

Autumn Raptor Migration Summary 2003

Kyle McCarty

Twelve hawkwatches reported counts for autumn 2003 (Table 1). Count hours ranged from 138 to 1,127 hours, for a total of 8,045 hours, and count days at all sites ranged from 51 to 144 days for a total of 1,142 days. An overall total of 116,443 raptors representing 18 species was reported. Swainson's Hawk (*Buteo swainsoni*) was reported at one site, Little Gap (Northampton County), and Mississippi Kite (*Ictinia mississippiensis*) was reported at two sites, Little Gap and Second Mountain (Lebanon County). Including these sightings, autumn hawkwatches have reported 25 Swainson's Hawks (11 watchsites) to *Pennsylvania Birds* since 1990, and five Mississippi Kites (4 watchsites), all of them since 2000.

Average count effort (hours of observation) for the twelve watchsites in 2003 was greater than 2002 (670 hours/site vs. 601 hours/site), with increased effort at all sites except Bake Oven Knob (Lehigh County), Hawk Mountain Sanctuary (Berks County), and Jack's Mountain (Mifflin County).

Composition of the flight

In November 2003, Golden Eagles (*Aquila chrysaetos*) were seen

in unprecedented numbers in Pennsylvania, with ridge-top sites experiencing the largest flights. Observers at Allegheny Front (Bedford County), Bake Oven Knob, Hawk Mountain Sanctuary, Stone Mountain (Huntingdon County), and Waggoners Gap (Cumberland County) recorded 25 or more eagles in one day, with most peak flights between 8 and 20 November (Table 2), and these sites, as well as Rose Tree Park (Delaware County), set season records for the species. Overall, Golden Eagles passed at a higher average rate this year than any of the previous five years.

Bald Eagles (*Haliaeetus leucocephalus*) have been a remarkable success story in bird conservation, with populations rebounding from DDT-era lows. Counts of Bald Eagles at Pennsylvania watchsites are now exceeding anything ever seen before. The phenomenal recovery was unthinkable just twenty years ago. At Hawk Mountain Sanctuary, for example, this year's count of 215 Bald Eagles (August 15-December 15) surpasses the total number counted during the entire decade of the 1970s, when the annual average was 18 eagles.

The four most numerous migrants this year were Broad-winged Hawks (*Buteo platypterus*), Red-tailed Hawks (*Buteo jamaicensis*), Sharp-shinned Hawks (*Accipiter striatus*), and Turkey Vultures (*Cathartes aura*) (Table 3). Broadwings made up the largest percentage of the overall flight at 39%, ranging from 27% at Bake Oven Knob to 61% at Jack's Mountain. No watchsite had more

than 7,000 broadwings this year. Sharp-shinned Hawks (21% overall) ranged from 11% of the flight at Jack's Mountain to 28% at Waggoners Gap. Red-tailed Hawks

Table 2. Peak dates and numbers of Golden Eagles in autumn 2003.

Watchsite	Date	Number
Allegheny Front	10 Nov	27
	23 Nov	51
Bake Oven Knob	8 Nov	21
	20 Nov	29
Hawk Mountain	20 Nov	31
	8, 14, 15 Nov	15
Jack's Mountain	10, 14 Nov	8
Little Gap	15 Nov	16
Militia Hill	8 Oct	1
Rocky Ridge	11 Oct; 8, 9 Nov	1
Rose Tree Park	13, 14 Nov	2
Second Mountain	21 Nov	11
Stone Mountain	13, 20 Nov	25
Tuscarora Summit	7 Nov	4
Waggoner's Gap	8 Nov	28

(18% overall) ranged from 4% at Militia Hill (Montgomery County) to 23% of the flight at Bake Oven Knob, and Turkey Vultures (5% overall) ranged from <1% to 11%. Three of the remaining twelve regular migrants, Osprey (*Pandion haliaetus*) (at 3%), Cooper's Hawk (*Accipiter cooperii*) (at 3%), and American Kestrel (*Falco sparverius*) (at 2%) made up 2% or more of the overall flight.

Compared to a below-average year in 2002, the overall average passage rate of Northern Harriers (*Circus cyaneus*) increased >70% this year, and was the highest since 1999. The average rate of passage also increased significantly from 2002 for Black Vultures (*Coragyps atratus*) (+50%), Rough-legged Hawks (*Buteo lagopus*) (+233%), Golden Eagles (+27%), and Sharp-shinned Hawks (+15%), whereas decreases occurred for Broad-winged Hawks (-47%), Red-tailed Hawks (-10%), and Merlins (*Falco columbarius*) (-14%).

