

Delta Marsh Bird Observatory Interim Report: 1996

Heidi den Haan

Delta Marsh Bird Observatory

Box 1, R.R. #1, Portage la Prairie, Manitoba R1N 3A1



Introduction

The Delta Marsh Bird Observatory (DMBO) is a member of the Canadian Migration Monitoring Network. Its next nearest neighbors are Last Mountain Bird Observatory in Saskatchewan, and Thunder Cape Bird Observatory in Thunder Bay. As the only station in Manitoba, it plays a critical role in addressing the paucity of information regarding the status of populations of songbirds in the central prairie provinces.

Traditionally noted for its abundance of waterfowl, the Delta Marsh is also a primary stopover site for migrating songbirds. The narrow strip of trees growing on the dune ridge between the lake and the marsh provides a natural migration pathway making it an ideal place to situate a monitoring station. In addition, food sources from the marsh and lake make possible large numbers of migrating passerines to be funneled through the narrow forest ridge. These "huge quantities" of birds have earned DMBO the reputation of being the busiest monitoring station in Canada.

Methods

DMBO operates on a daily basis during both the spring and fall migration periods and follows an established protocol which involves banding, a daily census, and other continuous observations. The spring and fall banding stations are located on the forested dune ridge which lies between Lake Manitoba and Delta Marsh. Spring banding occurred during 1 May to 6 June at the Delta Waterfowl and Wetlands Research Station, located 5 km to the east of the University Field Station (UFSDM); fall banding was conducted at UFSDM from 9 July to 30 September.

Banding starts early in the day, about ½ hour before sunrise, and continues for six hours (except under adverse weather conditions). This is important as some species disappear after the first hour or so of light while others do not appear till later. DMBO runs a series of ten mistnets which are checked every ½ hour, or more frequently if necessary. All mistnets are a standard 3 x 12 meter, four tier design with a 30 mm nylon mesh. Net opening and closing times are also noted so that

trapping effort can be recorded.

Upon removal from the net, each bird is identified and banded. We then record its wing length, fat condition, primary molt, and weight. In addition, when possible, age and sex are also determined. The birds are then released.

A census is also done 1-2 hours after sunrise along a predetermined route and takes about 45 - 60 minutes each day. The objective of the census is to count as many of the birds present as possible from within the defined count area by counting all birds identified by sight or sound along the census route. Incidental but continuous observations are made by banders and other observers throughout the six hour banding period. This is done to account for visibly migrating birds and indicates general movements overlooked by the banding or census alone.

Daily Estimated Totals (ETs) are derived daily and are based on banding totals, the daily census, and other observations. They are the best estimates of the numbers of each species present in (or migrating through) the station area each day. Although estimates, they are more realistic than any one of the three methods.

In addition to our monitoring function, blood and feather samples were taken from a subset of birds captured to be used in genetics and stable-isotope analysis. DMBO also collected live ticks from captured birds for the Lyme Disease Association of Ontario to help assess the spread of Lyme disease.

Results

Hagan *et al.* (1994) suggested that a long-term commitment is required to obtain measurements of population changes that are amenable to useful interpretation. Therefore, a minimum of 5 years of counts is likely to be needed to give any reliable indication of population trends, although 10 years or more are desirable. With this in mind, DMBO will start to analyze the phenology of migration starting in 1997 (after 3 years) but continue to incorporate the data and assess population trends in subsequent years.

DMBO had an outstanding year in 1996, banding a total of 8891 birds. Including retrapped birds, we tipped the scales at a record of almost 10,000 captures! Of this

total, 3074 birds of 70 species were caught during spring migration, and 5817 birds of 79 species were recorded in the fall (Table 1).

Weather played an important role in the spring of 1996. Record snow accumulation during the previous winter meant that banding started with only five nets (despite our best efforts to shovel the drifts away). By 12 May we were fully operational, however migrants were kept at bay until the 3rd week of May by cold northerly winds, cloudy skies and rain. By 23 May, we were catching over 150 birds/day and made up for the delay quickly. Our biggest day occurred on 3 June when an influx of Cedar Waxwings constituted almost half of the 300 birds caught that day. In the end, the number of unique captures was very similar to that of 1995, although some increases/decreases in some species did occur (see Table 1).

The fall of 1996 brought an increase of about 800 birds compared to last fall, and although the season started off slowly with a manageable 20 to 50 birds/day, in August there was no relief from the frantic pace of 150 to 200 birds/day. Of note were the especially high catches of Tennessee Warblers, Yellow Warblers, American Redstarts and Common Yellowthroats, while there was a decrease in the number of thrushes and sparrows (see Table 1).

In addition to the banding this fall, we collected blood samples from 40 "pale" and 40 "bright" hatch-year (HY) Yellow Warblers. The samples were analyzed by Dr. Lisle Gibbs of McMaster University in an effort to determine if Yellow Warblers can be sexed by their pale (female) or bright (male) plumage. The DNA sex determination results were positive, i.e. - the bright birds were all males and the pale birds were all females. This

means that we now have a reliable way of determining sex by plumage in HY Yellow Warblers.

DMBO will maintain its constant effort mistnetting operation into the future as well as serve as a research node for studies of migrating songbirds.

Acknowledgements

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References

Hagan, J. M. III, Hobson, K. A., Nur, D. J. T. N. and Ralph, C. J. 1994. Recommended methods for monitoring bird migration. Prepared by the Intensive Sites Technical Committee of the Migration Monitoring Council. 22pp.

Table 1. Delta Marsh Bird Observatory banding summary for 1992-1996.

