

Autumn Raptor Migration Summary 2008

Laurie Goodrich

Autumn 2008 was a season of contrasts. Three migration watchsites reported above-average total raptor counts, and ten reported below-average totals. Five species exceeded their 2007 total by 10% or more, but 10 species dipped below 2007 tallies by more than 10%. Two sites dropped by 50% compared to 2007. A total of 108,146 migrant hawks of 19 species was tallied at the fourteen Pennsylvania watch sites, during a combined 1049 days and 7617 hours of coverage from 1 Aug through 1 Jan. Season highlights included two Mississippi Kites (*Ictinia mississippiensis*): adult, Hawk Mountain; immature, Little Gap; a Swainson's Hawk (*Buteo swainsoni*): juvenile-intermediate morph, Rose Tree Park, and a Gyrfalcon (*Falco rusticolus*): immature/gray morph. Little Gap (Table 2).

Fourteen hawk watches reported in autumn 2008 including four sites—Allegheny Front, Blue Mountain-Route 183, Buckingham, and Council Cup—not covered here in 2007 (Figure 1). Hours of coverage per site ranged from 51 to 1171. Days per site ranged from 7 to 141. The 2008 birds per hour ranged from 7.5 to 224.4 per site, with most sites ranging from 7.5 to 24 birds per hour. The average passage rate statewide was 14.55 birds per hour (Table 2).

As in the past, the Broad-winged Hawk (*Buteo platypterus*) was the most numerous migrant at all watch sites in 2008, comprising 51.6% of the flight. Sharp-shinned Hawks (*Accipiter striatus*) represented 19.1% of all migrants observed, and Red-tailed Hawks (*Buteo jamaicensis*) 11.1%. At

Buckingham, a one-week count site, 98% of the migrants recorded were Broad-winged Hawks; this compares to a range of 28% to 79% at other full-season sites. Five percent of the state's migrants were Turkey Vultures (*Cathartes aura*). Most other species each represented less than 3% of the combined flight.

Although the 2008 total passage rate was similar to 2007, individual species counts varied widely (Table 2). Higher 2008 counts were recorded for Black Vulture (*Coragyps atratus*) and Turkey Vultures (up 18% and 19%, respectively), Bald Eagle (*Haliaeetus leucocephalus*) (up 9%), Broad-winged Hawk (up 38%), Rough-legged Hawk (*Buteo lagopus*) (up 20%), and Golden Eagle (*Aquila chrysaetos*) (up 40%). The 2008 passage rates were notably lower for Osprey (down 29%), Northern Harrier (*Circus cyaneus*) (down 50%), Sharp-shinned and Cooper's hawks (*Accipiter cooperii*) (down 34% and 33%, respectively), Northern Goshawk (*Accipiter gentilis*) (down 54%), Red-shouldered (*Buteo lineatus*) and Red-tailed hawks (down 20% and 21% respectively), as well as the three falcons, American Kestrel (*Falco sparverius*) (down 26%), Merlin (*Falco columbarius*) (down 26%), and Peregrine Falcon (*Falco peregrinus*) (down 14%). State-wide hours and count days were higher in 2008 (up 14% and 11% respectively), in large part due to the four additional sites. Individual site hours were reduced at seven sites and increased at four sites (>10% difference), and three sites reported similar hours of coverage between years.

Few records were set in 2008, although high counts were recorded at some sites. Our most abundant migrant, the Broad-winged Hawk, passed through the state in peak numbers from 11 to 20 September, with the highest totals recorded at southeastern sites: Buckingham (7483 on 17 September), Militia Hill (4848 on 18 September), and Rose Tree Park (2017 on 16 September). See Table 1 and Figure 1. Mid-September was the time to see Bald Eagles in Pennsylvania as well; the highest one-day site tally for the state was made at Bake Oven Knob and Waggoner's Gap on 15 September, both recording 24 birds. Eight other sites reported their highest one-day total for Bald Eagles between 15 and 19 September, suggesting a big eagle flight state-wide during that week (Table 1). Western Pennsylvania watch sites took the lead for Golden Eagle counts, led by a one-day peak count of 34 Golden Eagles at Allegheny Front 2 November, and 27 at Waggoner's Gap 22 November. Stone Mountain also weighed in with 15 Golden Eagles 21 November and 14 on 22 November. On 1 November, a stream of Golden Eagles took the Kittatinny Ridge route, with 11 counted at Little Gap and 12 at both Bake Oven Knob and Hawk Mountain. On 2 November, the birds appeared to continue their ridge flight; 10 were at Blue Mountain-Route 183, 13 at Second Mountain, and 25 at Waggoner's Gap (Table 1).