Table 1. Watchsites reporting for autumn 2003.

Watchsite	County	Hours
Hawk Mountain	Berks	1101
Second Mountain	Lebanon	1054
Waggoners Gap	Cumberland	1052
Allegheny Front	Bedford	846
Bake Oven Knob	Lehigh	767
Little Gap	Northampton	721
Rose Tree Park	Delaware	674
Militia Hill	Montgomery	452
Stone Mountain	Huntingdon	440
Jack's Mountain	Mifflin	400
Tuscarora Summit	Fulton	392
Rocky Ridge	York	148

Seasonal highlights

Allegheny Front (Bedford County)

– The site logged the most days of observation (117) since 1997, and second-highest number of hours (846). Peak flights of 51 Golden Eagles on November 23 (a state record) and 27 on November 10 accounted for 41% of the Golden Eagle flight and contributed to a season record count of 192. Season records also were established for Black Vulture (37; peak flight 15 on September 10) and Bald Eagle (66; 10 on September 10). On October 3, a season high 10 Peregrine Falcons (*Falco peregrinus*) were counted. Counts and rates of passage of Northern Harriers, Broad-winged Hawks, American Kestrels, and Peregrine Falcons were above average for the site, while those for Turkey Vultures, Cooper's Hawks, Red-tailed Hawks, Red-shouldered Hawks (*Buteo lineatus*), and Merlins were below average. Half of the season's 66 total Red-shouldered Hawks passed between November 3 and November 10.

Bake Oven Knob (Lehigh County)

– Season records were set for Black Vulture (328; peak count 10 on October 30 and November 10) and Golden Eagle (137; single-day record count 29 on November 20). On September 5, observers counted 34 Bald Eagles, a single-day record, as well as 55 Ospreys. The Osprey count was the second-highest ever (634; peak count 61 on September 28). On November 8, peak flights of 6 Northern Goshawks (*Accipiter gentilis*) and 640 Red-tailed Hawks, along with 21 Golden Eagles, contributed to a season high daily count of 702 raptors. Compared to the 10-year averages, passage rates of Golden and Bald Eagles were significantly higher (up 50% and 35% respectively), but were lower (20-50%) for *accipiters*. Three of the season's five Rough-legged Hawks passed on November 15. One quarter of the Northern Harrier flight passed

October 5-12, with a peak count of 14 on October 8.

Hawk Mountain Sanctuary

(Berks County) – Season records were set for Bald Eagles (215; peak count 26 on September 5) and Golden Eagles (159; peak count and single-day record of 31 on November 20) during the official August 15 to December 15 count. Flights of 15 Golden Eagles were seen November 8, 14, and 15. Peak counts of 9 Northern Goshawks and 540 Red-tailed Hawks occurred November 8. The American Kestrel count of 376 was well below the ten-year average (618). After last year's strong flight, the Broad-winged Hawk count was near average this year (peak count 1,493 on September 18). Several species were well above the 10-year average counts, including Turkey Vulture (+56%), Rough-legged Hawk (+25%), Golden Eagle (+65%), Bald Eagle (+63%), and Peregrine Falcon (+25%); species well below the average include Sharp-shinned Hawk (-26%), Northern Goshawk (-35%), and Merlin (-24%).

Jack's Mountain (Mifflin County)

– Passage rates were somewhat higher than average for Osprey, Bald Eagle, and Peregrine Falcon, and below average for Sharp-shinned Hawk, Northern Goshawk, Red-shouldered Hawk, and American Kestrel. Forty-seven Ospreys (30% of the season total) were seen September 26-27. Peak count days by species: Turkey Vulture (47; October 21), Black Vulture (4; October 3 and 8), Osprey (30; September 27), Bald Eagle (8; September 10), Northern Harrier (17; October 31), Sharp-shinned Hawk (76; October 7), Cooper's Hawk (14; October 20), Northern Goshawk (1; several days), Red-shouldered Hawk (3; October 30), Broad-winged Hawk (766; September 21), Red-tailed Hawk (178; October 25), Rough-legged Hawk (1; November 20), Golden Eagle (8; November 10 and 14); American Kestrel (11; October 5),

Merlin (3; October 3), and Peregrine Falcon (8; October 3).

