

Autumn Raptor Migration Summary 2006

Lindsay Zemba

Eleven hawkwatches reported counts for autumn 2006 (Table 1). The number of hours ranged from 285 to 1186, for a total of 7,566. The number of days at all sites ranged from 34 to 152, for a total of 1,093. A total of 151,421 raptors representing 17 species was reported. A single Mississippi Kite was reported at both Hawk Mountain Sanctuary and Rose Tree Park (Table 2).

Average count effort for the twelve watchsites was greater in 2006 than in 2005 (687 hours/site vs. 629 hours/site).

Data are available for all watchsites at the Hawk Migration Association of North America's *Hawk Count* website (<http://hawkcount.org/>).

Composition of the flight

Overall, the three most numerous migrants were Broad-winged Hawks (*Buteo platypterus*), Sharp-shinned Hawks (*Accipiter striatus*), and Red-tailed Hawks (*Buteo jamaicensis*) (Table 2). Broad-winged Hawks (49% overall), ranged from 30% of the flight at Waggoner's Gap to 76% at Allegheny Front; Sharp-shinned Hawks (20% overall) ranged from 6% of the flight at Allegheny Front to 32% at Waggoner's Gap; and Red-tailed Hawks (13.5% overall) ranged from 2.2% of the flight at Militia Hill to 28% at Stone Mountain. Of the remaining regular migrants, only Turkey Vulture (*Cathartes aura*) and Cooper's Hawk (*Accipiter cooperii*) made up at least 3% of the flight.

This year's passage rate (birds/hour) was almost 23% higher than in 2005 (Table 2). Species passage rates increased by 30% for Osprey (*Pandion haliaetus*), by 26% for Sharp-shinned Hawks, and by 45% for Broad-winged Hawks. Passage rates decreased by 69% for Northern Harriers (*Circus cyaneus*), 77% for Northern Goshawks (*Accipiter gentilis*), 76% for Red-shouldered Hawks (*Buteo lineatus*), and 89% for Rough-legged Hawks (*Buteo lagopus*). All other species differed by 20% or less from the previous year. Overall, many sites reported record-breaking flights of Golden Eagles (*Aquila chrysaetos*), Bald Eagles (*Haliaeetus leucocephalus*), and Broad-winged Hawks. Peak counts of Bald Eagles, Ospreys, and broadwings occurred

on similar dates among several sites (Table 3). In addition, peaks for Sharp-shinned Hawks were comparable among six sites, and Golden Eagles peaked on similar dates (17-22 Nov) for Allegheny Front (39), Bake Oven Knob (14), Hawk Mountain (10), Little Gap (6), Second Mountain (9), and Stone Mountain (11).

Seasonal highlights

Allegheny Front (Bedford County) – Six new records were broken this season: total birds per hour (20.15), season total (18,348 raptors, beating last year's total of 18,268), total count hours (910.25), and season high records for Bald Eagles (70), Broad-winged Hawks (13,974), and Golden Eagles (222). The highest one-day count was on 15 Sep, with 8,023 raptors recorded, 7,979 of which were broadwings, making Sep an extraordinary month with a total of 14,508 raptors. Nov also produced high numbers, including 129 Golden Eagles from 20 – 28 Nov. Dec was noteworthy as well because of the 42 Golden Eagles counted, 22 of which were counted on 12 Dec. The broadwing count made up 76% of the total flight. Red-tailed Hawks, broadwings, and Sharp-shinned Hawks, together made up 90% of the flight (8%, 76%, and 6%, respectively). Peak flights of Turkey Vultures (459 birds, 2.5% of total flight) and Sharp-shinned Hawks (1177 birds, 6% of total flight) were recorded between 5 and 21 Oct, and numbers of redtails were steady through Oct and the first half of Nov (1548 birds, 8% of total flight).

