APPENDIX L

NEXRAD DATA

Appendix L-1

WSR-88D Parameters

Table L-1. WSR-88D characteristics from the National Research Council, 2002.

Parameter/Feature Radar System	Value/Description
Range of observation	
Reflectivity	460km
Velocity	230km
Angular Coverage	
Azimuth	Full circle or sector
Elevation	Operational limits; -1° to +20°
Antenna	
Type	S-Band, center-fed, parabolic dish
Reflector aperture	8.54-m (28-ft) diameter; circular
Beamwidth (one-way, 3 dB)	0.96° at 2.7 GHz; 0.88° at 3.0 GHz
Gain	45.8 dB at 2.85 GHz (midband)
Polarization	Linear horizontal
First side-lobe level	-29 dB
Steerability	360° azimuth; -1° to +45° elevation
Mechanical limits	-1° to +60°
Rotation rate	30° s^{-1} (azimuth and elevation)
Angular acceleration	15° s^{-2} (azimuth and elevation)
Pointing accuracy	±0.2°
Radome	
Type	Fiberglass skin foam sandwich
Diameter	11.89m (39 ft.)
RF Loss (two-way)	0.3 ± 0.06 dB over 2.7–3.0 GHz band
Transmitter	
Type	Master Oscillator Power Amplifier (MOPA)
Frequency range	2.7–3.0 GHz
Peak power output (nominal)	500 kW into antenna
Pulsewidth (nominal)	1.57 µs (short pulse); 4.5 µs (long pulse) ±4%
RF duty cycle (maximum)	0.002
Pulse Repetition Frequency	
Long pulse	322–422 Hz ± 1.7%
Short pulse	322–1282 Hz ± 1.7%
Waveform types	Contiguous and batch
Receiver	
Type	Linear
Tunability (frequency range)	2.7–3.0 GHz
Bandwidth (3 dB)	0.63 MHz (short pulse); 0.22 MHz (long pulse)
Phase control	Selectable
Receiver channels	Linear output I/Q; log output
Dynamic range	95 dB max; 93 dB at 1 dB compression
Minimum detectable signal	-113 dBm
Noise temperature	450 K

Table L-1 (*continued*). WSR-88D characteristics from the National Research Council, 2002.

Parameter/Feature Radar System	Value/Description
Pulse Repetition Frequency	
Intermediate frequency	57.6 MHz
Sampling rate	600 kHz
Signal Processor	
Type	Hardwired/programmable
Parameters derived	Reflectivity; mean radial velocity; Doppler spectral width
Algorithms (respective)	Power averaging; pulse-pair; single-lag correlation
Accuracy (Standard Deviation)	
Reflectivity	<1 dB
Velocity and spectrum width	<1 m s^{-1}
Number of Pulses Averaged	
Reflectivity	6–64
Velocity and spectrum width	40–200
Range Resolution	
Reflectivity	1 km
Velocity and spectrum width	0.25 km
Azimuth Resolution	
Reflectivity	1°
Velocity and spectrum width	1°
Clutter canceller	Digital, infinite impulse response (IIR), 5-pole
Clutter suppression	30–50 dB
Filter notch half-width	0.5–4 m s^{-1}

Appendix L-2

Seasonal Data for Nocturnal Bird Migration

Table L-2. Year-to-year and night-to-night pattern of nocturnal spring bird migration (2005) over the onshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Onshore Spring 2005						
Date	1A		2A		3A	
	Density	Comments	Density	Comments	Density	Comments
15-Mar	0	P	0	P	0	P
16-Mar	0	P, MI	0	P, MI	0	P, MI
17-Mar	0	P, MI	0	P, MI	0	P, MI
18-Mar	0	MI	0	MI	0	MI
19-Mar	0	P	0	P	0	P
20-Mar	0	P	0	P	0	P
21-Mar	0	MI	0	MI	0	MI
22-Mar	23		58		24	
23-Mar	0	P	0	P	0	P
24-Mar	0	MI	0	MI	0	MI
25-Mar	0	P, MI	0	P, MI	0	P, MI
26-Mar	4		5		4	
27-Mar	0	P	0	P	0	P
28-Mar	0	P	0	P	0	P
29-Mar	0	P, MI	0	P, MI	0	P, MI
30-Mar	26		6		40	
31-Mar	0	P	0	P	0	P
1-Apr	0	P	0	P	0	P
2-Apr	0	P	0	P	0	P
3-Apr	0	P, MI	0	P, MI	0	P, MI
4-Apr	0	MI	0	MI	0	MI
5-Apr	46		46		27	
6-Apr	72		11		5	
7-Apr	0	P	0	P	0	P
8-Apr	0	MI, P	0	MI, P	0	MI, P
9-Apr	-	S	-	S	-	S
10-Apr	7		22		12	
11-Apr	12		8		3	
12-Apr	12		6		4	
13-Apr	-	OSA	-	OSA	-	OSA
14-Apr	0	MI	0	MI	0	MI
15-Apr	0	MI	0	MI	0	MI
16-Apr	2		1		2	
17-Apr	-	S	-	S	-	S
18-Apr	0		32		11	
19-Apr	0	P, MI	0	P, MI	0	P, MI
20-Apr	0	P	0	P	0	P
21-Apr	21		5		7	
22-Apr	0	P	58	P	15	P

Table L-2 (*continued*). Year-to-year and night-to-night pattern of nocturnal spring bird migration (2005) over the onshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Onshore Spring 2005						
Date	1A		2A		3A	
	Density	Comments	Density	Comments	Density	Comments
23-Apr	0	P	0	P	0	P
24-Apr	0	P	0	P	0	P
25-Apr	0	P	8	P	5	P
26-Apr	9	P	4	P	4	P
27-Apr	0	P, MI	0	P, MI	0	P, MI
28-Apr	0	P	0	P	0	P
29-Apr	1	P	30	P	9	P
30-Apr	0	P	0	P	0	P
1-May	15		1		2	
2-May	0	P, MI	0	P, MI	0	P, MI
3-May	19		1		49	
4-May	8		68		14	
5-May	7		2		3	
6-May	0	P	0	P	0	P
7-May	12		10		8	
8-May	0	MI	0	MI	0	MI
9-May	95		23		15	
10-May	276		60		28	
11-May	569		119		17	
12-May	0	MI	0	MI	0	MI
13-May	179		101		9	
14-May	-	S	-	S	-	S
15-May	-	S	-	S	-	S
16-May	10		12		14	
17-May	7		31		15	
18-May		S		S		S
19-May	74	P	6	P	8	P
20-May	0	P, MI	0	P, MI	0	P, MI
21-May	0	P	0	P	0	P
22-May	0	P	0	P	0	P
23-May	0	P, MI	0	P, MI	0	P, MI
24-May	0	P	0	P	0	P
25-May	0	P	0	P	0	P
26-May	-	V0	-	V0	-	V0
27-May	-	S	-	S	-	S
28-May	-	V0	-	V0	-	V0
29-May	0	P, MI	0	P, MI	0	P, MI
30-May	0	P, MI	0	P, MI	0	P, MI
31-May	-	S	-	S	-	S

Table L-3. Year-to-year and night-to-night pattern of nocturnal spring bird migration (2005) over the offshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Offshore Spring 2005						
Date	1B		2B		3B	
	Density	Comments	Density	Comments	Density	Comments
15-Mar	0	P	0	P	0	P
16-Mar	0	P, MI	0	P, MI	0	P, MI
17-Mar	0	P, MI	0	P, MI	0	P, MI
18-Mar	0	MI	0	MI	0	MI
19-Mar	0	P	0	P	0	P
20-Mar	0	P	0	P	0	P
21-Mar	0	MI	0	MI	0	MI
22-Mar	9		3		6	
23-Mar	0	P	0	P	0	P
24-Mar	0	MI	0	MI	0	MI
25-Mar	0	P, MI	0	P, MI	0	P, MI
26-Mar	0		0		0	
27-Mar	0	P	0	P	0	P
28-Mar	0	P	0	P	0	P
29-Mar	0	P, MI	0	P, MI	0	P, MI
30-Mar	3		57		5	
31-Mar	0	P	0	P	0	P
1-Apr	0	P	0	P	0	P
2-Apr	0	P	0	P	0	P
3-Apr	0	P, MI	0	P, MI	0	P, MI
4-Apr	0	MI	0	MI	0	MI
5-Apr	32		10		32	
6-Apr	2		3		10	
7-Apr	0	P	0	P	0	P
8-Apr	0	MI, P	0	MI, P	0	MI, P
9-Apr	-	S	-	S	-	S
10-Apr	6		1		1	
11-Apr	0		0		0	
12-Apr	3		1		0	
13-Apr	-	OSA	-	OSA	-	OSA
14-Apr	0	MI	0	MI	0	MI
15-Apr	0	MI	0	MI	0	MI
16-Apr	0		0		0	
17-Apr	-	S	-	S	-	S
18-Apr	2		8		6	
19-Apr	0	P, MI	0	P, MI	0	P, MI
20-Apr	0	P	0	P	0	P
21-Apr	0		0		0	
22-Apr	0	P	6	P	8	P
23-Apr	0	P	0	P	0	P
24-Apr	0	P	0	P	0	P
25-Apr	4	P	2	P	2	P

Table L-3 (*continued*). Year-to-year and night-to-night pattern of nocturnal spring bird migration (2005) over the offshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Offshore Spring 2005						
Date	1B		2B		3B	
	Density	Comments	Density	Comments	Density	Comments
26-Apr	0	P	0	P	0	P
27-Apr	0	P, MI	0	P, MI	0	P, MI
28-Apr	0	P	0	P	0	P
29-Apr	1	P	2	P	5	P
30-Apr	0	P	0	P	0	P
1-May	3		1		1	
2-May	0	P, MI	0	P, MI	0	P, MI
3-May	1		0		1	
4-May	13		3		3	
5-May	3		4		0	
6-May	0	P	0	P	0	P
7-May	3		2		7	
8-May	0	MI	0	MI	0	MI
9-May	3		6		5	
10-May	6		2		3	
11-May	26		10		5	
12-May	0	MI	0	MI	0	MI
13-May	6		2		2	
14-May	-	S	-	S	-	S
15-May	-	S	-	S	-	S
16-May	3		2		4	
17-May	0		0		2	
18-May		S		S		S
19-May	0	P	0	P	0	P
20-May	0	P, MI	0	P, MI	0	P, MI
21-May	0	P	0	P	0	P
22-May	0	P	0	P	0	P
23-May	0	P, MI	0	P, MI	0	P, MI
24-May	0	P	0	P	0	P
25-May	0	P	0	P	0	P
26-May	-	V0	-	V0	-	V0
27-May	-	S	-	S	-	S
28-May	-	V0	-	V0	-	V0
29-May	0	P, MI	0	P, MI	0	P, MI
30-May	0	P, MI	0	P, MI	0	P, MI
31-May	-	S	-	S	-	S

Table L-4. Year-to-year and night-to-night pattern of nocturnal spring bird migration (2006) over the onshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Onshore Spring 2006						
Date	1A		2A		3A	
	Density	Comments	Density	Comments	Density	Comments
15-Mar	-	V0	-	V0	-	V0
16-Mar	-	V0	-	V0	-	V0
17-Mar	-	V0	-	V0	-	V0
18-Mar	-	V0	-	V0	-	V0
19-Mar	-	V0	-	V0	-	V0
20-Mar	-	V0	-	V0	-	V0
21-Mar	-	V0	-	V0	-	V0
22-Mar	-	V0	-	V0	-	V0
23-Mar	-	V0	-	V0	-	V0
24-Mar	-	V0	-	V0	-	V0
25-Mar	0	P	0	P	0	P
26-Mar	0	P, MI	0	P, MI	0	P, MI
27-Mar	28		50		30	
28-Mar	-	S	-	S	-	S
29-Mar	-	V0	-	V0	-	V0
30-Mar	-	V0	-	V0	-	V0
31-Mar	0		9		3	
1-Apr	0	MI	0	MI	0	MI
2-Apr	-	S	-	S	-	S
3-Apr	0	P	0	P	0	P
4-Apr	-	V0	-	V0	-	V0
5-Apr	-	V0	-	V0	-	V0
6-Apr	-	V0	-	V0	-	V0
7-Apr	-	S	-	S	-	S
8-Apr	-	ND	-	ND	-	ND
9-Apr	-	V0	-	V0	-	V0
10-Apr	58		22		49	
11-Apr	-	V0	-	V0	-	V0
12-Apr	0		7		5	
13-Apr	0	MI	0	MI	0	MI
14-Apr	19		12		2	
15-Apr	0	MI	0	MI	0	MI
16-Apr	0	MI	0	MI	0	MI
17-Apr	-	V0	-	V0	-	V0
18-Apr	-	V0	-	V0	-	V0
19-Apr	-	V0	-	V0	-	V0
20-Apr	-	V0	-	V0	-	V0
21-Apr	0	P	0	P	0	P
22-Apr	0	P	0	P	0	P
23-Apr	0	P, MI	0	P, MI	0	P, MI
24-Apr	-	V0	-	V0	-	V0
25-Apr	0	P	0	P	0	P

Table L-4 (*continued*). Year-to-year and night-to-night pattern of nocturnal spring bird migration (2006) over the onshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Onshore Spring 2006						
Date	1A		2A		3A	
	Density	Comments	Density	Comments	Density	Comments
26-Apr	-	V0	-	V0	-	V0
27-Apr	-	V0	-	V0	-	V0
28-Apr	-	V0	-	V0	-	V0
29-Apr	-	V0	-	V0	-	V0
30-Apr	-	V0	-	V0	-	V0
1-May	-	V0	-	V0	-	V0
2-May	-	V0	-	V0	-	V0
3-May	-	V0	-	V0	-	V0
4-May	-	S	-	S	-	S
5-May	67		317		166	
6-May	-	V0	-	V0	-	V0
7-May	-	V0	-	V0	-	V0
8-May	-	V0	-	V0	-	V0
9-May	-	V0	-	V0	-	V0
10-May	-	V0	-	V0	-	V0
11-May	0	P	0	P	0	P
12-May	-	MD	-	MD	-	MD
13-May	0		5		26	
14-May	0	MI, P	0	MI, P	0	MI, P
15-May	0	P	0	P	0	P
16-May	130		47		6	
17-May	0		207		14	
18-May	0	P, MI	0	P, MI	0	P, MI
19-May	9		4		1	
20-May	-	V0	-	V0	-	V0
21-May	-	V0	-	V0	-	V0
22-May	-	V0	-	V0	-	V0
23-May	-	V0	-	V0	-	V0
24-May	-	V0	-	V0	-	V0
25-May	0	P	67	P	36	P
26-May	0	P	0	P	5	P
27-May	0	MI	0	MI	0	MI
28-May	-	S	-	S	-	S
29-May	35		8		6	
30-May	0	P	0	P	0	P
31-May	-	V0	-	V0	-	V0

Table L-5. Year-to-year and night-to-night pattern of nocturnal spring bird migration (2006) over the offshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Offshore Spring 2006						
Date	1B		2B		3B	
	Density	Comments	Density	Comments	Density	Comments
15-Mar	-	V0	-	V0	-	V0
16-Mar	-	V0	-	V0	-	V0
17-Mar	-	V0	-	V0	-	V0
18-Mar	-	V0	-	V0	-	V0
19-Mar	-	V0	-	V0	-	V0
20-Mar	-	V0	-	V0	-	V0
21-Mar	-	V0	-	V0	-	V0
22-Mar	-	V0	-	V0	-	V0
23-Mar	-	V0	-	V0	-	V0
24-Mar	-	V0	-	V0	-	V0
25-Mar	0	P	0	P	0	P
26-Mar	0	P, MI	0	P, MI	0	P, MI
27-Mar	2		2		3	
28-Mar	-	S	-	S	-	S
29-Mar	-	V0	-	V0	-	V0
30-Mar	-	V0	-	V0	-	V0
31-Mar	1		0		0	
1-Apr	0	MI	0	MI	0	MI
2-Apr	-	S	-	S	-	S
3-Apr	0	P	0	P	0	P
4-Apr	-	V0	-	V0	-	V0
5-Apr	-	V0	-	V0	-	V0
6-Apr	-	V0	-	V0	-	V0
7-Apr	-	S	-	S	-	S
8-Apr	-	ND	-	ND	-	ND
9-Apr	-	V0	-	V0	-	V0
10-Apr	10		4		8	
11-Apr	-	V0	-	V0	-	V0
12-Apr	0		1		2	
13-Apr	0	MI	0	MI	0	MI
14-Apr	2		0		0	
15-Apr	0	MI	0	MI	0	MI
16-Apr	0	MI	0	MI	0	MI
17-Apr	-	V0	-	V0	-	V0
18-Apr	-	V0	-	V0	-	V0
19-Apr	-	V0	-	V0	-	V0
20-Apr	-	V0	-	V0	-	V0
21-Apr	0	P	0	P	0	P
22-Apr	0	P	0	P	0	P
23-Apr	0	P, MI	0	P, MI	0	P, MI
24-Apr	-	V0	-	V0	-	V0
25-Apr	0	P	0	P	0	P

Table L-5 (*continued*). Year-to-year and night-to-night pattern of nocturnal spring bird migration (2006) over the offshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Offshore Spring 2006						
Date	1B		2B		3B	
	Density	Comments	Density	Comments	Density	Comments
26-Apr	-	V0	-	V0	-	V0
27-Apr	-	V0	-	V0	-	V0
28-Apr	-	V0	-	V0	-	V0
29-Apr	-	V0	-	V0	-	V0
30-Apr	-	V0	-	V0	-	V0
1-May	-	V0	-	V0	-	V0
2-May	-	V0	-	V0	-	V0
3-May	-	V0	-	V0	-	V0
4-May	-	S	-	S	-	S
5-May	52		78		88	
6-May	-	V0	-	V0	-	V0
7-May	-	V0	-	V0	-	V0
8-May	-	V0	-	V0	-	V0
9-May	-	V0	-	V0	-	V0
10-May	-	V0	-	V0	-	V0
11-May	0	P	0	P	0	P
12-May	-	MD	-	MD	-	MD
13-May	0		2		4	
14-May	0	MI, P	0	MI, P	0	MI, P
15-May	0	P	0	P	0	P
16-May	9		2		3	
17-May	8		2		5	
18-May	0	P, MI	0	P, MI	0	P, MI
19-May	1		0		1	
20-May	-	V0	-	V0	-	V0
21-May	-	V0	-	V0	-	V0
22-May	-	V0	-	V0	-	V0
23-May	-	V0	-	V0	-	V0
24-May	-	V0	-	V0	-	V0
25-May	0	P	1	P	29	P
26-May	0	P	0	P	3	P
27-May	0	MI	0	MI	0	MI
28-May	-	S	-	S	-	S
29-May	2		0		0	
30-May	0	P	0	P	0	P
31-May	-	V0	-	V0	-	V0

Table L-6. Year-to-year and night-to-night pattern of nocturnal spring bird migration (2007) over the onshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Onshore Spring 2007						
Date	1A		2A		3A	
	Density	Comments	Density	Comments	Density	Comments
15-Mar	0	P	0	P	0	P
16-Mar	0	P	0	P	0	P
17-Mar	0	P	0	P	0	P
18-Mar	0	MI	0	MI	0	MI
19-Mar	0	P	0	P	0	P
20-Mar	0	MI	0	MI	0	MI
21-Mar	0	P, MI	0	P, MI	0	P, MI
22-Mar	0	P	0	P	0	P
23-Mar	0	P	0	P	0	P
24-Mar	27		26		5	
25-Mar	21		13		16	
26-Mar	41		341		48	
27-Mar	0	P, MI	0	P, MI	0	P, MI
28-Mar	0	MI	0	MI	0	MI
29-Mar	0	MI	0	MI	0	MI
30-Mar	224		57		43	
31-Mar	11		11		9	
1-Apr	0	P	0	P	0	P
2-Apr	6		7		8	
3-Apr	15		0		1	
4-Apr	0	P, MI	0	P, MI	0	P, MI
5-Apr	0	P	0	P	0	P
6-Apr	0	P	0	P	0	P
7-Apr	0	P	0	P	0	P
8-Apr	0	P, MI	0	P, MI	0	P, MI
9-Apr	0	P, MI	0	P, MI	0	P, MI
10-Apr	29		3		4	
11-Apr	0	P, MI	0	P, MI	0	P, MI
12-Apr	0	P, MI	0	P, MI	0	P, MI
13-Apr	0	MI	0	MI	0	MI
14-Apr	0	P	0	P	0	P
15-Apr	0	P	0	P	0	P
16-Apr	0	P	0	P	0	P
17-Apr	0	P	0	P	0	P
18-Apr	0	P, MI	0	P, MI	0	P, MI
19-Apr	30		7		17	
20-Apr	-	S	-	S	-	S
21-Apr	227		504		54	
22-Apr	-	S	-	S	-	S
23-Apr	29		58		9	
24-Apr	10		7		5	
25-Apr	0	P	0	P	0	P