Little Gap (Northampton County)

– Established a season record of 7 Rough-legged Hawks. Two rare raptors were reported: the site's first record of Mississippi Kite on September 6 and a Swainson's Hawk on September 29. The counts for Northern Harrier (224; peak count 20 on October 21) and Peregrine Falcon (45; 8 on October 5) were each the second highest for the site. On September 18, a peak flight of 2,341 Broad-winged Hawks was seen, with another 2,140 on September 21. Total counts and passage rates of Turkey Vultures, Bald Eagles, Northern Harriers, Rough-legged Hawks, Golden Eagles, and Peregrine Falcons were above the 5-year average. All other species were below the 5-year average, and the American Kestrel and Merlin counts were the lowest since 1997.

Militia Hill (Montgomery County)

– A single-day record count of 13 Bald Eagles on September 5 contributed to a season record of 51. A Sandhill Crane on October 11 highlighted single-day record counts of Northern Harriers (15) and Cooper's Hawks (23), as well as season peak counts of Sharp-shinned Hawks (126) and American Kestrels (27). On October 25, 107 Turkey Vultures were counted. The season's 91 Northern Harriers more than doubled last year's count, and is nearly 50% more than the average count for the previous 15 years. The total Broad-winged Hawk count (2,065; peak count 769 on October 1) was the lowest since 1989, and may have been affected by the strong winds and rain from Hurricane Isabel, which shut the site down early on September 18.

Rocky Ridge (York County)

– Season record counts were established for Bald Eagles (48; peak count 8 on September 24) and Cooper's Hawks (58; 11 on October

12), and were well above the 10-year averages for these species (26 and 35, respectively, in 1993-2002). The Red-shouldered Hawk count was well below the 10-year average (6 season, 20 average). Compared to last year, passage rates were more than 30% higher in 2003 for Bald Eagles, Northern Harriers (peak count 6 on October 12), and American Kestrels (peak count 20 on September 28). An early Northern Goshawk, the only one for the season, was seen on September 6.

Rose Tree Park (Delaware County) – Many season count records were set, including Turkey Vulture (821; peak count 177 on October 22), Osprey (441; 34 on October 8), Bald Eagle (156; 11 on September 5), Northern Harrier (157; 14 on October 11), Sharp-shinned Hawk (2,033; 146 on October 11), Cooper's Hawk (354; 37 on October 11), Red-tailed Hawk (757; 112 on November 8), Golden Eagle (13; 2 on several days), Merlin (75; 9 on September 21), and Peregrine Falcon (23; 3 on September 26). The passage rate for all raptors excluding Broad-winged Hawks was the highest in the site's five years of monitoring (8.23 birds per hour). One-third of the season's American Kestrel flight occurred October 5-11 (peak count 39 on October 11), and nearly one quarter of the Red-shouldered Hawk flight came in a single day, November 8, when 41 were counted.

Second Mountain (Lebanon County) – The site's second Mississippi Kite was reported on October 9. Season count records were established for Black Vulture (511; peak count 58 on November 21), Bald Eagle (77; 5 on September 21), and Northern Harrier (250; 18 on October 11). The Red-shouldered Hawk count of 227 (peak count 23 on October 30) was the highest since 1995, and well above the ten-year average of 180. Observers at this site saw more Northern Goshawks (74) this year than any other site,

including a peak count of 7 on October 28. Other peak counts by species: Turkey Vulture (137; November 2), Osprey (28; October 27), Sharp-shinned Hawk (195; October 30), Cooper's Hawk (19; October 7), Broad-winged Hawk (1,038; September 21), Red-tailed Hawk (234; October 25), Rough-legged Hawk (2; November 8), Golden Eagle (11; November 21), American Kestrel (17; October 11), Merlin (3; October 5), Peregrine Falcon (4; September 27).

Stone Mountain (Huntingdon County) – Observers logged a record number of hours this year (440 hours) and new season records were established for Bald Eagles (53; peak count 7 on September 10), Northern Harriers (145; 9 on November 3, 7, and 20), Broad-winged Hawks (3,214; 1,055 on September 20), Rough-legged Hawks (8; 2 on November 8 and 20), Golden Eagles (137; 25 on November 13 and 20), and total hawks (6,435; 1,117 on September 20). Ospreys also were well above the five-year average (137 this year; 98 average; peak count 15 on September 5 and October 5), but American Kestrels (126; 157; 22 on October 5) and Merlins (31; 42; 4 on October 5 and 19) were well below the five-year average. More than 80% (26) of the season's 32 Peregrine Falcons were counted between September 29 and October 5. A late-season flight of 15 Golden Eagles occurred on December 1.