Allegheny Front (Somerset/Bedford)

– Allegheny Front recorded 7485 migrants over 103 days of coverage from 15 August to 21 December, averaging 9.78 birds per hour. The total count was down 11% as a result of lower than average counts for several species. The site's largest one-day flight (all raptors) swirled past on 18 September, when 1133 Broad-winged Hawks and 1156 total hawks were counted. Golden Eagles are the most celebrated migrant raptor at this site, and the first week of November brought the bulk of the flight, including 34 on 2 November and 32 on 5 November, among a total of 109 for the week and 154 for the season. Above-average counts were recorded for Bald Eagle and Golden Eagle (69, 154), and for Broad-winged Hawk (3887).

Table 1. Peak count dates for selected species at all Pennsylvania watch sites.

Site	Bald Eagle		Golden Eagle		Br.-winged Hawk	
	Count	Date	Count	Date	Count	Date
Allegheny Front	8	9/19	34	11/2	1133	9/18
Blue Mtn./Rte. 183	4	10/5	10	11/2	621	9/20
Bake Oven Knob	24	9/15	12	11/1	808	9/11
Council Cup	10	9/15	0	—	214	9/16
Hawk Mountain	15	9/15	12	11/1	1107	9/11
Jack's Mountain	4	9/19	1	several	419	9/14
Little Gap	18	9/15	11	11/1	1663	9/17
Militia Hill	11	9/18	1	several	4848	9/18
Rose Tree Park	7	11/9	1	several	2017	9/16
Second Mountain	10	9/19	13	11/2	681	9/11
Stone Mountain	6	9/16, 18	15	11/21	650	9/15
Tuscarora Summit	6	9/19	7	11/3	390	9/15
Waggoner's Gap	24	9/15	27	11/22	1691	9/16

Bake Oven Knob (Lehigh) – Bake Oven's total count of 10,523 raptors in 103 days was down 30% despite setting a new site record for hours of effort at 916.8. A new site record was set for Bald Eagle (236), reflecting the continued upswing in this species. Golden Eagles and Black and Turkey vultures also flew past in above-average numbers (119, 280, 920 respectively). The Broad-winged Hawk count of 2992 and the Red-tailed Hawk count of 1501 represented the most notable decreases from their long-term average, both down more than 40%.

Blue Mountain/Route 183 (Berks/Schuylkill) – In 2008, we welcome back a historical migration watch site to active duty. Route 183 watchers covered 31 days and tallied 2498 hawks, with the highest one-day count on 20 September when they tallied 663 hawks including 621 Broad-winged Hawks. The most abundant migrants for this site were Broad-winged and Sharp-shinned hawks, at 36% and 32% of the flight. The largest Sharp-shinned Hawk flight occurred on 4 October when 138 zoomed past, but 10 Golden Eagles on 2 November were a definite one-day highlight.

Buckingham-BWSEPT (Bucks) – The BWSEPT Broad-winged Hawk transect count has been whittled down to one remaining site, which this year recorded the highest count of Broad-winged Hawks in the state, 11,230, including a one-day peak of 7483 on 17 September. The total raptor count was 11,445 in seven days of coverage, and included 25 Bald Eagles and 3 Peregrine Falcons. The Broad-winged Hawk total well surpassed the average for this site of 2065.

Council Cup (Luzerne) – Another returning site in 2008 was Council Cup, where counters tallied 1418 hawks in 29 days of coverage, including 55 Bald Eagles and 399 Broad-winged Hawks. The largest one-day flight occurred 15 September with 288 migrants including 10 Bald Eagles. Similar to other sites, the Red-tailed Hawk total (323) was well below the historical average (757).

Hawk Mountain Sanctuary (Berks/Schuylkill) – Hawk Mountain tallied 12,219 hawks in 132 days, one of its lowest season totals on record. The total was 38% below the long-term average of 18,673 hawks, and the

second-lowest total recorded since 1971. Species falling below-average included Cooper's Hawk, Northern Goshawk, Red-shouldered, Broad-winged, and Red-tailed hawks, and American Kestrel, all of which were down at least 30%. In contrast, a new record was set for Bald Eagle (245), and above-average counts were recorded for Black and Turkey vultures (38, 357 respectively), Golden Eagle (136), and Peregrine Falcon (61). Highlights included 13 Peregrine Falcons on 2 October, and an adult Mississippi Kite that swooped over the ridge at 13:14 on 7 September.

Jack's Mountain (Mifflin) – Jack's Mountain recorded 1483 in 21 days of counts mostly in September. Counts and effort were down 60% from the long-term average. Broad-winged Hawks were the most numerous migrant with 1104 totaled and a peak of 419 on 14 September. Bald Eagles were seen daily from 11 to 19 September, including a high of 4 on 19 September.