Table L-6 (*continued*). Year-to-year and night-to-night pattern of nocturnal spring bird migration (2007) over the onshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Onshore Spring 2007						
Date	1A		2A		3A	
	Density	Comments	Density	Comments	Density	Comments
26-Apr	0	P, MI	0	P, MI	0	P, MI
27-Apr	0	P, MI	0	P, MI	0	P, MI
28-Apr	0	P, MI	0	P, MI	0	P, MI
29-Apr	65		82		3	
30-Apr	0	MI	0	MI	0	MI
1-May	345		129		290	
2-May	0	MI	0	MI	0	MI
3-May	62		78		28	
4-May	367		78		28	
5-May	0	P, MI	0	P, MI	0	P, MI
6-May	0	MI	0	MI	0	MI
7-May	-	S	-	S	-	S
8-May	19		10		6	
9-May	35		45		28	
10-May	17		162		31	
11-May	-	V0	-	V0	-	V0
12-May	-	MD	-	MD	-	MD
13-May	-	MD	-	MD	-	MD
14-May	-	V0	-	V0	-	V0
15-May	-	MD	-	MD	-	MD
16-May	0	P	0	P	0	P
17-May	0	P, MI	0	P, MI	0	P, MI
18-May	0	P, MI	0	P, MI	0	P, MI
19-May	0	P	0	P	0	P
20-May	0	P, MI	0	P, MI	0	P, MI
21-May	232		74		36	
22-May	17		21		49	
23-May	21		9		7	
24-May	-	ND	-	ND	-	ND
25-May	-	ND	-	ND	-	ND
26-May	-	ND	-	ND	-	ND
27-May	-	S	-	S	-	S
28-May	18		6		5	
29-May	0		14		7	
30-May	61		10		29	
31-May	41		9		4	

Table L-7. Year-to-year and night-to-night pattern of nocturnal spring bird migration (2007) over the offshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Offshore Spring 2007						
Date	1B		2B		3B	
	Density	Comments	Density	Comments	Density	Comments
15-Mar	0	P	0	P	0	P
16-Mar	0	P	0	P	0	P
17-Mar	0	P	0	P	0	P
18-Mar	0	MI	0	MI	0	MI
19-Mar	0	P	0	P	0	P
20-Mar	0	MI	0	MI	0	MI
21-Mar	0	P, MI	0	P, MI	0	P, MI
22-Mar	0	P	0	P	0	P
23-Mar	0	P	0	P	0	P
24-Mar	3		2		0	
25-Mar	9		0		0	
26-Mar	12		0		3	
27-Mar	0	P, MI	0	P, MI	0	P, MI
28-Mar	0	MI	0	MI	0	MI
29-Mar	0	MI	0	MI	0	MI
30-Mar	22		4		11	
31-Mar	0		0		0	
1-Apr	0	P	0	P	0	P
2-Apr	4		5		6	
3-Apr	1		0		0	
4-Apr	0	P, MI	0	P, MI	0	P, MI
5-Apr	0	P	0	P	0	P
6-Apr	0	P	0	P	0	P
7-Apr	0	P	0	P	0	P
8-Apr	0	P, MI	0	P, MI	0	P, MI
9-Apr	0	P, MI	0	P, MI	0	P, MI
10-Apr	0		0		0	
11-Apr	0	P, MI	0	P, MI	0	P, MI
12-Apr	0	P, MI	0	P, MI	0	P, MI
13-Apr	0	MI	0	MI	0	MI
14-Apr	0	P	0	P	0	P
15-Apr	0	P	0	P	0	P
16-Apr	0	P	0	P	0	P
17-Apr	0	P	0	P	0	P
18-Apr	0	P, MI	0	P, MI	0	P, MI
19-Apr	3		0		0	
20-Apr	-	S	-	S	-	S
21-Apr	103		58		28	
22-Apr	-	S	-	S	-	S
23-Apr	8		3		3	
24-Apr	1		0		2	
25-Apr	0	P	0	P	0	P

Table L-7 (*continued*). Year-to-year and night-to-night pattern of nocturnal spring bird migration (2007) over the offshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Offshore Spring 2007						
Date	1B		2B		3B	
	Density	Comments	Density	Comments	Density	Comments
26-Apr	0	P, MI	0	P, MI	0	P, MI
27-Apr	0	P, MI	0	P, MI	0	P, MI
28-Apr	0	P, MI	0	P, MI	0	P, MI
29-Apr	3		5		0	
30-Apr	0	MI	0	MI	0	MI
1-May	30		18		56	
2-May	0	MI	0	MI	0	MI
3-May	13		2		2	
4-May	24		1		4	
5-May	0	P, MI	0	P, MI	0	P, MI
6-May	0	MI	0	MI	0	MI
7-May	-	S	-	S	-	S
8-May	1		1		0	
9-May	8		6		7	
10-May	2		11		11	
11-May	-	V0	-	V0	-	V0
12-May	-	MD	-	MD	-	MD
13-May	-	MD	-	MD	-	MD
14-May	-	V0	-	V0	-	V0
15-May	-	MD	-	MD	-	MD
16-May	0	P	0	P	0	P
17-May	0	P, MI	0	P, MI	0	P, MI
18-May	0	P, MI	0	P, MI	0	P, MI
19-May	0	P	0	P	0	P
20-May	0	P, MI	0	P, MI	0	P, MI
21-May	3		1		0	
22-May	0		0		0	
23-May	0		1		0	
24-May	-	ND	-	ND	-	ND
25-May	-	ND	-	ND	-	ND
26-May	-	ND	-	ND	-	ND
27-May	-	S	-	S	-	S
28-May	1		0		0	
29-May	3		1		7	
30-May	3		1		2	
31-May	7		0		0	

Table L-8. Year-to-year and night-to-night pattern of nocturnal spring bird migration (2008) over the onshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Onshore Spring 2008						
Date	1A		2A		3A	
	Density	Comments	Density	Comments	Density	Comments
15-Mar	0	P	0	P	0	P
16-Mar	0	P	0	P	0	P
17-Mar	0	P	0	P	0	P
18-Mar	0	P	0	P	0	P
19-Mar	0	P	0	P	0	P
20-Mar	0	P, MI	0	P, MI	0	P, MI
21-Mar	29		16		22	
22-Mar	0	P,MI	0	P,MI	0	P,MI
23-Mar	38		6		16	
24-Mar	0	P, MI	0	P, MI	0	P, MI
25-Mar	22		10		34	
26-Mar	15		9		13	
27-Mar	33		16		5	
28-Mar	0	P	0	P	0	P
29-Mar	0	MI	0	MI	0	MI
30-Mar	-	S	-	S	-	S
31-Mar	0	P	0	P	0	P
1-Apr	15		9		11	
2-Apr	0	MI	0	MI	0	MI
3-Apr	0	P	0	P	0	P
4-Apr	0	P, MI	0	P, MI	0	P, MI
5-Apr	0	P	0	P	0	P
6-Apr	0	MI	0	MI	0	MI
7-Apr	0	P, MI	0	P, MI	0	P, MI
8-Apr	-	S	-	S	-	S
9-Apr	4		5		6	
10-Apr	82		77		40	
11-Apr	37		27		10	
12-Apr	0	P	0	P	0	P
13-Apr	0	P	0	P	0	P
14-Apr	0	MI	0	MI	0	MI
15-Apr	-	S	-	S	-	S
16-Apr	2		7		6	
17-Apr	60		16		9	
18-Apr	92		50		76	
19-Apr	10		4		25	
20-Apr	0	P, MI	0	P, MI	0	P, MI
21-Apr	0	MI	0	MI	0	MI
22-Apr	1		1		0	
23-Apr	164		71		14	
24-Apr	58		40		187	
25-Apr	-	S	-	S	-	S

Table L-8 (*continued*). Year-to-year and night-to-night pattern of nocturnal spring bird migration (2008) over the onshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Onshore Spring 2008						
Date	1A		2A		3A	
	Density	Comments	Density	Comments	Density	Comments
26-Apr	0	P, MI	0	P, MI	0	P, MI
27-Apr	0	P	0	P	0	P
28-Apr	0	P	0	P	0	P
29-Apr	0	MI	0	MI	0	MI
30-Apr	29		68		35	
1-May	0	P	227	P	38	P
2-May	25		39		42	
3-May	0	P	0	P	0	P
4-May	140		37		10	
5-May	133		61		9	
6-May	-	S	-	S	-	S
7-May	372		119		33	
8-May	0	P, MI	0	P, MI	0	P, MI
9-May	0	P	0	P	0	P
10-May	0	MI	0	MI	0	MI
11-May	0	P, MI	0	P, MI	0	P, MI
12-May	0	P	0	P	0	P
13-May	31		11		25	
14-May	-	S	-	S	-	S
15-May	0	P, MI	0	P, MI	0	P, MI
16-May	0	P	0	P	0	P
17-May	116		32		5	
18-May	0	P, MI	0	P, MI	0	P, MI
19-May	0	MI	0	MI	0	MI
20-May	0	P, MI	0	P, MI	0	P, MI
21-May	0	MI	0	MI	0	MI
22-May	0	P, MI	0	P, MI	0	P, MI
23-May	0	MI	0	MI	0	MI
24-May	0	MI	0	MI	0	MI
25-May	215		128		40	
26-May	100		87		9	
27-May	0	P	0	P	0	P
28-May	46		51		7	
29-May	52		29		6	
30-May	65		13		4	
31-May	0	MI	0	MI	0	MI

Table L-9. Year-to-year and night-to-night pattern of nocturnal spring bird migration (2008) over the offshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Offshore Spring 2008						
Date	1B		2B		3B	
	Density	Comments	Density	Comments	Density	Comments
15-Mar	0	P	0	P	0	P
16-Mar	0	P	0	P	0	P
17-Mar	0	P	0	P	0	P
18-Mar	0	P	0	P	0	P
19-Mar	0	P	0	P	0	P
20-Mar	0	P, MI	0	P, MI	0	P, MI
21-Mar	2		2		4	
22-Mar	0	P,MI	0	P,MI	0	P,MI
23-Mar	0		0		1	
24-Mar	0	P, MI	0	P, MI	0	P, MI
25-Mar	4		2		3	
26-Mar	4		2		3	
27-Mar	2		0		2	
28-Mar	0	P	0	P	0	P
29-Mar	0	MI	0	MI	0	MI
30-Mar	-	S	-	S	-	S
31-Mar	0	P	0	P	0	P
1-Apr	3		0		0	
2-Apr	0	MI	0	MI	0	MI
3-Apr	0	P	0	P	0	P
4-Apr	0	P, MI	0	P, MI	0	P, MI
5-Apr	0	P	0	P	0	P
6-Apr	0	MI	0	MI	0	MI
7-Apr	0	P, MI	0	P, MI	0	P, MI
8-Apr	-	S	-	S	-	S
9-Apr	3		0		12	
10-Apr	20		2		1	
11-Apr	2		4		4	
12-Apr	0	P	0	P	0	P
13-Apr	0	P	0	P	0	P
14-Apr	0	MI	0	MI	0	MI
15-Apr	-	S	-	S	-	S
16-Apr	0		0		0	
17-Apr	3		3		0	
18-Apr	4		8		3	
19-Apr	2		1		2	
20-Apr	0	P, MI	0	P, MI	0	P, MI
21-Apr	0	MI	0	MI	0	MI
22-Apr	0		1		0	
23-Apr	3		0		0	
24-Apr	6		1		8	
25-Apr	-	S	-	S	-	S

Table L-9 (*continued*). Year-to-year and night-to-night pattern of nocturnal spring bird migration (2008) over the offshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Offshore Spring 2008						
Date	1B		2B		3B	
	Density	Comments	Density	Comments	Density	Comments
26-Apr	0	P, MI	0	P, MI	0	P, MI
27-Apr	0	P	0	P	0	P
28-Apr	0	P	0	P	0	P
29-Apr	0	MI	0	MI	0	MI
30-Apr	2		2		0	
1-May	0	P	3	P	2	P
2-May	3		4		3	
3-May	0	P	0	P	0	P
4-May	8		1		1	
5-May	3		2		2	
6-May	-	S	-	S	-	S
7-May	13		4		4	
8-May	0	P, MI	0	P, MI	0	P, MI
9-May	0	P	0	P	0	P
10-May	0	MI	0	MI	0	MI
11-May	0	P, MI	0	P, MI	0	P, MI
12-May	0	P	0	P	0	P
13-May	0		0		0	
14-May	-	S	-	S	-	S
15-May	0	P, MI	0	P, MI	0	P, MI
16-May	0	P	0	P	0	P
17-May	10		3		3	
18-May	0	P, MI	0	P, MI	0	P, MI
19-May	0	MI	0	MI	0	MI
20-May	0	P, MI	0	P, MI	0	P, MI
21-May	0	MI	0	MI	0	MI
22-May	0	P, MI	0	P, MI	0	P, MI
23-May	0	MI	0	MI	0	MI
24-May	0	MI	0	MI	0	MI
25-May	15		7		3	
26-May	10		5		3	
27-May	0	P	0	P	0	P
28-May	1		1		7	
29-May	31		0		1	
30-May	2		0		0	
31-May	0	MI	0	MI	0	MI

Table L-10. Year-to-year and night-to-night pattern of nocturnal spring bird migration (2009) over the onshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Onshore Spring 2009						
Date	1A		2A		3A	
	Density	Comments	Density	Comments	Density	Comments
15-Mar	0	P	0	P	0	P
16-Mar	0	P	0	P	0	P
17-Mar	-	S	-	S	-	S
18-Mar	114		66		76	
19-Mar	0	P, MI	0	P, MI	0	P, MI
20-Mar	-	RM	-	RM	-	RM
21-Mar	-	RM	-	RM	-	RM
22-Mar	-	RM	-	RM	-	RM
23-Mar	0	RM, MI	0	RM, MI	0	RM, MI
24-Mar	0	MI	0	MI	0	MI
25-Mar	44		17		57	
26-Mar	0	P	0	P	0	P
27-Mar	0	P	0	P	0	P
28-Mar	0	P	0	P	0	P
29-Mar	0	P, MI	0	P, MI	0	P, MI
30-Mar	0	MI	0	MI	0	MI
31-Mar	17		66		16	
1-Apr	0	P	0	P	0	P
2-Apr	-	OSA	-	OSA	-	OSA
3-Apr	0	P, MI	0	P, MI	0	P, MI
4-Apr	-	RM	-	RM	-	RM
5-Apr	31		27		16	
6-Apr	0	P	0	P	0	P
7-Apr	0	P	0	P	0	P
8-Apr	0	P, MI	0	P, MI	0	P, MI
9-Apr	29		5		8	
10-Apr	0	P, MI	0	P, MI	0	P, MI
11-Apr	0	P, MI	0	P, MI	0	P, MI
12-Apr	-	RM	-	RM	-	RM
13-Apr	0	P	0	P	0	P
14-Apr	0	P	0	P	0	P
15-Apr	0	P, MI	0	P, MI	0	P, MI
16-Apr	14		9		9	
17-Apr	45		30		16	
18-Apr	134		45		9	
19-Apr	0	P	0	P	0	P
20-Apr	0	P	0	P	0	P
21-Apr	0	P, MI	0	P, MI	0	P, MI
22-Apr	0	P,MI	0	P,MI	0	P,MI
23-Apr	0	MI	0	MI	0	MI
24-Apr	187		142		91	
25-Apr	116		67		44	

Table L-10 (*continued*). Year-to-year and night-to-night pattern of nocturnal spring bird migration (2009) over the onshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Onshore Spring 2009						
Date	1A		2A		3A	
	Density	Comments	Density	Comments	Density	Comments
26-Apr	168		45		45	
27-Apr	245		43		19	
28-Apr	0	P, MI	0	P, MI	0	P, MI
29-Apr	-	S	-	S	-	S
30-Apr	11		15		7	
1-May	265		88		6	
2-May	0	P,MI	0	P,MI	0	P,MI
3-May	0	P	0	P	0	P
4-May	0	P, MI	0	P, MI	0	P, MI
5-May	0	P	0	P	0	P
6-May	0	P	0	P	0	P
7-May	-	S	-	S	-	S
8-May	238		121		234	
9-May	0	P, MI	0	P, MI	0	P, MI
10-May	0	MI	0	MI	0	MI
11-May	223		16		8	
12-May	171		71		40	
13-May	-	S	-	S	-	S
14-May	0	P	0	P	0	P
15-May	91		65		15	
16-May	64		25		15	
17-May	0	P	0	P	0	P
18-May	-	ND	-	ND	-	ND
19-May	292		78		20	
20-May	-	S	-	S	-	S
21-May	66		65		25	
22-May	135		83		12	
23-May	105		23		9	
24-May	-	S	-	S	-	S
25-May	0	P, MI	0	P, MI	0	P, MI
26-May	0	P	0	P	0	P
27-May	-	S	-	S	-	S
28-May	0	P	0	P	0	P
29-May	0	P, MI	0	P, MI	0	P, MI
30-May	32		31		11	
31-May	0	MI	0	MI	0	MI

Table L-11. Year-to-year and night-to-night pattern of nocturnal spring bird migration (2009) over the offshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Offshore Spring 2009						
Date	1B		2B		3B	
	Density	Comments	Density	Comments	Density	Comments
15-Mar	0	P	0	P	0	P
16-Mar	0	P	0	P	0	P
17-Mar	-	S	-	S	-	S
18-Mar	6		8		8	
19-Mar	0	P, MI	0	P, MI	0	P, MI
20-Mar	-	RM	-	RM	-	RM
21-Mar	-	RM	-	RM	-	RM
22-Mar	-	RM	-	RM	-	RM
23-Mar	0	RM, MI	0	RM, MI	0	RM, MI
24-Mar	0	MI	0	MI	0	MI
25-Mar	0		0		0	
26-Mar	0	P	0	P	0	P
27-Mar	0	P	0	P	0	P
28-Mar	0	P	0	P	0	P
29-Mar	0	P, MI	0	P, MI	0	P, MI
30-Mar	0	MI	0	MI	0	MI
31-Mar	1		7		5	
1-Apr	0	P	0	P	0	P
2-Apr	-	OSA	-	OSA	-	OSA
3-Apr	0	P, MI	0	P, MI	0	P, MI
4-Apr	-	RM	-	RM	-	RM
5-Apr	7		6		4	
6-Apr	0	P	0	P	0	P
7-Apr	0	P	0	P	0	P
8-Apr	0	P, MI	0	P, MI	0	P, MI
9-Apr	6		2		3	
10-Apr	0	P, MI	0	P, MI	0	P, MI
11-Apr	0	P, MI	0	P, MI	0	P, MI
12-Apr	-	RM	-	RM	-	RM
13-Apr	0	P	0	P	0	P
14-Apr	0	P	0	P	0	P
15-Apr	0	P, MI	0	P, MI	0	P, MI
16-Apr	2		0		0	
17-Apr	8		4		8	
18-Apr	9		1		1	
19-Apr	0	P	0	P	0	P
20-Apr	0	P	0	P	0	P
21-Apr	0	P, MI	0	P, MI	0	P, MI
22-Apr	0	P,MI	0	P,MI	0	P,MI
23-Apr	0	MI	0	MI	0	MI
24-Apr	7		5		12	
25-Apr	21		4		7	

