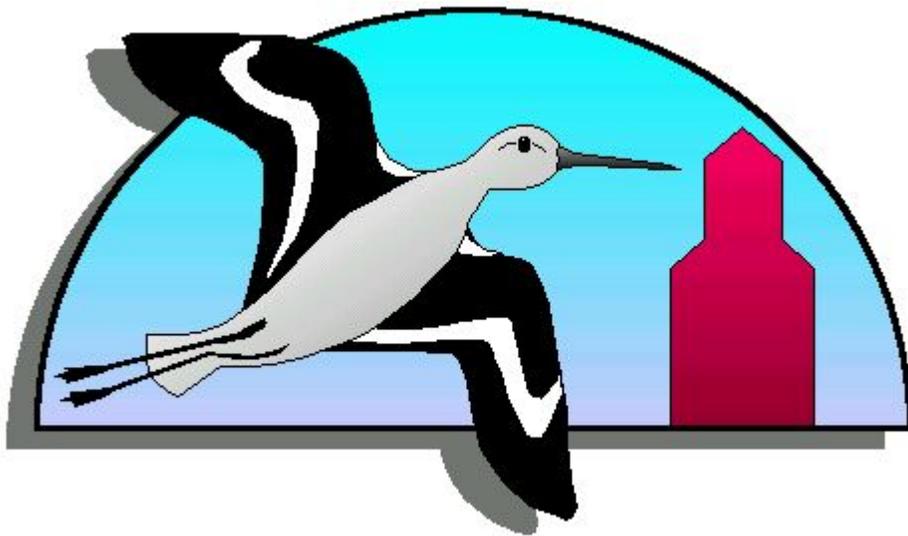


Beaverhill Bird Observatory



2003 Spring Report

Tara Worobetz

Spring Migration Monitoring

The 2003 Spring Migration Monitoring at the BBO was busy and memorable not only due to the many birds captured and banded but for the variable weather as well. Returning bander Matt Hanneman and new bander Tara Worobetz started out the 2003 banding season and were joined at the end of May by volunteer Kim McKinnon. Banding occurred on 32 days between May 1st and June 10th, resulting in 69.4% of the total possible net hours this season. The weather inhibited banding efforts on 8 days, with winds or cold temperatures delaying or preventing netting. A total of 2218.75 net hours resulted in 755 birds captured, with an average capture rate of 34 birds caught per 100 net hours (Appendix A, Spring report). However, capture rates varied significantly between net lanes with net 8 having the highest rate and net lane 3 having the lowest rate (Table 1).

Table 1: BBO Net lane productivity and capture rate 2003

Net Lane	Net Hours	Birds Captured	Birds Captured/ 100 net hours
2	184.00	44	23.91
2X	184.00	46	25.00
3	180.50	34	18.84
4	180.50	57	31.58
8	147.25	83	56.37
9	147.25	52	35.31
9X	147.25	82	55.69
12	150.50	56	37.21
40	179.25	91	50.77
41	179.25	54	30.13
43	184.00	63	34.24
43X	171.00	43	25.15
49	184.00	50	27.17
Total	2218.75	755	34.03

Weekly capture rates varied significantly over the spring migration period (Figure 1). May 1-10 resulted in the highest capture rates with 53.6 birds caught per 100 net hours. As previously noted, this may be attributed to the cold weather during that period, causing migrating birds to stay longer in the area. May 25-31 had the second highest capture rates with 40.6 birds per 100 net hours and May 18-24 had 29.9 birds per 100 net hours. May 11-17 and June 1-10 had the lowest capture rates with 21.2 and 20.1 birds caught per 100 net hours respectively. It is interesting to note that although June 1-10 had the lowest capture rates, this period showed the highest diversity of birds captured.

The diversity of bird species recorded during spring migration was quite impressive and remained fairly steady over the migration period. Staff captured 45 species of birds in the mist nets and banded 41 of these species. Diversity was highest during the first and last 10 days of spring migration, with 21 and 22 species being caught in those periods respectively. The week of May 11-17 saw 20 species captured, 19 species were captured between May 18-24 and 17 species were captured during May 25-31 (Figure 2).

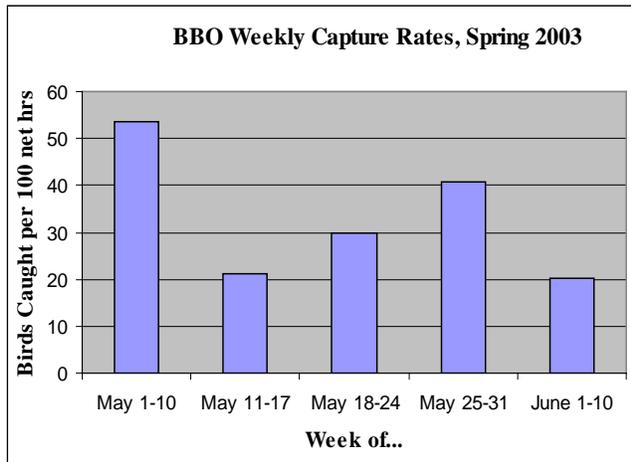


Figure 1: Weekly Capture Rates at the BBO-Spring, 2003

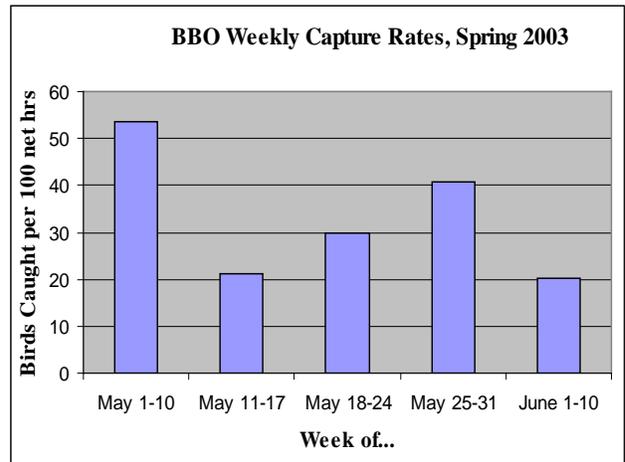


Figure 2: 2003 Account of Avian Diversity Captured at the BBO-Spring 2003

Wintry weather, complete with snow, below-zero temperatures and north winds appeared to have a major effect on spring migration. This weather system seemed to halt migration in its tracks, and staff observed dozens of White-throated Sparrows and Lincoln’s Sparrows lingering in the area, utilizing the bird feeder at the lab and flying into the nets when we were able to open them. As soon as the weather improved, these birds moved on. It is interesting to note that White-throated Sparrows made it to the top five lists, both for birds captured and birds banded during the spring period (Tables 2 and 3).