Tuscarora Summit (Fulton County) – Highlights include new season records for Black Vulture (49; peak count 11 on September 2), Bald Eagle (32; 6 on September 5), and Turkey Vulture (510; single-day record count 92 on October 20), and a single-day record count of 12 Peregrine Falcons on October 3. The Peregrine count (30) was the second-highest on record since 42 were seen in 1991, and was more than twice the ten-year average count (12). The counts of Ospreys (148) and

Northern Harriers (107) were the highest since 1993. A flight of 912 Broad-winged Hawks contributed to a peak season count of 961 total hawks on September 23. Passage rates and counts of Sharp-shinned Hawk (season total 874; peak 105 on October 31) and Northern Goshawk (2; 1 on October 21 and November 25) were both below the ten-year average. In November, a state-high 11 Ospreys were seen, including 7 on November 3.

Waggoner's Gap (Cumberland County) – On October 19, observers counted all of Pennsylvania's 16 species of regularly occurring migrants, a final tally of 687 raptors highlighted by the third site record of Sandhill Crane, as well as an extremely late Broad-winged Hawk, 88 Turkey Vultures, 19 Northern Harriers, 429 Sharp-shinned Hawks, a peak count of 80 Cooper's Hawks, and 4 Northern Goshawks. Season records were set for Northern Harriers (457; peak count 34 on November 4) and Golden Eagles (234; single-day record 28 on November 8). The counts for all species, except Northern Goshawk (total 63; 6 on November 8), Rough-legged Hawk (11; 1 on numerous days), and Merlin (55; 7 on October 11), were well above the ten-year averages. This was the only site at which Sharp-shinned Hawks were the most numerous migrant over Broad-winged Hawks. One hundred or more Sharp-shinneds were counted on 23 days, with a peak flight of 484 on October 8.

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Table 3. Hawkwatch Results for Autumn 2003 in Pennsylvania.

ALLEGHENY FRONT (Bedford) 2000
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	129.5	5	0	12	7	2	23	10	0	0	155	59	0	0	13	1	0	13	300
September	30	226	23	48	68	41	22	202	38	4	3	2,875	70	0	0	31	5	16	67	3,513
October	31	245	9	280	35	11	53	966	115	5	16	12	621	1	33	49	24	26	72	2,328
November	28	181.8	0	66	1	7	34	37	10	2	46	0	445	3	150	1	0	1	49	852
December	11	63.5	0	0	0	0	0	0	0	0	1	0	28	1	9	0	0	0	7	46
Total	117	846	37	394	116	66	111	1,228	173	11	66	3,042	1,223	5	192	94	30	43	208	7,039
Total per hr.			0.04	0.47	0.14	0.08	0.13	1.5	0.20	0.01	0.08	3.6	1.4	0.01	0.23	0.11	0.04	0.05	0.25	8.3
% of flight			0.5	5.6	1.6	0.9	1.6	17.4	2.5	0.2	0.9	43.2	17.4	0.07	2.7	1.3	0.4	0.6	3.0	100

BAKE OVEN KNOB (Lehigh) 2003
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	18	122.3	49	124	62	38	7	15	5	0	0	63	43	0	0	24	1	0	13	444
September	25	208.8	97	234	358	79	37	437	33	0	8	3,283	55	0	1	103	6	16	88	4,835
October	29	238.5	82	323	208	38	119	2,148	184	6	72	8	802	0	29	98	36	33	78	4,264
November	26	197.5	100	107	6	19	34	208	41	21	66	0	1,975	5	107	4	0	0	49	2,742
Total	98	767	328	788	634	174	197	2,808	263	27	146	3,354	2,875	5	137	229	43	49	228	12,285
Total per hr.			0.43	1.0	0.83	0.23	0.26	3.7	0.34	0.04	0.19	4.4	3.7	0.01	0.18	0.30	0.06	0.06	0.30	16.0
% of flight			2.7	6.4	5.2	1.4	1.6	22.9	2.1	0.2	1.2	27.3	23.4	0.04	1.1	1.9	0.4	0.4	1.9	100