Table L-11 (*continued*). Year-to-year and night-to-night pattern of nocturnal spring bird migration (2009) over the offshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Offshore Spring 2009						
Date	1B		2B		3B	
	Density	Comments	Density	Comments	Density	Comments
26-Apr	24		4		4	
27-Apr	11		4		6	
28-Apr	0	P, MI	0	P, MI	0	P, MI
29-Apr	-	S	-	S	-	S
30-Apr	6		1		5	
1-May	4		2		4	
2-May	0	P,MI	0	P,MI	0	P,MI
3-May	0	P	0	P	0	P
4-May	0	P, MI	0	P, MI	0	P, MI
5-May	0	P	0	P	0	P
6-May	0	P	0	P	0	P
7-May	-	S	-	S	-	S
8-May	17		6		7	
9-May	0	P, MI	0	P, MI	0	P, MI
10-May	0	MI	0	MI	0	MI
11-May	8		3		9	
12-May	11		7		29	
13-May	-	S	-	S	-	S
14-May	0	P	0	P	0	P
15-May	4		4		4	
16-May	9		6		10	
17-May	0	P	0	P	0	P
18-May	-	ND	-	ND	-	ND
19-May	14		6		27	
20-May	-	S	-	S	-	S
21-May	22		7		10	
22-May	13		2		8	
23-May	7		7		5	
24-May	-	S	-	S	-	S
25-May	0	P, MI	0	P, MI	0	P, MI
26-May	0	P	0	P	0	P
27-May	-	S	-	S	-	S
28-May	0	P	0	P	0	P
29-May	0	P, MI	0	P, MI	0	P, MI
30-May	2		1		4	
31-May	0	MI	0	MI	0	MI

Table L-12. Year-to-year and night-to-night pattern of nocturnal fall bird migration (2004) over the onshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Onshore Fall 2004						
Date	1A		2A		3A	
	Density	Comments	Density	Comments	Density	Comments
8/15/04	0	P	0	P	0	P
8/16/04	7		18		12	
8/17/04	0	P, MI	0	P, MI	0	P, MI
8/18/04	0	P, MI	0	P, MI	0	P, MI
8/19/04	0	P, MI	0	P, MI	0	P, MI
8/20/04	-	ND	-	ND	-	ND
8/21/04	-	ND	-	ND	-	ND
8/22/04	29		21		20	
8/23/04	18		14		6	
8/24/04	16		7		25	
8/25/04	-	ND	-	ND	-	ND
8/26/04	0	P, MI	0	P, MI	0	P, MI
8/27/04	0		1		5	
8/28/04	2		15		31	
8/29/04	0		0		0	
8/30/04	0	P, MI	0	P, MI	0	P, MI
8/31/04	41		244		195	
9/1/04	41		53		48	
9/2/04	10		4		13	
9/3/04	7		2		5	
9/4/04	4		35		36	
9/5/04	0	0SA	0	0SA	0	0SA
9/6/04	0	P	0	P	0	P
9/7/04	0	P, MI	0	P, MI	0	P, MI
9/8/04	0	P, MI	0	P, MI	0	P, MI
9/9/04	16		15		12	
9/10/04	466		153		45	
9/11/04	4		23		16	
9/12/04	35		12		4	
9/13/04	12		150		20	
9/14/04	0		0		0	
9/15/04	0		0		0	
9/16/04	23		16		26	
9/17/04	0	P, MI	0	P, MI	0	P, MI
9/18/04	0		77		22	
9/19/04	30		21		19	
9/20/04	26		41		8	
9/21/04	0		9		15	
9/22/04	17		17		13	
9/23/04	13		13		13	
9/24/04	1		5		5	
9/25/04	0	P, MI	0	P, MI	0	P, MI

Table L-12 (*continued*). Year-to-year and night-to-night pattern of nocturnal fall bird migration (2004) over the onshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Onshore Fall 2004						
Date	1A		2A		3A	
	Density	Comments	Density	Comments	Density	Comments
9/26/04	46		112		33	
9/27/04	0	P	0	P	0	P
9/28/04	0	P	0	P	0	P
9/29/04	33		93		31	
9/30/04	-	S	-	S	-	S
10/1/04	21		7		25	
10/2/04	0	P	0	P	0	P
10/3/04	1		130		50	
10/4/04	84		44		10	
10/5/04	528		115		54	
10/6/04	18		5		29	
10/7/04	2		7		8	
10/8/04	-	S	-	S	-	S
10/9/04	0	P, MI	0	P, MI	0	P, MI
10/10/04	169		108		36	
10/11/04	52		116		34	
10/12/04	37		33		37	
10/13/04	0	P	0	P	0	P
10/14/04	0	MI	0	MI	0	MI
10/15/04	0	P, MI	0	P, MI	0	P, MI
10/16/04	16		0		0	
10/17/04	0	P	0	P	0	P
10/18/04	0	P	0	P	0	P
10/19/04	0	P, MI	0	P, MI	0	P, MI
10/20/04	16		4		4	
10/21/04	0	P	0	P	0	P
10/22/04	0	P	0	P	0	P
10/23/04	4		10		4	
10/24/04	13		16		15	
10/25/04	1		58		38	
10/26/04	157		91		64	
10/27/04	18		19		20	
10/28/04	8		7		9	
10/29/04	0	P	0	P	0	P
10/30/04	0	P, MI	0	P, MI	0	P, MI
10/31/04	58		41		4	
11/1/04	0		12		137	
11/2/04	0	P, MI	0	P, MI	0	P, MI
11/3/04	10		26		70	
11/4/04	0	P	0	P	0	P
11/5/04	0	MI	0	MI	0	MI
11/6/04	0	MI	0	MI	0	MI

Table L-12 (*continued*). Year-to-year and night-to-night pattern of nocturnal fall bird migration (2004) over the onshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Onshore Fall 2004						
Date	1A		2A		3A	
	Density	Comments	Density	Comments	Density	Comments
11/7/04	0	MI	0	MI	0	MI
11/8/04	12		42		41	
11/9/04	-	ND	-	ND	-	ND
11/10/04	0	MI	0	MI	0	MI
11/11/04	0	P, MI	0	P, MI	0	P, MI
11/12/04	0	P	0	P	0	P
11/13/04	12		36		72	
11/14/04	5		12		5	
11/15/04	0	MI	0	MI	0	MI

Table L-13. Year-to-year and night-to-night pattern of nocturnal fall bird migration (2004) over the offshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Offshore Fall 2004						
Date	1B		2B		3B	
	Density	Comments	Density	Comments	Density	Comments
8/15/04	0	P	0	P	0	P
8/16/04	3		5		6	
8/17/04	0	P, MI	0	P, MI	0	P, MI
8/18/04	0	P, MI	0	P, MI	0	P, MI
8/19/04	0	P, MI	0	P, MI	0	P, MI
8/20/04	-	ND	-	ND	-	ND
8/21/04	-	ND	-	ND	-	ND
8/22/04	1		3		5	
8/23/04	1		2		4	
8/24/04	4		2		5	
8/25/04	-	ND	-	ND	-	ND
8/26/04	0	P, MI	0	P, MI	0	P, MI
8/27/04	4		2		0	
8/28/04	2		2		4	
8/29/04	0		0		0	
8/30/04	0	P, MI	0	P, MI	0	P, MI
8/31/04	7		29		28	
9/1/04	2		1		6	
9/2/04	1		1		3	
9/3/04	0		2		3	
9/4/04	9		2		6	
9/5/04	0	0SA	0	0SA	0	0SA
9/6/04	0	P	0	P	0	P
9/7/04	0	P, MI	0	P, MI	0	P, MI
9/8/04	0	P, MI	0	P, MI	0	P, MI
9/9/04	2		2		5	
9/10/04	16		7		2	
9/11/04	1		1		3	
9/12/04	1		3		2	
9/13/04	3		2		4	
9/14/04	0		0		0	
9/15/04	0		0		0	
9/16/04	5		3		5	
9/17/04	0	P, MI	0	P, MI	0	P, MI
9/18/04	0		25		4	
9/19/04	8		4		3	
9/20/04	5		3		4	
9/21/04	2		4		16	
9/22/04	2		3		4	
9/23/04	2		2		7	
9/24/04	1		1		3	
9/25/04	0	P, MI	0	P, MI	0	P, MI

Table L-13 (*continued*). Year-to-year and night-to-night pattern of nocturnal fall bird migration (2004) over the offshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Offshore Fall 2004						
Date	1B		2B		3B	
	Density	Comments	Density	Comments	Density	Comments
9/26/04	15		12		6	
9/27/04	0	P	0	P	0	P
9/28/04	0	P	0	P	0	P
9/29/04	8		5		8	
9/30/04	-	S	-	S	-	S
10/1/04	7		4		4	
10/2/04	0	P	0	P	0	P
10/3/04	14		22		22	
10/4/04	0		4		3	
10/5/04	19		23		9	
10/6/04	3		4		4	
10/7/04	2		2		3	
10/8/04	-	S	-	S	-	S
10/9/04	0	P, MI	0	P, MI	0	P, MI
10/10/04	25		10		7	
10/11/04	2		4		4	
10/12/04	2		3		4	
10/13/04	0	P	0	P	0	P
10/14/04	0	MI	0	MI	0	MI
10/15/04	0	P, MI	0	P, MI	0	P, MI
10/16/04	5		0		0	
10/17/04	0	P	0	P	0	P
10/18/04	0	P	0	P	0	P
10/19/04	0	P, MI	0	P, MI	0	P, MI
10/20/04	2		1		21	
10/21/04	0	P	0	P	0	P
10/22/04	0	P	0	P	0	P
10/23/04	0		0		3	
10/24/04	3		4		5	
10/25/04	8		6		2	
10/26/04	52		31		14	
10/27/04	6		2		3	
10/28/04	1		3		3	
10/29/04	0	P	0	P	0	P
10/30/04	0	P, MI	0	P, MI	0	P, MI
10/31/04	6		8		7	
11/1/04	5		31		52	
11/2/04	0	P, MI	0	P, MI	0	P, MI
11/3/04	1		5		8	
11/4/04	0	P	0	P	0	P
11/5/04	0	MI	0	MI	0	MI
11/6/04	0	MI	0	MI	0	MI

Table L-13 (*continued*). Year-to-year and night-to-night pattern of nocturnal fall bird migration (2004) over the offshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Offshore Fall 2004						
Date	1B		2B		3B	
	Density	Comments	Density	Comments	Density	Comments
11/7/04	0	MI	0	MI	0	MI
11/8/04	2		5		3	
11/9/04	-	ND	-	ND	-	ND
11/10/04	0	MI	0	MI	0	MI
11/11/04	0	P, MI	0	P, MI	0	P, MI
11/12/04	0	P	0	P	0	P
11/13/04	0		3		11	
11/14/04	2		3		3	
11/15/04	0	MI	0	MI	0	MI

Table L-14. Year-to-year and night-to-night pattern of nocturnal fall bird migration (2005) over the onshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Onshore Fall 2005						
Date	1A		2A		3A	
	Density	Comments	Density	Comments	Density	Comments
15-Aug	16		4		8	
16-Aug	0	P	0	P	0	P
17-Aug	0	P, S	0	P, S	0	P, S
18-Aug	0	MI, S	0	MI, S	0	MI, S
19-Aug	0	P, MI	0	P, MI	0	P, MI
20-Aug	-	MD	-	MD	-	MD
21-Aug	-	MD	-	MD	-	MD
22-Aug	80		64		54	
23-Aug	-	MD	-	MD	-	MD
24-Aug	81		43		22	
25-Aug	0	MI	0	MI	0	MI
26-Aug	0	P, MI	0	P, MI	0	P, MI
27-Aug	0	P, MI	0	P, MI	0	P, MI
28-Aug	0	MI	0	MI	0	MI
29-Aug	0	P, MI	0	P, MI	0	P, MI
30-Aug	0	P, MI	0	P, MI	0	P, MI
31-Aug	25		64		32	
1-Sep	342		349		132	
2-Sep	-	S	-	S	-	S
3-Sep	225		126		66	
4-Sep	47		38		22	
5-Sep	16		29		45	
6-Sep	9		6		22	
7-Sep	-	S	-	S	-	S
8-Sep	-	S	-	S	-	S
9-Sep	88		173		182	
10-Sep	15		72		122	
11-Sep	1		12		9	
12-Sep	-	S	-	S	-	S
13-Sep	-	S	-	S	-	S
14-Sep	0	P, MI	0	P, MI	0	P, MI
15-Sep	-	S	-	S	-	S
16-Sep	1		7		44	
17-Sep	0	P, MI	0	P, MI	0	P, MI
18-Sep	99		29		7	
19-Sep	-	S	-	S	-	S
20-Sep	51		70		16	
21-Sep	10		17		5	
22-Sep	0	MI	0	MI	0	MI
23-Sep	0	P	24	P	14	P
24-Sep	14		7		18	
25-Sep	0	MI	0	MI	0	MI

Table L-14 (*continued*). Year-to-year and night-to-night pattern of nocturnal fall bird migration (2005) over the onshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Onshore Fall 2005						
Date	1A		2A		3A	
	Density	Comments	Density	Comments	Density	Comments
26-Sep	0	P, MI	0	P, MI	0	P, MI
27-Sep	87		59		37	
28-Sep	0	MI	0	MI	0	MI
29-Sep	23		27		27	
30-Sep	23		32		12	
1-Oct	11		29		8	
2-Oct	-	S	-	S	-	S
3-Oct	-	S	-	S	-	S
4-Oct	22		17		47	
5-Oct	-	S	-	S	-	S
6-Oct	0	P, MI	0	P, MI	0	P, MI
7-Oct	0	P	0	P	0	P
8-Oct	0	P	0	P	0	P
9-Oct	1		15		4	
10-Oct	0	P	0	P	0	P
11-Oct	0	P	0	P	0	P
12-Oct	0	P	0	P	0	P
13-Oct	0	P	0	P	0	P
14-Oct	0	P	0	P	0	P
15-Oct	506		193		46	
16-Oct	20		22		8	
17-Oct	456		361		102	
18-Oct	256		165		6	
19-Oct	0	MI	0	MI	0	MI
20-Oct	705		355		124	
21-Oct	0	P, MI	0	P, MI	0	P, MI
22-Oct	0	P, MI	0	P, MI	0	P, MI
23-Oct	342		152		107	
24-Oct	0	P	0	P	0	P
25-Oct	0	P	0	P	0	P
26-Oct	35		241		72	
27-Oct	23		46		26	
28-Oct	100		325		109	
29-Oct	41		79		58	
30-Oct	15		46		33	
31-Oct	0	MI	0	MI	0	MI
1-Nov	0	P, MI	0	P, MI	0	P, MI
2-Nov	156		347		196	
3-Nov	0	MI	0	MI	0	MI
4-Nov	0	P, MI	0	P, MI	0	P, MI
5-Nov	7		8		13	
6-Nov	0	P, MI	0	P, MI	0	P, MI

Table L-14 (*continued*). Year-to-year and night-to-night pattern of nocturnal fall bird migration (2005) over the onshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Onshore Fall 2005						
Date	1A		2A		3A	
	Density	Comments	Density	Comments	Density	Comments
7-Nov	55		167		90	
8-Nov	30		117		92	
9-Nov	-	MD	-	MD	-	MD
10-Nov	5		12		20	
11-Nov	-	ND	-	ND	-	ND
12-Nov	-	ND	-	ND	-	ND
13-Nov	0	P, MI	0	P, MI	0	P, MI
14-Nov	38		91		40	
15-Nov	0	P, MI	0	P, MI	0	P, MI

Table L-15. Year-to-year and night-to-night pattern of nocturnal fall bird migration (2005) over the offshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Offshore Fall 2005						
Date	1B		2B		3B	
	Density	Comments	Density	Comments	Density	Comments
15-Aug	4		2		13	
16-Aug	0	P	0	P	0	P
17-Aug	0	P, S	0	P, S	0	P, S
18-Aug	0	MI, S	0	MI, S	0	MI, S
19-Aug	0	P, MI	0	P, MI	0	P, MI
20-Aug	-	MD	-	MD	-	MD
21-Aug	-	MD	-	MD	-	MD
22-Aug	19		10		6	
23-Aug	-	MD	-	MD	-	MD
24-Aug	10		11		6	
25-Aug	0	MI	0	MI	0	MI
26-Aug	0	P, MI	0	P, MI	0	P, MI
27-Aug	0	P, MI	0	P, MI	0	P, MI
28-Aug	0	MI	0	MI	0	MI
29-Aug	0	P, MI	0	P, MI	0	P, MI
30-Aug	0	P, MI	0	P, MI	0	P, MI
31-Aug	16		15		14	
1-Sep	31		25		11	
2-Sep	-	S	-	S	-	S
3-Sep	41		10		17	
4-Sep	17		4		6	
5-Sep	6		0		8	
6-Sep	4		1		4	
7-Sep	-	S	-	S	-	S
8-Sep	-	S	-	S	-	S
9-Sep	39		42		7	
10-Sep	18		8		9	
11-Sep	1		3		3	
12-Sep	-	S	-	S	-	S
13-Sep	-	S	-	S	-	S
14-Sep	0	P, MI	0	P, MI	0	P, MI
15-Sep	-	S	-	S	-	S
16-Sep	2		3		5	
17-Sep	0	P, MI	0	P, MI	0	P, MI
18-Sep	7		4		2	
19-Sep	-	S	-	S	-	S
20-Sep	9		19		4	
21-Sep	5		1		2	
22-Sep	0	MI	0	MI	0	MI
23-Sep	0	P	2	P	3	P
24-Sep	2		3		3	
25-Sep	0	MI	0	MI	0	MI

Table L-15 (*continued*). Year-to-year and night-to-night pattern of nocturnal fall bird migration (2005) over the offshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Offshore Fall 2005						
Date	1B		2B		3B	
	Density	Comments	Density	Comments	Density	Comments
26-Sep	0	P, MI	0	P, MI	0	P, MI
27-Sep	18		11		6	
28-Sep	0	MI	0	MI	0	MI
29-Sep	9		5		4	
30-Sep	5		2		3	
1-Oct	5		2		5	
2-Oct	-	S	-	S	-	S
3-Oct	-	S	-	S	-	S
4-Oct	4		3		5	
5-Oct	-	S	-	S	-	S
6-Oct	0	P, MI	0	P, MI	0	P, MI
7-Oct	0	P	0	P	0	P
8-Oct	0	P	0	P	0	P
9-Oct	2		2		4	
10-Oct	0	P	0	P	0	P
11-Oct	0	P	0	P	0	P
12-Oct	0	P	0	P	0	P
13-Oct	0	P	0	P	0	P
14-Oct	0	P	0	P	0	P
15-Oct	73		50		18	
16-Oct	10		9		6	
17-Oct	122		144		50	
18-Oct	9		39		5	
19-Oct	0	MI	0	MI	0	MI
20-Oct	37		18		8	
21-Oct	0	P, MI	0	P, MI	0	P, MI
22-Oct	0	P, MI	0	P, MI	0	P, MI
23-Oct	17		6		7	
24-Oct	0	P	0	P	0	P
25-Oct	0	P	0	P	0	P
26-Oct	12		15		13	
27-Oct	4		4		2	
28-Oct	10		4		10	
29-Oct	10		21		27	
30-Oct	0		14		5	
31-Oct	0	MI	0	MI	0	MI
1-Nov	0	P, MI	0	P, MI	0	P, MI
2-Nov	36		114		83	
3-Nov	0	MI	0	MI	0	MI
4-Nov	0	P, MI	0	P, MI	0	P, MI
5-Nov	1		3		4	
6-Nov	0	P, MI	0	P, MI	0	P, MI

Table L-15 (*continued*). Year-to-year and night-to-night pattern of nocturnal fall bird migration (2005) over the offshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Offshore Fall 2005						
Date	1B		2B		3B	
	Density	Comments	Density	Comments	Density	Comments
7-Nov	15		19		19	
8-Nov	10		5		7	
9-Nov	-	MD	-	MD	-	MD
10-Nov	3		3		4	
11-Nov	-	ND	-	ND	-	ND
12-Nov	-	ND	-	ND	-	ND
13-Nov	0	P, MI	0	P, MI	0	P, MI
14-Nov	6		2		3	
15-Nov	0	P, MI	0	P, MI	0	P, MI