Our most numerous migrants, Myrtle Warblers, were most prevalent during this period as well. In one five-day period alone, staff caught 127 Myrtle Warblers and banded 115 of these birds! By the end of spring migration, Myrtle Warblers found themselves as the top birds banded, with 137 banded over the 32 days of banding; representing 25% of the total birds banded this spring (Table 3). Myrtle Warblers represented 20% of all birds captured this spring (Table 2). Another interesting pattern emerged with this species, as staff observed that a wave of predominantly male Myrtle Warblers migrated through the area, followed by a wave of predominantly female Myrtle Warblers, suggesting that males head off to their northern breeding grounds earlier to set up territories before the females arrive.

The five species with the highest capture numbers were Least Flycatchers (174 captured), Myrtle Warblers (149 captured), Yellow Warblers (119 captured), White-throated Sparrows (48 captured) and Clay-colored Sparrows (40 captured). Together, these five species comprise 70% of the total birds captured this season (Table 2). Of these captures, 26 of the Least Flycatchers and 39 of the Yellow Warblers were recoveries, meaning they had been captured and banded in a previous year.

Table 2: Top 5 Species Captured at the BBO in Spring of 2003

Rank	Species	Number	% of Top 5	% of Total Captured
1	Least Flycatcher	174	33	23
2	Myrtle Warbler	149	28	20
3	Yellow Warbler	119	22	16
4	White-throated Sparrow	48	9	6
5	Clay-colored Sparrow	40	8	5
	TOTAL	530	100	70

The same five species also represent the top five bird species banded, and represent 68% of all birds banded during spring migration monitoring, although in this case, Myrtle Warblers came in first place with 137 banded, ahead of Least Flycatchers with 117 banded. Staff banded 48 Yellow Warblers, 38 White-throated Sparrows, and 32 Clay-colored Sparrows.

Table 3: Top 5 Species Banded at the BBO in Spring of 2003

Rank	Species	Number	% of Top 5	% of Total Banded
1	Myrtle Warbler	137	37	25
2	Least Flycatcher	117	31	21
3	Yellow Warbler	48	13	9
4	White-throated Sparrow	38	10	7
5	Clay-colored Sparrow	32	9	6
	TOTAL	372	100	68

Tree Swallow Nest Monitoring

Monitoring of the Tree Swallow nest boxes occurred every 4 or 5 days since the start of May. Of the 49 nest boxes, 12 boxes saw no nesting activity all season. BBO staff continued to capture and band as many Tree Swallows as possible throughout the spring. By our last swallow grid check of the spring, 25 swallows had been banded and 8 swallows banded in previous years had been recaptured. These swallows were caught using the “feather” or “run and capture” methods. The first swallow eggs were observed on May 29th and by June 8th, the last check of the spring, no nestlings had emerged. Staff suspected a pair of Mountain Bluebirds was nesting in one of the nest boxes in the swallow grid and on May 24th, one Mountain Bluebird egg was found in the nest box. By May 29th, the Bluebirds had laid 6 eggs.

Nest Searching

Another activity that kept staff busy this spring was searching for as many nests of breeding birds as possible and monitoring their progress. We were able to locate the nests of American Robins, Yellow Warblers, Long-eared Owls, Clay-colored Sparrows, Least Flycatchers, Common Ravens, American Crows, Red-tailed Hawks, and Mallards. As well, House Wrens and Tree Swallows made use of the many nest boxes around the lab.

Birding Activities

In addition to the birds captured during banding activities, a number of species of interest were observed around the BBO this spring. Some of these species include Peregrine Falcons, Bald Eagles, Northern Harriers, Western Meadowlark, Sprague's Pipits, Nelson's Sharp-tailed Sparrows, Le Conte's Sparrows, Western Tanagers, a Black-throated Green Warbler, Black-and-White Warblers, Eastern Kingbirds, American Avocets, Wilson's Phalaropes and a pair of Cinnamon Teals at the Weir (just to name a few!)

BBO staff participated in the Baillie Birdathon on May 28th, recording 96 species in approximately 16 hours. Another exciting opportunity occurred when Al DeGroot, raptor bander extraordinaire, invited us to accompany him in Redwater and observe as he banded Great-horned Owls and their nestlings. Norm Cool visited the BBO on May 24th and filmed us as we worked for a TV show that will air in September of 2004.

However, there is more than just birds to the BBO and many kinds of wildlife can be seen in the Natural Area. Mammals observed in the area of the BBO and natural area this spring included porcupines, voles, a skunk, moose, mule deer, white-tailed deer, a long-tailed weasel, least weasel, coyotes, northern flying squirrels, and many, many snowshoe hares. A red squirrel was even seen frequenting the bird feeder at the lab, the first time this species has been observed in the natural area.