HAWK MOUNTAIN (Berks) 2003
Laurie Goodrich, compiler

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	Unid	Total
July	1	4	0	0	1	1	0	1	0	0	0	1	0	0	0	0	0	0	0	4
August	18	167.7	0	0	78	33	16	19	5	0	1	149	33	0	0	32	1	0	2	369
September	27	270.3	0	0	332	81	66	567	89	1	3	5,964	39	0	0	167	19	10	31	7,369
October	29	282.5	5	236	266	47	120	2,829	503	11	80	20	859	2	35	173	72	44	54	5,356
November	28	223.0	14	90	3	32	41	233	75	27	144	0	2,121	6	110	4	5	1	26	2,932
December	19	108.2	4	0	0	27	13	2	12	14	14	0	334	2	15	0	0	0	5	442
January	12	45.5	1	2	0	13	0	0	0	1	0	0	18	2	1	0	0	0	1	39
Total	134	1100.99	24	328	680	234	256	3,651	694	54	242	6,134	3,404	12	161	376	97	55	119	16,511
Total per hr.			0.02	0.30	0.62	0.21	0.23	3.3	0.62	0.05	0.22	5.6	3.1	0.01	0.15	0.34	0.09	0.05	0.11	15.0
% of flight			0.15	2.0	4.1	1.4	1.6	22.1	4.1	0.33	1.5	37.2	20.6	0.07	0.98	2.3	0.59	0.33	0.72	100

JACK'S MOUNTAIN (Mifflin) 2003
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	20	152	0	32	110	36	32	148	25	1	0	3,758	31	0	0	36	1	8	8	4,226
October	23	155	12	86	42	12	51	498	84	2	6	29	401	0	14	43	13	20	11	1,324
November	15	85.5	7	0	3	1	20	51	12	1	3	0	472	1	33	2	0	1	2	609
December	1	7.5	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	12
Total	59	400	19	118	155	49	103	697	121	4	9	3,787	916	1	47	81	14	29	21	6,171
Total per hr.			0.05	0.30	0.39	0.12	0.26	1.7	0.30	0.01	0.02	9.5	2.3	0.00	0.12	0.20	0.04	0.07	0.05	15.4
% of flight			0.3	1.9	2.5	0.8	1.7	11.3	2.0	0.06	0.1	61.4	14.8	0.02	0.8	1.3	0.2	0.5	0.3	100

LITTLE GAP (Northampton) 2003
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	13	84	0	0	29	22	6	6	9	0	2	117	23	0	0	17	1	0	9	241
September	27	207.5	9	13	252	46	53	602	57	0	4	6,795	59	0	0	151	15	18	71	8,147
October	28	231.3	7	187	221	46	131	2,251	269	9	36	11	749	2	23	93	24	26	66	4,151
November	25	173	12	96	6	21	33	260	51	17	54	0	1,545	3	56	1	4	1	39	2,199
December	6	25.5	3	1	0	3	1	0	0	2	2	0	57	2	3	0	0	0	1	75
Total	99	721	31	297	508	138	224	3,119	386	28	98	6,923	2,433	7	82	262	44	45	186	14,813
Total per hr.			0.04	0.41	0.70	0.19	0.31	4.3	0.54	0.04	0.14	9.6	3.4	0.01	0.11	0.36	0.06	0.06	0.26	20.6
% of flight			0.2	2.0	3.4	0.9	1.5	21.1	2.6	0.2	0.7	46.7	16.4	0.05	0.6	1.8	0.3	0.3	1.3	100

*Total includes one Mississippi Kite seen September 6 and one Swainson's Hawk seen September 29.

MILLITIA HILL (Montgomery) 2003
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	4	33	151	34	20	226	28	2	4	1,124	7	0	0	130	3	3	15	1,784
October	31	240	10	435	98	17	71	683	81	1	14	941	190	0	1	92	21	10	27	2,682
Total	61	452	14	468	249	51	91	909	109	3	18	2,065	197	0	1	222	24	13	42	4,476
Total per hr.			0.03	1.0	0.54	0.11	0.20	2.0	0.24	0.01	0.04	4.5	0.43	0	0.002	0.48	0.05	0.03	0.09	9.7
% of flight			0.31	10.5	5.6	1.1	2.0	20.3	2.4	0.07	0.40	46.1	4.4	0.0	0.02	5.0	0.54	0.29	0.94	100

Hawkwatch Results for Autumn 2003 in Pennsylvania.