Bake Oven Knob (Lehigh County) – This was a huge flight year, with a total count of 20,855, the largest since 1978. Eleven species were above the 10-year average. The count of 330 Black Vultures set a new record. Ospreys had the third highest count (649) ever recorded; Northern Harriers (247) and Sharp-shinned Hawks (4,062) were above both the 5 and 10-year averages; Cooper's Hawks (469) had the second highest count ever; Red-shouldered Hawks (224) had the highest tally since 1985; Broad-winged Hawks (9,735) had the second highest count in almost 30 years; Red-tailed Hawks (3,191) were down a bit from

last year but still had the sixth highest count ever recorded for this species; Golden Eagles, at 130 birds, approached the record of 137 set in 2003. Bald Eagles (171) were slightly below the 5-year average but still well above the 10-year average; Merlins (106) were down from 2005 but 2006 was still the second highest count ever recorded for the species; American Kestrels (190) were well below the 5-year average and equal to the 10-year average; and Peregrines (40) were below the 5-year average but well above the all-year average (Kunkle, 2007).

Hawk Mountain Sanctuary (Berks/Schuylkill Counties) – The total number of raptors this year (25,276) was the highest recorded since 1986, when more than 29,000 passed through. Broadwings, redtails, and Sharp-shinned Hawks, combined made-up 85% of the flight (47%, 16%, and 22%, respectively). It was the highest season-total for broadwings (11,801) since 1978, and the fourth-highest count ever at Hawk Mountain. Season records include Golden Eagles (169); Merlins (204), making the count for this species the highest in the state; Peregrine Falcons (62), which ties the record set in 2002; and a one-day record of Northern Harriers (36) seen on 27 Sep, which ties a 53-year old record. In addition, counts were higher than the 10-year average for Turkey Vultures, Black Vultures, Sharp-shinned Hawks, Cooper's Hawks, Red-tailed Hawks, Bald Eagles, and Osprey. A Mississippi Kite was spotted on 11 Sep. Peak flights for Sharp-shinned (427) and Cooper's Hawks (84) were recorded on 21 Oct. Other peak flights include Osprey (90; 27 Sep), Turkey Vulture (76; 1 Nov), Red-tailed Hawks (266; 20 Nov), and Red-shouldered Hawks (26; 30 Oct). American Kestrels (season total = 412) were 20% below their 10-year average.

Jack's Mountain (Mifflin County) – Count effort at Jack's Mountain has been low the past few years, including the 202 hours in 2006. This resulted in below-average counts for all species. The majority of Broad-winged Hawks passed through between 12 and 22 Sep, with the biggest day being 12 Sep when 616 birds were recorded. Other peak

counts this year included Turkey Vultures (47 birds on 9 Oct), Osprey (11 birds on 12 Sep), Red-tailed Hawks (55 birds on 5 Nov), Sharp-shinned Hawks (88 birds on 19 Oct), and American Kestrels (15 birds on 15 Sep).

Little Gap (Northampton County) – Little Gap had its highest passage rate ever (38 birds/hour vs. the previous record of 30 birds/hr set in 2002), as well as the highest passage rate in the state. Season record highs were set for Turkey Vultures (555), Red-shouldered Hawks (181), Cooper's Hawks (673) and total raptors (20,949). On 12 Sep, 4,663 broadwings passed through, which is a single-day record for that species. Other peak counts include Turkey Vultures (93 birds on 21 Oct), Northern Harriers (30 birds on 22 Oct), Bald Eagles (14 birds on both 31 Aug and 10 Sep), American Kestrels (25 birds on 21 Sep), Merlins (9 birds on 22 Oct), Osprey (67 on 22 Sep), Red-tailed Hawks (252 on 25 Oct), Red-shouldered Hawks (25 birds on 19 Nov), and Golden Eagles (9 birds on 25 Oct).

Militia Hill (Montgomery County) – The total number of raptors counted was 5,467. Broadwings, at 2,966, were lower than the 10 year average. The biggest numbers occurred on 20 Sep, when 546 broadwings were counted, along with 94 other raptors. Several records were set this year at Militia Hill. They included record season highs of Bald Eagles (73), Osprey (406), Sharp-shinned Hawks (1,153), Cooper's Hawks (194), Red-shouldered Hawks (72), and Golden Eagles (5). One-day peak flights include Osprey (42 birds on 25 Sep), Bald Eagles (6 birds on 3 Sep), Northern Harriers (8 birds on 22 Oct), Sharp-shinned Hawks (83 birds on 21 Oct), Red-shouldered Hawks (15 birds on 27 Oct), and American Kestrels (20 birds on 20 Sep).