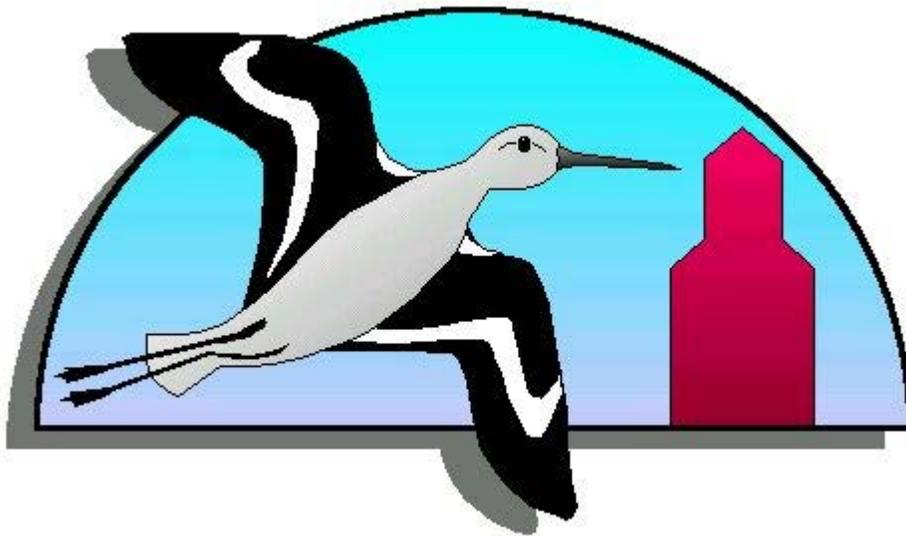
Volunteers

BBO staff would like to thank all the volunteers and visitors who came out this spring to help with various activities. Ty Flockhart, a BBO staff member from previous years, came out twice to help with the Tree Swallow monitoring activities. An avid birder from Lac La Biche, Fred Basargin spent two days with us after reading all about the great birding at Beaverhill Lake. Kelsey Gibos spent five days with us at the end of May to learn banding, and Kim McKinnon arrived at the same time to stay and volunteer for the rest of the summer. Christine Boulton, Warren Fleming, Chuck and Lisa Priestley, Bryn Spence, Juanita Mumby, and Al DeGroot cooperated to cover staff days off and the Priestleys even managed to capture and band an American Kestrel using a Bal-shatri trap! Matt's wife, Anita Hanneman, is also a regularly seen volunteer at the BBO. Thanks to all these people for helping to make the spring season at the BBO a great success.

Appendix A. BBO capture totals for spring songbird migration, 2003

Species	Banded	Repeats	Recoveries	Other	Total
Least Flycatcher	117	29	26	2	174
Alder Flycatcher	3	0	0	0	3
Yellow-bellied Flycatcher	1	0	0	0	1
Western wood Pee Wee	2	0	0	0	2
Traill's Flycatcher	6	0	0	0	6
Yellow Warbler	48	27	39	5	119
Myrtle Warbler	137	0	0	12	149
Orange-crowned Warbler	5	0	0	0	5
Tennessee Warbler	1	0	0	0	1
Mourning Warbler	1	0	0	0	1
Conneticut Warbler	1	0	0	0	1
Black-throated Green Warbler	1	0	0	0	1
Western Palm Warbler	1	0	0	0	1
Northern Waterthrush	3	0	0	0	3
Common Yellowthroat	1	0	0	0	1
American Redstart	4	0	0	0	4
Ovenbird	1	0	0	0	1
American Robin	1	0	1	0	2
Hermit Thrush	12	8	0	0	20
Swainson's Thrush	28	1	0	1	30
Gray-cheeked Thrush	2	0	0	0	2
Lincoln's Sparrow	18	1	0	1	20
White-throated Sparrow	38	6	0	4	48
Savannah Sparrow	2	0	0	0	2
Clay-colored Sparrow	32	4	2	2	40
Song Sparrow	0	0	0	1	1
Chipping Sparrow	18	0	0	0	18
White-crowned Sparrow	4	0	0	0	4
Sparrow sp.	0	0	0	2	2
Yellow-shafted Flicker	2	0	0	0	2
Yellow-bellied Sapsucker	3	0	0	0	3
Hairy Woodpecker	0	0	1	0	1
Rose-breasted Grosbeak	1	0	0	0	1
Warbling Vireo	3	1	2	0	6
Blue-headed Vireo	1	0	0	0	1
Red-eyed Vireo	2	0	0	0	2
House Wren	18	9	1	1	29
Brown-headed Cowbird	5	1	2	0	8
Ruby-throated Hummingbird	0	0	0	2	2
American Goldfinch	4	0	0	1	5
Ruby-crowned Kinglet	10	1	0	0	11
Golden-crowned Kinglet	1	0	0	0	1
Black-capped Chickadee	5	11	0	0	16
Red-breasted Nuthatch	2	0	0	0	2
Tree Swallow	0	0	1	0	1
Sharp-shinned Hawk	1	0	0	1	2
TOTALS	546	99	75	35	755

Beaverhill Bird Observatory



2003 Summer MAPS Report Monitoring Avian Productivity and Survivorship

Tara Worobetz

MAPS Program

Five M.A.P.S rounds were completed at the Beaverhill Bird Observatory during June and July of 2003. The first M.A.P.S. round ran from June 11th to 20th, the second round from June 21st to 30th, the third round from July 1st-10th, the fourth from July 11th to 20th and the fifth round ran from July 21st to 31st.

Banding activities were carried out at each of the three M.A.P.S. stations (BLAB, WEIR, and PARK) once during each of the five M.A.P.S. rounds. Each banding session lasted for 6 hours, starting at sunrise. There were ten nets set up at each M.A.P.S. station. Each station completed 300 net hours by the end of the project, for a total of 900 net hours across the three stations. This fulfills 100% of all possible net hours.

BLAB station came was the most productive with 94 birds captured over the five M.A.P.S. rounds for a capture rate of 31.3 birds per 100 net hours. WEIR station caught the second most birds, with 73 captures and a capture rate of 24.3 birds per 100 net hours. PARK station caught the fewest birds at 57 captures and a capture rate of 19 birds per 100 net hours (Table 1). At all three stations, Least Flycatchers were by far the most abundant birds captured in the mist nets and also the most abundant bird banded. These birds make up 75% of all the captures at WEIR station, 70% of all captures at PARK station, and 54% of all captures at BLAB station (Table 2).

In addition to having the highest capture rate, BLAB station caught the greatest diversity of bird species of the three stations. BLAB station captured 13 species of birds and banded 11 species, whereas PARK station captured and banded six bird species and WEIR station captured and banded five bird species. See Appendix A (MAPS report) for capture totals for each station.

Table 1: Number of birds caught per net at each MAPS station

WEIR MAPS Station		PARK MAPS Station		BLAB MAPS Station	
Net #	Total birds caught	Net #	Total birds caught	Net #	Total birds caught
M 1	6	M 1	2	M 1	10
M 2	14	M 2	17	M 2	1
M 3	8	M 3	6	M 3	6
M 4	3	M 4	8	M 4	12
M 5	6	M 5	2	M 5	13
M 6	3	M 6	2	M 6	11
M 7	6	M 7	5	M 7	11
M 8	10	M 8	4	M 8	8
M 9	12	M 9	8	M 9	8
M 10	5	M 10	3	M 10	14
total	73	total	57	total	94

In addition to banding activities, staff also conducted point counts at each station once during each of the five M.A.P.S. rounds. There were nine point count stations at each M.A.P.S. station (WEIR, PARK, and BLAB) and the point counts recorded all bird species heard or seen within a ten-minute period. Point counts were completed by four hours after sunrise. Point counts at Weir and Park Stations were conducted on June 17th and 28th, and July 9th and 19th. Point counts at B-Lab station were conducted

on June 20th, and 29th, and July 10th, 19th, and 27th. Species recorded on point counts are listed in Table 2.