ROCKY RIDGE (York) 2003
Randy Phillips, compiler

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	Unid	Total	
August	9	21.3	0	0	2	12	0	5	5	0	0	10	13	0	0	0	0	0	0	2	49
September	20	75	2	8	20	22	8	161	24	1	0	1,188	47	0	0	46	0	2	11	1,540	
October	14	32	4	0	15	9	14	148	23	0	4	4	120	0	1	20	1	1	0	364	
November	8	19	0	0	0	5	8	20	6	0	2	0	134	0	2	0	0	0	3	180	
Total	51	148	6	8	37	48	30	334	58	1	6	1,202	314	0	3	66	1	3	16	2,133	
Total per hr.			0.04	0.05	0.25	0.32	0.20	2.3	0.39	0.01	0.04	8.1	2.1	0.00	0.02	0.45	0.01	0.02	0.11	14.4	
% of flight			0.3	0.4	1.7	2.3	1.4	15.7	2.7	0.05	0.3	56.4	14.7	0.0	0.1	3.1	0.05	0.1	0.8	100	

ROSE TREE PARK (Delaware) 2003
Jim Lockyer, compiler

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	Unid	Total
August	17	115	0	10	34	20	4	14	9	0	1	99	5	0	4	2	0	0	5	207
September	29	218	0	2	201	63	21	424	69	0	0	1,150	20	0	2	173	35	6	20	2,186
October	30	218.5	16	504	200	53	93	1,338	242	1	28	1,027	84	0	5	212	32	17	56	3,908
November	22	121.75	21	305	6	20	36	257	34	1	138	0	643	0	6	9	6	0	15	1,499
December	1	1	0	0	0	0	1	0	0	0	2	0	5	0	0	0	0	0	0	8
Total	99	674	37	821	441	156	157	2,033	354	2	169	2,276	757	0	13	398	75	23	96	7,808
Total per hr.			0.05	1.2	0.65	0.23	0.23	3.0	0.53	0.00	0.25	3.4	1.1	0.00	0.02	0.59	0.11	0.03	0.14	11.6
% of flight			0.5	10.5	5.6	2.0	2.0	26.0	4.5	0.03	2.2	29.1	9.7	0.0	0.2	5.1	1.0	0.3	1.2	100

SECOND MOUNTAIN (Lebanon) 2003
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	30	201	0	0	22	10	0	7	5	1	5	278	73	0	0	12	0	0	0	413
September	27	237.5	0	8	133	26	44	389	54	9	7	4,860	100	0	0	88	9	13	26	5,766
October	30	273.5	26	305	100	27	135	1,767	200	48	85	28	671	0	16	72	20	11	55	3,567
November	28	211.5	267	305	0	11	58	162	37	13	127	0	736	2	51	2	0	0	30	1,801
December	23	124	208	73	0	3	13	2	1	3	2	0	105	1	17	0	0	2	8	438
January	1	6	10	4	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	16
Total	139	1054	511	695	255	77	250	2,327	297	74	227	5,166	1,666	3	84	174	29	26	119	12,001
Total per hr.			0.49	0.66	0.24	0.07	0.24	2.2	0.28	0.07	0.22	4.9	1.6	0.00	0.08	0.17	0.03	0.02	0.11	11.4
% of flight			4.3	5.8	2.1	0.6	2.1	19.4	2.5	0.6	1.9	43.0	14.0	0.02	0.7	1.4	0.2	0.2	1.0	100

**Total includes one Mississippi Kite seen October 9.

Hawkwatch Results for Autumn 2003 in Pennsylvania.

STONE MOUNTAIN (Huntingdon) 2003
Greg Grove, compiler

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMIKE	MERL	PEFA	Unid	Total
September	25	145.5	0	0	82	33	24	200	55	2	6	3,183	50	0	0	73	7	13	17	3,745
October	27	154.5	0	0	55	15	51	568	163	1	15	31	319	0	7	51	24	19	32	1,351
November	17	124.5	0	0	0	4	69	69	29	10	44	0	890	7	113	2	0	0	21	1,258
December	2	15.5	0	0	0	1	1	1	2	2	0	0	52	1	17	0	0	0	4	81
Total	71	440	0	0	137	53	145	838	249	15	85	3,214	1,311	8	137	126	31	32	74	6,435
Total per hr.			0	0	0.3	0.1	0.3	1.9	0.6	0.0	0.1	7.3	3.0	0.0	0.3	0.3	0.1	0.1	0.2	14.6
% of flight			0	0	2.1	0.8	2.3	13.0	3.9	0.2	1.0	49.9	20.4	0.1	2.1	2.0	0.5	0.5	1.1	100