Rose Tree Park (Delaware County) – At Rose Tree Park, record season highs included Black Vultures (117) and Peregrine Falcons (24). The broadwing flight peaked between 20 and 26 Sep (3954 birds; 78% of total flight). Other peak counts in Sep were Sharp-shinned Hawks (144 birds on 26 Sep), Osprey (30 birds on 26 Sep), Bald Eagles (8 birds on 10 Sep), and American Kestrels (31 birds on 17 Sep). Oct brought peak flights for Cooper's Hawks (22 birds on 1 Oct). Other peak counts included Red-shouldered Hawks (20

birds on Nov 1), Turkey Vultures (82 birds on 2 Nov), and Red-tailed Hawks (49 birds on 2 Nov).

Second Mountain (Lebanon County) – The month of Sep brought the first big flights of the season, accounting for 46% of the total flight. The majority of broadwings occurred between 8 - 29 Sep, reaching a total of 3,317 for the season. This was a record-breaking season for both Bald Eagles (129) and Golden Eagles (110). Except for Northern Goshawks (43 birds vs. 10 year average of 64 birds) and Broadwings (3317 birds vs. 10 year average of 4225 birds), all other species were above or close to the 10 year average. Oct held season highs for Sharp-shinned Hawks (207 birds on 22 Oct), Cooper's Hawks (22 birds on 8 Oct), Northern Goshawks (6 birds on Oct 31), Red-tailed Hawks (123 on 31 Oct). Nov held season peaks for Red-shouldered Hawks (23 birds on 2 Nov), and Golden Eagles (9 birds on 20 Nov).

Stone Mountain (Huntingdon County) – Stone Mountain had an above average year (6,688 birds). All season totals for individual species also were above or close to their 10 year average. All species, except Turkey Vultures, also were up from last year's count, including Osprey (118 vs. 66), Bald Eagles (62 vs. 25), Golden Eagles (174 vs. 91), Northern Harriers (149 vs. 52), Sharp-shinned Hawks (1352 vs. 788), American Kestrels (136 vs. 93), and Peregrine Falcons (30 vs. 9). Peak counts included Red-tailed Hawks (207 on 2 Nov), Golden Eagles (11 on both 17 Nov and 2 Dec), and American Kestrels (12 birds on 29 Sep).

Tuscarora Summit (Fulton County) – This season was the highest total count since 1991. Two records were broken: the high count for Broad-winged Hawks for a single day (2,662) and the high count of Bald Eagles for the season (57). All species were close to or above the 10 year average except for Black Vultures (16 vs. 30), Turkey Vultures (171 vs. 301), Northern Goshawks (0 vs. 6), Red-tailed Hawks (556 vs. 713), and Golden Eagles (27 vs. 39). Ninety-four percent of the broadwing flight passed between 12 and 18 Sep (peak count was on 12 Sep). Osprey also had their peak count on Sep 12 (12 birds). Other peak counts included Turkey Vultures (45; 14 Oct), Black Vultures (9; 10 Oct), Northern Harrier (13; 31 Oct), Sharp-shinned

Hawk (108; 3 Oct), Cooper's Hawks (7; 4 and 8 Oct), Golden Eagles (5; 31 Oct), Bald Eagles (5; 17 Sep and 31 Oct), American Kestrels (6; 4 Oct), Merlins (3; 31 Oct), and Peregrine Falcons (3; 29 Sep).