Little Gap (Northampton) – This eastern Kittatinny Ridge site tallied 8605 total raptors of 17 species in 70 days of coverage. Both counts and effort were below the long-term average; however two exciting rarities made up for this deficit. An immature Mississippi Kite was spotted heading south above the ridge on 2 September, and on 26 November, an immature gray morph Gyrfalcon was sighted and subsequently trapped and released. Little Gap recorded its highest Bald Eagle count (18) on 15 September along with an early immature Golden Eagle. The highest one-day counts of the season, 1702 and 1632, were tallied on 17 and 18 September respectively, and included more than 1500 Broad-winged Hawks each day.

Militia Hill (Montgomery) – Renown for its Broad-winged Hawk flights, Militia Hill did not disappoint, recording 8504 Broad-wings among 10,763 raptors in 58 days of coverage, ending 31 October. The first notable flight circled past on 16 September with 2,834 Broad-winged Hawks and 9 Bald Eagles. On 18 September, the highest one-day count of 4848 Broad-wings was tallied, mostly passing after 14:00. That same day saw a one-day peak count of 11 Bald Eagles. This day was the second-highest Broad-winged total for the state, and also the day

Militia Hill observers counted their 200,000th raptor in their site's history.

Rose Tree Park (Delaware) – Rose Tree tallied 6984 total raptors during 93 days of coverage. Broad-winged Hawks represented 57% of the flight, with 4004 counted in 2008. The rarest migrant, an immature intermediate morph Swainson's Hawk, glided overhead at 12:45 on 13 October. Other highlights included 2017 Broad-wings on 16 September, 4 Peregrine Falcons on 6 October, and 7 Bald Eagles on 9 November. The 2008 total of 24 Peregrine Falcons tied the site record set in 2006—another hopeful sign for this species.

Second Mountain (Lebanon) – Watchers recorded 7006 hawks in 125 days of coverage for a 2008 season that was 29% below average. The highest one-day total occurred on 11 September when 681 Broad-wings were among 719 total raptors. The Golden Eagle count of 102 was the second-highest ever for this site, only surpassed by the 2006 count of 127. Other above-average tallies were Peregrine Falcon (32), Bald Eagle (127), and Black and Turkey vultures (397, 613). Other highlights were 7 Peregrines on 3 October and 13 Golden Eagles on 2 November.

Stone Mountain (Huntington) – Stone Mountain recorded its second-highest total for Broad-winged Hawk, 1894, amid an overall total of 4109 hawks in an average season of effort of 64 days. Overall, many species were lower than average, with Northern Harrier (42) and Sharp-shinned Hawk (540) the lowest for this site since 1995 and the lowest since regular coverage began. Red-tailed Hawk counts were the lowest since 1996. Bald Eagles continued their state-wide upswing, sailing south in above-average numbers. Their final tally of 52 was the third highest ever recorded here. The third highest year also was tallied for Golden Eagle at 133, including back to back "eagle days" on 21 and 22 November when 15 and 14 were counted, respectively. Thirteen of the Golden Eagles passed between 12:00 and 14:00 on the 21 November. Snow squalls often obscured views on 22 November, leading to speculation as to what Stone Mountain might have recorded if skies were clear.

Tuscarora Summit (Fulton) – Bald Eagles set a new record at Tuscarora

Summit with 58 in 2008, including 6 on 19 September. The total site count of 3515 raptors fell short of the average of 4291, despite above-average coverage during 72 days. Black and Turkey vultures and Golden Eagle all surpassed site averages with 39, 413, and 43 counted respectively. Broad-winged Hawks formed the bulk of the flight with 1553 counted and a peak one-day flight of 390 on 15 September. Other notable flights included 100 Turkey Vultures on 30 October and 7 Golden Eagles on 3 November.

Waggoner's Gap (Cumberland) – The 2008 Waggoner's Gap total of 20,093 raptors was lower than in recent years, but above the long-term average of 19,205. Effort was also above-average this year: counters covered 141 days from the opening of the season on 1 August to its close on 31 December. In contrast to other sites, Waggoner's recorded above-average flights for seven species. Among these were Black and Turkey vultures (91, 1345), Bald Eagle (308), Sharp-shinned Hawk (6085), Broad-winged Hawk (7205), Golden Eagle (244), and Merlin (130). The Sharp-shinned Hawk and Merlin numbers were especially noteworthy at Waggoner's Gap, since counts of these species at other sites fell below average this year. Peak one-day counts of these

two species coincided on 16 October, with 631 Sharp-shins and 21 Merlins zipping by the Gap. Other season highlights included 24 Bald Eagles on 15 September, 1691 Broad-winged Hawks on 16 September, and 27 Golden Eagles on 22 November. Finally, as was the case at other sites, the Red-tailed Hawk count of 2693 dipped 38% below the long-term average.

Acknowledgments

I dedicate this report to Maurice Broun, the first official Pennsylvania hawk-counter, who climbed to the Kittatinny Ridge 75 years ago this autumn. I thank Pennsylvania's hawk counters for their many hours covering the skies, as well as the site compilers for sharing their results and thoughts in 2008. Data were collected from <www.hawkcount.org>, a website maintained by the Hawk Migration Association of North America (J. Sodergren, webmaster). I thank Caitlyn Little for assistance with compiling tables for this report and David Barber for preparing the figure. Keith L. Bildstein provided valuable input on an earlier version of this report. This is Hawk Mountain Sanctuary contribution number 178.

