

Autumn Raptor Migration Summary 2005

Gail Farmer

Twelve hawkwatches reported counts for autumn 2005 (Table 1). Count hours ranged from 179 to 1,121, for a total of 7,542. Count days at all sites ranged from 41 to 153, for a total of 1,108. A total of 116,841 raptors representing 17 species was reported, including Swainson's Hawk (*Buteo swainsoni*) at Bake Oven Knob and Second Mountain.

Average count effort in Aug.-Dec. for the twelve watchsites in 2005 was slightly less than in 2004 (629 hours/site vs. 635 hours/site), with decreased effort at all sites except Bake Oven Knob (Lehigh), Hawk Mountain (Berks/Schuylkill), Rocky Ridge (York), Rose Tree Park (Delaware), and Waggoner's Gap (Cumberland County; Table 1).

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

Composition of the flight

The four most numerous migrants overall were Broad-winged Hawks (*Buteo platypterus*), Sharp-shinned Hawks (*Accipiter striatus*), and Red-tailed Hawks (*Buteo jamaicensis*) (Table 2). Broad-wings made up the largest percentage of the overall flight at 35%, ranging from 13% at Stone Mountain to 80% at Militia Hill. Sharp-shinned Hawks (20% overall) ranged from 8% of the flight at Militia Hill to 33% at Waggoner's Gap. Red-tailed Hawks (16% overall) ranged from 2% at Militia Hill to 38% of the flight at Stone Mountain. Of the remaining thirteen regular migrants, only Turkey Vulture (*Cathartes aura*), Northern Harrier (*Circus cyaneus*), Red-shouldered Hawk (*Buteo lineatus*), and Cooper's Hawk (*Accipiter cooperii*) made up 3% or more of the flight.

Passage rates for most species were higher this year than in 2004, with Red-shouldered Hawks and Northern Harriers increasing by more than 80% (Table 2). Counts of Northern Goshawks (*Accipiter gentilis*) increased by 52%, Rough-legged Hawks (*Buteo lagopus*) increased by 50%, Peregrine Falcons (*Falco peregrinus*) by 45%, Golden Eagles (*Aquila chrysaetos*) by 38%, and Merlins (*Falco columbarius*) by

36%. Osprey (*Pandion haliaetus*) passage rates were 25% lower this year than in 2004, and all other species differed by less than 20% from the previous year. Overall, many sites reported record breaking flights of Cooper's Hawks, Bald Eagles (*Haliaeetus leucocephalus*), Turkey Vultures, Red-shouldered Hawks, and Merlins.

Peak counts of Bald Eagle (Table 3), Sharp-shinned Hawks, Cooper's Hawks, American Kestrels (*Falco sparverius*), and Merlins were synchronous among six sites, presumably owing to a cold front during the second week of October that brought strong northwest winds the weekend of the 15th and 16th.

Seasonal highlights

Allegheny Front (Bedford) – No new records were set at Allegheny Front, and only 5,350 (in 758 hours) raptors were counted, compared to the 12,866 raptors counted during 799 hours in 2004. The highest one-day count was on 28 Oct., with 400 raptors recorded. The Broad-winged Hawk count was particularly low this year, with only 1,194 birds counted, making up only 22% of the flight. In 2004 the 5,556 broadwings counted made-up over 45% of flight. Red-tailed Hawks, Broad-winged Hawks, and Sharp-shinned Hawks, together made up 70% of the flight (29%, 22%, and 19%, respectively). Between 20 and 30 Oct., peak flights of Turkey Vultures (157) and Red-tailed Hawks (711) were recorded, and the first two weeks of Oct. brought the peak flight for Sharp-shinned Hawks (540 birds, 53% of total flight). On 11 Nov., Franklin Mountain (NY) observed a record-breaking 71 Golden Eagles, three days later Allegheny Front recorded 45 Golden Eagles, their highest daily count that season. More than twice as many Peregrine Falcons were counted this year than last year (50 and 21, respectively).

Bake Oven Knob (Lehigh) – Flights for most species were higher than the ten-year average at Bake Oven Knob, including Merlins, American Kestrels, Golden Eagles, Sharp-shinned Hawks, and Cooper's Hawks. Season records included Turkey Vultures (1,023), Merlins

(150), and Cooper's Hawks (492). Sixty-nine percent of the Broad-winged Hawk flight passed between 22 and 25 Sept., with a peak count of 1,287 birds on 25 Sept. The peak count for Osprey also occurred in Sept. (56; 22 Sept.). Peak flights of American Kestrels (88) and Merlins (67) occurred on 15 and 16 Oct. (accounting for 40% of each of their total flights). Other peak counts in Oct. include Sharp-shinned Hawk (485; 16 Oct.), Cooper's Hawk (69; 19 Oct.), Northern Goshawk (6; Oct. 23), Peregrine Falcon (6; 3 Oct.), Bald Eagle (13; 16 Oct.). Peak counts in Nov. included Northern Harrier (10; 4 Nov.), Golden Eagle (6; 3 Nov.), and Red-tailed Hawk (231; 11 Nov.).