Waggoner's Gap (Cumberland County) – Season record highs were set for Bald Eagles (332), Golden Eagles (275), Osprey (682), and Peregrine Falcons (82). Overall, the site recorded more Bald Eagles, Golden Eagles, Northern Harriers (366), Osprey, Sharp-shinned Hawks (7,931), Cooper's Hawks (986), Red-shouldered Hawks (306), Peregrine Falcons, and Turkey Vultures (1,415) than any other site in Pennsylvania. All species' counts were close to or above the 10 year average, except for Northern Goshawks (29 vs. 99), Red-tailed Hawks (4239 vs. 4514), and Rough-legged Hawks (3 vs. 9). Most (93%) of the 6,926 broadwings occurred between 9 and 26 Sep. Other peak counts include Osprey (76; 12 Sep), Bald Eagles (20; 15 Sep), Merlins (5; 7 Oct), Black Vultures (23; 9 Dec), Turkey Vultures (163; 31 Oct), Sharp-shinned Hawks (722; 7 Oct), Cooper's Hawks (54; 7 Oct), American Kestrels (28; 15 Sep), Red-shouldered Hawk (41; 2 Nov), Red-tailed Hawk (261; 2 Nov), and Northern Harrier (26; 31 Oct).

Acknowledgments: I thank the compilers who reported their counts for autumn 2006, and all of the watchsite participants who helped to document the migration. Keith Bildstein commented on an earlier version of this manuscript. This is Hawk Mountain Sanctuary contribution number 149.

References:

Kunkle, D. R. 2007. The 2006 Autumn Hawk Count at Bake Oven Knob, Lehigh County, PA. *American Hawkwatcher* 32:1-7.

*Acopian Center for Conservation Learning
Hawk Mountain Sanctuary
410 Summer Valley Road
Orwigsburg, PA 17961
zembra@hawkmtn.org*

Table 1. Watchsites reporting for autumn 2006 (Aug - Dec).

Watchsite	County	Hours of Observation
Allegheny Front	Bedford	910
Bake Oven Knob	Lehigh	111
Hawk Mountain	Berks/Schuylkill	1116
Jack's Mountain	Mifflin	202
Little Gap	Northampton	556
Militia Hill	Montgomery	443
Rose Tree Park	Delaware	649
Second Mountain	Lebanon	1084
Stone Mountain	Huntington	285
Tuscarora Summit	Fulton	326
Waggoner's Gap	Cumberland	1186

Table 3. Peak count dates for Osprey, Bald Eagle, and Broad-winged Hawk at Pennsylvania watchsites in autumn 2006.

Watchsite	Osprey		Bald Eagle		Broad-winged Hawk	
	Count	Date	Count	Date	Count	Date
Allegheny Front	13	09/15	7	09/21	7978	09/14
Bake Oven Knob	77	09/21	12	09/09	4154	09/11
Hawk Mountain	90	09/26	15	09/10	7508	09/11
Jack's Mountain	11	09/11	6	09/14	616	09/11
Little Gap	67	09/21	14	09/09	4663	09/11
Militia Hill	42	09/24	6	09/15	546	09/19
Rose Tree Park	30	09/25	8	09/09	1402	09/19
Second Mountain	21	09/21	9	09/21	381	09/11
Stone Mountain	8	09/18	4	09/23	223	09/13
Tuscarora Summit	12	09/11	5	09/16	2662	09/11
Waggoner's Gap	76	09/11	20	09/14	1614	09/11

Table 2. Hawkwatch Results for Autumn 2006 in Pennsylvania.

ALLEGHENY FRONT (Bedford)
Che Mincone, compiler

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	Unid	Total
August	17	132	6	0	11	23	0	30	8	0	2	129	21	0	0	10	2	0	17	259
September	30	225	1	69	87	32	17	215	35	0	1	13,831	76	0	1	36	10	17	80	14508
October	31	237	13	370	26	11	28	902	136	0	28	14	902	0	15	29	20	30	115	2,639
November	30	215	0	17	1	2	15	30	10	4	48	0	497	4	164	0	0	1	40	833
December	15	102	0	3	0	2	1	2	2	1	2	0	52	0	42	0	0	0	2	109
Total	123	911	20	459	125	70	61	1,179	191	5	81	13,974	1548	4	222	75	32	48	254	18,348
Total per hr			0.02	0.5	0.14	0.08	0.07	1.3	0.21	0.01	0.09	15.4	1.7	0.00	0.24	0.08	0.04	0.05	0.28	20.1
% of flight			0.11	2.5	0.7	0.4	0.3	6	1.0	0.0	0.4	76	8	0.0	1.2	0.4	0.2	0.3	1.4	100

