0.298)
Magnolia Warbler
Fall: −2.53%/yr (0.369)
Yellow−rumped Warbler
Fall: −0.18%/yr (0.963)
Palm Warbler
Fall: −13.53%/yr (0.007)
Migration Index
Year


Blackpoll Warbler
Fall: −2.13%/yr (0.606)
Black−and−white Warbler
Fall: −3.51%/yr (0.482)
American Redstart
Fall: 1.17%/yr (0.715)
Ovenbird
Fall: 0.22%/yr (0.936)
Northern Waterthrush
Fall: 0.8%/yr (0.702)
Connecticut Warbler
Fall: −6.14%/yr (0.077)
Mourning Warbler
Fall: −7.41%/yr (0.013)
MacGillivray's Warbler
Fall: −10.06%/yr (0.002)
Migration Index
Year


Common Yellowthroat
Fall: −3.22%/yr (0.298)
Wilson's Warbler
Fall: 4.38%/yr (0.035)
Canada Warbler
Fall: −4.68%/yr (0.435)
Western Tanager
Fall: −10.12%/yr (0.302)
American Tree Sparrow
Fall: −10.74%/yr (0.03)
Chipping Sparrow
Fall: −0.97%/yr (0.806)
Clay−colored Sparrow
Fall: −0.79%/yr (0.81)
Song Sparrow
Fall: 0.56%/yr (0.865)
Migration Index
Year


Lincoln's Sparrow
Fall: 1.56%/yr (0.554)
Swamp Sparrow
Fall: −8.17%/yr (0.269)
White−throated Sparrow
Fall: −3.79%/yr (0.182)
White−crowned Sparrow
Fall: 0.43%/yr (0.77)
Dark−eyed Junco
Fall: −3.97%/yr (0.307)
Rose−breasted Grosbeak
Fall: 1.96%/yr (0.621)
Baltimore Oriole
Fall: −5.28%/yr (0.128)
American Goldfinch
Fall: −19.48%/yr (0.013)
Migration Index
Year