*Acopian Ctr. for Conservation Learning
Hawk Mountain Sanctuary Association
410 Summer Valley Road
Orwigsburg, Pennsylvania 17961*

Editor's note: The long-term trends of hawk counts at two Pennsylvania watch sites were recently posted to the web, along with other sites from across the country. For information on trends in autumn hawk counts at Waggoner's Gap and Hawk Mountain, readers can go to <www.rpi-project.org> and select the site and species. Conservation status reports are available on Hawk Mountain's website, which can be found at <www.hawkmountain.org>. Click on the "Learn about Raptors" section.

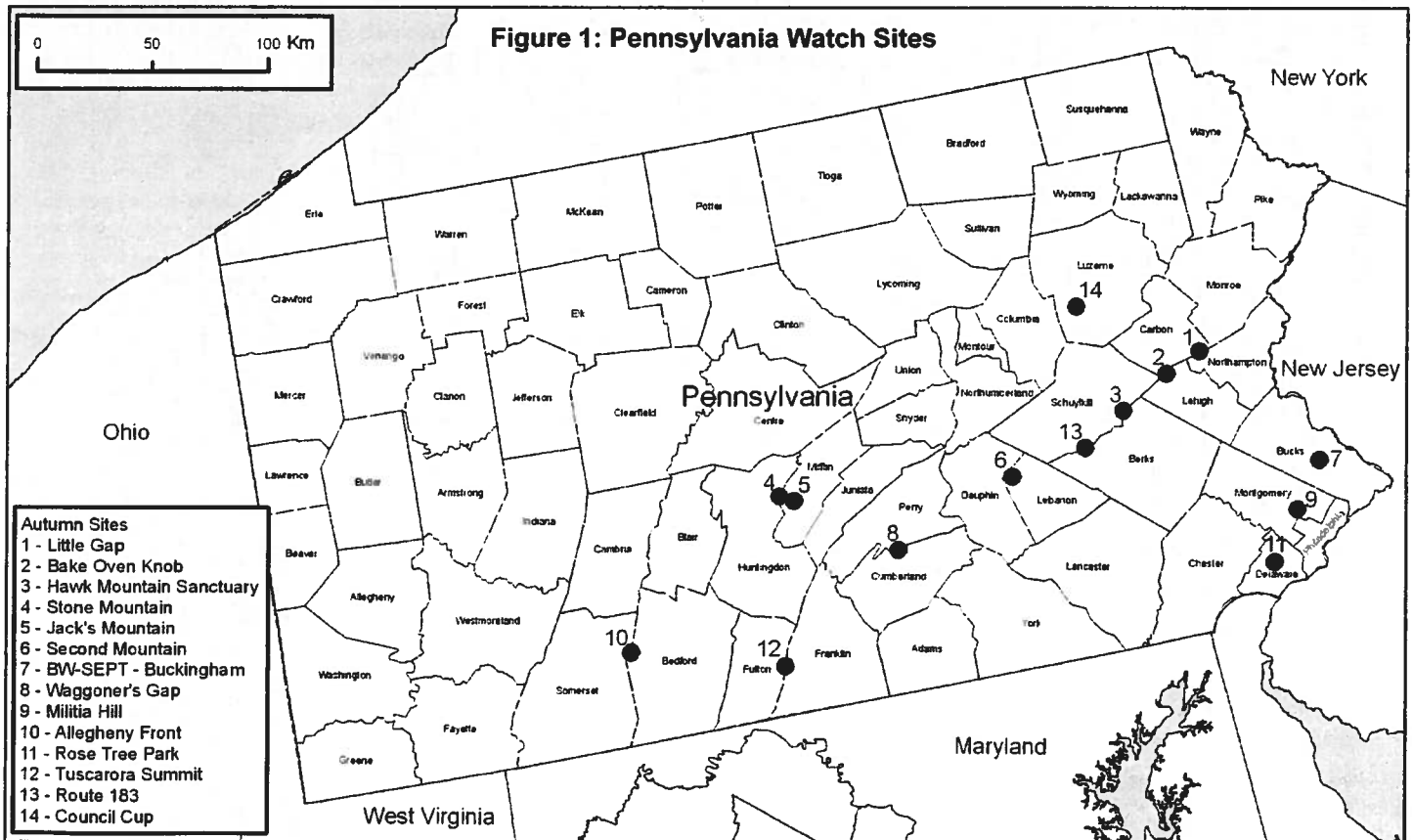


Figure 1: Pennsylvania Watch Sites

Table 2. Autumn 2008 count results for Pennsylvania watch sites.