BAKE OVEN KNOB (Lehigh)
Dan Kunkle, compiler

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	Unid	Total
August	17	111	51	121	34	19	7	7	4	0	2	40	28	0	0	7	0	0	23	343
September	30	239	113	241	501	89	61	867	113	1	5	9675	99	0	0	122	40	31	145	12103
October	31	269	118	514	113	44	119	2857	310	11	89	20	1606	0	55	60	61	14	119	6092
November	26	183	48	81	1	19	60	221	42	4	128	0	1458	0	75	1	5	0	56	2199
Total	104	802	330	957	649	171	247	4,052	469	16	224	9,735	3,191	0	130	190	106	45	343	20,737
Total per hr			0.41	1.2	0.8	0.2	0.3	5.1	0.6	0.0	0.3	12.1	4.0	0	0.2	0.2	0.1	0.1	0.4	25.9
% of flight			1.6	4.6	3.1	0.8	1.2	20	2.3	0.1	1.1	47	15	0	0.6	0.9	0.5	0.2	1.7	100.0

HAWK MOUNTAIN (Berks and Schuylkill)
Laurie Goodrich, compiler

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	Unid	Total*
August	19	148	1	0	34	13	8	13	8	0	0	47	15	0	0	16	3	1	4	163
September	30	293	17	13	544	103	95	1039	206	0	7	11718	118	0	1	276	56	35	76	14305
October	31	306	19	289	94	44	113	4110	641	2	101	36	1739	0	60	119	132	26	133	7658
November	30	237	41	140	1	29	53	316	74	11	130	0	1822	1	78	1	12	0	84	2793
December	20	132	7	10	2	14	6	2	1	2	19	0	254	0	30	0	1	0	9	357
Total	130	1116	85	452	675	203	275	5,480	930	15	257	11,801	3,948	1	169	412	204	62	306	25,276
Total per hr			0.08	0.4	0.6	0.2	0.2	4.9	0.8	0	0.2	10.6	3.5	0	0.2	0.4	0.2	0	0.3	22.6
% of flight			0.3	1.8	2.7	0.8	1.1	22	3.7	0.1	1.0	47	16	0	0.7	1.6	0.8	0.2	1.2	100.0

*Total includes one MK

JACK'S MOUNTAIN (Mifflin)
Ron Singer, compiler

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	Unid.	Total
September	15	96	4	49	50	21	13	104	18	1	1	2578	28	0	0	50	2	0	2	2921
October	15	83	0	116	6	7	11	346	32	0	4	0	166	0	5	11	5	8	11	728
November	4	24	0	0	0	1	9	5	3	1	2	0	97	1	7	0	1	0	0	127
Total	34	203	4	165	56	29	33	455	53	2	7	2,578	291	1	12	61	8	8	13	3,776
Total per hr			0.02	0.8	0.3	0.1	0.2	2.3	0.3	0	0	12.8	1.4	0	0.1	0.3	0	0	0.1	18.7
% of flight			0.1	4.4	1.5	0.8	0.9	12	1.4	0.1	0.2	68	8	0	0.3	1.6	0.2	0.2	0.3	100

LITTLE GAP (Northampton)
Michael Schall, compiler

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	Unid	Total
August	16	32	5	0	30	21	3	6	5	0	0	30	4	0	0	12	0	0	9	125
September	30	179	8	33	430	91	54	1155	140	0	8	11263	175	0	1	188	28	15	61	13650
October	31	181	39	437	70	28	74	2866	491	6	69	31	1310	0	38	61	47	25	66	5658
November	30	139	11	85	0	24	31	90	36	5	102	0	1082	1	37	1	2	0	9	1516
December	10	26	1	0	0	9	0	1	1	1	2	0	33	1	2	0	0	0	1	52
Total	117	557	64	555	530	173	162	4,118	673	12	181	11,324	2,604	2	78	262	77	40	146	21,001
Total per hr			0.1	1.0	1.0	0.3	0.3	7.4	1.2	0.02	0.3	20.4	4.7	0.004	0.1	0.5	0.1	0.1	0.3	37.8
% of flight			0.3	2.6	2.5	0.8	0.8	20	3.2	0.1	0.9	54	12	0	0.4	1.2	0.4	0.2	0.7	100