Table 2. Species heard or seen during point counts across all stations during MAPS 2003.

American Coot	Mallard	Red-eyed Vireo
American Bittern	Duck sp.	Warbling Vireo
Sora	Common Raven	Tree Swallow
Pied-billed Grebe	American Crow	American Goldfinch
Canada Goose	Black-billed Magpie	Pine Siskin
Goose sp.	Mourning Dove	Least Flycatcher
Eared Grebe	European Starling	Alder Flycatcher
Common Tern	Ruffed Grouse	Clay-colored Sparrow
Black Tern	Brown-headed Cowbird	Savannah Sparrow
Franklin's Gull	Yellow-headed Blackbird	Vesper Sparrow
Ring-billed Gull	Red-winged Blackbird	Lincoln's Sparrow
Gull sp.	Blackbird sp.	White-throated Sparrow
American Avocet	Baltimore Oriole	Song Sparrow
Common Snipe	Cedar Waxwing	House Wren
Marbled Godwit	Sprague's Pipit	Yellow Warbler
Willet	Yellow-bellied Sapsucker	Common Yellowthroat
Lesser Yellowlegs	Downy Woodpecker	Black-capped Chickadee
Yellowlegs sp.	Hairy Woodpecker	Ruby-throated Hummingbird
Peep sp.	American Robin	Northern Harrier
Northern Shoveller	Hermit Thrush	Northern Goshawk

Tree Swallow Nesting Activity

The Tree Swallow grid continued to be monitored rigorously throughout the summer. As many adults as possible were captured using a variety of methods including the feather method, run and cover method, and for the difficult to catch individuals there was the ball and chain method. In the end, BBO staff managed to capture 75 Tree Swallows, banding 35, and as a pleasant surprise we were able to band a male, Mountain Bluebird that was nesting within the grid (Table 3.). Unfortunately, the bluebird nest of six young failed with no known cause, but we were kept busy with the rest of the grid. Young were hatching, parents were busily feeding and our timing had to be just right in order to band the young before fledging. We were successful and there was a band on every young swallow leg before they left the nest. There were 137 young banded in total from 29 nest boxes (Table 4.).

Table 3. Adult Tree Swallow capture totals during 2003 BBO field season.

Species	Banded	Repeats	Recoveries	Dead Recov.	Dead Repeats	Total
Tree Swallow	35	25	10	5	5	85
Mountain Bluebird	1					1

Table 4. 2003 Tree Swallow nestling results in comparison to 2002

TRES Nestling data	2003	2002
Young banded	137	177
Successful nests	29	34
Avg. young/nest	4.72	5.21
Highest fledgling success	9	unavailable
Lowest fledgling success	3	unavailable

BBO staff also continued to locate and monitor as many nests as possible. Nest monitoring cards provided by Environment Canada were filled out throughout nesting season. By the end of the summer, staff had filled out 58 of these nest cards, one for each nest found in the natural area and monitored over the nesting period (Table 5). The Tree Swallow nests and the House Wren nests were located in nest boxes around the lab. Of these 58 nests, 35 of them were monitored until completion, either until the young had fledged or the nest had failed. Staff was very amused to find that the Least Flycatchers that had built their nest very close to the toilet had used toilet paper as one of their building materials!

Table 5. Nests found in and around the Beaverhill Natural Area in 2003

Species	Nests found	Species	Nests found
Least Flycatcher	21	American Robin	1
Yellow Warbler	15	Long-eared Owl	1
Brown-headed Cowbird	5	Red-tailed Hawk	1
Tree Swallow	5	Common Raven	1
House Wren	5	American Crow	1
Clay-Coloured Sparrow	2	American Goldfinch*	1
Mallard	2		

* Nest found on September 4th

After the young from these nests were determined to be old enough, staff tried to band as many nestlings as possible. Nest-side banding occurred at the nests of many House Wrens and Least Flycatchers, a Brown-headed Cowbird, as well as a Red-Tailed Hawk nest, and we were also able to band a young American Robin, and Yellow Warbler.

Many other activities and events kept everyone at the BBO busy over the summer months. On June 15th, the annual Crepe Breakfast was held, with Janos Kovacs coming out to prepare crepes for everyone attending. Al DeGroot invited us out to the Redwater area on June 28th to teach us about banding raptors. We were each able to try out climbing a tree to access a nest or nest box and were also given practice with banding the nestlings of Red-tailed Hawks and American Kestrels. We also accompanied Chuck and Lisa Priestley, who came out on July 1st to band some young Red-tailed Hawks in the area.

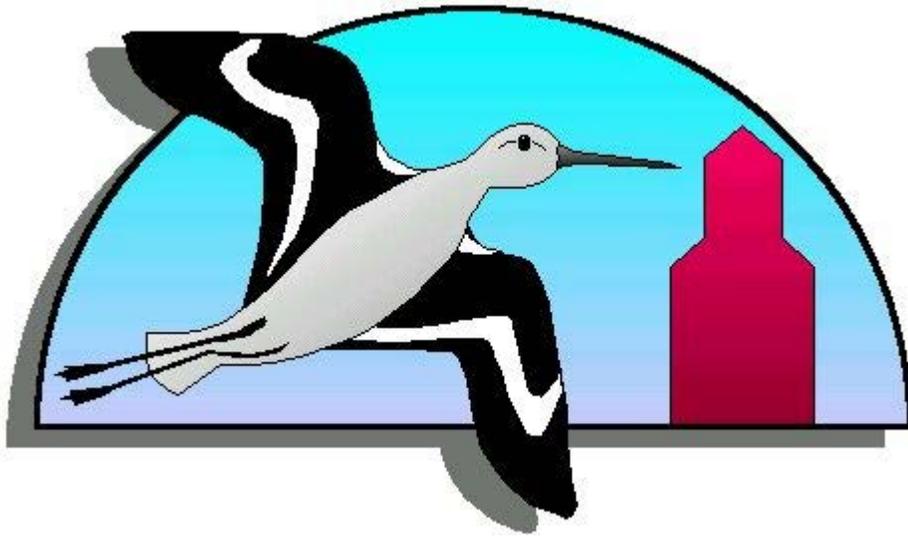
A banding conference, led by Ken Burton from California, took place from July 21st-23rd, and provided staff with a great opportunity to brush up on “aging skills”, an often challenging part of the banding process! Ken even came out to the BBO on the 24th and spent the last day of M.A.P.S. project banding with us. July 25th was the date of the annual Medieval Party, and all the attendees donned medieval garb and ate a delicious fondue dinner prepared by Chuck and Lisa.