ALLEGHENY FRONT (Somerset and 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	15	127	5	0	22	12	1	43	13	0	1	258	79	0	0	14	0	1	34	483
September	29	225.5	5	4	76	39	12	222	43	2	0	3628	110	0	1	21	4	1	73	4241
October	27	218.5	5	325	12	8	31	708	123	4	24	1	657	1	30	20	25	12	77	2063
November	25	163.5	0	18	1	5	7	26	15	1	31	0	427	3	118	0	0	1	21	674
December	7	30.5	0	0	0	5	1	1	0	0	0	0	11	0	5	0	0	0	1	24
Total	103	765	16	347	111	69	52	1000	194	7	56	3887	1284	4	184	55	29	15	206	7485
Total per hr			0.02	0.45	0.15	0.09	0.07	1.31	0.25	0.01	0.07	5.08	1.68	0.01	0.20	0.07	0.04	0.02	0.27	9.78
% of flight			0.2	4.6	1.5	0.9	0.7	13.4	2.6	0.1	0.7	51.9	17.2	0.1	2.1	0.7	0.4	0.2	2.8	100.0
Average	105.6	752.1	20.2	607.0	106.5	47.4	73.9	1141.0	253.4	14.4	92.9	3457.5	2089.4	4.3	135.6	75.3	38.1	33.4	234.3	8424.4

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	150.5	57	176	64	67	7	37	10	0	0	150	45	0	0	28	4	1	26	672
September	29	258.75	92	285	246	80	21	551	61	0	1	2838	32	0	1	59	13	10	102	4392
October	29	287.5	73	359	164	66	67	2127	229	3	36	4	376	1	37	62	58	38	116	3816
November	28	220	58	100	4	23	27	157	29	8	62	0	1048	2	81	0	1	1	42	1643
Total	103	916.75	280	920	478	236	122	2,872	329	11	99	2,992	1,501	3	119	149	76	60	286	10523
Total per hr			0.31	1.00	0.52	0.26	0.13	3.13	0.36	0.01	0.11	3.26	1.64	0.00	0.13	0.16	0.08	0.05	0.31	11.48
% of flight			2.7	8.7	4.5	2.2	1.2	27.3	3.1	0.1	0.9	28.4	14.3	0.0	1.1	1.4	0.7	0.5	2.7	100.0
Average	98	719.7045	224.091	706.5	590.7	149.9	167.6	3071	355.0	43.3	143.9	6309	2683	2.2	86.0	199.8	74.2	45.4	303.0	15144

BLUE MOUNTAIN Rte. 183 (Schuylkill and Berks) - Scott Fisher, compiler

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	Unid	Total
August	6	41.5	7	0	10	7	0	12	3	0	1	36	12	0	0	14	0	0	6	108
September	6	36	8	33	19	5	0	66	9	0	1	867	15	0	0	3	0	1	8	1035
October	12	77	20	72	10	13	9	668	65	0	18	0	140	0	15	19	6	3	11	1069
November	7	47	11	18	1	6	5	44	1	3	11	0	159	0	21	1	3	0	2	286
Total	31	201.5	46	123	40	31	14	790	78	3	31	903	326	0	38	37	9	4	27	2498
Total per hr			0.23	0.61	0.20	0.15	0.07	3.92	0.39	0.01	0.15	4.48	1.62	0.00	0.18	0.18	0.04	0.02	0.13	12.40
% of flight			1.8	4.9	1.6	1.2	0.6	31.6	3.1	0.1	1.2	36.1	13.1	0.0	1.4	1.5	0.4	0.2	1.1	100.0
Average--no past data available																				

BUCKINGHAM-BWSEPT (Bucks) - Kirk Moulton, Compiler

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	Unid	Total
September	7	51	0	2	61	25	11	56	13	0	3	11230	3	0	0	34	0	3	4	11445
Total	7	51	0	2	61	25	11	56	13	0	3	11230	3	0	0	34	0	3	4	11445
Total per hr			0.00	0.04	1.20	0.49	0.22	1.10	0.25	0.00	0.06	220.20	0.06	0.00	0.00	0.67	0.00	0.06	0.08	224.41
% of flight			0.0	0.0	0.5	0.2	0.1	0.5	0.1	0.0	0.0	98.1	0.0	0.0	0.0	0.3	0.0	0.0	0.0	100.0
Average	10	64	4.5	2.3	52.2	11.2	9.7	75.8	20.0	0.0	1.2	2065.2	11.5	0.3	0.0	40.3	2.5	1.5	8.2	2306.0