Table L-16. Year-to-year and night-to-night pattern of nocturnal fall bird migration (2006) over the onshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Onshore Fall 2006						
Date	1A		2A		3A	
	Density	Comments	Density	Comments	Density	Comments
15-Aug	-	S	-	S	-	S
16-Aug	-	V0	-	V0	-	V0
17-Aug	-	V0	-	V0	-	V0
18-Aug	-	V0	-	V0	-	V0
19-Aug	0	P, MI	0	P, MI	0	P, MI
20-Aug	23		38		4	
21-Aug	85		116		29	
22-Aug	-	S	-	S	-	S
23-Aug	-	S	-	S	-	S
24-Aug	0	MI	0	MI	0	MI
25-Aug	4		12		6	
26-Aug	0	MI	0	MI	0	MI
27-Aug	0	P	0	P	0	P
28-Aug	3	P IN SA	21	P IN SA	9	P IN SA
29-Aug	0	P, MI	0	P, MI	0	P, MI
30-Aug	-	S	-	S	-	S
31-Aug	-	S	-	S	-	S
1-Sep	0	P, RI	0	P, RI	0	P, RI
2-Sep	0	P, RI	0	P, RI	0	P, RI
3-Sep	-	V0	-	V0	-	V0
4-Sep	-	P	-	P	-	P
5-Sep	0	P	0	P	0	P
6-Sep	-	V0	-	V0	-	V0
7-Sep	-	S	-	S	-	S
8-Sep	-	S	-	S	-	S
9-Sep	-	S	-	S	-	S
10-Sep	49		377		40	
11-Sep	29		14		20	
12-Sep	0	MI	0	MI	0	MI
13-Sep	0	P, MI	0	P, MI	0	P, MI
14-Sep	0	P	0	P	0	P
15-Sep	-	MD	-	MD	-	MD
16-Sep	192		215		152	
17-Sep	-	S	-	S	-	S
18-Sep	4	RWMG	14	RWMG	8	RWMG
19-Sep	88		104		26	
20-Sep	146		55		21	
21-Sep	146		116		37	
22-Sep	0	P, MI	0	P, MI	0	P, MI
23-Sep	0	P, MI	0	P, MI	0	P, MI
24-Sep	0	P	0	P	0	P
25-Sep	-	S	-	S	-	S

Table L-16 (*continued*). Year-to-year and night-to-night pattern of nocturnal fall bird migration (2006) over the onshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Onshore Fall 2006						
Date	1A		2A		3A	
	Density	Comments	Density	Comments	Density	Comments
26-Sep	653		370		81	
27-Sep	-	V0	-	V0	-	V0
28-Sep	0	P, MI	0	P, MI	0	P, MI
29-Sep	73		251		37	
30-Sep	0	P, MI	0	P, MI	0	P, MI
1-Oct	88		117		46	
2-Oct	66		125		99	
3-Oct	-	S	-	S	-	S
4-Oct	0	P, MI	0	P, MI	0	P, MI
5-Oct	81		52		77	
6-Oct	0	P, MI	0	P, MI	0	P, MI
7-Oct	27		6		5	
8-Oct	-	S	-	S	-	S
9-Oct	-	S	-	S	-	S
10-Oct	-	S	-	S	-	S
11-Oct	0	P	0	P	0	P
12-Oct	-	V0, MI	-	V0, MI	-	V0, MI
13-Oct	-	V0, MI	-	V0, MI	-	V0, MI
14-Oct	-	V0	-	V0	-	V0
15-Oct	-	V0	-	V0	-	V0
16-Oct	-	V0	-	V0	-	V0
17-Oct	0	P	0	P	0	P
18-Oct	76		169		42	
19-Oct	0	P, MI	0	P, MI	0	P, MI
20-Oct	0	MI	0	MI	0	MI
21-Oct	12		140		95	
22-Oct	0	P, MI	0	P, MI	0	P, MI
23-Oct	39		37		8	
24-Oct	23		24		11	
25-Oct	52		377		241	
26-Oct	-	MD	-	MD	-	MD
27-Oct	0	P	0	P	0	P
28-Oct	0	P, MI	0	P, MI	0	P, MI
29-Oct	29		21		5	
30-Oct	15		27		5	
31-Oct	0	P, MI	0	P, MI	0	P, MI
1-Nov	-	S	-	S	-	S
2-Nov	412		668		313	
3-Nov	51		92		68	
4-Nov	82		82		116	
5-Nov	28		5		16	
6-Nov	10		12		19	

Table L-16 (*continued*). Year-to-year and night-to-night pattern of nocturnal fall bird migration (2006) over the onshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Onshore Fall 2006						
Date	1A		2A		3A	
	Density	Comments	Density	Comments	Density	Comments
7-Nov	0	P	0	P	0	P
8-Nov	0		101		21	
9-Nov	64		188		137	
10-Nov	-	S	-	S	-	S
11-Nov	0	P, MI	0	P, MI	0	P, MI
12-Nov	0	P	0	P	0	P
13-Nov	0	P	0	P	0	P
14-Nov	0	P, MI	0	P, MI	0	P, MI
15-Nov	0	P, MI	0	P, MI	0	P, MI

Table L-17. Year-to-year and night-to-night pattern of nocturnal fall bird migration (2006) over the offshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Offshore Fall 2006						
Date	1B		2B		3B	
	Density	Comments	Density	Comments	Density	Comments
15-Aug	-	S	-	S	-	S
16-Aug	-	V0	-	V0	-	V0
17-Aug	-	V0	-	V0	-	V0
18-Aug	-	V0	-	V0	-	V0
19-Aug	0	P, MI	0	P, MI	0	P, MI
20-Aug	4		5		2	
21-Aug	3		2		3	
22-Aug	-	S	-	S	-	S
23-Aug	-	S	-	S	-	S
24-Aug	0	MI	0	MI	0	MI
25-Aug	0		1		2	
26-Aug	0	MI	0	MI	0	MI
27-Aug	0	P	0	P	0	P
28-Aug	0	P IN SA	2	P IN SA	2	P IN SA
29-Aug	0	P, MI	0	P, MI	0	P, MI
30-Aug	-	S	-	S	-	S
31-Aug	-	S	-	S	-	S
1-Sep	0	P, RI	0	P, RI	0	P, RI
2-Sep	0	P, RI	0	P, RI	0	P, RI
3-Sep	-	V0	-	V0	-	V0
4-Sep	-	P	-	P	-	P
5-Sep	0	P	0	P	0	P
6-Sep	-	V0	-	V0	-	V0
7-Sep	-	S	-	S	-	S
8-Sep	-	S	-	S	-	S
9-Sep	-	S	-	S	-	S
10-Sep	34		6		4	
11-Sep	3		2		3	
12-Sep	0	MI	0	MI	0	MI
13-Sep	0	P, MI	0	P, MI	0	P, MI
14-Sep	0	P	0	P	0	P
15-Sep	-	MD	-	MD	-	MD
16-Sep	46		9		16	
17-Sep	-	S	-	S	-	S
18-Sep	2	RWMG	0	RWMG	0	RWMG
19-Sep	3		5		4	
20-Sep	26		17		23	
21-Sep	4		3		3	
22-Sep	0	P, MI	0	P, MI	0	P, MI
23-Sep	0	P, MI	0	P, MI	0	P, MI
24-Sep	0	P	0	P	0	P
25-Sep	-	S	-	S	-	S

Table L-17 (*continued*). Year-to-year and night-to-night pattern of nocturnal fall bird migration (2006) over the offshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Offshore Fall 2006						
Date	1B		2B		3B	
	Density	Comments	Density	Comments	Density	Comments
26-Sep	23		12		11	
27-Sep	-	V0	-	V0	-	V0
28-Sep	0	P, MI	0	P, MI	0	P, MI
29-Sep	29		7		5	
30-Sep	0	P, MI	0	P, MI	0	P, MI
1-Oct	17		8		7	
2-Oct	5		33		19	
3-Oct	-	S	-	S	-	S
4-Oct	0	P, MI	0	P, MI	0	P, MI
5-Oct	9		2		6	
6-Oct	0	P, MI	0	P, MI	0	P, MI
7-Oct	9		1		0	
8-Oct	-	S	-	S	-	S
9-Oct	-	S	-	S	-	S
10-Oct	-	S	-	S	-	S
11-Oct	0	P	0	P	0	P
12-Oct	-	V0, MI	-	V0, MI	-	V0, MI
13-Oct	-	V0, MI	-	V0, MI	-	V0, MI
14-Oct	-	V0	-	V0	-	V0
15-Oct	-	V0	-	V0	-	V0
16-Oct	-	V0	-	V0	-	V0
17-Oct	0	P	0	P	0	P
18-Oct	23		19		4	
19-Oct	0	P, MI	0	P, MI	0	P, MI
20-Oct	0	MI	0	MI	0	MI
21-Oct	6		18		13	
22-Oct	0	P, MI	0	P, MI	0	P, MI
23-Oct	3		5		4	
24-Oct	5		6		5	
25-Oct	26		28		104	
26-Oct	-	MD	-	MD	-	MD
27-Oct	0	P	0	P	0	P
28-Oct	0	P, MI	0	P, MI	0	P, MI
29-Oct	14		4		4	
30-Oct	7		4		1	
31-Oct	0	P, MI	0	P, MI	0	P, MI
1-Nov	-	S	-	S	-	S
2-Nov	20		42		19	
3-Nov	6		9		4	
4-Nov	6		4		3	
5-Nov	6		0		0	
6-Nov	0		0		0	

Table L-17 (*continued*). Year-to-year and night-to-night pattern of nocturnal fall bird migration (2006) over the offshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Offshore Fall 2006						
Date	1B		2B		3B	
	Density	Comments	Density	Comments	Density	Comments
7-Nov	0	P	0	P	0	P
8-Nov	0		22		21	
9-Nov	24		32		24	
10-Nov	-	S	-	S	-	S
11-Nov	0	P, MI	0	P, MI	0	P, MI
12-Nov	0	P	0	P	0	P
13-Nov	0	P	0	P	0	P
14-Nov	0	P, MI	0	P, MI	0	P, MI
15-Nov	0	P, MI	0	P, MI	0	P, MI

Table L-18. Year-to-year and night-to-night pattern of nocturnal fall bird migration (2007) over the onshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Onshore Fall 2007						
Date	1A		2A		3A	
	Density	Comments	Density	Comments	Density	Comments
15-Aug	0	P, MI	0	P, MI	0	P, MI
16-Aug	0	P, MI	0	P, MI	0	P, MI
17-Aug	15		32		12	
18-Aug	3		10		4	
19-Aug	0	P	0	P	0	P
20-Aug	0	P	0	P	0	P
21-Aug	0	P, MI	0	P, MI	0	P, MI
22-Aug	0	MI	0	MI	0	MI
23-Aug	8		3		6	
24-Aug	0	MI	0	MI	0	MI
25-Aug	0	P, MI	0	P, MI	0	P, MI
26-Aug	6		0		0	
27-Aug	57		25		35	
28-Aug	-	S	-	S	-	S
29-Aug	-	S	-	S	-	S
30-Aug	-	S	-	S	-	S
31-Aug	29		100		65	
1-Sep	82		51		22	
2-Sep	0	MI	0	MI	0	MI
3-Sep	0	MI	0	MI	0	MI
4-Sep	130		129		65	
5-Sep	53		65		24	
6-Sep	0	MI	0	MI	0	MI
7-Sep	-	S	-	S	-	S
8-Sep	-	S, MI	-	S, MI	-	S, MI
9-Sep	0	P, MI	0	P, MI	0	P, MI
10-Sep	0	P, MI	0	P, MI	0	P, MI
11-Sep	0	P, MI	0	P, MI	0	P, MI
12-Sep	208		277		79	
13-Sep	24		357		19	
14-Sep	0	P	0	P	0	P
15-Sep	176		196		34	
16-Sep	78		14		16	
17-Sep	23		8		6	
18-Sep	10		4		10	
19-Sep	-	MI, S	-	MI, S	-	MI, S
20-Sep	-	S	-	S	-	S
21-Sep	-	S	-	S	-	S
22-Sep	0	MI	0	MI	0	MI
23-Sep	323		225		331	
24-Sep	-	MI, S	-	MI, S	-	MI, S
25-Sep	-	MI, S	-	MI, S	-	MI, S

Table L-18 (*continued*). Year-to-year and night-to-night pattern of nocturnal fall bird migration (2007) over the onshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Onshore Fall 2007						
Date	1A		2A		3A	
	Density	Comments	Density	Comments	Density	Comments
26-Sep	0	P, MI	0	P, MI	0	P, MI
27-Sep	0	P, MI	0	P, MI	0	P, MI
28-Sep	134		196		106	
29-Sep	292		216		161	
30-Sep	15		9		11	
1-Oct	0	MI	0	MI	0	MI
2-Oct	0	MI	0	MI	0	MI
3-Oct	0	MI	0	MI	0	MI
4-Oct	-	S	-	S	-	S
5-Oct	177		66		16	
6-Oct	30		22		29	
7-Oct	35		65		210	
8-Oct	11		17		7	
9-Oct	0	P	0	P	0	P
10-Oct	46		83		85	
11-Oct	0	P, MI	0	P, MI	0	P, MI
12-Oct	65		260		0	
13-Oct	10		30		10	
14-Oct	392		362		71	
15-Oct	-	S	-	S	-	S
16-Oct	-	S	-	S	-	S
17-Oct	0	MI	0	MI	0	MI
18-Oct	0	P, MI	0	P, MI	0	P, MI
19-Oct	0	P	0	P	0	P
20-Oct	43		0		0	
21-Oct	0	MI	0	MI	0	MI
22-Oct	0	P, MI	0	P, MI	0	P, MI
23-Oct	0	P, MI	0	P, MI	0	P, MI
24-Oct	0	P	0	P	0	P
25-Oct	-	MD	-	MD	-	MD
26-Oct	0	P	0	P	0	P
27-Oct	46		15		5	
28-Oct	57		213		142	
29-Oct	-	ND	-	ND	-	ND
30-Oct	35		18		8	
31-Oct	0	MI	0	MI	0	MI
1-Nov	72		80		47	
2-Nov	20		6		5	
3-Nov	46		30		21	
4-Nov	31		19		10	
5-Nov	0	P, MI	0	P, MI	0	P, MI
6-Nov	0	MI	0	MI	0	MI

Table L-18 (*continued*). Year-to-year and night-to-night pattern of nocturnal fall bird migration (2007) over the onshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Onshore Fall 2007						
Date	1A		2A		3A	
	Density	Comments	Density	Comments	Density	Comments
7-Nov	101		121		117	
8-Nov	29		31		21	
9-Nov	0	P	0	P	0	P
10-Nov	92		133		172	
11-Nov	16		23		58	
12-Nov	0	P, MI	0	P, MI	0	P, MI
13-Nov	44		17		28	
14-Nov	0	P, MI	0	P, MI	0	P, MI
15-Nov	0	P, MI	0	P, MI	0	P, MI

Table L-19. Year-to-year and night-to-night pattern of nocturnal fall bird migration (2007) over the offshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Offshore Fall 2007						
Date	1B		2B		3B	
	Density	Comments	Density	Comments	Density	Comments
15-Aug	0	P, MI	0	P, MI	0	P, MI
16-Aug	0	P, MI	0	P, MI	0	P, MI
17-Aug	4		5		3	
18-Aug	3		2		1	
19-Aug	0	P	0	P	0	P
20-Aug	0	P	0	P	0	P
21-Aug	0	P, MI	0	P, MI	0	P, MI
22-Aug	0	MI	0	MI	0	MI
23-Aug	0		0		0	
24-Aug	0	MI	0	MI	0	MI
25-Aug	0	P, MI	0	P, MI	0	P, MI
26-Aug	7		5		5	
27-Aug	5		2		6	
28-Aug	-	S	-	S	-	S
29-Aug	-	S	-	S	-	S
30-Aug	-	S	-	S	-	S
31-Aug	5		19		8	
1-Sep	13		5		3	
2-Sep	0	MI	0	MI	0	MI
3-Sep	0	MI	0	MI	0	MI
4-Sep	21		27		36	
5-Sep	5		3		4	
6-Sep	0	MI	0	MI	0	MI
7-Sep	-	S	-	S	-	S
8-Sep	-	S, MI	-	S, MI	-	S, MI
9-Sep	0	P, MI	0	P, MI	0	P, MI
10-Sep	0	P, MI	0	P, MI	0	P, MI
11-Sep	0	P, MI	0	P, MI	0	P, MI
12-Sep	99		5		4	
13-Sep	4		3		3	
14-Sep	0	P	0	P	0	P
15-Sep	18		9		5	
16-Sep	3		1		3	
17-Sep	3		1		0	
18-Sep	1		1		3	
19-Sep	-	MI, S	-	MI, S	-	MI, S
20-Sep	-	S	-	S	-	S
21-Sep	-	S	-	S	-	S
22-Sep	0	MI	0	MI	0	MI
23-Sep	61		57		26	
24-Sep	-	MI, S	-	MI, S	-	MI, S
25-Sep	-	MI, S	-	MI, S	-	MI, S

Table L-19 (*continued*). Year-to-year and night-to-night pattern of nocturnal fall bird migration (2007) over the offshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Offshore Fall 2007						
Date	1B		2B		3B	
	Density	Comments	Density	Comments	Density	Comments
26-Sep	0	P, MI	0	P, MI	0	P, MI
27-Sep	0	P, MI	0	P, MI	0	P, MI
28-Sep	49		48		39	
29-Sep	67		34		6	
30-Sep	0		0		2	
1-Oct	0	MI	0	MI	0	MI
2-Oct	0	MI	0	MI	0	MI
3-Oct	0	MI	0	MI	0	MI
4-Oct	-	S	-	S	-	S
5-Oct	8		10		5	
6-Oct	7		11		10	
7-Oct	15		65		100	
8-Oct	11		9		4	
9-Oct	0	P	0	P	0	P
10-Oct	10		10		11	
11-Oct	0	P, MI	0	P, MI	0	P, MI
12-Oct	34		15		9	
13-Oct	3		3		4	
14-Oct	43		7		4	
15-Oct	-	S	-	S	-	S
16-Oct	-	S	-	S	-	S
17-Oct	0	MI	0	MI	0	MI
18-Oct	0	P, MI	0	P, MI	0	P, MI
19-Oct	0	P	0	P	0	P
20-Oct	21		9		7	
21-Oct	0	MI	0	MI	0	MI
22-Oct	0	P, MI	0	P, MI	0	P, MI
23-Oct	0	P, MI	0	P, MI	0	P, MI
24-Oct	0	P	0	P	0	P
25-Oct	-	MD	-	MD	-	MD
26-Oct	0	P	0	P	0	P
27-Oct	9		2		5	
28-Oct	19		23		28	
29-Oct	-	ND	-	ND	-	ND
30-Oct	2		0		1	
31-Oct	0	MI	0	MI	0	MI
1-Nov	7		3		4	
2-Nov	3		0		0	
3-Nov	2		7		9	
4-Nov	1		1		2	
5-Nov	0	P, MI	0	P, MI	0	P, MI
6-Nov	0	MI	0	MI	0	MI

Table L-19 (*continued*). Year-to-year and night-to-night pattern of nocturnal fall bird migration (2007) over the offshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Offshore Fall 2007						
Date	1B		2B		3B	
	Density	Comments	Density	Comments	Density	Comments
7-Nov	7		22		14	
8-Nov	2		1		0	
9-Nov	0	P	0	P	0	P
10-Nov	4		6		5	
11-Nov	2		2		3	
12-Nov	0	P, MI	0	P, MI	0	P, MI
13-Nov	5		3		3	
14-Nov	0	P, MI	0	P, MI	0	P, MI
15-Nov	0	P, MI	0	P, MI	0	P, MI

Table L-20. Year-to-year and night-to-night pattern of nocturnal fall bird migration (2008) over the onshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Onshore Fall 2008						
Date	1A		2A		3A	
	Density	Comments	Density	Comments	Density	Comments
15-Aug	53		17		14	
16-Aug	27		22		11	
17-Aug	-	S	-	S	-	S
18-Aug	0	MI	0	MI	0	MI
19-Aug	191		61		14	
20-Aug	33		13		17	
21-Aug	23		12		6	
22-Aug	9		7		8	
23-Aug	0	MI	0	MI	0	MI
24-Aug	0	MI	0	MI	0	MI
25-Aug	196		100		33	
26-Aug	73		58		39	
27-Aug	21		16		45	
28-Aug	-	S	-	S	-	S
29-Aug	0	P	0	P	0	P
30-Aug	214		197		164	
31-Aug	51		56		88	
1-Sep	55		31		33	
2-Sep	-	S	-	S	-	S
3-Sep	-	S	-	S	-	S
4-Sep	0	P, MI	0	P, MI	0	P, MI
5-Sep	0	P	0	P	0	P
6-Sep	-	P, MI	-	P, MI	-	P, MI
7-Sep	78		74		60	
8-Sep	0	MI	0	MI	0	MI
9-Sep	0	P	0	P	0	P
10-Sep	84		66		81	
11-Sep	9		28		13	
12-Sep	-	MD	-	MD	-	MD
13-Sep	-	ND	-	ND	-	ND
14-Sep	0	MI	0	MI	0	MI
15-Sep	-	S	-	S	-	S
16-Sep	0		70		42	
17-Sep	36		30		13	
18-Sep	129		39		18	
19-Sep	30		6		7	
20-Sep	23		17		18	
21-Sep	-	S	-	S	-	S
22-Sep	21		5		11	
23-Sep	-	MD	-	MD	-	MD
24-Sep	-	S	-	S	-	S
25-Sep	0	P	0	P	0	P