Matt Hanneman, Tara Worobetz, Kim McKinnon, and Kyla Dolen staffed the BBO during the 2003 summer season. In addition, thank you to Chuck and Lisa Priestley, Bryn Spence, Juanita Mumby, and Anita Hanneman for helping out with the M.A.P.S. project on many occasions.

Appendix A. BBO capture totals during summer MAPS program, 2003.

Species:	Banded			Repeats			Recoveries			Other			Total			MAPS totals
	B-Lab	Weir	Park	B-Lab	Weir	Park	B-Lab	Weir	Park	B-Lab	Weir	Park	B-Lab	Weir	Park	
Least Flycatcher	18	31	17	15	6	13	16	16	9	0	2	1	49	55	40	144
House Wren	4		1	5		0	0		0	1		0	10		1	11
American Robin	0			1			0			0			1			1
Yellow Warbler	1	4	2	4	3	0	3	4	2	0	2	0	8	13	4	25
Ovenbird	1	1		0	0		0	0		0	0		1	1		2
Tennessee Warbler	2			0			0			0			2			2
Clay-colored Sparrow	1	1		0	0		1	0		0	0		2	1		3
Brown-headed Cowbird	4	1		0	0		0	1		0	1		4	3		7
Hermit Thrush	1			4			1			0			6			6
Swainson's Thrush			1			0			0			0			1	1
Black-capped Chickadee	5		4	3		0	0		2	0		0	8		6	14
Warbling Vireo	1			0			0			0			1			1
Hairy Woodpecker	1			0			0			0			1			1
Yellow-bellied Sapsucker			2			3			0			0			5	5
Ruby-Throated Hummingbird	0			0			0			1			1			1
totals:	39	38	27	32	9	16	21	21	13	2	5	1	94	73	57	
		104			57			55			8			224		224

Beaverhill Bird Observatory



Fall Report 2003

Matthew Hanneman

Introduction

Fall Migration Monitoring is the part of the field season that the staff looks forward to every year at the Beaverhill Bird Observatory, and this year was no exception. After the successful but somewhat tedious summer MAPS program, the variety of fall projects and the anticipation of huge songbird abundance and diversity generates an immense amount of excitement. However, fall migration is also the busiest part of the season, and usually keeps the staff very active with irregular sleep patterns. Despite the schedule, fall migration monitoring was successful and another season of research is complete.

Fall migration monitoring began on the first of August with songbird and raptor monitoring. The second season of intensive Northern Saw-whet Owl monitoring was started two weeks later on August 15. Songbird and raptor monitoring were completed on October 10th while Saw-whet Owl monitoring continued until **November** . On top of these three major projects, Summer Sunday tours also continued throughout the month of August, but with limited success. The annual BBO butterfly count was also held, which gave us a chance to diversify our focus from birds for a day. Fall migration also wouldn't be complete without the annual Steaks and Saw-whet event, which was a huge success with the largest turn out to date.

Fortunately, there was plenty of staff and volunteers on hand this fall to handle all these tasks. Tara Worobetz, Kyla Dolen, and I, Matthew Hanneman made up the hired staff, and we were also lucky to have an extra volunteer to the end of August, Kim McKinnon. Then, after all the staff had left, and just as I was becoming lonely I was blessed with another volunteer, Helen Jewell, who was visiting in Canada all the way from England.

Songbird Migration Monitoring

Fall songbird monitoring began on August 1st and ended on October 10th. Monitoring was composed of thirteen mist nets set one half hour before sunrise and run for six hours, weather permitting. Migration coverage did not occur in temperatures below 0°C or above 27°C, winds higher than 3 on the beaufort scale, or during any precipitation events. Banding took place on 59 days out of a possible 71 days of fall migration with 3818.25 (68.9%) net hours completed out of a possible 5538 net hours. Wind was the major factor in the reduction of possible net hours, but there were also some days without coverage due to scheduling constraints.

Fall songbird migration turned out to be relatively slow this fall with the banding effort resulting in a total of 1093 birds banded and 1315 caught (Appendix A, Fall report). Combined with the total net hours, this is equivalent to 28.6 birds banded per 100 net hours (34.4 birds caught/100NH), which is significantly lower when compared to the last four years (Table 1; Figure 1). In fact, banding effort in the last five years has steadily increased but the number of birds caught has, on average, decreased (Figure 2.). This indicates that the concentration of birds migrating through the BBO has decreased over these years, despite the increase in banding effort.

Table 1. 2003 Fall songbird banding results compared to previous four years.

Year	1999	2000	2001	2002	2003
Birds Captured	2745	1740	2095	1734	1315
Birds Banded	2172	1433	1758	1464	1093
Net Hours	2533.5	2843.25	3678.5	4173.75	3818.25
Capture rate (birds/100NH)	108.3	61.2	56.9	41.2	34.4
Species Captured	58	55	56	62	57

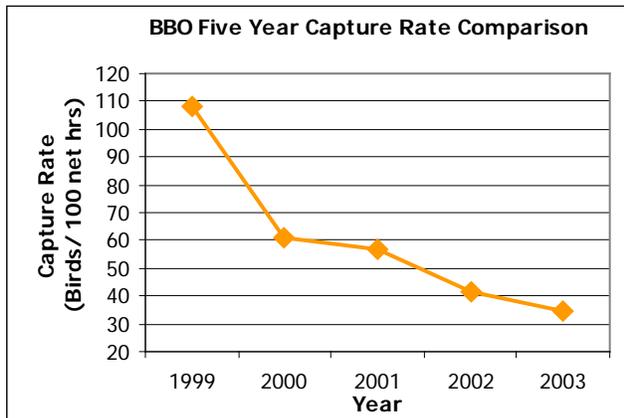


Figure 1. Fall songbird capture rate five year trend.