COUNCIL CUP (Luzerne) - Donald Kapral, Compiler

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	Unid	Total
August	3	12	0	13	0	5	0	2	1	0	0	5	24	0	0	0	0	0	7	57
September	12	59	2	216	19	29	2	45	14	0	0	386	99	0	0	8	0	0	83	903
October	8	36.5	1	99	19	17	2	51	3	0	0	6	107	0	0	9	0	0	36	350
November	6	22.5	0	1	0	4	0	2	1	0	1	2	93	0	0	0	0	1	3	108
Total	29	130	3	329	38	56	4	100	19	0	1	399	323	0	0	17	0	1	129	1418
Total per hr			0.02	2.53	0.29	0.42	0.03	0.77	0.15	0.00	0.01	3.07	2.48	0.00	0.00	0.13	0.00	0.01	0.99	10.91
% of flight			0.2	23.2	2.7	3.9	0.3	7.1	1.3	0.0	0.1	28.1	22.8	0.0	0.0	1.2	0.0	0.1	9.1	100.0
Average	41.9	145.3	3.0	210.7	55.9	25.2	16.1	253.1	28.1	2.5	6.7	1063.9	757.0	0.5	2.8	47.5	3.5	4.0	38.0	2118.9

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	22	185.5	6	14	57	70	2	40	15	0	3	133	27	0	0	60	5	1	7	440
September	30	272.5	6	29	265	84	28	596	124	0	3	4144	76	0	3	114	39	15	38	5585
October	31	291.5	15	261	148	55	80	2599	353	7	54	12	469	0	37	120	79	44	73	4406
November	30	233.5	11	52	4	34	28	119	36	15	72	0	1158	3	79	0	6	1	45	1663
December	18	109.5	0	1	0	17	5	4	2	6	5	0	77	3	17	0	0	0	1	138
January	1	3	0	0	0	2	1	0	0	0	0	0	3	0	1	0	0	0	0	7
Total	132	1095.5	38	357	474	262	144	3358	530	28	137	4289	1810	6	138	294	129	61	184	12219
Total per hr			0.03	0.33	0.43	0.24	0.13	3.05	0.48	0.03	0.13	3.91	1.65	0.01	0.12	0.27	0.12	0.06	0.15	11.15
% of flight			0.3	2.9	3.9	2.1	1.2	27.5	4.3	0.2	1.1	35.1	14.8	0.0	1.1	2.4	1.1	0.5	1.3	100.0
Average	122.0	1074.3	61.0	284.4	611.4	174.1	244.7	4654.7	757.8	68.2	281.3	6845.7	3654.5	7.9	112.6	550.3	143.3	46.8	173.0	18672.7

* Includes an adult Mississippi Kite in Sep.

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
August	1	5	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
September	13	92.25	1	23	48	15	11	85	9	0	0	1104	16	0	0	21	4	4	2	1343
October	4	19.5	0	24	0	1	4	18	1	0	0	0	44	0	0	2	2	0	1	97
November	2	8.5	17	0	0	2	2	0	1	1	0	0	14	0	2	0	0	0	0	39
December	1	3	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	3
Total	21	128.25	18	47	48	19	17	104	11	1	0	1104	76	0	2	23	6	4	3	1483
Total per hr			0.14	0.37	0.37	0.15	0.13	0.81	0.09	0.01	0.00	8.60	0.59	0.00	0.02	0.18	0.05	0.03	0.02	11.56
% of flight			1.2	3.2	3.2	1.3	1.1	7.0	0.7	0.1	0.0	74.4	5.1	0.0	0.1	1.6	0.4	0.3	0.2	100.0
Average	55.3	333.9	88.5	223.7	113.9	37.5	69.3	853.7	104.8	10.6	18.4	2817.5	836.9	0.8	29.5	100.9	14.8	10.9	29.3	4914.6

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	3	11.75	0	0	4	2	0	1	3	0	0	6	8	0	0	6	1	0	3	34
September	21	135.5	13	54	150	44	9	337	38	0	3	5012	49	0	1	62	17	1	21	5812
October	23	148.75	25	124	101	24	31	842	112	6	17	0	419	0	9	15	22	20	37	1804
November	22	127.5	14	42	1	24	14	94	32	8	41	0	608	0	43	2	4	0	19	947
December	1	2.5	2	0	0	1	1	0	0	0	0	0	4	0	0	0	0	0	0	8
Total	70	426	54	220	266	95	55	1274	185	14	61	5018	1088	0	53	85	44	21	80	8605
Total per hr			0.13	0.52	0.60	0.22	0.13	2.99	0.43	0.03	0.14	11.78	2.55	0.00	0.12	0.20	0.10	0.05	0.19	20.20
% of flight			0.6	2.6	3.0	1.1	0.6	14.8	2.1	0.2	0.7	58.3	12.6	0.0	0.6	1.0	0.5	0.2	0.9	100.0
Average	102.0	659.4	53.1	332.4	484.6	124.0	166.8	3399.7	488.7	42.5	124.8	7496.9	2591.9	2.5	69.8	290.7	62.6	34.2	148.4	15914.2

* Includes a Mississippi Kite in Sep and grey morph Gyrfalcon in Nov.