Table L-20 (*continued*). Year-to-year and night-to-night pattern of nocturnal fall bird migration (2008) over the onshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Onshore Fall 2008						
Date	1A		2A		3A	
	Density	Comments	Density	Comments	Density	Comments
26-Sep	0	P, MI	0	P, MI	0	P, MI
27-Sep	0	P, MI	0	P, MI	0	P, MI
28-Sep	31		12		5	
29-Sep	-	S	-	S	-	S
30-Sep	0	P, MI	0	P, MI	0	P, MI
1-Oct	-	S	-	S	-	S
2-Oct	132		78		167	
3-Oct	267		77		24	
4-Oct	0	MI	0	MI	0	MI
5-Oct	121		129		73	
6-Oct	196		81		37	
7-Oct	-	S	-	S	-	S
8-Oct	0	P, MI	0	P, MI	0	P, MI
9-Oct	-	S	-	S	-	S
10-Oct	-	S	-	S	-	S
11-Oct	-	S	-	S	-	S
12-Oct	198		290		121	
13-Oct	-	S	-	S	-	S
14-Oct	-	S	-	S	-	S
15-Oct	268		99		60	
16-Oct	144		213		81	
17-Oct	81	P	44	P	21	P
18-Oct	47		7		5	
19-Oct	23		6		8	
20-Oct	0	MI	0	MI	0	MI
21-Oct	0	MI	0	MI	0	MI
22-Oct	-	V0	-	V0	-	V0
23-Oct	62		18		22	
24-Oct	0	P	0	P	0	P
25-Oct	0	P	0	P	0	P
26-Oct	0	MI	0	MI	0	MI
27-Oct	0	P	0	P	0	P
28-Oct	0	P	0	P	0	P
29-Oct	0	P	0	P	0	P
30-Oct	209		103		105	
31-Oct	0	MI	0	MI	0	MI
1-Nov	147		98		105	
2-Nov	8		5		9	
3-Nov	0	MI	0	MI	0	MI
4-Nov	0	P	0	P	0	P
5-Nov	0	P	0	P	0	P
6-Nov	0	P, MI	0	P, MI	0	P, MI

Table L-20 (*continued*). Year-to-year and night-to-night pattern of nocturnal fall bird migration (2008) over the onshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Onshore Fall 2008						
Date	1A		2A		3A	
	Density	Comments	Density	Comments	Density	Comments
7-Nov	0	MI	0	MI	0	MI
8-Nov	0	P, MI	0	P, MI	0	P, MI
9-Nov	101		121		80	
10-Nov	78		78		30	
11-Nov	56		50		44	
12-Nov	16		23		16	
13-Nov	0	P	0	P	0	P
14-Nov	0	P	0	P	0	P
15-Nov	0	P	0	P	0	P

Table L-21. Year-to-year and night-to-night pattern of nocturnal fall bird migration (2008) over the offshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Offshore Fall 2008						
Date	1B		2B		3B	
	Density	Comments	Density	Comments	Density	Comments
15-Aug	3		3		5	
16-Aug	8		4		5	
17-Aug	-	S	-	S	-	S
18-Aug	0	MI	0	MI	0	MI
19-Aug	25		16		17	
20-Aug	5		7		8	
21-Aug	9		4		0	
22-Aug	2		0		0	
23-Aug	0	MI	0	MI	0	MI
24-Aug	0	MI	0	MI	0	MI
25-Aug	40		9		9	
26-Aug	41		9		9	
27-Aug	4		8		6	
28-Aug	-	S	-	S	-	S
29-Aug	0	P	0	P	0	P
30-Aug	22		31		71	
31-Aug	11		6		8	
1-Sep	16		6		5	
2-Sep	-	S	-	S	-	S
3-Sep	-	S	-	S	-	S
4-Sep	0	P, MI	0	P, MI	0	P, MI
5-Sep	0	P	0	P	0	P
6-Sep		P, MI		P, MI		P, MI
7-Sep	16		9		13	
8-Sep	0	MI	0	MI	0	MI
9-Sep	0	P	0	P	0	P
10-Sep	21		9		11	
11-Sep	6		6		9	
12-Sep	-	MD	-	MD	-	MD
13-Sep	-	ND	-	ND	-	ND
14-Sep	0	MI	0	MI	0	MI
15-Sep	-	S	-	S	-	S
16-Sep	19		7		8	
17-Sep	8		3		3	
18-Sep	23		4		5	
19-Sep	1		6		0	
20-Sep	2		10		9	
21-Sep	-	S	-	S	-	S
22-Sep	9		4		3	
23-Sep	-	MD	-	MD	-	MD
24-Sep	-	S	-	S	-	S
25-Sep	0	P	0	P	0	P

Table L-21 (*continued*). Year-to-year and night-to-night pattern of nocturnal fall bird migration (2008) over the offshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Offshore Fall 2008						
Date	1B		2B		3B	
	Density	Comments	Density	Comments	Density	Comments
26-Sep	0	P, MI	0	P, MI	0	P, MI
27-Sep	0	P, MI	0	P, MI	0	P, MI
28-Sep	6		3		5	
29-Sep	-	S	-	S	-	S
30-Sep	0	P, MI	0	P, MI	0	P, MI
1-Oct	-	S	-	S	-	S
2-Oct	26		3		7	
3-Oct	13		3		21	
4-Oct	0	MI	0	MI	0	MI
5-Oct	10		9		5	
6-Oct	28		9		5	
7-Oct	-	S	-	S	-	S
8-Oct	0	P, MI	0	P, MI	0	P, MI
9-Oct	-	S	-	S	-	S
10-Oct	-	S	-	S	-	S
11-Oct	-	S	-	S	-	S
12-Oct	13		44		22	
13-Oct	-	S	-	S	-	S
14-Oct	-	S	-	S	-	S
15-Oct	9		9		15	
16-Oct	48		15		5	
17-Oct	45	P	4	P	7	P
18-Oct	4		2		3	
19-Oct	5		2		4	
20-Oct	0	MI	0	MI	0	MI
21-Oct	0	MI	0	MI	0	MI
22-Oct	-	V0	-	V0	-	V0
23-Oct	4		5		4	
24-Oct	0	P	0	P	0	P
25-Oct	0	P	0	P	0	P
26-Oct	0	MI	0	MI	0	MI
27-Oct	0	P	0	P	0	P
28-Oct	0	P	0	P	0	P
29-Oct	0	P	0	P	0	P
30-Oct	27		34		36	
31-Oct	0	MI	0	MI	0	MI
1-Nov	11		5		5	
2-Nov	0		0		0	
3-Nov	0	MI	0	MI	0	MI
4-Nov	0	P	0	P	0	P
5-Nov	0	P	0	P	0	P
6-Nov	0	P, MI	0	P, MI	0	P, MI

Table L-21 (*continued*). Year-to-year and night-to-night pattern of nocturnal fall bird migration (2008) over the offshore sample areas. Date is the date at beginning of night. Density = mean birds km^{-3} measured by averaging maximum dBZ reflectivity from migrants aloft at 0.5° over the sample areas. ND = no data available, MI=mostly insects aloft, MD = missing data, P = precipitation in SA, V0 = bad velocity, S = strobing in SA, OSA = migration out of sample area, and RM = radar malfunction.

Offshore Fall 2008						
Date	1B		2B		3B	
	Density	Comments	Density	Comments	Density	Comments
7-Nov	0	MI	0	MI	0	MI
8-Nov	0	P, MI	0	P, MI	0	P, MI
9-Nov	11		3		4	
10-Nov	8		11		17	
11-Nov	5		6		3	
12-Nov	1		0		0	
13-Nov	0	P	0	P	0	P
14-Nov	0	P	0	P	0	P
15-Nov	0	P	0	P	0	P

Appendix L-3

Hourly Data for Nocturnal Bird Migration

Table L-22. Hour-to-hour patterns of migration density (expressed as percentage of peak density) over sample area for a subsample of nights showing migration for Spring (2005-2009). Time is in Universal Time Coordinate (UTC). Note: Date is for beginning of night. SE= standard error, SD = standard deviation, SV = sample variance.

Date	Spring Sample Area 1A										
	Time (UTC)										
	22:00	23:00	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
3/30/2005	1%	9%	100%	17%	39%	30%	37%	45%	58%	49%	61%
4/5/2005	2%	0%	6%	100%	8%	0%	0%	0%	0%	0%	29%
4/18/2005	0%	79%	100%	0%	0%	0%	0%	0%	0%	0%	0%
5/10/2005	0%	1%	4%	17%	28%	100%	0%	0%	50%	27%	27%
5/31/2005	1%	1%	15%	100%	89%	29%	39%	68%	55%	30%	4%
3/27/2006	39%	8%	31%	38%	51%	100%	58%	76%	70%	75%	51%
4/10/2006	0%	0%	11%	37%	25%	18%	62%	29%	85%	100%	66%
5/5/2006	0%	1%	0%	0%	0%	0%	0%	0%	100%	47%	6%
5/17/2006	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%
4/23/2007	0%	0%	0%	16%	11%	79%	100%	0%	15%	10%	5%
5/13/2008	0%	0%	1%	7%	10%	16%	0%	0%	52%	100%	77%
5/25/2008	0%	0%	32%	79%	0%	0%	74%	34%	49%	100%	25%
3/18/2009	0%	7%	38%	20%	39%	100%	93%	85%	90%	51%	26%
4/24/2009	1%	1%	11%	21%	100%	54%	76%	85%	84%	70%	30%
4/26/2009	0%	1%	15%	22%	26%	48%	75%	78%	100%	78%	36%
4/27/2009	0%	3%	11%	18%	48%	81%	88%	100%	55%	34%	20%
5/12/2009	6%	3%	14%	86%	46%	24%	97%	100%	77%	27%	13%

Table L-22 (*continued*). Hour-to-hour patterns of migration density (expressed as percentage of peak density) over sample area for a subsample of nights showing migration for Spring (2005-2009). Time is in Universal Time Coordinate (UTC). Note: Date is for beginning of night. SE= standard error, SD = standard deviation, SV = sample variance.

Date	Spring Sample Area 1A										
	Time (UTC)										
	22:00	23:00	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
Mean	3%	13%	23%	34%	31%	40%	47%	41%	55%	47%	28%
SE	2%	7%	8%	8%	7%	9%	10%	10%	8%	9%	6%
Median	0	1	11	20	26	29	58	34	55	47	26
Mode	0	#N/A	0	0	0	0	0	0	0	0	0
SD	9	29	31	35	30	39	40	40	34	35	24
SV	90	856	973	1220	901	1492	1579	1635	1155	1250	562
Kurtosis	16	6	3	0	1	-1	-2	-2	-1	-1	0
Skewness	4	3	2	1	1	1	0	0	-1	0	1
Range	39	100	100	100	100	100	100	100	100	100	77
Minimum	0	0	0	0	0	0	0	0	0	0	0
Maximum	39	100	100	100	100	100	100	100	100	100	77
Sum	51	215	389	579	521	678	799	699	939	797	476
Count	17	17	17	17	17	17	17	17	17	17	17

Table L-23. Hour-to-hour patterns of migration density (expressed as percentage of peak density) over sample area for a subsample of nights showing migration for Spring (2005-2009). Time is in Universal Time Coordinate (UTC). Note: Date is for beginning of night. SE= standard error, SD = standard deviation, SV = sample variance.

Date	Spring Sample Area 2A										
	Time (UTC)										
	22:00	23:00	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
3/30/2005	0%	55%	97%	61%	45%	53%	77%	77%	89%	100%	86%
4/5/2005	9%	1%	8%	21%	46%	85%	100%	91%	100%	67%	29%
4/18/2005	0%	0%	39%	59%	87%	94%	100%	61%	93%	59%	32%
5/10/2005	1%	0%	5%	6%	17%	100%	62%	27%	18%	17%	27%
5/31/2005	5%	0%	6%	48%	24%	34%	100%	68%	27%	16%	8%
3/27/2006	6%	2%	13%	69%	100%	81%	74%	58%	53%	22%	18%
4/10/2006	0%	0%	11%	12%	25%	28%	24%	15%	12%	100%	61%
5/5/2006	0%	0%	9%	23%	0%	44%	100%	45%	39%	0%	4%
5/17/2006	0%	0%	5%	33%	35%	95%	33%	37%	100%	14%	13%
4/23/2007	0%	0%	3%	17%	35%	75%	100%	55%	13%	9%	1%
5/13/2008	0%	0%	3%	14%	44%	100%	96%	62%	79%	92%	89%
5/25/2008	0%	1%	4%	100%	83%	65%	23%	11%	14%	15%	8%
3/18/2009	0%	1%	9%	20%	38%	100%	58%	68%	55%	26%	12%
4/24/2009	0%	0%	4%	18%	43%	46%	100%	84%	58%	25%	10%
4/26/2009	0%	2%	17%	18%	79%	92%	100%	96%	84%	63%	23%
4/27/2009	0%	10%	7%	24%	85%	74%	100%	71%	44%	19%	9%
5/12/2009	0%	38%	20%	39%	31%	100%	71%	46%	46%	61%	68%

Table L-23 (*continued*). Hour-to-hour patterns of migration density (expressed as percentage of peak density) over sample area for a subsample of nights showing migration for Spring (2005-2009). Time is in Universal Time Coordinate (UTC). Note: Date is for beginning of night. SE= standard error, SD = standard deviation, SV = sample variance.

Date	Spring Sample Area 2A										
	Time (UTC)										
	22:00	23:00	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
Mean	1%	6%	15%	34%	48%	75%	77%	57%	54%	41%	29%
SE	1%	4%	6%	6%	7%	6%	7%	6%	8%	8%	7%
Median	0	0	8	23	43	81	96	61	53	25	18
Mode	0	0	#N/A	#N/A	#N/A	100	100	#N/A	#N/A	#N/A	#N/A
SD	3	15	23	25	29	25	28	25	32	34	29
SV	7	238	526	638	815	620	806	609	999	1128	829
Kurtosis	4	7	11	1	-1	-1	0	0	-1	-1	0
Skewness	2	3	3	1	0	-1	-1	0	0	1	1
Range	9	55	95	94	100	72	77	85	88	100	88
Minimum	0	0	3	6	0	28	23	11	12	0	1
Maximum	9	55	97	100	100	100	100	96	100	100	89
Sum	21	109	260	580	818	1268	1317	972	923	705	498
Count	17	17	17	17	17	17	17	17	17	17	17

Table L-24. Hour-to-hour patterns of migration density (expressed as percentage of peak density) over sample area for a subsample of nights showing migration for Spring (2005-2009). Time is in Universal Time Coordinate (UTC). Note: Date is for beginning of night. SE= standard error, SD = standard deviation, SV = sample variance.

Date	Spring Sample Area 3A										
	Time (UTC)										
	22:00	23:00	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
3/30/2005	2%	6%	10%	17%	20%	37%	59%	100%	81%	60%	36%
4/5/2005	0%	0%	41%	72%	61%	71%	87%	91%	100%	61%	37%
4/18/2005	0%	0%	59%	100%	98%	69%	33%	22%	28%	39%	25%
5/10/2005	0%	0%	12%	15%	97%	100%	40%	32%	22%	21%	14%
5/31/2005	79%	26%	26%	97%	70%	100%	38%	21%	18%	12%	11%
3/27/2006	22%	2%	52%	100%	44%	40%	63%	84%	71%	59%	58%
4/10/2006	0%	0%	51%	44%	39%	31%	100%	30%	32%	47%	7%
5/5/2006	0%	0%	9%	14%	25%	29%	100%	17%	11%	4%	0%
5/17/2006	0%	0%	28%	48%	41%	55%	100%	65%	39%	47%	16%
4/23/2007	0%	0%	45%	100%	77%	78%	58%	22%	21%	0%	0%
5/13/2008	0%	0%	17%	45%	100%	88%	58%	57%	57%	19%	10%
5/25/2008	0%	12%	29%	100%	83%	34%	26%	24%	22%	12%	8%
3/18/2009	0%	9%	45%	41%	61%	100%	48%	36%	20%	8%	5%
4/24/2009	0%	0%	30%	97%	78%	81%	100%	91%	48%	9%	4%
4/26/2009	0%	21%	40%	31%	100%	69%	73%	98%	84%	75%	6%
4/27/2009	0%	0%	25%	91%	88%	81%	100%	52%	30%	18%	16%
5/12/2009	0%	0%	59%	91%	50%	42%	44%	30%	100%	48%	26%

Table L-24 (*continued*). Hour-to-hour patterns of migration density (expressed as percentage of peak density) over sample area for a subsample of nights showing migration for Spring (2005-2009). Time is in Universal Time Coordinate (UTC). Note: Date is for beginning of night. SE= standard error, SD = standard deviation, SV = sample variance.

Date	Spring Sample Area 3A										
	Time (UTC)										
	22:00	23:00	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
Mean	6%	4%	34%	65%	67%	65%	66%	51%	46%	32%	16%
SE	5%	2%	4%	8%	6%	6%	6%	7%	7%	6%	4%
Median	0	0	30	72	70	69	59	36	32	21	11
Mode	0	0	#N/A	100	#N/A	#N/A	100	#N/A	#N/A	#N/A	0
SD	19	8	17	34	26	25	27	31	30	24	16
SV	380	64	276	1163	702	649	709	943	906	570	242
Kurtosis	14	3	-1	-2	-1	-1	-2	-1	-1	-1	2
Skewness	4	2	0	0	0	0	0	1	1	0	1
Range	79	26	51	86	80	71	74	83	89	75	58
Minimum	0	0	9	14	20	29	26	17	11	0	0
Maximum	79	26	59	100	100	100	100	100	100	75	58
Sum	103	76	577	1104	1132	1107	1128	873	783	536	279
Count	17	17	17	17	17	17	17	17	17	17	17

Table L-25. Hour-to-hour patterns of migration density (expressed as percentage of peak density) over sample area for a subsample of nights showing migration for Spring (2005-2009). Time is in Universal Time Coordinate (UTC). Note: Date is for beginning of night. SE= standard error, SD = standard deviation, SV = sample variance.

Date	Spring Sample Area 1B										
	Time (UTC)										
	22:00	23:00	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
3/30/2005	0%	0%	0%	0%	0%	42%	77%	74%	100%	84%	94%
4/5/2005	0%	2%	3%	4%	20%	22%	77%	50%	38%	100%	85%
4/18/2005	40%	32%	94%	42%	21%	56%	72%	76%	0%	37%	100%
5/10/2005	0%	0%	0%	11%	49%	59%	100%	66%	29%	25%	25%
5/31/2005	0%	0%	0%	0%	73%	84%	66%	51%	100%	49%	0%
3/27/2006	0%	0%	100%	40%	32%	42%	30%	28%	32%	36%	30%
4/10/2006	0%	0%	17%	15%	61%	33%	100%	23%	32%	39%	64%
5/5/2006	0%	0%	0%	14%	9%	6%	100%	0%	0%	0%	3%
5/17/2006	0%	0%	0%	100%	78%	47%	37%	17%	13%	41%	41%
4/23/2007	0%	0%	0%	33%	70%	82%	100%	61%	17%	11%	7%
5/13/2008	0%	0%	3%	0%	7%	27%	58%	54%	44%	38%	100%
5/25/2008	0%	5%	6%	100%	37%	69%	36%	12%	22%	18%	15%
3/18/2009	0%	0%	0%	71%	46%	85%	100%	36%	28%	7%	88%
4/24/2009	41%	10%	16%	27%	61%	68%	89%	89%	100%	85%	26%
4/26/2009	4%	45%	14%	100%	47%	53%	42%	19%	44%	17%	13%
4/27/2009	0%	21%	35%	20%	64%	39%	41%	100%	85%	26%	16%
5/12/2009	0%	0%	16%	100%	66%	18%	13%	15%	24%	7%	8%

Table L-25 (*continued*). Hour-to-hour patterns of migration density (expressed as percentage of peak density) over sample area for a subsample of nights showing migration for Spring (2005-2009). Time is in Universal Time Coordinate (UTC). Note: Date is for beginning of night. SE= standard error, SD = standard deviation, SV = sample variance.