Hawk Mountain Sanctuary (Berks/Schuylkill) – The total count at Hawk Mountain Sanctuary this year (18,310) was higher than in 2004 (15,030) and close to the ten-year average (18,551). Broad-winged Hawks, Red-tailed Hawks, and Sharp-shinned Hawks, together made-up 79% of the flight (29%, 25%, and 25%, respectively). Season records include 112 Black Vultures (*Coragyps atratus*), 457 Turkey Vultures, and 198 Merlins, with a single-day record of 48 birds on Oct. 15th. Hawk Mountain had the highest count of Merlins in the state. Hawk Mountain also recorded its second highest season-total for Cooper's Hawks (1,119), versus the season record of 1,121 in 1998. Nearly 50% of the American Kestrel (188 of 468) and Merlin (85 of 198) flights occurred between 15 and 17 Oct. Peak flights for Sharp-shinned (741) and Cooper's Hawks (163) were recorded on 22 Oct. Other peak flights include Osprey (44; 22 Sept.), Turkey Vulture (67; 31 Oct.), Northern Harrier (16; 4 Nov.), and Peregrine Falcon (8; 15 Oct.).

Jack's Mountain (Mifflin) – Count effort at Jack's Mountain declined for a fourth year and was 25% below the average (since 1995), resulting in below average counts and passage rates for all species. The site reported record low counts of Northern Harriers (17), Red-shouldered Hawks (2), and Red-tailed Hawks (360). Peak counts included Turkey Vulture (53; 27 Oct.), Osprey (23; 19 Sept.), Broad-winged Hawk (886; 19 Sept.),

Red-tailed Hawks (50; 19 Oct.), Sharp-shinned Hawk (55; Oct. 19), American Kestrel (15; 19 Sept.), Merlin (6; 19 Oct.) and Peregrine Falcon (2; 6 Oct.).

Little Gap (Northampton) – In 2005 Little Gap had the second highest passage rate ever (28 birds/hour versus 30 birds/hr in 2002). Season record highs were set for Black Vultures (108), Turkey Vultures (510), Red-tailed Hawks (4,298), Red-shouldered Hawks (173), Cooper's Hawks (589), and Golden Eagle (102). Counts of most species were at or above the ten-year average, except for Northern Harriers (-5%), Broad-winged Hawks (-14%), and American Kestrels (-22%) which were below average. The peak count for Broad-winged Hawks occurred on 22 Sept. Over 59% of the total Sharp-shinned Hawk flight and 47% of the Cooper's Hawk flight passed between 15 and 20 Oct. Peak counts that week included Turkey Vulture (76; 15 Oct.), Northern Harrier (14; 18 Oct.), Bald Eagle (14; 16 Oct.), American Kestrel (30; 15 Oct.), and Merlin (17; 15 Oct.). Other peak counts include Osprey (39; 25 Sept.), Red-tailed Hawk (788; 29 Oct.), Red-shouldered Hawk (29; 30 Oct.), Northern Goshawk (6; 29 Oct. and 2 Nov.), and Golden Eagle (8; 11 Nov.).

Militia Hill (Montgomery) – Several records were set this season at Militia Hill, including season record highs of 62 Bald Eagles and 184 Cooper's Hawks, and a one-day record high of 140 Sharp-shinned Hawks (23 Oct.). On 19 Sept., 3,920 broadwings were counted in the morning and 366 more were counted in the afternoon. Sept. 21 brought 2,486 broadwings, 6 Bald Eagles, and the site reported its 175,000th bird in its 18-year history. Sixty percent of Ospreys counted in Sept. passed between the 18th and 25th (98 of 154), and most Ospreys (60%) counted in Oct. passed between 9 and 11 Oct. (49 of 103). Other peak flights included 568 Sharp-shinned Hawks (66% of total count; 15-31 Oct.), 40 Red-shouldered Hawks (43%; 29-31 Oct.), 203 Red-tailed Hawks (74%; 26-31 Oct.), 54 American Kestrels (29%; 24 Sept.), and 161 Turkey Vultures (70%; 26-29 Oct.).

Rocky Ridge (York) – Rocky Ridge had the third highest overall passage rate among watchsites in Pennsylvania with 23 birds per hour.

Ten species of raptors passed on 24 Sept., and on the same date in little more than one hour, 2,000 Broad-winged Hawks (63% of total flight for the season) were counted streaming just above the tree line. Bald Eagle sightings this season (71) were more than two times the ten-year average. The Sharp-shinned Hawk count was 25% above average, with 260 in Oct. And the American Kestrel count was also 25% higher than average, with 39 birds recorded in Oct. and 29 in Sept. Red-tailed Hawk sightings were 35% below average, however, this could be due to somewhat limited coverage in Nov. (18.25 hours; Table 3). Peak flights for Sharp-shinned Hawks (121; 30%) and American Kestrels (22; 31%) occurred on 15 and 16 Oct. Other peak flights by species: Osprey (9; Sept. 24), Cooper's Hawk (8; 23 Oct.); Northern Harrier (7; 24 Sept.), and Turkey Vulture (58, 84% of total flight; 28 Oct.).