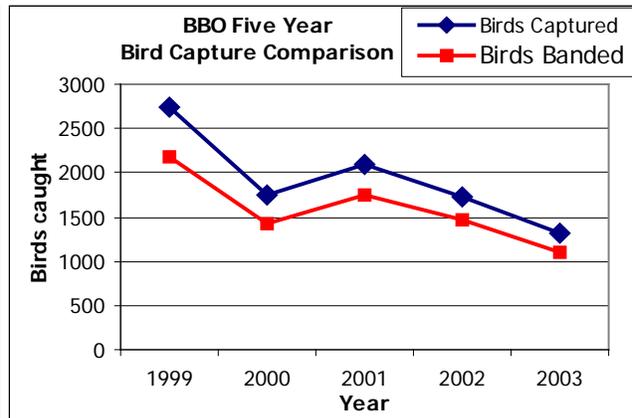


Figure 2. Fall songbird banding totals five year trend.

The capture rate showed two distinct peaks or waves of migration over the course of the fall, one in the third week of August and another in the first week of September, which followed closely with actual bird abundance (figures 3, 4). However, capture rate varied considerably between net lanes with nets 9 and 9x showing the highest rates and nets 2 and 2x showing the lowest rates (Table 2).

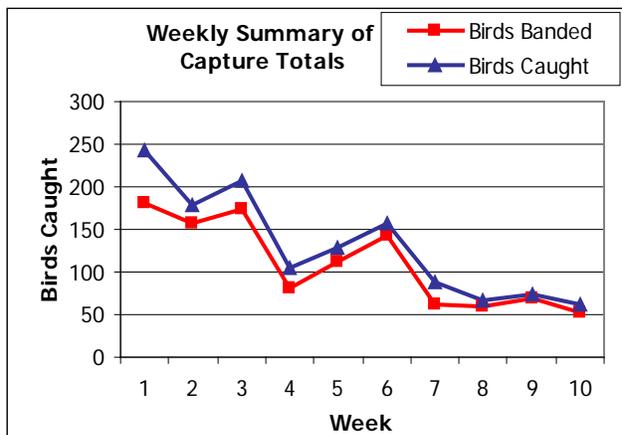


Figure 3. Fall weekly songbird banding totals 2003.

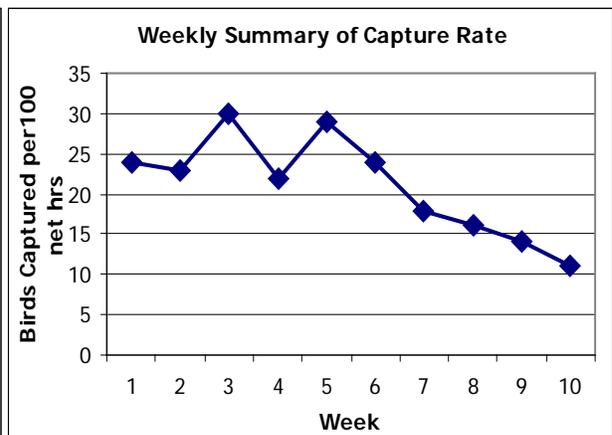


Figure 4. Fall weekly songbird capture rate trend 2003.

Table 2. Net lane productivity and capture rates.

Net Lane	Net Hours	Birds Captured	Birds Captured/ 100 Net hours
2	318.50	38	11.93
2x	318.50	36	11.30
3	306.00	54	17.65
4	306.00	68	22.22
8	253.75	116	45.71
9	253.75	184	72.51
9x	253.75	189	74.48
12	264.75	100	37.77
40	318.50	180	56.51
41	318.50	104	32.65
43	318.50	104	32.65
43x	269.25	59	21.91
49	318.50	83	26.06
Total	3818.25	1315	34.44

Species diversity remains relatively high with 57 species captured and 55 species banded, which is reasonably consistent from the previous four years (Table 1). A Ruby-throated Hummingbird was caught but could not be banded without the proper permit, while a Black-billed Magpie also flew into the mist nets but escaped unbanded before it could be extracted. Some interesting captures, due to their relative rarity, included a Northern Shrike (1), Brown Creepers (2) and Bay-breasted Warblers (2). The weekly trend of species diversity shared a similar phenomenon with the capture rate with two peaks occurring throughout the fall (Figure 5).

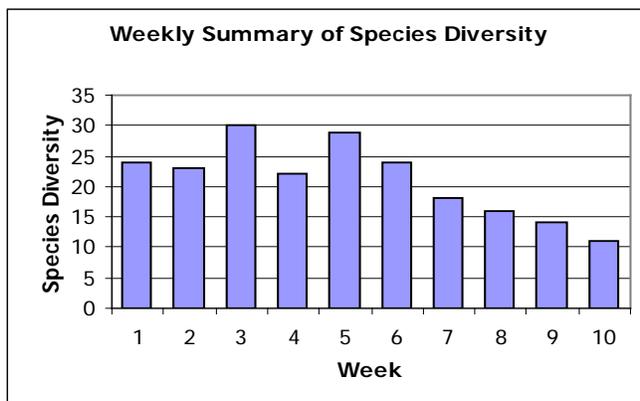


Figure 5. Fall 2003 weekly songbird diversity trend

The species that dominated in the mist nets in both numbers caught and banded was, not surprisingly, the Least Flycatcher (Figures 6, 7). Following close behind were Myrtle Warblers, which decided to arrive at the BBO all at one time. Yellow Warblers were the next highest caught, followed by Black-capped Chickadees and American Tree Sparrows. However, Tennessee Warblers replaced Chickadees in the number of banded individuals because the majority of Black-capped Chickadees were repeat captures.

