MAINE OWL MONITORING PROGRAM

MAINE AUDUBON

MAINE DEPT. OF INLAND FISHERIES AND WILDLIFE

2006 Field Season Summary

February 15, 2007

Background:

The Maine Owl Monitoring Program (MOMP) began in 2004 and is based on the results of an initial research project by Maine Audubon and the Maine Department of Fisheries and Wildlife in 2002 and 2003 that investigated the effects of different survey protocols on owl detection. The primary goals of MOMP are to document the distribution and abundance of Maine's owls, including both common and rare species; to examine habitat, weather, and other variables that may relate to owl distribution and abundance; and to engage citizen scientists in this research opportunity.

MOMP surveys are conducted on established road routes, with ten stops per route, and a thirteen minute listening protocol at each stop. From 2004-2007, audiotapes with 20-second owl calls were played after three minutes of passive listening (Northern Saw-whet Owl call), at minute five (Barred Owl call) and at minute 11(Great Horned Owl call). Surveys take place no earlier than midnight and usually end by 4 a.m.

Field Season Update:

MOMP surveys were completed in 2006 by more than 135 dedicated volunteers, and the summary of the number of owls detected since 2004 is shown in Table 1. The number of routes surveyed in 2006 was comparable to the first year of MOMP, and we expect to maintain this level of survey effort in the near future. A power analysis to determine a target number of owl monitoring routes for the state is needed.

Table 1. Summary of owl detections

	2004	**2005**	**2006**
# Routes Run	71	56	70
# Routes With Owls	63	43	61
# of Owls Detected:	**2004**	**2005**	**2006**
Barred (BARR)	200	128	231
Great Horned (GHOW)	64	24	55
Northern Saw-whet (NSWO)	48	80	100
Eastern Screech (EASO)	1	1	1
Long-eared (LEOW)	2	0	1
Short-eared (SEOW)	1	0	2
Unknown (UNKN)	3	0	4

Most routes (87%) had at least one owl detected during the 2006 survey, an improvement over 2005 and comparable to results from 2004. The total number of owls detected in 2006 is higher for all species compared to 2005. This is likely due to the lack of snow cover in 2006 that would have made prey more available. .

The highest number of owls detected on a single route was 20, with the same route having this record number in both 2005 and 2006. For routes that did have owls, there was a relatively equal distribution of between one and eight owls per route (with about 10% in each numerical category). This contrasts with our initial research that showed a high proportion of routes with just one owl detection.

Owl detections appear to be relatively stable over the course of the night, except for slightly lower detection rates consistently during the first half-hour of the survey (midnight to 12:30 a.m.). Owl detections remain relatively stable over the course of the season.

To compare the results from year to year, when the number of routes surveyed each year is different, we calculated the number of owls detected per route by species (Table 2).

Table 2. Owl detection rates (# Owls/Route)

# of Owls Detected/Route	2004	2005	2006
Barred Owl (BARR)	2.82	2.29	3.47
Great Horned Owl (GHOW)	0.90	0.43	0.83
Northern Saw-whet Owl (NSWO)	0.68	1.43	1.59
All Species Combined	4.49	4.16	6.04

The number of owls detected per route was higher for BARR and NSWO in 2006 than in either of the previous two years. Again, weather conditions may have meant larger populations for both of these species in 2006. GHOW populations appear to be comparable to 2004. An analysis of weather and snowfall is needed in the coming years as we continue to collect information about abundance and distribution.

MOMP routes were initially distributed state-wide, though the bulk of the routes have been run in the south and central part of the state (Figure 1). There continues to be a core area in central Maine where owl detections rates are higher (Figure 1, darkest gray boxes). We will see if this concentration of owl detections stays the same over time as additional years of MOMP survey data are collected.