Date	Spring Sample Area 1B										
	Time (UTC)										
	22:00	23:00	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
Mean	5%	7%	18%	40%	44%	49%	67%	45%	42%	37%	42%
SE	3%	3%	8%	9%	6%	6%	7%	7%	8%	7%	9%
Median	0	0	3	27	47	47	72	50	32	36	26
Mode	0	0	0	0	#N/A	#N/A	100	#N/A	100	#N/A	#N/A
SD	13	13	31	39	25	24	29	30	34	29	37
SV	178	180	982	1510	622	560	853	872	1143	842	1404
Kurtosis	5	4	4	-1	-1	-1	-1	-1	0	0	-1
Skewness	3	2	2	1	0	0	0	0	1	1	1
Range	41	45	100	100	78	78	87	100	100	100	100
Minimum	0	0	0	0	0	6	13	0	0	0	0
Maximum	41	45	100	100	78	85	100	100	100	100	100
Sum	85	116	304	678	740	831	1137	771	707	621	715
Count	17	17	17	17	17	17	17	17	17	17	17

Table L-26. Hour-to-hour patterns of migration density (expressed as percentage of peak density) over sample area for a subsample of nights showing migration for Spring (2005-2009). Time is in Universal Time Coordinate (UTC). Note: Date is for beginning of night. SE= standard error, SD = standard deviation, SV = sample variance.

Date	Spring Sample Area 1B										
	Time (UTC)										
	22:00	23:00	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
3/30/2005	0%	0%	0%	0%	87%	51%	60%	58%	67%	100%	92%
4/5/2005	0%	0%	0%	14%	18%	50%	76%	71%	100%	94%	45%
4/18/2005	0%	0%	0%	19%	23%	28%	44%	86%	84%	100%	92%
5/10/2005	0%	0%	0%	0%	62%	72%	100%	55%	82%	54%	72%
5/31/2005	0%	0%	0%	0%	99%	0%	85%	100%	46%	53%	0%
3/27/2006	0%	0%	0%	64%	100%	63%	29%	87%	92%	50%	54%
4/10/2006	0%	0%	0%	0%	0%	60%	60%	100%	34%	23%	49%
5/5/2006	0%	0%	0%	0%	4%	11%	100%	20%	5%	0%	0%
5/17/2006	0%	0%	0%	0%	59%	0%	0%	0%	100%	0%	0%
4/23/2007	0%	0%	100%	10%	12%	15%	17%	0%	7%	7%	0%
5/13/2008	0%	0%	0%	0%	34%	77%	65%	100%	26%	32%	47%
5/25/2008	0%	0%	0%	15%	86%	100%	70%	27%	43%	33%	17%
3/18/2009	0%	0%	0%	30%	0%	100%	67%	0%	16%	0%	0%
4/24/2009	15%	22%	20%	38%	81%	92%	100%	73%	47%	52%	71%
4/26/2009	0%	0%	0%	91%	55%	95%	84%	100%	83%	68%	52%
4/27/2009	0%	0%	0%	100%	73%	50%	59%	67%	55%	46%	27%
5/12/2009	0%	0%	0%	0%	12%	0%	18%	42%	100%	28%	42%

Table L-26 (*continued*). Hour-to-hour patterns of migration density (expressed as percentage of peak density) over sample area for a subsample of nights showing migration for Spring (2005-2009). Time is in Universal Time Coordinate (UTC). Note: Date is for beginning of night. SE= standard error, SD = standard deviation, SV = sample variance.

Date	Spring Sample Area 1B										
	Time (UTC)										
	22:00	23:00	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
Mean	1%	1%	7%	22%	47%	51%	61%	58%	58%	43%	39%
SE	1%	1%	6%	8%	9%	9%	7%	9%	8%	8%	8%
Median	0	0	0	10	55	51	65	67	55	46	45
Mode	0	0	0	0	0	0	100	100	100	0	0
SD	4	5	24	33	36	36	31	37	33	33	32
SV	14	29	597	1065	1325	1314	931	1371	1098	1107	1032
Kurtosis	17	17	15	1	-2	-1	-1	-1	-1	-1	-1
Skewness	4	4	4	2	0	0	-1	0	0	0	0
Range	15	22	100	100	100	100	100	100	95	100	92
Minimum	0	0	0	0	0	0	0	0	5	0	0
Maximum	15	22	100	100	100	100	100	100	100	100	92
Sum	15	22	120	379	805	866	1034	987	988	738	658
Count	17	17	17	17	17	17	17	17	17	17	17

Table L-27. Hour-to-hour patterns of migration density (expressed as percentage of peak density) over sample area for a subsample of nights showing migration for Spring (2005-2009). Time is in Universal Time Coordinate (UTC). Note: Date is for beginning of night. SE= standard error, SD = standard deviation, SV = sample variance.

Date	Spring Sample Area 3B										
	Time (UTC)										
	22:00	23:00	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
3/30/2005	0%	0%	0%	37%	51%	66%	59%	99%	100%	90%	59%
4/5/2005	0%	0%	5%	11%	13%	17%	20%	26%	33%	100%	16%
4/18/2005	0%	0%	0%	0%	48%	44%	39%	32%	37%	100%	34%
5/10/2005	0%	0%	50%	0%	67%	100%	70%	60%	66%	70%	0%
5/31/2005	0%	0%	0%	100%	22%	20%	16%	16%	0%	25%	0%
3/27/2006	0%	0%	82%	100%	73%	56%	59%	50%	67%	82%	64%
4/10/2006	0%	0%	0%	0%	15%	16%	21%	100%	4%	9%	9%
5/5/2006	0%	0%	0%	0%	12%	12%	100%	4%	0%	0%	0%
5/17/2006	0%	0%	0%	0%	45%	0%	0%	100%	99%	70%	0%
4/23/2007	0%	0%	0%	100%	80%	83%	79%	79%	0%	0%	0%
5/13/2008	0%	0%	0%	0%	100%	77%	56%	41%	24%	58%	34%
5/25/2008	0%	0%	0%	0%	84%	67%	68%	100%	0%	0%	40%
3/18/2009	0%	0%	15%	7%	6%	6%	6%	4%	2%	100%	0%
4/24/2009	0%	0%	22%	62%	100%	83%	91%	50%	22%	18%	27%
4/26/2009	0%	0%	0%	0%	100%	98%	64%	78%	78%	47%	36%
4/27/2009	0%	0%	0%	76%	81%	79%	100%	79%	78%	55%	87%
5/12/2009	0%	0%	0%	0%	0%	10%	0%	0%	0%	100%	14%

Table L-27 (*continued*). Hour-to-hour patterns of migration density (expressed as percentage of peak density) over sample area for a subsample of nights showing migration for Spring (2005-2009). Time is in Universal Time Coordinate (UTC). Note: Date is for beginning of night. SE= standard error, SD = standard deviation, SV = sample variance.

Date	Spring Sample Area 3B										
	Time (UTC)										
	22:00	23:00	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
Mean	0%	0%	10%	29%	53%	49%	50%	54%	36%	54%	25%
SE	0%	0%	5%	10%	9%	9%	8%	9%	9%	9%	6%
Median	0	0	0	0	51	56	59	50	24	58	16
Mode	0	0	0	0	100	#N/A	100	#N/A	0	0	0
SD	0	0	23	41	36	35	34	36	37	39	27
SV	0	0	508	1676	1277	1239	1165	1313	1399	1499	707
Kurtosis	N/A	N/A	7	-1	-2	-2	-1	-1	-1	-2	0
Skewness	N/A	N/A	3	1	0	0	0	0	1	0	1
Range	0	0	82	100	100	100	100	100	100	100	87
Minimum	0	0	0	0	0	0	0	0	0	0	0
Maximum	0	0	82	100	100	100	100	100	100	100	87
Sum	0	0	174	492	897	832	848	919	611	924	421
Count	17	17	17	17	17	17	17	17	17	17	17

Table L-28. Hour-to-hour patterns of migration density (expressed as percentage of peak density) over sample area for a subsample of nights showing migration for fall (2004-2008). Time is in Universal Time Coordinate (UTC). Note: Date is for beginning of night. SE= standard error, SD = standard deviation, SV = sample variance.

Date	Fall Sample Area 1A										
	Time (UTC)										
	22:00	23:00	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
8/24/2004	0%	84%	84%	30%	97%	100%	70%	21%	28%	12%	18%
9/10/2004	0%	2%	9%	15%	50%	0%	100%	33%	9%	7%	4%
10/5/2004	0%	12%	18%	13%	16%	39%	100%	61%	20%	24%	15%
8/22/2005	3%	3%	27%	29%	53%	0%	100%	33%	59%	28%	26%
9/1/2005	1%	1%	16%	23%	43%	79%	100%	0%	64%	43%	29%
9/3/2005	1%	2%	28%	27%	51%	100%	31%	77%	31%	32%	20%
9/9/2005	3%	3%	13%	70%	69%	0%	32%	100%	72%	33%	32%
10/15/2005	7%	82%	65%	82%	100%	71%	53%	61%	59%	21%	7%
11/14/2005	15%	50%	35%	74%	100%	62%	19%	5%	3%	4%	3%
9/10/2006	0%	1%	3%	33%	46%	0%	0%	100%	68%	33%	16%
11/3/2006	3%	8%	40%	48%	70%	68%	48%	45%	100%	33%	19%
11/4/2006	14%	4%	14%	94%	32%	100%	22%	32%	40%	16%	20%
11/9/2006	15%	88%	23%	67%	89%	41%	19%	19%	35%	82%	100%
8/27/2007	0%	3%	13%	23%	89%	100%	69%	58%	32%	44%	20%
9/15/2007	1%	7%	66%	100%	90%	76%	46%	35%	33%	72%	23%
9/29/2007	0%	0%	0%	4%	8%	21%	0%	0%	100%	35%	22%
10/7/2007	4%	15%	15%	29%	28%	35%	59%	70%	88%	100%	69%
10/14/2007	1%	13%	26%	81%	91%	39%	32%	0%	100%	0%	24%
10/27/2007	0%	6%	45%	100%	34%	2%	18%	5%	22%	11%	12%
8/25/2008	0%	59%	13%	34%	68%	96%	95%	82%	100%	48%	26%
9/10/2008	9%	24%	62%	70%	93%	83%	100%	97%	36%	14%	15%

Table L-28 (*continued*). Hour-to-hour patterns of migration density (expressed as percentage of peak density) over sample area for a subsample of nights showing migration for fall (2004-2008). Time is in Universal Time Coordinate (UTC). Note: Date is for beginning of night. SE= standard error, SD = standard deviation, SV = sample variance.

Date	Fall Sample Area 1A										
	Time (UTC)										
	22:00	23:00	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
9/18/2008	0%	19%	25%	100%	63%	50%	36%	26%	11%	10%	10%
10/6/2008	6%	29%	32%	48%	100%	60%	59%	63%	53%	38%	29%
11/9/2008	5%	19%	31%	39%	95%	64%	41%	47%	81%	100%	66%
Mean	4%	22%	29%	51%	66%	54%	52%	44%	52%	35%	26%
SE	1%	6%	4%	6%	6%	7%	7%	7%	6%	6%	5%
Median	1	10	26	43	69	61	47	40	46	32	20
Mode	0	#N/A	#N/A	100	100	100	100	0	100	#N/A	#N/A
SD	5	28	22	31	29	36	33	32	31	28	22
SV	0	8	5	9	8	13	11	11	10	8	5
Kurtosis	95	91	57	-129	-107	-118	-113	-100	-117	80	502
Skewness	144	149	105	31	-41	-28	24	24	26	118	218
Range	15	87	84	96	92	100	100	100	97	100	97
Minimum	0	0	0	4	8	0	0	0	3	0	3
Maximum	15	88	84	100	100	100	100	100	100	100	100
Sum	88	535	703	1232	1576	1286	1250	1068	1246	839	624
Count	24	24	24	24	24	24	24	24	24	24	24

Table L-29. Hour-to-hour patterns of migration density (expressed as percentage of peak density) over sample area for a subsample of nights showing migration for fall (2004-2008). Time is in Universal Time Coordinate (UTC). Note: Date is for beginning of night. SE= standard error, SD = standard deviation, SV = sample variance.

Date	Fall Sample Area 2A										
	Time (UTC)										
	22:00	23:00	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
8/24/2004	0%	0%	54%	45%	58%	78%	80%	100%	0%	0%	0%
9/10/2004	0%	2%	21%	23%	32%	50%	98%	100%	27%	13%	10%
10/5/2004	0%	24%	33%	34%	49%	81%	100%	67%	48%	30%	12%
8/22/2005	1%	1%	34%	100%	96%	63%	56%	91%	79%	54%	36%
9/1/2005	0%	1%	17%	22%	22%	33%	61%	100%	88%	63%	34%
9/3/2005	1%	2%	48%	51%	43%	73%	100%	74%	54%	34%	33%
9/9/2005	5%	1%	22%	27%	30%	49%	100%	91%	58%	0%	0%
10/15/2005	2%	44%	67%	100%	85%	53%	30%	23%	17%	10%	4%
11/14/2005	2%	8%	11%	18%	88%	100%	39%	7%	3%	4%	0%
9/10/2006	0%	14%	58%	58%	68%	71%	100%	62%	25%	22%	18%
11/3/2006	7%	13%	27%	61%	74%	100%	89%	75%	58%	53%	23%
11/4/2006	5%	19%	20%	25%	53%	88%	100%	64%	40%	15%	6%
11/9/2006	12%	18%	56%	100%	68%	26%	10%	10%	13%	22%	40%
8/27/2007	0%	12%	41%	88%	100%	92%	59%	57%	51%	36%	21%
9/15/2007	1%	7%	30%	41%	32%	61%	80%	60%	63%	100%	65%
9/29/2007	0%	17%	28%	19%	18%	33%	49%	100%	99%	79%	21%
10/7/2007	2%	3%	2%	5%	39%	100%	74%	64%	59%	78%	27%
10/14/2007	0%	7%	16%	20%	28%	34%	44%	59%	100%	92%	57%
10/27/2007	0%	0%	0%	90%	0%	100%	52%	27%	38%	32%	34%
8/25/2008	4%	5%	12%	44%	42%	92%	95%	80%	100%	93%	43%
9/10/2008	16%	9%	80%	100%	100%	98%	73%	95%	62%	27%	12%

Table L-29 (*continued*). Hour-to-hour patterns of migration density (expressed as percentage of peak density) over sample area for a subsample of nights showing migration for fall (2004-2008). Time is in Universal Time Coordinate (UTC). Note: Date is for beginning of night. SE= standard error, SD = standard deviation, SV = sample variance.

Date	Fall Sample Area 2A										
	Time (UTC)										
	22:00	23:00	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
9/18/2008	0%	16%	86%	100%	46%	38%	34%	29%	23%	14%	12%
10/6/2008	38%	41%	48%	65%	84%	81%	82%	100%	68%	36%	15%
11/9/2008	14%	16%	18%	24%	56%	85%	80%	100%	59%	32%	43%
Mean	5%	12%	35%	53%	55%	70%	70%	68%	51%	39%	24%
SE	2%	2%	5%	7%	6%	5%	5%	6%	6%	6%	4%
Median	1	8	29	45	51	76	77	71	56	32	21
Mode	0	0	#N/A	100	100	100	100	100	#N/A	0	0
SD	8	12	23	33	28	25	26	30	29	31	18
SV	72	140	538	1066	777	630	698	907	868	936	321
Kurtosis	10	2	0	-1	-1	-1	-1	-1	-1	-1	0
Skewness	3	2	1	0	0	0	-1	-1	0	1	1
Range	38	44	86	95	100	74	90	93	100	100	65
Minimum	0	0	0	5	0	26	10	7	0	0	0
Maximum	38	44	86	100	100	100	100	100	100	100	65
Sum	110	279	828	1260	1311	1679	1686	1635	1231	939	565
Count	24	24	24	24	24	24	24	24	24	24	24

Table L-30. Hour-to-hour patterns of migration density (expressed as percentage of peak density) over sample area for a subsample of nights showing migration for fall (2004-2008). Time is in Universal Time Coordinate (UTC). Note: Date is for beginning of night. SE= standard error, SD = standard deviation, SV = sample variance.

Date	Fall Sample Area 3A										
	Time (UTC)										
	22:00	23:00	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
8/24/2004	0%	6%	11%	33%	60%	61%	61%	98%	100%	99%	37%
9/10/2004	0%	10%	78%	71%	52%	55%	47%	100%	84%	31%	24%
10/5/2004	0%	61%	62%	31%	43%	62%	100%	46%	49%	28%	13%
8/22/2005	8%	6%	92%	100%	79%	79%	79%	63%	68%	54%	40%
9/1/2005	2%	6%	52%	45%	46%	50%	60%	81%	100%	93%	73%
9/3/2005	4%	6%	96%	96%	0%	83%	91%	100%	62%	50%	35%
9/9/2005	1%	6%	14%	16%	16%	19%	50%	100%	37%	43%	23%
10/15/2005	4%	38%	50%	72%	100%	59%	28%	17%	22%	12%	7%
11/14/2005	12%	32%	98%	80%	94%	85%	100%	14%	9%	5%	0%
9/10/2006	0%	20%	94%	100%	81%	81%	77%	95%	57%	16%	16%
11/3/2006	65%	64%	63%	93%	100%	71%	68%	59%	44%	37%	30%
11/4/2006	66%	65%	100%	80%	76%	81%	76%	62%	39%	20%	11%
11/9/2006	64%	80%	100%	62%	27%	14%	13%	6%	6%	8%	11%
8/27/2007	0%	6%	92%	100%	87%	75%	67%	42%	35%	35%	26%
9/15/2007	0%	13%	70%	84%	82%	59%	66%	97%	80%	100%	98%
9/29/2007	0%	54%	95%	84%	36%	35%	54%	100%	51%	73%	46%
10/7/2007	0%	4%	5%	7%	16%	55%	100%	99%	52%	34%	26%
10/14/2007	3%	29%	56%	43%	61%	60%	55%	74%	100%	66%	51%
10/27/2007	63%	0%	0%	0%	0%	100%	80%	53%	51%	55%	69%
8/25/2008	0%	0%	32%	98%	58%	64%	95%	95%	100%	63%	31%
9/10/2008	6%	6%	80%	81%	100%	73%	64%	65%	57%	37%	27%

Table L-30 (*continued*). Hour-to-hour patterns of migration density (expressed as percentage of peak density) over sample area for a subsample of nights showing migration for fall (2004-2008). Time is in Universal Time Coordinate (UTC). Note: Date is for beginning of night. SE= standard error, SD = standard deviation, SV = sample variance.

Date	Fall Sample Area 3A										
	Time (UTC)										
	22:00	23:00	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
9/18/2008	0%	33%	100%	80%	60%	49%	59%	53%	40%	25%	17%
10/6/2008	13%	47%	85%	49%	61%	98%	100%	82%	60%	51%	33%
11/9/2008	47%	55%	100%	56%	38%	37%	42%	82%	28%	17%	5%
Mean	15%	27%	68%	65%	57%	63%	68%	70%	55%	44%	31%
SE	5%	5%	7%	6%	6%	4%	5%	6%	6%	6%	5%
Median	3	16	79	76	60	61	67	78	52	37	26
Mode	0	0	100	100	0	#N/A	100	100	100	#N/A	#N/A
SD	25	25	33	31	31	22	23	29	28	28	23
SV	6	6	11	9	10	5	5	9	8	8	5
Kurtosis	54	-95	-52	-54	-80	18	1	-26	-54	-25	196
Skewness	152	67	-88	-72	-34	-50	-40	-81	19	68	131
Range	66	80	100	100	100	86	87	94	94	95	98
Minimum	0	0	0	0	0	14	13	6	6	5	0
Maximum	66	80	100	100	100	100	100	100	100	100	98
Sum	358	646	1624	1562	1372	1505	1632	1683	1331	1051	749
Count	24	24	24	24	24	24	24	24	24	24	24

Table L-31. Hour-to-hour patterns of migration density (expressed as percentage of peak density) over sample area for a subsample of nights showing migration for fall (2004-2008). Time is in Universal Time Coordinate (UTC). Note: Date is for beginning of night. SE= standard error, SD = standard deviation, SV = sample variance.