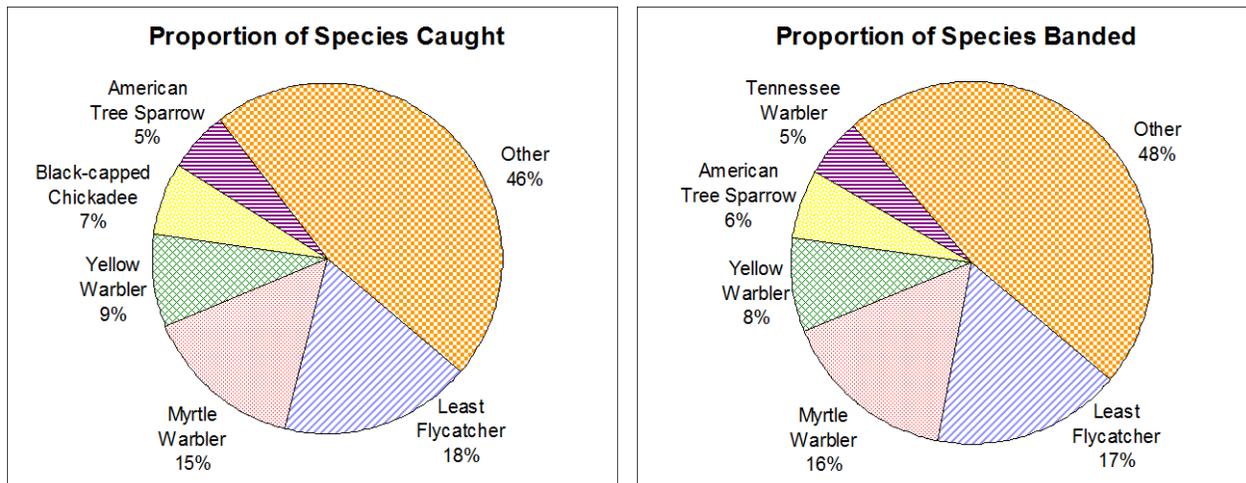


Figure 6. Proportion of the top five species caught during fall migration 2003.

Figure 6. Proportion of the top five species banded during fall migration 2003.

It is also interesting to note a number of pronounced fluctuations within a species in the number banded when compared to last year. American Redstarts revealed the most drastic decrease with 101(72%) fewer banded this year than last year, but may be misleading because of an unusually abundant year in 2002. Yellow Warblers showed a similar change with 131(59%) fewer banded. Conversely, Wilson’s Warblers, Ovenbirds, and Ruby-crowned Kinglets showed relative increases from last year. These fluctuations are presented in Table 3.

Table 3. Significant fluctuations in species numbers between 2003 and 2002

Species Banded	2002	2003	% Variance
American Redstart	140	39	-72.14
Black-capped Chickadee	90	30	-66.67
Yellow Warbler	222	91	-59.01
Traill's Flycatcher	41	18	-56.10
Tennessee Warbler	99	59	-40.40
Ruby-crowned Kinglet	29	50	42.00
Ovenbird	13	26	50.00
Wilson's Warbler	17	34	50.00

* Decreases in bold

Fall Raptor Monitoring

The two other major activities throughout the fall included the Raptor monitoring and the Northern Saw-whet Owl monitoring. There were at most thirteen raptor traps placed around the Natural Area (11 drop-lid traps and 2 Goshawk traps). These traps were open constantly and monitored every 4-8 hours. This fall proved to be relatively slow compared to previous years

with only 10 captures in total (Table 4). However, a new species was added to those captured in the traps this fall and ironically it was not a raptor. A Myrtle Warbler had managed to trigger off one of the Goshawk traps and was fluttering inside when we approached on one of the checks.

Table 4. Species caught and banded during fall raptor monitoring 2003.

Species	Banded	Escaped	Released	Total
Cooper's Hawk	1			1
Red-tailed Hawk	2			2
Long-eared Owl	1			1
Great-horned Owl	3			3
Black-billed Magpie	1	1		2
Myrtle Warbler			1	1
Total	8	1	1	10

The Northern Saw-whet Owl monitoring was another huge success this year. It was slow early on, and it seemed as though we were not going to reach last years capture total. However, there was a huge boost at the end, Saw-whets flooded the nets, and we soared past the numbers banded last fall. In total, there were 151 Saw-whets banded (155 caught) by the final day of NSWOW monitoring. There were also two other species of owls captured with the Saw-whet audio lure. Two Long-eared Owls were banded this fall, which was a pleasant surprise, but the excitement reached its peak when a Boreal Owl was discovered in the nets one evening. The owl attracted quite a bit of attention and is now considered to be the most photographed BOOW in the entire boreal forest. See **Appendix...** in annual report for total NSWOW capture results.

There were even some record breaking capture events this fall when 12 Saw-whet Owls were banded on a single night and five of those caught in a single check. To make it even more spectacular, it happened to land on the Annual Steaks and Saw-whets evening, when there were over 20 people from the public on hand to witness it. Steaks and Saw-whets occurred over two nights and as you can guess, it was a huge success, both in public turn out and Saw-whet Owl turn out.

BBO Butterfly Count

The annual BBO Butterfly count was held during fall migration on August 3rd. We were once again delighted to have Barb and Jim Beck come out and lead the count and tell us plenty of stories at the same time. It was a beautiful day for it and we managed to net 19 species mainly comprised of Marbled Whites and Clouded Sulfurs (Table 5). We started off at the BBO lab, walking the net lanes with butterfly nets in hand. After banding we headed to Amisk Creek to see what we could find there. Then it was off to Mom's Ice cream Corral for a break from the heat

and some delicious ice cream treats. We finally ended off at the Tofield Nature Center to have a walk around the manmade wetland to find us some coppers.

Table 5. Species and number of individuals seen during 2003 annual BBO butterfly count.

Species	Common Name	Number Observed
<i>Pontia occidentalis</i>	Western White	175
<i>Pieris rapae</i>	Cabbage White	171
	White sp.	1015
<i>Colias philodice</i>	Clouded Sulphur	96
<i>Colias sp.</i>	Sulphur Sp.	184
<i>Lycaena dione</i>	Gray Copper	15
<i>Lycaena hyllus</i>	Bronze Copper	2
<i>Lycaena helloides</i>	Purplish Copper	3
<i>Lycaena sp.</i>	Copper sp.	3
<i>Speyeria cybele pseudocarpenteri</i>	Great Spangled Fritillary	6
<i>Speyeria atlantis hollandi</i>	Atlantis Fritillary	1
<i>Speyeria mormonia</i>	Mormon Fritillary	3
<i>Speyeria sp.</i>	Greater Fritillary sp.	9
<i>Boloria (Clossiana) sp.</i>	Lesser Fritillary sp.	1
<i>Phyciodes cocyta</i>	Northern Crescent	2
<i>Polygonia satyrus</i>	Satyr (Anglewing) Comma	1
<i>Nymphalis antiopa</i>	Mourning Cloak	11
<i>Aglais milberti</i>	Milbert's Tortoiseshell	2
<i>Vanessa cardui</i>	Painted Lady	1
<i>Coenonympha inornata</i>	Inornate Ringlet	17
<i>Cercyonis pegala</i>	Common Wood Nymph	43
<i>Thymelicus lineola</i>	European Skipper	8
<i>Hesperia assiniboia</i>	Plains (Common Branded) Skipper	19
<i>Hesperinae sp</i>	Fold Wing Skipper sp.	7
Number of Species: 19		Total: 1795