MILITIA HILL (Montgomery)
Marylea Klauder, compiler

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	Unid	Total
September	30	212	2	0	298	46	25	439	50	0	14	2664	24	0	0	141	5	7	31	3746
October	31	231	17	60	108	27	49	714	144	2	58	302	98	0	5	79	17	6	44	1730
Total	61	443	19	60	406	73	74	1,153	194	2	72	2,966	122	0	5	220	22	13	75	5,476
Total per hr			0.04	0.1	0.9	0.2	0.2	2.6	0.4	0	0.2	7	0.3	0	0	0.5	0	0	0.2	12.4
% of flight			0.4	1.1	7.4	1.3	1.4	21.1	3.5	0	1.3	54	2.2	0	0	4.0	0.4	0.2	1.4	100.0

ROSE TREE PARK (Delaware)
Jim Lockyer, compiler

Month	Days	Hours	TUVU	BLVU	OSPR	NOHA	BAEA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	U nid.	Total*
August	12	83	0	3	25	4	8	15	10	0	8	48	7	0	0	4	0	0	2	134
September	30	190	12	3	172	33	57	615	115	1	7	4253	21	0	0	158	21	4	27	5501
October	31	200	145	14	83	30	102	795	140	5	57	753	156	0	1	98	29	17	17	2425
November	30	177	249	97	1	22	35	264	42	8	128	0	281	0	4	3	8	3	11	1156
Total	103	650	406	117	281	89	202	1,689	307	14	200	5,054	465	0	5	263	58	24	57	9,216
Total per hr			0.6	0.2	0.4	0.1	0.3	2.6	0.5	0	0.3	7.8	0.7	0	0	0.4	0.1	0	0.1	14.2
% of flight			4.4	1.3	3.0	1.0	2.2	18	3.3	0.2	2.2	55	5.0	0	0	2.9	0.6	0.3	0.6	100.0

*Total includes one MK

SECOND MOUNTAIN (Lebanon)
David Schwenk, compiler

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	Unid	Total
August	31	198	0	3	7	10	1	10	6	1	5	111	64	0	1	7	0	0	3	229
September	30	244	0	0	173	53	55	518	71	6	3	3180	108	0	3	98	23	15	16	4322
October	31	265	30	294	35	48	72	1865	195	27	51	26	593	0	52	36	23	11	33	3391
November	29	201	153	184	1	15	41	117	22	5	101	0	658	1	46	1	1	0	28	1374
December	31	178	142	316	0	11	2	4	0	4	4	0	177	1	25	0	2	1	5	694
Total	152	1086	325	797	216	137	171	2,514	294	43	164	3,317	1,600	2	127	142	49	27	85	10,010
Total per hr			0.3	0.7	0.2	0.1	0.2	2.3	0.3	0.0	0.2	3.1	1.5	0	0.1	0.1	0	0	0.1	9.2
% of flight			3.2	8.0	2.2	1.4	1.7	25	2.9	0.4	1.6	33	16	0	1.3	1.4	0.5	0.3	0.8	100.0

STONE MOUNTAIN (Huntingdon)
Greg Grove, compiler

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	Unid	Total
August	3	7	8	10	59	29	74	677	162	7	44	1088	912	2	80	68	21	15	64	3320
September	17	86	0	0	47	13	25	148	53	0	3	1076	25	0	0	52	5	8	23	1478
October	20	101	8	10	12	8	23	471	98	5	12	11	411	0	9	15	15	7	28	1143
November	13	64	0	0	0	3	26	56	10	2	29	0	444	1	53	1	1	0	11	637
December	6	28	0	0	0	9	1	0	1	0	3	0	60	1	32	0	0	0	3	110
Total	59	286	16	20	118	62	149	1,352	324	14	91	2,175	1,852	4	174	136	42	30	129	6,688
Total per hr			0.1	0.1	0.4	0.2	0.5	4.7	1.1	0	0.3	7.6	6.5	0	0.6	0.5	0.1	0	0.5	23.5
% of flight			0.2	0.3	1.8	0.9	2.2	20	4.8	0.2	1.4	33	28	0	2.6	2.0	0.6	0.4	1.9	100.0