MILITIA HILL (Montgomery) - Marylea Klauder and Lynn Jackson, Compilers

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	Unid	Total
September	29	214.5	0	162	51	22	269	28	0	1	8480	10	0	0	117	2	6	23	9171	
October	29	230.8	62	391	71	38	590	84	0	38	24	96	0	2	95	13	15	56	1592	
Total	58	445.3	62	391	233	68	859	112	0	39	8504	106	0	2	212	15	21	79	10763	
Total per hr			0.14	0.88	0.52	0.15	1.93	0.25	0.00	0.09	19.10	0.24	0.00	0.00	0.48	0.03	0.05	0.18	24.17	
% of flight			0.6	3.6	2.2	0.6	8.0	1.0	0.0	0.4	79.0	1.0	0.0	0.0	2.0	0.1	0.2	0.7	100.0	
Average	68.6	503.3	40.6	290.6	264.1	42.8	948.5	138.1	1.9	50.1	7115.9	327.2	0.4	2.4	275.1	23.0	13.0	76.6	9678.8	

ROSE TREE PARK (Delaware) - Jim Lockyer, Compiler

Month	Days	Hours	TUVU	BLVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	Unid.	Total*
August	8	53.5	0	7	17	5	11	8	0	4	67	7	0	0	4	0	0	2	133	
September	29	198	6	5	109	54	10	286	46	0	14	3909	40	0	72	18	8	18	4595	
October	30	206	278	50	67	43	22	620	93	1	55	28	125	0	66	27	14	10	1502	
November	26	140	85	56	5	20	12	128	20	0	71	0	339	0	1	5	2	9	754	
Total	93	697.5	369	118	198	122	45	1045	167	1	144	4004	611	0	3	143	50	24	39	6984
Total per hr			0.62	0.20	0.33	0.20418	0.07531	1.75	0.28	0.00	0.24	6.70	0.86	0.00	0.01	0.24	0.08	0.04	0.07	11.69
% of flight			5.3	1.7	2.8	1.74685	0.64433	15.0	2.4	0.0	2.1	57.3	7.3	0.0	0.0	2.0	0.7	0.3	0.6	100.0
Average	96.9	680.5	105.6	490.3	293.6	143	96.1	1605.1	251.9	8.8	173.3	4404.2	522.8	0.4	5.4	322.6	49.0	18.3	93.0	9037.0

* Includes an intermediate morph. Juvenile Swainson's Hawk in Oct.

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	23	148	0	0	9	12	4	15	10	2	3	111	63	0	2	16	1	1	5	254
September	25	222.5	0	0	73	49	17	284	40	4	6	2159	96	0	4	36	6	4	14	2792
October	29	263	184	326	50	26	46	1340	152	14	27	6	275	0	23	35	26	27	28	2585
November	28	198	152	233	0	29	20	28	11	7	68	0	524	1	64	0	2	0	12	1151
December	20	104	61	54	0	11	1	2	1	2	4	0	75	2	9	0	2	0	0	224
Total	125	936.5	397	613	132	127	88	1669	214	29	108	2276	1033	3	102	87	37	32	59	7006
Total per hr			0.42	0.66	0.14	0.14	0.09	1.78	0.23	0.03	0.12	2.43	1.10	0.00	0.11	0.09	0.04	0.03	0.06	7.49
% of flight			5.7	8.7	1.9	1.8	1.3	23.8	3.1	0.4	1.5	32.5	14.7	0.0	1.5	1.2	0.5	0.5	0.8	100.0
Average	129.7	972.2	248.9	465.5	217.3	62.8	155.4	2326.5	300.6	59.1	172.2	3959.3	1570.2	3.2	63.6	161.5	40.2	24.0	68.1	9898.3

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
September	17	99	0	0	53	32	6	109	30	1	4	1893	28	0	14	5	0	11	2186	
October	26	141.75	97	183	29	10	30	400	66	3	17	1	346	0	22	29	19	16	21	1289
November	19	110.75	19	28	0	10	5	29	12	2	29	0	368	0	101	2	1	0	5	611
December	2	11.25	0	0	0	0	1	2	0	1	0	0	9	0	10	0	0	0	0	23
Total	64	362.75	116	211	82	52	42	640	108	7	50	1894	751	0	133	45	25	16	37	4109
Total per hr			0.32	0.58	0.23	0.14	0.12	1.49	0.30	0.02	0.14	5.22	2.07	0.00	0.37	0.12	0.07	0.04	0.10	11.33
% of flight			2.8	5.1	2.0	1.3	1.0	13.1	2.6	0.2	1.2	46.1	18.3	0.0	3.2	1.1	0.6	0.4	0.9	100.0
Average	61.2	340.5	7.6	82.9	98.9	30.1	83.0	902.1	192.7	11.9	64.0	1244.1	1282.7	2.4	92.1	119.5	31.8	22.3	66.7	4336.3