Interpretation

The BBO is now showing off many more interpretive signs this year thanks to the board members and staff. On top of the trail marking signs, wonderfully decorated by Lisa Priestley, there are now 11 new wildlife interpretive signs describing some of the flora and fauna that can be observed throughout the Natural Area. The signs were professionally constructed by Lisa and Chuck Priestley and then hauled out and pounded into the ground by the staff. The signs combined with trail maintenance provide an excellent new look to the BBO.

The BBO continued to host the biweekly Summer Sunday tours throughout August with a different theme every Sunday. Unfortunately, there was limited public interest, but two individuals came on one Sunday to have a tour of the BBO, survey the wetlands, and try to catch pond critters while we were at it. It was also part of educational research for Junior High students on how climate change affects wetlands. Beaverhill Lake’s receding shoreline was an excellent example of this and it will now be used in the classroom.

Northern Saw-whet Owl monitoring has, on the other hand, captured a large amount of public interest and contributed greatly in promoting the BBO. As was mentioned above, Steaks and Saw-whets attracted many people over the two nights it was held and it could not have been more successful with 19 owls banded in total. Furthermore, the Edmonton Journal was invited out to the BBO on September 25 to write an article featuring the lovable Saw-whet Owl. Journalist, **Honica** , wrote an excellent article which generated even more public interest and because of it, I was pleased to have many visitors make the trip to the BBO to get a personal encounter with the Saw-whet Owl.

Visitors and volunteers are always welcome and deserve our appreciation for all their help and enthusiasm. It is a great opportunity to promote the BBO and helps keeps me sane when I’m all by my lonesome. Special thanks goes to Chuck and Lisa Priestley for all their time they devoted out at the lab while staff were on days off or just to visit. Volunteers are listed below with the number of days each volunteered.

Table 6. BBO volunteers during fall migration period, 2003.

Volunteer	Number of days	Volunteer	Number of days
Chuck Priestley	16	Elisabeth Beaubien	2
Lisa Priestley	16	Ian Keir	1
Hellen Jewell	11	Ty Flockhart	1
Bryn Spence	8	Randal Hosheit	1
Juanita Mumby	8	Al DeGroot	1
Anita Hanneman	3	Shannon Ripley	1
Enrique Valdez	2	Katy Morrison	1
Geoff Holroyd	2		

Famous Staff Quotes

Tara Worobetz: “CEDAR WAXWINGS!! I’ve been waiting all summer to catch those guys! Now my summer is complete and I can leave happy.”

Kim McKinnon: “Sometime during the course of the day we had an unconfirmed sighting of 17 Pink Flamingos. If you can back us up with a photographed sighting, please email us at www.PIFLsAreUs.com”

Kyla Dolen: “Matt the laughing Jackass let a quail go this morning, because nobody expects the innocent quail. Who would have though such a fat, docile bird actually had the spunk to escape (not Matt obviously).

Matt Hanneman: "... That's okay, the birds will become my friends and the owls will keep me company at night. Then I will become the bird whisperer and I will eventually deploy them as my winged armies in my aspiration for world domination. Ha, Ha, Ha, Ha, Haaa! Okay, where was I. Oh ya, birds."

Appendix A (Fall Report). BBO capture totals for fall songbird migration, 2003.

Species	Banded	Repeats	Recoveries	Other	Total
Ruby-throated Hummingbird				1	1
Yellow-bellied Sapsucker	2	1			3
Downy Woodpecker	8	4			12
Hairy Woodpecker	3		1		4
Yellow-shafted Flicker	1			1	2
Western Wood-Pewee	1				1
Yellow-bellied Flycatcher	1				1
Alder Flycatcher	3				3
Least Flycatcher	184	42	4	3	233
Traill's Flycatcher	18				18
Northern Shrike	1				1
Blue-headed Vireo	1				1
Warbling Vireo	8	2	1		11
Philadelphia Vireo	4				4
Red-eyed Vireo	6				6
Black-billed Magpie				1	1
Black-capped Chickadee	30	60		1	91
Red-breasted Nuthatch	3				3
Brown Creeper	2				2
House Wren	10	16			26
Golden-crowned Kinglet	3				3
Ruby-crowned Kinglet	50	3			53
Gray-cheeked Thrush	1				1
Swainson's Thrush	22	1			23
Hermit Thrush	17	13			30
American Robin	5				5
Gray Catbird	2				2
Cedar Waxwing	2				2
Tennessee Warbler	59			1	60
Orange-crowned Warbler	51	3		2	56
Yellow Warbler	91	16	4	2	113
Magnolia Warbler	17				17
Cape May Warbler	6			1	7
Myrtle Warbler	175	13		5	193
Western Palm Warbler	4			1	5
Bay-breasted Warbler	2				2
Blackpoll Warbler	13	1			14
Black-and-white Warbler	6				6
American Redstart	39			3	42
Ovenbird	26	1		1	28
Northern Waterthrush	12				12
Mourning Warbler	7				7

Common Yellowthroat	3			3
Wilson's Warbler	34	3		37
Canada Warbler	2			2
American Tree Sparrow	66	2		71
Chipping Sparrow	2		3	2

Appendix A cont...

Species	Banded	Repeats	Recoveries	Other	Total
Clay-colored Sparrow	35		2	1	38
Savannah Sparrow	10				10
Fox Sparrow	1				1
Song Sparrow	5				5
Lincoln's Sparrow	3				3
White-throated Sparrow	6				6
White-crowned Sparrow	3				3
Slate-coloured Junco	24				24
Rose-breasted Grosbeak	2				2
American Goldfinch	1		2		3
Total	1093	181	14	27	1315