Date	Fall Sample Area 1B										
	Time (UTC)										
	22:00	23:00	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
8/24/2004	0%	0%	0%	0%	96%	93%	100%	77%	46%	55%	80%
9/10/2004	0%	1%	5%	12%	17%	84%	100%	30%	6%	4%	3%
10/5/2004	0%	3%	9%	14%	22%	47%	49%	0%	100%	57%	29%
8/22/2005	4%	4%	7%	51%	70%	82%	100%	94%	75%	43%	19%
9/1/2005	2%	1%	6%	38%	66%	90%	0%	47%	100%	49%	26%
9/3/2005	2%	2%	4%	11%	52%	100%	72%	66%	48%	31%	16%
9/9/2005	7%	2%	5%	12%	41%	66%	100%	99%	70%	27%	17%
10/15/2005	1%	45%	100%	82%	70%	71%	54%	30%	33%	11%	6%
11/14/2005	0%	8%	35%	100%	92%	40%	31%	25%	17%	14%	0%
9/10/2006	0%	0%	2%	2%	23%	100%	93%	35%	23%	19%	15%
11/3/2006	0%	0%	23%	16%	34%	100%	95%	95%	21%	69%	0%
11/4/2006	0%	0%	0%	8%	100%	19%	0%	61%	33%	65%	22%
11/9/2006	0%	6%	27%	58%	93%	44%	19%	33%	48%	100%	71%
8/27/2007	0%	0%	30%	40%	98%	69%	100%	80%	79%	72%	44%
9/15/2007	11%	4%	35%	78%	80%	70%	100%	0%	0%	82%	21%
9/29/2007	0%	0%	5%	5%	8%	17%	100%	0%	65%	9%	4%
10/7/2007	3%	0%	0%	11%	100%	0%	0%	47%	80%	43%	29%
10/14/2007	1%	3%	4%	15%	30%	54%	62%	100%	86%	48%	26%
10/27/2007	0%	23%	100%	92%	66%	47%	28%	24%	9%	15%	92%
8/25/2008	13%	25%	26%	11%	44%	100%	17%	15%	25%	28%	28%
9/10/2008	26%	13%	21%	30%	41%	48%	100%	55%	25%	11%	8%

Table L-31 (*continued*). Hour-to-hour patterns of migration density (expressed as percentage of peak density) over sample area for a subsample of nights showing migration for fall (2004-2008). Time is in Universal Time Coordinate (UTC). Note: Date is for beginning of night. SE= standard error, SD = standard deviation, SV = sample variance.

Date	Fall Sample Area 1B										
	Time (UTC)										
	22:00	23:00	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
9/18/2008	0%	30%	100%	25%	35%	71%	43%	26%	17%	20%	22%
10/6/2008	6%	8%	26%	47%	100%	67%	78%	74%	49%	28%	20%
11/9/2008	24%	10%	16%	53%	100%	55%	69%	39%	43%	9%	17%
Mean	4%	8%	24%	34%	61%	64%	63%	48%	46%	38%	26%
SE	2%	2%	6%	6%	6%	6%	8%	7%	6%	5%	5%
Median	0	3	12	21	66	68	70	43	44	30	20
Mode	0	0	0	#N/A	100	100	100	0	100	#N/A	0
SD	7	12	31	30	31	28	37	32	30	26	24
SV	54	133	984	903	980	775	1395	1024	897	694	578
Kurtosis	4	4	2	0	-1	0	-1	-1	-1	0	2
Skewness	2	2	2	1	0	-1	0	0	0	1	2
Range	26	45	100	100	92	100	100	100	100	96	92
Minimum	0	0	0	0	8	0	0	0	0	4	0
Maximum	26	45	100	100	100	100	100	100	100	100	92
Sum	101	188	586	811	1476	1535	1509	1153	1099	910	616
Count	24	24	24	24	24	24	24	24	24	24	24

Table L-32. Hour-to-hour patterns of migration density (expressed as percentage of peak density) over sample area for a subsample of nights showing migration for fall (2004-2008). Time is in Universal Time Coordinate (UTC). Note: Date is for beginning of night. SE= standard error, SD = standard deviation, SV = sample variance.

Date	Fall Sample Area 2B										
	Time (UTC)										
	22:00	23:00	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
8/24/2004	0%	0%	0%	56%	83%	78%	72%	35%	100%	71%	0%
9/10/2004	0%	32%	51%	97%	68%	83%	100%	100%	50%	43%	41%
10/5/2004	0%	28%	31%	24%	29%	43%	62%	100%	68%	36%	14%
8/22/2005	15%	20%	12%	44%	37%	26%	33%	100%	74%	28%	5%
9/1/2005	4%	5%	12%	26%	22%	42%	80%	100%	94%	55%	36%
9/3/2005	8%	9%	15%	40%	35%	66%	100%	88%	100%	68%	69%
9/9/2005	8%	3%	5%	10%	14%	22%	91%	100%	75%	43%	0%
10/15/2005	2%	40%	73%	88%	100%	61%	34%	19%	14%	9%	37%
11/14/2005	0%	45%	100%	91%	97%	91%	69%	57%	0%	89%	25%
9/10/2006	0%	0%	39%	38%	48%	64%	100%	48%	42%	33%	11%
11/3/2006	0%	0%	15%	86%	24%	37%	66%	73%	100%	83%	35%
11/4/2006	0%	0%	0%	42%	34%	79%	100%	78%	89%	27%	29%
11/9/2006	0%	8%	35%	52%	100%	32%	12%	16%	12%	15%	14%
8/27/2007	0%	46%	44%	100%	98%	95%	66%	79%	53%	39%	61%
9/15/2007	0%	0%	37%	100%	98%	61%	65%	100%	99%	89%	71%
9/29/2007	0%	0%	7%	9%	12%	23%	33%	100%	31%	23%	11%
10/7/2007	0%	0%	1%	2%	21%	77%	100%	95%	85%	79%	19%
10/14/2007	0%	24%	25%	33%	45%	70%	95%	100%	101%	68%	54%
10/27/2007	0%	47%	100%	97%	90%	53%	72%	44%	45%	22%	0%
8/25/2008	53%	0%	54%	100%	50%	62%	57%	46%	47%	56%	26%
9/10/2008	45%	0%	39%	98%	100%	91%	75%	67%	63%	61%	37%

Table L-32 (*continued*). Hour-to-hour patterns of migration density (expressed as percentage of peak density) over sample area for a subsample of nights showing migration for fall (2004-2008). Time is in Universal Time Coordinate (UTC). Note: Date is for beginning of night. SE= standard error, SD = standard deviation, SV = sample variance.

Date	Fall Sample Area 2B										
	Time (UTC)										
	22:00	23:00	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
9/18/2008	0%	32%	83%	61%	67%	90%	70%	100%	69%	51%	69%
10/6/2008	0%	35%	34%	33%	63%	100%	80%	67%	38%	17%	13%
11/9/2008	11%	24%	100%	24%	30%	33%	29%	0%	19%	19%	24%
Mean	6%	17%	38%	56%	57%	62%	69%	71%	61%	47%	29%
SE	3%	4%	7%	7%	6%	5%	5%	6%	6%	5%	5%
Median	0	8	34	48	49	63	71	78	65	43	26
Mode	0	0	0	100	100	#N/A	100	100	100	#N/A	0
SD	14	18	32	34	32	24	26	31	32	25	22
SV	192	313	1053	1146	1002	598	658	985	1002	614	501
Kurtosis	7	-1	0	-2	-2	-1	0	0	-1	-1	-1
Skewness	3	1	1	0	0	0	-1	-1	0	0	1
Range	53	47	100	98	88	78	88	100	101	80	71
Minimum	0	0	0	2	12	22	12	0	0	9	0
Maximum	53	47	100	100	100	100	100	100	101	89	71
Sum	145	398	912	1352	1365	1479	1662	1710	1467	1127	702
Count	24	24	24	24	24	24	24	24	24	24	24

Table L-33. Hour-to-hour patterns of migration density (expressed as percentage of peak density) over sample area for a subsample of nights showing migration for fall (2004-2008). Time is in Universal Time Coordinate (UTC). Note: Date is for beginning of night. SE= standard error, SD = standard deviation, SV = sample variance.

Date	Fall Sample Area 3B										
	Time (UTC)										
	22:00	23:00	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
8/24/2004	0%	0%	0%	48%	60%	45%	56%	66%	100%	73%	28%
9/10/2004	0%	49%	100%	85%	95%	84%	72%	78%	73%	68%	75%
10/5/2004	0%	97%	76%	47%	51%	77%	100%	45%	43%	57%	36%
8/22/2005	0%	0%	51%	61%	61%	74%	73%	68%	51%	89%	100%
9/1/2005	16%	20%	21%	66%	66%	62%	87%	100%	93%	63%	28%
9/3/2005	21%	0%	40%	49%	61%	57%	70%	100%	46%	27%	28%
9/9/2005	31%	33%	37%	60%	66%	100%	87%	79%	64%	70%	85%
10/15/2005	18%	27%	72%	85%	93%	100%	27%	20%	21%	21%	13%
11/14/2005	0%	0%	77%	91%	84%	100%	88%	0%	0%	0%	0%
9/10/2006	0%	0%	0%	0%	73%	100%	100%	82%	68%	66%	0%
11/3/2006	0%	0%	86%	83%	100%	80%	93%	93%	64%	57%	35%
11/4/2006	27%	37%	100%	91%	83%	42%	22%	11%	10%	12%	14%
11/9/2006	0%	0%	36%	56%	58%	75%	76%	100%	78%	96%	58%
8/27/2007	0%	0%	44%	82%	100%	72%	35%	53%	41%	23%	0%
9/15/2007	0%	0%	57%	100%	61%	63%	43%	52%	56%	57%	55%
9/29/2007	0%	0%	40%	50%	55%	78%	84%	100%	56%	52%	61%
10/7/2007	0%	0%	2%	3%	10%	52%	66%	100%	85%	61%	58%
10/14/2007	0%	73%	50%	40%	58%	57%	84%	100%	66%	53%	42%
10/27/2007	0%	100%	48%	34%	49%	49%	44%	0%	0%	0%	0%
8/25/2008	0%	0%	57%	100%	76%	42%	50%	57%	46%	57%	56%
9/10/2008	0%	0%	30%	79%	88%	100%	70%	53%	30%	26%	0%

Table L-33 (*continued*). Hour-to-hour patterns of migration density (expressed as percentage of peak density) over sample area for a subsample of nights showing migration for fall (2004-2008). Time is in Universal Time Coordinate (UTC). Note: Date is for beginning of night. SE= standard error, SD = standard deviation, SV = sample variance.

Date	Fall Sample Area 3B										
	Time (UTC)										
	22:00	23:00	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
9/18/2008	0%	36%	88%	100%	49%	55%	46%	40%	51%	33%	28%
10/6/2008	0%	63%	100%	59%	68%	83%	93%	78%	53%	35%	31%
11/9/2008	69%	100%	91%	94%	65%	42%	49%	35%	18%	0%	0%
Mean	8%	26%	54%	65%	68%	70%	67%	63%	51%	46%	35%
SE	3%	7%	6%	6%	4%	4%	5%	7%	6%	6%	6%
Median	0	0	51	63	65	73	71	67	52	55	29
Mode	0	0	0	100	100	100	#N/A	100	0	0	0
SD	16	36	31	28	20	20	23	33	27	27	29
SV	267	1268	979	797	408	413	539	1076	737	756	848
Kurtosis	8	0	-1	0	2	-1	-1	-1	0	-1	0
Skewness	3	1	0	-1	-1	0	0	-1	0	0	1
Range	69	100	100	100	90	58	78	100	100	96	100
Minimum	0	0	0	0	10	42	22	0	0	0	0
Maximum	69	100	100	100	100	100	100	100	100	96	100
Sum	183	635	1306	1562	1628	1689	1616	1510	1215	1097	830
Count	24	24	24	24	24	24	24	24	24	24	24

Appendix L-4

Weather and Nocturnal Bird Migration Data

Table L-34. Number of nights with overcast and ceiling at or below 1000 ft. during spring 2005 (15 March - 31 May). Weather conditions on these nights are also indicated. Time 1 is when conditions began and time 2 is when conditions ended. Sample area density (mean birds km^{-3}) entry based on maximum mean dBZ measures within the sample areas.

Spring 2005	Time 1	Time 2	Sky Cover[a]	Ceiling	Weather	Mean Birds km-3 [b]					
						1A	2A	3A	1B	2B	3B
20-21 March	19:00	1:00	ovc	200-600	light rain, mist	0	0	0	0	0	0
23-24 March	19:00	4:00	ovc	600-900	light rain, mist	0	0	0	0	0	0
27-28 March	1:00	4:00	ovc	200-800	moderate rain, light rain	0	0	0	0	0	0
28-29 March	19:00	4:00	ovc	100-300	light rain, mist, fog	0	0	0	0	0	0
31 March-1 April	4:00	4:00	ovc	400		0	0	0	0	0	0
1-2 April	22:00	4:00	ovc	100-300	light rain, mist	0	0	0	0	0	0
2-3 April	19:00	22:00	ovc	100-500	mist	0	0	0	0	0	0
22-23 April	22:00	1:00	ovc, bkn	400-600		0	58	15	0	6	8
23-24 April	22:00	1:00	ovc	200		0	0	0	0	0	0
30 April-1 May	19:00	19:00	ovc	500		0	0	0	0	0	0
6-7 May	1:00	1:00	ovc	800	light rain	0	0	0	0	0	0
10-11 May	19:00	4:00	ovc	100-700	mist	276	60	28	6	2	3
15-16 May	1:00	1:00	ovc	200		S	S	S	S	S	S
20-21 May	19:00	22:00	ovc	500-900	light rain, mist	0	0	0	0	0	0

[a] Sky Cover is the amount of the sky obscured. CLR or SKC = 0, FEW = 1/8-2/8, SCT = 3/8-4/8, BKN = 5/8-7/8, OVC = 8/8, W = Vertical Visibility = 8/8.
[b] Peak mean value for evening; measured in birds km^{-3}; V0 = bad radial velocity data, ND= no data, P=Precipitation, MI=mostly insects, OSA = Out of Sample Area, S=strobing.

Table L-35. Number of nights with overcast and ceiling at or below 1000 ft. during spring 2006 (15 March - 31 May). Weather conditions on these nights are also indicated. Time 1 is when conditions began and time 2 is when conditions ended. Sample area density (mean birds km^{-3}) entry based on maximum mean dBZ measures within the sample areas.

Spring 2006	Time 1	Time 2	Sky Cover[a]	Ceiling	Weather	Birds km-3 [b]					
						1A	2A	3A	1B	2B	3B
25-26 March	4:00	4:00	ovc	600		0	0	0	0	0	0
28-29 March	4:00	4:00	vv	100	mist	S	S	S	S	S	S
3-4 April	19:00	19:00	ovc	300	mist	0	0	0	0	0	0
21-22 April	4:00	4:00	ovc	600	moderate rain, mist	0	0	0	0	0	0
22-23 April	22:00	4:00	ovc	200-400	light rain, mist	0	0	0	0	0	0
11-12 May	19:00	19:00	ovc	600	light rain, mist	0	0	0	0	0	0
	1:00	1:00	ovc	600	moderate rain, mist	0	0	0	0	0	0
13-14 May	22:00	4:00	ovc	500-700		0	5	26	0	2	4
14-15 May	1:00	1:00	ovc	800		0	0	0	0	0	0
15-16 May	1:00	1:00	ovc	500	mist	0	0	0	0	0	0
28-29 May	4:00	4:00	ovc	100	mist	S	S	S	S	S	S
31 May-1 June	19:00	4:00	ovc, bkn	100-300	mist	V0	V0	V0	V0	V0	V0

[a] Sky Cover is the amount of the sky obscured. CLR or SKC = 0, FEW = 1/8-2/8, SCT = 3/8-4/8, BKN = 5/8-7/8, OVC = 8/8, W = Vertical Visibility = 8/8.
[b] Peak mean value for evening; measured in birds km^{-3}; V0 = bad radial velocity data, ND= no data, P=Precipitation, MI=mostly insects, OSA = Out of Sample Area, S=strobing.

Table L-36. Number of nights with overcast and ceiling at or below 1000 ft. during spring 2007 (15 March - 31 May). Weather conditions on these nights are also indicated. Time 1 is when conditions began and time 2 is when conditions ended. Sample area density (mean birds km^{-3}) entry based on maximum mean dBZ measures within the sample areas.

Spring 2007	Time 1	Time 2	Sky Cover[a]	Ceiling	Weather	Birds km-3 [b]					
						1A	2A	3A	1B	2B	3B
15-16 March	1:00	1:00	ovc	1000	moderate rain	0	0	0	0	0	0
16-17 March	22:00	1:00	ovc	700-900	light snow, freezing rain, mist	0	0	0	0	0	0
23-24 March	1:00	4:00	ovc	200	light rain, mist	0	0	0	0	0	0
1-2 April	19:00	4:00	ovc	100-1000	mist, fog	0	0	0	0	0	0
2-3 April	19:00	4:00	vv, ovc	100	mist, fog	6	7	8	4	5	6
3-4 April	19:00	4:00	ovc	600-800		15	0	1	1	0	0
15-16 April	19:00	22:00	ovc	100-700	heavy rain, light rain, mist	0	0	0	0	0	0
26-27 April	22:00	4:00	ovc	200-600	mist	0	0	0	0	0	0
27-28 April	19:00	1:00	ovc	300-500	mist	0	0	0	0	0	0
8-9 May	22:00	4:00	ovc	100-200	mist	19	10	6	1	1	0
9-10 May	19:00	4:00	sct, ovc	100-300	mist	35	45	28	8	6	7
10-11 May	4:00	4:00	ovc	100	mist	17	162	31	2	11	11
12-13 May	1:00	1:00	ovc	1000	light rain	MD	MD	MD	MD	MD	MD
17-18 May	1:00	1:00	ovc	900		0	0	0	0	0	0

[a] Sky Cover is the amount of the sky obscured. CLR or SKC = 0, FEW = 1/8-2/8, SCT = 3/8-4/8, BKN = 5/8-7/8, OVC = 8/8, W = Vertical Visibility = 8/8.
[b] Peak mean value for evening; measured in birds km^{-3}; V0 = bad radial velocity data, ND= no data, P=Precipitation, MI=mostly insects, OSA = Out of Sample Area, S=strobing.

Table L-37. Number of nights with overcast and ceiling at or below 1000 ft. during spring 2008 (15 March - 31 May). Weather conditions on these nights are also indicated. Time 1 is when conditions began and time 2 is when conditions ended. Sample area density (mean birds km^{-3}) entry based on maximum mean dBZ measures within the sample areas.

Spring 2008	Time 1	Time 2	Sky Cover[a]	Ceiling	Weather	Birds km-3 [b]					
						1A	2A	3A	1B	2B	3B
3-4 April	4:00	4:00	ovc	200	moderate rain, mist	0	0	0	0	0	0
7-8 April	19:00	4:00	ovc	600-1000	mist	0	0	0	0	0	0
8-9 April	19:00	4:00	ovc	200-400	mist	S	S	S	S	S	S
9-10 April	19:00	22:00	ovc	400-600	mist	4	5	6	3	0	12
	4:00	4:00	ovc	100	mist	4	5	6	3	0	12
11-12 April	19:00	22:00	ovc	200	mist	37	27	10	2	4	4
19-20 April	22:00	22:00	ovc	500		10	4	25	2	1	2
20-21 April	4:00	4:00	ovc	500		0	0	0	0	0	0
27-28 April	1:00	4:00	ovc	300-500	light rain, mist	0	0	0	0	0	0
28-29 April	22:00	22:00	ovc	600		0	0	0	0	0	0
2-3 May	19:00	4:00	bkn, ovc	100-500	mist	25	39	42	3	4	3
3-4 May	19:00	22:00	ovc	100	mist	0	0	0	0	0	0
	4:00	4:00	ovc	100	mist	0	0	0	0	0	0
4-5 May	4:00	4:00	ovc	200	mist	140	37	10	8	1	1
16-17 May	19:00	19:00	ovc	200	mist	0	0	0	0	0	0
31 May-1 June	19:00	19:00	ovc	400	mist	0	0	0	0	0	0

[a] Sky Cover is the amount of the sky obscured. CLR or SKC = 0, FEW = 1/8-2/8, SCT = 3/8-4/8, BKN = 5/8-7/8, OVC = 8/8, W = Vertical Visibility = 8/8.
[b] Peak mean value for evening; measured in birds km^{-3}; V0 = bad radial velocity data, ND= no data, P=Precipitation, MI=mostly insects, OSA = Out of Sample Area, S=strobing.