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	Unid	Total
September	21	119	5	0	72	33	18	284	39	0	14	3752	32	0	3	27	3	7	42	4331
October	29	151	9	154	33	20	39	659	66	0	12	5	256	0	14	33	9	8	41	1358
November	12	56	2	17	0	4	21	27	6	0	6	0	268	0	10	0	0	0	13	374
Total	62	326	16	171	105	57	78	970	111	0	32	3,757	556	0	27	60	12	15	96	6,063
Total per hr.			0.1	0.5	0.3	0.2	0.2	3.0	0.3	0	0.1	11.5	1.7	0	0.1	0.2	0	0	0.3	18.6
% of flight			0.3	3	1.7	0.9	1.3	16	1.8	0.0	0.5	62	9	0	0.4	1.0	0.2	0.2	1.6	100.0

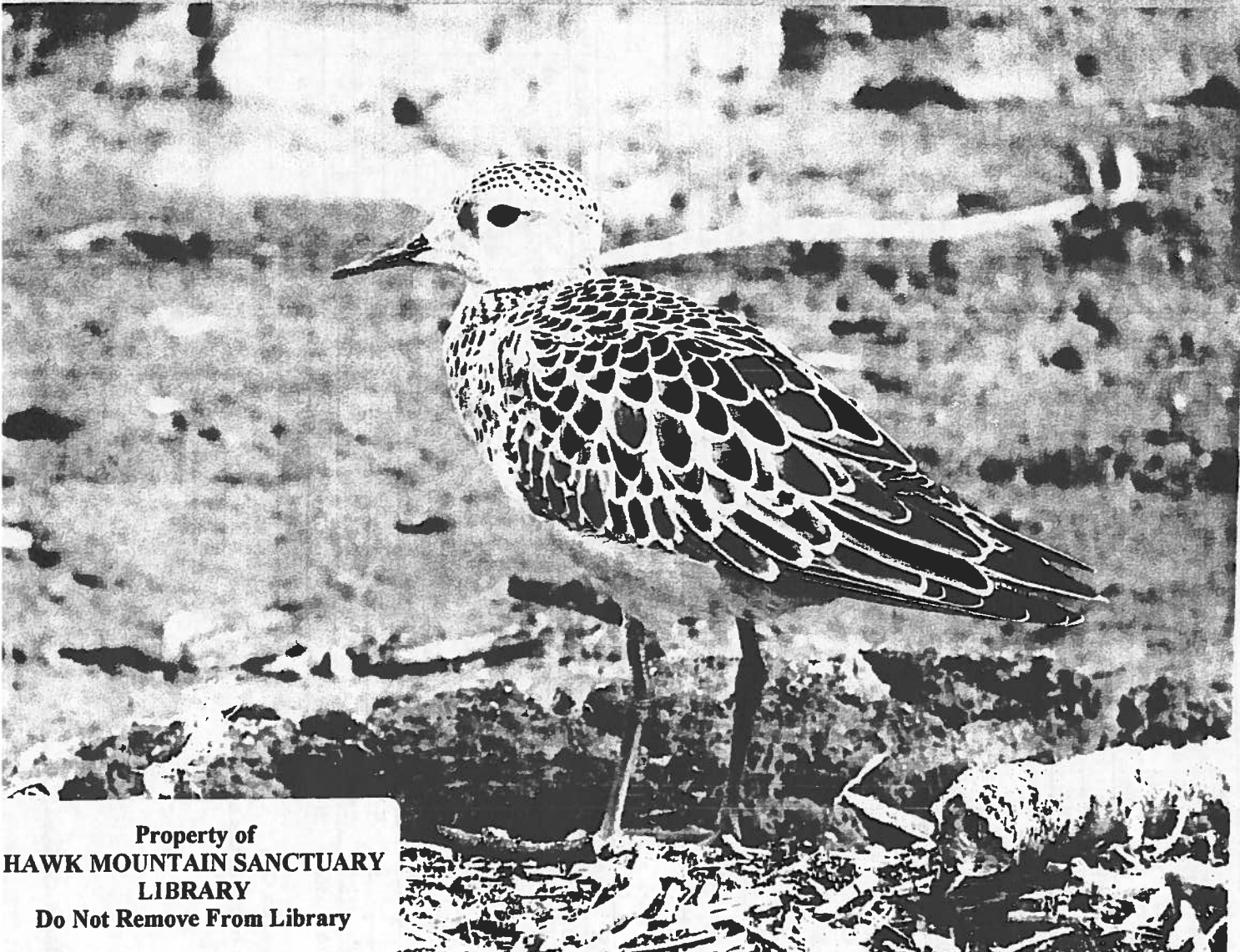
WAGONER'S GAP (Cumberland)
 David Grove, compiler