			70	66	67	68	69		
		60	61 **8.00** (n=2)	62	63	64	65 **7.00** (n=1)		
		54	55	56 **6.00** (n=3)	57	58	59		
	47	48	49	50 **5.20** (n=5)	51	52	53		
38	39	40	41 **3.50** (n=2)	42	43 **1.80** (n=5)	44 **3.20** (n=5)	45	46	
28 **1.00** (n=1)	29 **2.00** (n=3)	30 **6.33** (n=3)	31 **3.60** (n=5)	32 **6.80** (n=5)	33 **4.83** (n=6)	34	35 0.00 (n=1)	36 **8.50** (n=2)	37 **11.00** (n=1)
18 **7.00** (n=2)	19 **2.67** (n=3)	20 **2.80** (n=10)	21 **9.89** (n=9)	22 **9.27** (n=11)	23 **5.00** (n=4)	24 **3.00** (n=7)	25 **5.00** (n=1)	26	27 **6.50** (n=2)
10 **5.00** (n=4)	11 **0.67** (n=6)	12 **4.36** (n=11)	13 **6.33** (n=6)	14 **5.64** (n=14)	15 **4.57** (n=14)	16 **0.67** (n=3)	17		
4 **10.33** (n=3)	5 **3.50** (n=12)	6 **3.38** (n=8)	7 **3.00** (n=5)	8 **5.33** (n=3)	9				
2 **4.50** (n=2)	3 **2.00** (n=2)								
1 **5.33** (n=3)									

Figure 1. Spatial distribution of owl detections. Numbers represent the DeLorme Gazetteer block number (first line), the number of owls/route within the block (in bold), and the number of routes run in the block (n). The data from 2004-2006 have been combined. White blocks have not had any owl surveys completed.

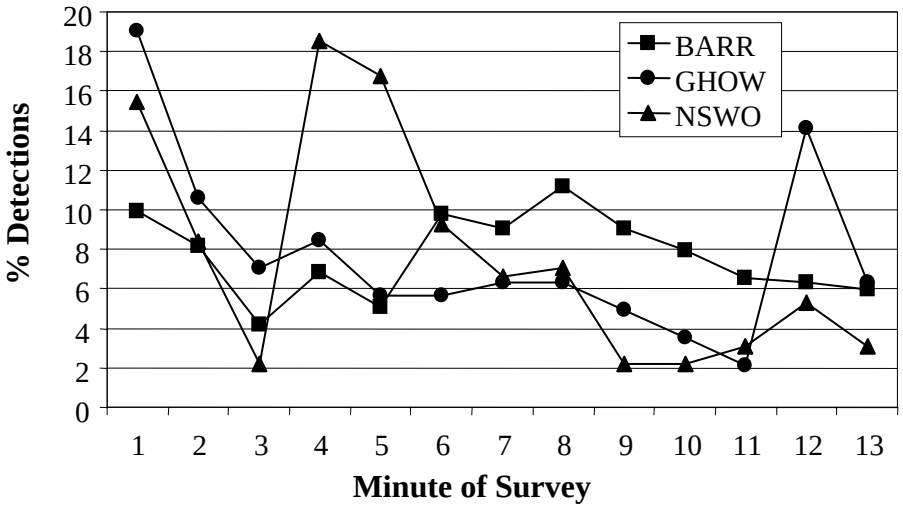

Figure 2. First owl detections by minute of survey and species.

An analysis of the timing for the first response of each owl (Figure 2) shows several things. Both NSWO and GHOW clearly respond to their own species playback calls (at the start of minutes 4 and 12 respectively). BARR show a delayed response to their playbacks at the start of minute five over the following four minutes. Neither BARR or NSWO show a marked decrease in calls after the GHOW playback at minute 12.

Summary and Future Work:

In summary, the 2006 MOMP season was a success, both in terms of the number of volunteers who participated as well as the number of owls detected and the value this additional year of surveys adds to our growing database of owl detections. Like all long-term monitoring projects, it will take additional years to collect adequate information for calculating population trends and the influence of habitat and weather. We will continue to work in coming years to increase the geographic range of MOMP, particularly in northern Maine, and to establish a target number of routes we need in the state to detect changes in owl populations over time.

After organizing files and contacting volunteers in 2006, almost all of the route information is complete with detailed maps and written descriptions in our files. We need to follow up with just a few volunteers in 2007 to complete this information. We need complete information about all MOMP routes to insure that surveys can continue in the future even if the MOMP volunteers change. In 2007, we will also be switching from cassette tapes to CDs, and replacing the Northern Saw-whet playback with a Long-eared Owl. We would like to collect more information on Long-eared distribution as this species is of conservation concern in Maine and across the northeast.