TUSCARORA SUMMIT(Fulton) 2003
Dale Gearhart, compiler

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMIKE	MERL	PEFA	Unid	Total
September	26	156	11	16	100	24	17	240	14	0	4	2,112	26	0	0	34	4	12	25	2,639
October	26	145	8	319	37	8	51	531	57	1	23	7	309	0	11	19	4	18	27	1,430
November	18	90.5	30	175	11	0	39	103	10	1	12	0	518	3	17	0	0	0	16	935
Total	70	392	49	510	148	32	107	874	81	2	39	2,119	853	3	28	53	8	30	68	5,004
Total per hr.			0.13	1.3	0.38	0.08	0.27	2.2	0.21	0.01	0.10	5.4	2.2	0.01	0.07	0.14	0.02	0.08	0.17	12.8
% of flight			1.0	10.2	3.0	0.6	2.1	17.5	1.6	0.04	0.8	42.3	17.0	0.06	0.6	1.1	0.2	0.6	1.4	100

WAGGONER'S GAP (Cumberland) 2003
David Grove, compiler

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMIKE	MERL	PEFA	Unid	Total
August	31	187.5	0	0	46	15	13	39	20	0	0	177	65	0	0	41	0	1	11	428
September	28	217.25	0	0	275	67	76	1,067	106	0	5	5,776	64	0	1	190	7	15	44	7,693
October	30	271.25	51	1,142	196	32	205	4,433	657	16	158	61	1,527	3	54	129	45	44	93	8,846
November	28	212.3	45	334	5	22	143	547	133	34	228	1	2,563	2	151	6	2	1	48	4,285
December	27	163.75	26	16	0	14	20	12	6	13	10	0	345	6	28	0	1	1	14	512
Total	144	1,052	122	1,492	522	150	457	6,098	922	63	401	6,015	4,584	11	234	366	55	62	210	21,764
Total per hr.			0.12	1.4	0.50	0.14	0.43	5.8	0.88	0.06	0.38	5.7	4.4	0.01	0.22	0.35	0.05	0.06	0.20	20.7
% of flight			0.6	6.9	2.4	0.7	2.1	28.0	4.2	0.3	1.8	27.6	21.1	0.05	1.1	1.7	0.3	0.3	1.0	100

Hawkwatch Results for Autumn 2003 in Pennsylvania.

TOTAL FOR ALL WATCHSITES 2003

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	Unit	Total*	
July	1	4	0	0	1	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	4
August	153	1,028	54	134	285	157	48	128	68	1	9	1,048	314	0	0	143	6	1	55	2,451	
September	314	2,326	146	394	2,082	552	420	4,663	592	20	44	42,068	568	0	4	1,222	111	132	423	53,445	
October	328	2,487	230	3,817	1,473	315	1,094	18,160	2,578	101	537	2,179	6,652	8	229	1,051	316	269	571	39,582	
November	243	1,640	496	1,478	41	142	517	1,947	438	127	864	1	12,062	32	796	31	17	5	298	19,292	
December	90	509	241	90	0	48	49	17	21	34	31	0	938	13	89	0	1	3	39	1,614	
January	13	52	11	6	0	13	0	0	0	1	1	0	19	2	1	0	0	0	1	55	
Total	1,142	8,045	1,178	5,919	3,882	1,228	2,128	24,916	3,697	284	1,486	45,297	20,553	55	1,119	2,447	451	410	1,387	116,443	
Total per hr.			0.15	0.74	0.48	0.15	0.26	3.1	0.46	0.04	0.18	5.6	2.6	0.01	0.14	0.30	0.06	0.05	0.17	14.5	
% of flight			1.0	5.1	3.3	1.1	1.8	21.4	3.2	0.2	1.3	38.9	17.7	0.0	1.0	2.1	0.4	0.4	1.2	100	
% change from 2002**			50	3	-4	0	73	15	2	0	0	-47	-10	233	27	-3	-14	0	-6	-25	

*Total count includes 1 Swainson's Hawk and 2 Mississippi Kites.

**Total birds per hour in 2003 vs. total birds per hour in 2002.