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	Unid	Total
August	31	207	0	0	23	32	9	22	18	0	4	142	11	0	0	44	0	0	7	312
September	29	259	0	0	556	183	119	2041	183	2	13	7233	87	0	4	221	22	45	60	10769
October	30	292	46	1061	101	74	159	5484	689	14	79	46	1676	0	69	89	57	34	92	9770
November	28	213	25	300	2	26	73	364	87	9	194	0	2006	1	137	3	3	2	24	3256
December	30	215	63	54	0	17	6	20	9	4	16	0	459	2	65	1	0	1	10	727
Total	148	1186	134	1,415	682	332	366	7,931	986	29	306	7,421	4,239	3	275	358	82	82	193	24,834
Total per hr			0.1	1.2	0.6	0.3	0.3	6.7	0.8	0.0	0.3	6.3	3.6	0.0	0.2	0.3	0.1	0.1	0.2	20.9
% of flight			0.5	5.7	2.7	1.3	1.5	32	4.0	0.1	1.2	30	17	0.0	1.1	1.4	0.3	0.3	0.8	100.0

TOTAL FOR ALL WATCHSITES

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	Unid	Total*
August	146	918	71	137	223	151	110	780	221	8	65	1,635	1,062	2	81	168	26	16	129	4,885
September	292	2142	162	408	2,930	697	539	7,425	1,023	11	76	71,223	793	0	13	1,369	215	184	563	87,634
October	311	2316	444	3,319	681	341	789	21,169	2,942	72	560	1,244	8,913	0	323	630	415	186	699	42,592
November	232	1509	529	921	7	145	364	1,490	332	49	868	0	8,613	10	611	11	33	6	276	14,265
December	112	681	213	383	2	62	16	29	14	12	46	0	1,035	5	196	1	3	2	30	2,049
Total	1,093	7566	1419	5,168	3,843	1,396	1,818	30,893	4,532	152	1,615	74,102	20,416	17	1,224	2,179	692	394	1,697	151,425
Total per hr			0.2	0.7	0.5	0.2	0.2	4.1	0.6	0.02	0.2	9.8	2.7	0.0	0.2	0.3	0.1	0.1	0.2	20.0
% of flight			0.9	3.4	2.5	0.9	1.2	20.4	3.0	0.1	1.1	48.9	13.5	0.01	0.8	1.4	0.5	0.3	1.1	100.0
% change from 2005**			-20.8	-10.3	29.5	12.7	-68.9	25.6	20.6	-76.5	-75.6	44.5	7.4	-88.9	-4.9	10.9	11.6	-12.4	-91.4	22.7
*Total includes 2 Mississippi Kites																				
**Total birds per hour in 2006 vs. total birds per hour in 2005																				

PENNSYLVANIA BIRDS



Property of
HAWK MOUNTAIN SANCTUARY
LIBRARY
Do Not Remove From Library

Volume 20, No. 4
Aug - Nov 2006
Issued April 2007