We are working with New Hampshire Audubon and partners from across the northeast on a project to investigate the possibility of combining monitoring for nightjars with a standardized owl monitoring protocol. We have received a small grant from the Northeast Coordinated Bird Monitoring Program, and will be contacting you after the MOMP survey season to gauge your interest in an early summer owl survey.

Finally, Maine Audubon is conducting a small research project in conjunction with MIT to field test cell phones that have been modified to both record and play owl calls. The phones can be controlled remotely by users at a website. We have about a dozen seasoned MOMP volunteers signed up to test this equipment in 2007. For more information, contact Susan at Maine Audubon.

The success of MOMP depends entirely on dedicated volunteers who are willing to forego a night of sleep for the pleasure of hearing owls! Thanks to the following 2006 MOMP volunteers:

Denise Austin, Si Balch, Amanda Barker, Diane Bartholomew, Gladys Benshimol, John Berry, Jensen Bissell, Nancy Bither, Ann Brayton, Jack Buckley, Barbara Buerger, Peter Buerger, Steve Bumps, Murray Carpenter, Jim Colquhoun, Chris Corio, Richard Cousins, Shannon Crowley, Frank Daggett, Mac Davis, Frank Davis, Jim Derby, Mary Lou Dietrich, Larry Dixley, Helen Dolloff, Jim Dougherty, Richard Duddy, Dalene Dutton, Matt Elliott, Mick Evans, Mary Evans, Chris Fichtel, Leah Finity, Pat Flynn, Pat Friedman, Max Friedman, Steve Ftorek, Susan Gallo, Sherri Gee, Jillian Glover, Patrick Glover, Bill Goodwill, Ed Hawkes, Susan Hayward, Mary Ann Hebert, Greg Hellyer, Kathy Hockman, Tom Hodgman, Jean Hoekwater, Stacia Hoover, Patricia Horine, Sam Horine, Dixie Hummel, Kathy Kandziolka, Carol Knapp, Ed Knapp, Eileen Kreutz, Ed Laine, Eileen Laine, Olga Lange, Karen Larsen, Leslie Latt, Kathy Lawrence, Nancy Light, Bill Mackowski, Bob MacLaughlin, Judith Marden, David Martin, Amy Meehan, Tom Michaud, Laurie Mooney, Jenn Morreale, Karen Morris, Clark "Chip" Moseley, Pat Moshimer, Gordon Mott, Virginia Mott, Richard Moulton, Michaelene Mulvey, J. Philip Murray, JoeMusante, Jeff Nixon, Bob Nixon, Susan Olds, Tony Owens, Nick Patterson, Aileen Peaco-Burkett, Jennifer Perry, Michael Peterson, Kit Pfeiffer, Nancy Piston, Rebecca Piston, Caro Poirier, Maureen Raynes, Don Reimer, Rebecca Richard, Gary Roberts, Sally Rooney, Fred Rooney, Catherine Rowe, Jennifer Royce Perry, Joe Shabbatt, Roy Sharp, Lauren Simpson, Travis Sparks, Alan Stevens, Joann Stevens, Lauren Stockwell, Jackie Stoutamyer, Catherine Thorup, Lindsay Tudor, Missie Walker, Kathy Wall, Stella Walsh, Bob Watson, Anne Watson, Andy Weik, Paula Wheeler, Beth White, Ted Whitham, Cheryl Wiggin, Art Wilder, Sallie Wilder, Nancy Williams, Rebekah Woisard, Linda Woodard, Christine Wooley, Nancy Wright, Stacey Wyman, Steve Yates, Jay Young, Unity College students (under the direction of Dave Potter and Mike Shannon) and University of Maine Student Chapter of The Wildlife Society (under the direction of Lindsay Seward).

We tried our best to include everyone who has submitted data for MOMP. If for some reason your name has been inadvertently omitted, please let us know (781-6180 ext. 216).

Additional special thanks to…

Shirley Wells for entering owl data, organizing files, printing and assembling the CD sleeves, and just generally being helpful and enthusiastic about the owl project. Thank you, Shirley!

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