Species	1992 Fall	1993 Fall	1994 Fall	1995 Spring	1995 Fall	1996 Spring	1996 Fall
Sharp-shinned Hawk	1	11	4			3	
Mourning Dove	3	5	6		3		1
Black-billed Cuckoo	3	4	17	1	3		1
Whip-poor-will					1		
Yellow-bellied Sapsucker	5	2	7	2	2	2	3
Downy Woodpecker	12	21	9	2	11		10
Hairy Woodpecker	8	15	4		6		6
Northern Flicker	4	10	9		11	1	5
Olive-sided Flycatcher			1	1			
Eastern Wood Pewee	27	26	19		16	1	12
Yellow-bellied Flycatcher	25	2	6	10	9	8	2
Traill's Flycatcher	26	42	19	74	55	96	32
Least Flycatcher	102	76	210	124	127	155	126
Eastern Phoebe	11	17	16	1	9		16
Great Crested Flycatcher	1		1		4		
Eastern Kingbird	26	17	17	11	18	14	7
Tree Swallow	87	363	125	140	92	7	377
Northern Rough-winged Swallow							1
Bank Swallow	6	5	8				3
Cliff Swallow	1						1
Barn Swallow	18	13	15		33	2	54
Blue Jay	1			6	2	10	
Black-capped Chickadee	1	5			18		
Boreal Chickadee		1					
Red-breasted Nuthatch	2	63	7	1	32		3
White-breasted Nuthatch	4	4	3		4		5
Brown Creeper	3	13	10	7	11	4	1
House Wren	78	40	104	56	101	27	59
Winter Wren		1		3	1		
Sedge Wren						1	
Marsh Wren	2	4	10	1	23		44
Golden-crowned Kinglet	4	16	7	7	5	6	3
Ruby-crowned Kinglet	55	101	99	182	128	116	24
Veery	5		2	5	2	4	1
Gray-cheeked Thrush	10	15	10	20	14	23	1
Swainson's Thrush	101	81	92	44	148	62	55
Hermit Thrush	5	11	31	49	48	88	7
American Robin	52	58	62	15	66	6	33
Gray Catbird	114	82	79	85	102	69	49
Brown Thrasher	2			8		6	
Cedar Waxwing	13	8	19	6	18	265	8
Solitary Vireo	11	5	8	7	9	2	3
Yellow-throated Vireo	1		1				
Warbling Vireo	45	33	86	16	56	12	48
Philadelphia Vireo	9	9	12	4	5	5	2
Red-eyed Vireo	22	17	15	8	16	15	13
Golden-winged Warbler	1			1			2
Tennessee Warbler	91	207	1100	181	284	74	622
Orange-crowned Warbler	21	51	51	74	69	58	14

Neotropical bird banding (1996)

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Nashville Warbler	13	37	109	20	33	33	51
Yellow Warbler	970	832	1436	495	1436	501	2117
Chestnut-sided Warbler	15	4	17	10	10	5	21
Magnolia Warbler	42	51	40	41	27	94	38
Cape May Warbler	2	15	25	9	23	28	12
Black-throated Blue Warbler	1	1	1				
Myrtle Warbler	74	566	432	291	341	97	369
Black-throated Green Warbler	2	4	4	2	2		4
Blackburnian Warbler		3	11	2	1		4
Palm Warbler	3	14	13	62	5	24	20
Bay-breasted Warbler	6	2	6	1	2	2	7
Blackpoll Warbler	29	49	50	146	60	44	19
Black-and-white Warbler	88	37	67	38	50	34	54
American Redstart	260	122	179	93	120	118	301
Ovenbird	32	40	55	21	57	43	53
Northern Waterthrush	191	199	211	24	173	24	155
Connecticut Warbler	2	1	2	3	2	3	2
Mourning Warbler	15	14	21	10	35	13	30
Common Yellowthroat	32	43	199	115	105	183	229
Wilson's Warbler	31	8	10	89	32	62	73
Canada Warbler	31	14	23	8	32	11	18
Northern Cardinal			1				
Rose-breasted Grosbeak	36	32	32	13	55	7	19
Rufous-sided Towhee			2		1		
American Tree Sparrow		1		3		8	1
Chipping Sparrow	12	19	28	25	32	5	45
Clay-colored Sparrow	4	8	12	54	72	30	28
Savannah Sparrow				7	1	2	
Sharp-tailed Sparrow						1	
Fox Sparrow	1	4	12	12	9	71	3
Song Sparrow	107	113	155	33	199	26	194
Vesper Sparrow						2	
Lincoln's Sparrow	10	3	10	13	8	43	4
Swamp Sparrow	2	7	5	12	20	30	4
White-throated Sparrow	51	93	123	183	124	248	31
White-crowned Sparrow	2			11	2	9	1
Harris' Sparrow	3	2	1	10	5	5	3
Dark-eyed Junco	10	114	45	24	77	39	15
Red-winged Blackbird		5	37	13	117	9	72
Yellow-headed Blackbird			1	14	14	13	7
Common Grackle	6	3	12	2	13	1	14
Brown-headed Cowbird	12	2	12	13	9	6	14
Orchard Oriole	5		24	1	10	5	11
Baltimore Oriole	46	35	124	35	104	37	71
Purple Finch	1	1	3	3	2		2
Pine Siskin	19	9	12	16	23		6
American Goldfinch	21	29	15	35	23	16	36
TOTAL SPECIES	81	77	81	75	81	70	79
TOTAL BIRDS	3206	3990	5878	3164	5028	3074	5817
TOTAL MIST NET HOURS	2916.9	4027.3	4674.0	1760.2	5091.2	1731.8	3827.3
BIRDS/MIST NET HOUR	1.1	1.0	1.3	1.8	1.0	1.8	1.5