Table L-38. Number of nights with overcast and ceiling at or below 1000 ft. during spring 2009 (15 March - 31 May). Weather conditions on these nights are also indicated. Time 1 is when conditions began and time 2 is when conditions ended. Sample area density (mean birds km^{-3}) entry based on maximum mean dBZ measures within the sample areas.

Spring 2009	Time 1	Time 2	Sky Cover[a]	Ceiling	Weather	Birds km-3 [b]					
						1A	2A	3A	1B	2B	3B
15-16 March	19:00	19:00	ovc	800		0	0	0	0	0	0
16-17 March	1:00	4:00	ovc	700-900		0	0	0	0	0	0
26-27 March	19:00	4:00	ovc, few	200-1000	light rain, mist	0	0	0	0	0	0
27-28 March	4:00	4:00	ovc	400	light rain, mist	0	0	0	0	0	0
28-29 March	19:00	4:00	ovc	200-400	moderate rain, mist	0	0	0	0	0	0
2-3 April	19:00	19:00	ovc	200	fog	OSA	OSA	OSA	OSA	OSA	OSA
10-11 April	1:00	4:00	ovc	100-200	mist	0	0	0	0	0	0
13-14 April	4:00	4:00	ovc	300	moderate rain, mist	0	0	0	0	0	0
14-15 April	19:00	4:00	ovc	500	light rain, mist	0	0	0	0	0	0
20-21 April	19:00	19:00	ovc	200	mist	0	0	0	0	0	0
	1:00	4:00	ovc	100-200	mist	0	0	0	0	0	0
21-22 April	19:00	19:00	ovc	300	mist	0	0	0	0	0	0
24-25 April	1:00	1:00	bkn	600		187	142	91	7	5	12
30 April-1 May	19:00	1:00	ovc	200	mist	11	15	7	6	1	5
3-4 May	19:00	4:00	ovc	400-600	moderate rain, light rain, mist	0	0	0	0	0	0
4-5 May	19:00	4:00	ovc	200-400	mist	0	0	0	0	0	0
5-6 May	22:00	4:00	ovc	300-800	heavy rain, moderate rain, mist	0	0	0	0	0	0
7-8 May	4:00	4:00	vv	700	fog	S	S	S	S	S	S
12-13 May	4:00	4:00	vv	100	fog	171	71	40	11	7	29
14-15 May	4:00	4:00	ovc	900		0	0	0	0	0	0
15-16 May	19:00	4:00	ovc, vv	100-300	mist, fog	91	65	15	4	4	4

Table L-38 (*continued*). Number of nights with overcast and ceiling at or below 1000 ft. during spring 2009 (15 March - 31 May). Weather conditions on these nights are also indicated. Time 1 is when conditions began and time 2 is when conditions ended. Sample area density (mean birds km^{-3}) entry based on maximum mean dBZ measures within the sample areas.

Spring 2009	Time 1	Time 2	Sky Cover[a]	Ceiling	Weather	Birds km-3 [b]					
						1A	2A	3A	1B	2B	3B
16-17 May	22:00	1:00	ovc, bkn	500		64	25	15	9	6	10
25-26 May	1:00	1:00	ovc	300	mist	0	0	0	0	0	0
26-27 May	1:00	4:00	ovc	300-700	mist	0	0	0	0	0	0
27-28 May	19:00	4:00	bkn, ovc	200-600	light rain, mist, fog	P	P	P	P	P	P
28-29 May	19:00	4:00	ovc	200	light rain, mist, fog	0	0	0	0	0	0
29-30 May	19:00	22:00	ovc, bkn	200-400	light thunderstorm, mist	0	0	0	0	0	0

[a] Sky Cover is the amount of the sky obscured. CLR or SKC = 0, FEW = 1/8-2/8, SCT = 3/8-4/8, BKN = 5/8-7/8, OVC = 8/8, W = Vertical Visibility = 8/8.
[b] Peak mean value for evening; measured in birds km^{-3}; V0 = bad radial velocity data, ND= no data, P=Precipitation, MI=mostly insects, OSA = Out of Sample Area, S=strobing.

Table L-39. Number of nights with overcast and ceiling at or below 1000 ft. during fall 2004 (15 August – 15 November). Weather conditions on these nights are also indicated. Time 1 is when conditions began and time 2 is when conditions ended. Sample area density (mean birds km^{-3}) entry based on maximum mean dBZ measures within the sample areas.

Fall 2004	Time 1	Time 2	Sky Cover[a]	Ceiling	Weather	Birds km-3 [b]					
						1A	2A	3A	1B	2B	3B
16 - 17 Aug	4:00	4:00	vv	100	fog	7	18	12	3	5	6
29-30 Aug	4:00	4:00	ovc	700		0	0	0	0	0	0
6-7 Sep	4:00	4:00	ovc	400	mist	0	0	0	0	0	0
7-8 Sep	22:00	4:00	ovc	400-700	rain, mist	0	0	0	0	0	0
15-16 Sep	22:00	4:00	ovc	100-700	mist	0	0	0	0	0	0
17-18 Sep	19:00	19:00	ovc	800		0	0	0	0	0	0
23-24 Sep	4:00	4:00	ovc	800	mist	13	13	13	2	2	7
26-27 Sep	4:00	4:00	ovc	100	mist	46	112	33	15	12	6
27-28 Sep	1:00	4:00	ovc	200	light rain, mist	0	0	0	0	0	0
28-29 Sep	19:00	19:00	ovc	700	light rain	33	0	0	0	0	0
30 Sep - 1 Oct	22:00	22:00	vv	100	fog	S	S	S	S	S	S
2-3 Oct	1:00	1:00	ovc	100	mist	0	0	0	0	0	0
19-20 Oct	19:00	4:00	ovc	500-900	light rain	0	0	0	0	0	0
29-30 Oct	1:00	4:00	ovc	500-700	rain	0	0	0	0	0	0
30-31 Oct	19:00	22:00	vv, ovc	100-300	mist	0	0	0	0	0	0
2-3 Nov	19:00	19:00	bkn	1000		0	0	0	0	0	0
4-5 Nov	19:00	22:00	ovc	200-400	light rain	0	0	0	0	0	0
12-13 Nov	19:00	4:00	ovc	700-900	light rain, rain	0	0	0	0	0	0

[a] Sky Cover is the amount of the sky obscured. CLR or SKC = 0, FEW = 1/8-2/8, SCT = 3/8-4/8, BKN = 5/8-7/8, OVC = 8/8, W = Vertical Visibility = 8/8.
[b] Peak mean value for evening; measured in birds km^{-3}; V0 = bad radial velocity data, ND= no data, P=Precipitation, MI=mostly insects, OSA = Out of Sample Area, S=strobing.

Table L-40. Number of nights with overcast and ceiling at or below 1000 ft. during fall 2005 (15 August – 15 November). Weather conditions on these nights are also indicated. Time 1 is when conditions began and time 2 is when conditions ended. Sample area density (mean birds km^{-3}) entry based on maximum mean dBZ measures within the sample areas.

Fall 2005	Time 1	Time 2	Sky Cover[a]	Ceiling	Weather	Birds km-3 [b]					
						1A	2A	3A	1B	2B	3B
30-31 Aug	1:00	1:00	ovc	1000		0	0	0	0	0	0
14-15 Sep	19:00	4:00	ovc	500-900		0	0	0	0	0	0
15-16 Sep	22:00	4:00	bkn, ovc	500-900	mist	S	S	S	S	S	S
16-17 Sep	19:00	19:00	bkn	500		1	7	44	2	3	5
	1:00	4:00	ovc	200-300	light rain	1	7	44	2	3	5
3-4 Oct	22:00	22:00	ovc	100		P	P	P	P	P	P
	4:00	4:00	ovc	900		P	P	P	P	P	P
4-5 Oct	22:00	22:00	vv	100		22	17	47	4	3	5
5-6 Oct	22:00	1:00	ovc	800-1000		S	S	S	S	S	S
6-7 Oct	19:00	19:00	ovc	100	mist	0	0	0	0	0	0
7-8 Oct	19:00	4:00	ovc	700-900	light rain	0	0	0	0	0	0
8-9 Oct	19:00	4:00	ovc	300-700	mist	0	0	0	0	0	0
9-10 Oct	19:00	4:00	ovc	200-500	mist	1	15	4	2	2	4
10-11 Oct	19:00	4:00	ovc	400-600	light rain	0	0	0	0	0	0
11-12 Oct	19:00	1:00	ovc	500-700	mist	0	0	0	0	0	0
12-13 Oct	19:00	4:00	ovc	400-900	rain, light rain, mist	0	0	0	0	0	0
13-14 Oct	19:00	22:00	ovc	800-900	light rain, mist	0	0	0	0	0	0
13-14 Oct	4:00	4:00	ovc	900		0	0	0	0	0	0
14-15 Oct	19:00	4:00	ovc	600-1000	mist	0	0	0	0	0	0
21-22 Oct	22:00	22:00	ovc	500	mist	0	0	0	0	0	0
25-26 Oct	19:00	1:00	ovc	600-700	mist	0	0	0	0	0	0
5-6 Nov	4:00	4:00	vv	100	fog	7	8	13	1	3	4

[a] Sky Cover is the amount of the sky obscured. CLR or SKC = 0, FEW = 1/8-2/8, SCT = 3/8-4/8, BKN = 5/8-7/8, OVC = 8/8, W = Vertical Visibility = 8/8.
[b] Peak mean value for evening; measured in birds km^{-3}; V0 = bad radial velocity data, ND= no data, P=Precipitation, MI=mostly insects, OSA = Out of Sample Area, S=strobing.

Table L-41. Number of nights with overcast and ceiling at or below 1000 ft. during fall 2006 (15 August – 15 November). Weather conditions on these nights are also indicated. Time 1 is when conditions began and time 2 is when conditions ended. Sample area density (mean birds km^{-3}) entry based on maximum mean dBZ measures within the sample areas.

Fall 2006	Time 1	Time 2	Sky Cover[a]	Ceiling	Weather	Birds km-3 [b]					
						1A	2A	3A	1B	2B	3B
15-16 Aug	1:00	1:00	vv	100	fog	S	S	S	S	S	S
16-17 Aug	1:00	1:00	few	100	mist	V0	V0	V0	V0	V0	V0
23-24 Aug	4:00	4:00	ovc	100	mist	S	S	S	S	S	S
25-26 Aug	1:00	1:00	bkn	1000		4	12	6	0	1	2
27-28 Aug	22:00	22:00	ovc	900	mist	0	0	0	0	0	0
29-30 Aug	19:00	4:00	ovc	200-500	light rain, mist	0	0	0	0	0	0
1-2 Sep	4:00	4:00	ovc	800	light rain, mist	0	0	0	0	0	0
5-6 Sep	22:00	22:00	ovc	1000	mist	0	0	0	0	0	0
	4:00	4:00	ovc	500	mist	0	0	0	0	0	0
6-7 Sep	1:00	4:00	vv, ovc	100	fog, mist	V0	V0	V0	V0	V0	V0
9-10 Sep	4:00	4:00	sct	100	mist	S	S	S	S	S	S
14-15 Sep	1:00	4:00	ovc	1000	heavy rain, mist	0	0	0	0	0	0
15-16 Sep	1:00	4:00	ovc	400-1000	mist	MD	MD	MD	MD	MD	MD
17-18 Sep	4:00	4:00	few	100	mist	S	S	S	S	S	S
10-11 Oct	22:00	1:00	vv, ovc	100-900	fog	S	S	S	S	S	S
11-12 Oct	19:00	22:00	ovc	200	light rain, mist	0	0	0	0	0	0
17-18 Oct	1:00	4:00	ovc	400-700		0	0	0	0	0	0
27-28 Oct	1:00	1:00	ovc	900	rain, mist	0	0	0	0	0	0
7-8 Nov	19:00	22:00	ovc	200	rain, mist	0	0	0	0	0	0
8-9 Nov	22:00	6:00	ovc	200-600	light rain, mist	0	101	21	0	22	21
11-12 Nov	4:00	4:00	ovc	300	mist	0	0	0	0	0	0
12-13 Nov	4:00	4:00	ovc	800	light rain, mist	0	0	0	0	0	0

Table L-41 (*continued*). Number of nights with overcast and ceiling at or below 1000 ft. during fall 2006 (15 August – 15 November). Weather conditions on these nights are also indicated. Time 1 is when conditions began and time 2 is when conditions ended. Sample area density (mean birds km^{-3}) entry based on maximum mean dBZ measures within the sample areas.

Fall 2006	Time 1	Time 2	Sky Cover[a]	Ceiling	Weather	Birds km-3 [b]					
						1A	2A	3A	1B	2B	3B
13-14 Nov	19:00	1:00	ovc	300-700	light rain, mist	0	0	0	0	0	0
14-15 Nov	1:00	1:00	ovc	400	mist	0	0	0	0	0	0
15-16 Nov	19:00	1:00	vv, ovc	100	fog	0	0	0	0	0	0

[a] Sky Cover is the amount of the sky obscured. CLR or SKC = 0, FEW = 1/8-2/8, SCT = 3/8-4/8, BKN = 5/8-7/8, OVC = 8/8, W = Vertical Visibility = 8/8.
[b] Peak mean value for evening; measured in birds km^{-3}; V0 = bad radial velocity data, ND= no data, P=Precipitation, MI=mostly insects, OSA = Out of Sample Area, S=strobing.

Table L-42. Number of nights with overcast and ceiling at or below 1000 ft. during fall 2007 (15 August – 15 November). Weather conditions on these nights are also indicated. Time 1 is when conditions began and time 2 is when conditions ended. Sample area density (mean birds km^{-3}) entry based on maximum mean dBZ measures within the sample areas.

Fall 2007	Time 1	Time 2	Sky Cover[a]	Ceiling	Weather	Birds km-3 [b]					
						1A	2A	3A	1B	2B	3B
19-20 Aug	22:00	1:00	ovc	400		0	0	0	0	0	0
20-21 Aug	22:00	22:00	ovc	1000		0	0	0	0	0	0
	4:00	4:00	ovc	700	light rain, mist	0	0	0	0	0	0
21-22 Aug	19:00	22:00	ovc	500-700	mist	0	0	0	0	0	0
	4:00	4:00	ovc	500	mist	0	0	0	0	0	0
22-23 Aug	19:00	4:00	ovc	100-500	mist	0	0	0	0	0	0
23-24 Aug	22:00	4:00	vv	100	fog	8	3	6	0	0	0
9-10 Sep	19:00	22:00	bkn, sct	500-700		0	0	0	0	0	0
	4:00	4:00	ovc	300		0	0	0	0	0	0
21-22 Sep	1:00	4:00	ovc	300-500	mist	S	S	S	S	S	S
26-27 Sep	4:00	4:00	few	300	mist	0	0	0	0	0	0
27-28 Sep	4:00	4:00	ovc	400		0	0	0	0	0	0
2-3 Oct	22:00	4:00	ovc	100-800	mist	0	0	0	0	0	0
3-4 Oct	19:00	19:00	sct	700		0	0	0	0	0	0
	1:00	4:00	ovc	300		0	0	0	0	0	0
4-5 Oct	19:00	4:00	ovc	100-300	mist	S	S	S	S	S	S
5-6 Oct	22:00	4:00	ovc, vv	100-300	mist, fog	177	66	16	8	10	5
7-8 Oct	19:00	22:00	ovc	900		35	65	210	15	65	100
9-10 Oct	19:00	1:00	ovc	400-800	thunderstorm, light thunderdstorm, light rain, mist	0	0	0	0	0	0
16-17 Oct	1:00	1:00	sct	100	mist	S	S	S	S	S	S
18-19 Oct	1:00	4:00	ovc	700-900		0	0	0	0	0	0

Table L-42 (*continued*). Number of nights with overcast and ceiling at or below 1000 ft. during fall 2007 (15 August – 15 November). Weather conditions on these nights are also indicated. Time 1 is when conditions began and time 2 is when conditions ended. Sample area density (mean birds km^{-3}) entry based on maximum mean dBZ measures within the sample areas.

Fall 2007	Time 1	Time 2	Sky Cover[a]	Ceiling	Weather	Birds km-3 [b]					
						1A	2A	3A	1B	2B	3B
19-20 Oct	19:00	22:00	ovc	200-800		0	0	0	0	0	0
24-25 Oct	19:00	4:00	ovc	600-900	rain, light rain, mist	0	0	0	0	0	0
26-27 Oct	19:00	22:00	ovc	200	mist	0	0	0	0	0	0
13-14 Nov	22:00	4:00	sct, ovc, few	100-700	shallow fog, mist	44	17	24	5	3	3

[a] Sky Cover is the amount of the sky obscured. CLR or SKC = 0, FEW = 1/8-2/8, SCT = 3/8-4/8, BKN = 5/8-7/8, OVC = 8/8, W = Vertical Visibility = 8/8.
[b] Peak mean value for evening; measured in birds km^{-3}; V0 = bad radial velocity data, ND= no data, P=Precipitation, MI=mostly insects, OSA = Out of Sample Area, S=strobing.

Table L-43. Number of nights with overcast and ceiling at or below 1000 ft. during fall 2008 (15 August – 15 November). Weather conditions on these nights are also indicated. Time 1 is when conditions began and time 2 is when conditions ended. Sample area density (mean birds km^{-3}) entry based on maximum mean dBZ measures within the sample areas.

Fall 2008	Time 1	Time 2	Sky Cover[a]	Ceiling	Weather	Birds km-3 [b]					
						1A	2A	3A	1B	2B	3B
5-6 Sep	22:00	4:00	ovc	400-600	light rain, mist	0	0	0	0	0	0
12-13 Sep	1:00	1:00	lvc	500	light rain, mist	MD	MD	MD	MD	MD	MD
20-21 Sep	4:00	4:00	ovc	1000	fog	23	17	18	2	10	9
25-26 Sep	1:00	1:00	ovc	800	light rain	0	0	0	0	0	0
26-27 Sep	19:00	1:00	ovc	200-400	mist	0	0	0	0	0	0
27-28 Sep	1:00	1:00	ovc	400		0	0	0	0	0	0
28-29 Sep	22:00	22:00	ovc	900	light rain, mist	31	12	5	6	3	5
30 Sep - 1 Oct	4:00	4:00	ovc	200	fog	0	0	0	0	0	0
5-6 Oct	1:00	1:00	ovc	500	fog	121	129	73	10	9	5
13-14 Oct	4:00	4:00	ovc	700	mist	S	S	S	S	S	S
15-16 Oct	4:00	4:00	ovc	200	mist	268	99	60	9	9	15
3-4 Nov	22:00	22:00	few	100	mist	0	0	0	0	0	0
5-6 Nov	22:00	1:00	ovc	800-1000	light rain, mist	0	0	0	0	0	0
6-7 Nov	19:00	4:00	ovc	400-1000	light rain, mist	0	0	0	0	0	0
7-8 Nov	19:00	4:00	ovc	300-800	mist	0	0	0	0	0	0
8-9 Nov	22:00	22:00	ovc	200	mist	0	0	0	0	0	0
13-14 Nov	19:00	4:00	ovc	100-500	mist	0	0	0	0	0	0
14-15 Nov	19:00	4:00	ovc, vv	100-300	rain, light rain, fog, mist	0	0	0	0	0	0
15-16 Nov	19:00	19:00	ovc	700	mist	0	0	0	0	0	0

[a] Sky Cover is the amount of the sky obscured. CLR or SKC = 0, FEW = 1/8-2/8, SCT = 3/8-4/8, BKN = 5/8-7/8, OVC = 8/8, W = Vertical Visibility = 8/8.
[b] Peak mean value for evening; measured in birds km^{-3}; V0 = bad radial velocity data, ND= no data, P=Precipitation, MI=mostly insects, OSA = Out of Sample Area, S=strobing.