TUSCARORA SUMMIT (Fulton) - Dale Gearhart, Compiler

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	Unid	Total
September	28	158.8	0	0	93	34	8	173	14	0	8	1553	13	0	2	16	1	2	26	1943
October	30	160.3	23	336	17	14	28	465	42	0	2	0	138	0	24	10	6	4	39	1148
November	14	72.5	16	77	0	10	10	37	2	0	7	0	240	0	17	1	1	0	6	424
Total	72	391.6	38	413	110	58	46	675	58	0	17	1553	391	0	43	27	8	6	71	3515
Total per hr			0.10	1.05	0.28	0.15	0.12	1.72	0.15	0.00	0.04	3.97	1.00	0.00	0.11	0.07	0.02	0.02	0.18	8.98
% of flight			1.1	11.7	3.1	1.7	1.3	19.2	1.7	0.0	0.5	44.2	11.1	0.0	1.2	0.8	0.2	0.2	2.0	100.0
Average			66.1	362.6	27.0	231.1	105.7	25.6	75.4	5.6	33.5	1918.3	694.4	0.5	34.3	41.5	7.4	13.7	70.6	4291.3

WAGGONER'S GAP (Cumberland) - Dave 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	234.5	0	0	33	62	9	26	37	0	2	337	45	0	0	85	0	0	9	545
September	25	235.25	0	0	243	119	27	1155	164	1	5	6866	74	0	3	108	30	13	54	8862
October	31	307.25	70	1082	91	64	96	4757	458	5	95	2	826	0	52	80	89	27	63	7857
November	27	234.75	7	254	0	27	52	140	31	19	134	0	1598	3	177	3	9	0	22	2476
December	27	159	14	9	0	36	4	7	0	8	1	0	150	5	12	0	2	0	5	253
Total	141	1170.75	91	1345	367	308	188	6085	690	33	237	7205	2693	8	244	276	130	40	153	20093
Total per hr			0.08	1.15	0.31	0.26	0.16	5.20	0.59	0.03	0.20	6.15	2.30	0.01	0.21	0.24	0.11	0.03	0.13	17.16
% of flight			0.5	6.7	1.8	1.5	0.9	30.3	3.4	0.2	1.2	35.9	13.4	0.0	1.2	1.4	0.6	0.2	0.8	100.0
Average			134.8	1045.4	104.2	1009.9	452.8	163.4	768.6	91.0	318.5	4975.6	4337.3	10.4	200.5	325.4	76.7	52.1	189.8	19204.8

TOTALS FOR ALL WATCH SITES - 2008

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	Unid	Total*
August	129	969.25	75	210	216	242	24	188	100	2	14	1103	310	0	2	227	11	4	99	2827
September	300	2258.55	133	651	1617	660	184	4234	633	8	49	54069	661	0	15	685	139	68	477	64285
October	309	2388.35	853	3632	779	358	484	15185	1781	43	383	84	4018	2	253	562	372	220	568	29578
November	234	1578.5	390	879	16	194	182	804	191	64	527	2	6576	12	704	10	32	6	186	10776
December/Jan.	77	422.75	77	64	0	73	14	16	3	17	10	0	331	10	54	0	4	0	7	680
Total	1049	7617.4	1628	6436	2628	1527	888	20427	2708	134	983	55268	11896	24	1028	1484	568	298	1337	108146
Total per hr			0.21	0.73	0.35	0.21	0.12	2.75	0.36	0.02	0.13	7.43	1.60	0.00	0.14	0.20	0.08	0.04	0.18	14.55
% of flight			1.4	5.1	2.5	1.4	0.8	19.1	2.5	0.1	0.9	51.6	11.1	0.0	1.0	1.4	0.5	0.3	1.2	101.0
% change from 2007			10.8%	14.1%	17.8%	18.5%	-28.8%	8.9%	-49.7%	-34.1%	-20.3%	38.0%	-21.2%	20.0%	40.4%	-26.0%	-26.4%	-13.6%	3.4%	-1.2%

*Includes 2 Mississippi Kites, 1 Swainson's Hawk, 1 Gyrfalcon.

KEY TO TABLE HEADERS

BLVU	Black Vulture	RSHA	Red-shouldered Hawk
TUVU	Turkey Vulture	BWHA	Broad-winged Hawk
OSPR	Osprey	RTHA	Red-tailed Hawk
BAEA	Bald Eagle	RLHA	Rough-legged hawk
NOHA	Northern Harrier	GOEA	Golden Eagle
SSHA	Sharp-shinned Hawk	AMKE	American Kestrel
COHA	Cooper's Hawk	MERL	Merlin
NOGO	Northern Goshawk	PEFA	Peregrine Falcon

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

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51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

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51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

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11	12	13	14	15	16	17	18	19	20
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31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100