Rose Tree Park (Delaware) – At Rose Tree Park, season records were set for Bald Eagles (297) and Red-shouldered Hawks (278). Passage rates and counts for Northern Harriers (peak count of 5 on 23 Oct.) and Golden Eagles (1; 5 and 17 Nov.) were the lowest since 1999. The Broad-winged Hawk flight peaked between 18 and 20 Sept. (1,682 birds; 73% of total flight). 23 Oct. brought the highest daily count that month (379 raptors), including peak counts for Sharp-shinned Hawk (203), Cooper's Hawk (24), and Red-shouldered Hawk (42). Other peak counts included Turkey Vulture (90; 27 Oct.), Bald Eagle (15; 1 Oct.), Red-tailed Hawk (96; 11 Nov.), American Kestrel (33; 15 Oct.), and Peregrine Falcon (3; 28 Oct.).

Second Mountain (Lebanon) – This year at Second Mountain, 24 and 25 Sept. brought the first big flights of the season, accounting for 37% of the total flight in Sept. A one-day record high count of Bald Eagles (10 birds) was set on 24 Sept., and the season peak of 1,123 broadwings occurred on 25 Sept., together with a flight of five more Bald Eagles and one Golden Eagle. The biggest non-broadwing daily count of the season was 19 Oct., with a total of 436 birds, featuring season highs for Sharp-shinned Hawks (339), Cooper's Hawks (30), and Northern Goshawks (7). On 30 Oct. there were with peak counts of Red-tailed Hawks (126), Red-shouldered Hawks (23), and

Golden Eagles (8). Counters braving cold temperatures on 25 Nov. were rewarded when a dark-morph Rough-legged Hawk was spotted, followed a few minutes later by a light morph. This was another record breaking season for Bald Eagles (96), raising the ten-year average from 23 in 1994 to 60. Golden Eagles and Cooper's Hawks were slightly above average, the Goshawk and Rough-legged Hawk were about average, and all other species were 65-85% below average.

Stone Mountain (Huntingdon) – The total count at Stone Mountain was below average for the second consecutive year (3,213 compared to ten year average of 4,341). This was due, at least in part, to decreased effort (257 hours, the lowest effort in the past seven years). The Broad-winged Hawk count was a record low, with only 425 birds counted (compared to a ten year average of 1,344). Other record lows include Osprey (66) and Peregrine Falcon (9). One-day record high counts included Sharp-shinned Hawk (186; 15 Oct.) and Cooper's Hawk (70; 16 Oct.). One Swainson's Hawk was seen on Oct. 23 (the same date as last years sighting of that species). The peak count for Red-tailed Hawks occurred on 23 Oct. (188). Other peak counts included Golden Eagle (14; 17 Nov.), Merlin (11; 15 Oct.), and American Kestrel (23; 11 Oct.).

Tuscarora Summit (Fulton) – Passage rates were lower than the ten-year average for Osprey (72; -30%), Northern Harrier (51; -27%), Red-shouldered Hawk (17; -50%), Broad-winged Hawk (1,142; -37%), Red-tailed Hawk (446; -38%), and American Kestrel (25; -37%). Counts for Turkey Vulture (457) and Bald Eagle (37) were above average and set new season record highs. Seventy percent of the Broad-winged Hawk flight (peak count was 419 on 19 Sept.) passed between 17 and 22 Sept. Bald Eagles (4; 24 Sept.) and Osprey (8; 22 Sept.) also had peak counts that month. Other peak counts included Turkey Vulture (191; 23 Oct.), Black Vulture (11; 14 Nov.), Northern Harrier (5; 3 Nov.), Sharp-shinned Hawk (153; 19 Oct.), Cooper's Hawk (6; 19 Oct.), Northern Goshawk (1; on 4 days), Golden Eagle (6; 7 Nov.), American Kestrel (3; 13 Sept. and 1 Nov.), Merlin (2; 1 Nov.), Peregrine Falcon (3; 1 Nov.).

Waggoner's Gap (Cumberland)

- Season record highs were set for Bald Eagles (303), Golden Eagles (242), Merlins (147), Turkey Vultures (1,814), and Cooper's Hawks (1,054), and overall, the site recorded more Bald Eagles, Golden Eagles, and Turkey Vultures than any other site in Pennsylvania. Sixty-four percent (2,609 birds) of the Broad-winged Hawk flight occurred between Sept. 11 and 19. Strong Northwest winds on the weekend of 15 and 16 Oct. brought more than 2,890 raptors, including peak counts on the 15 Oct. for Osprey (32), Bald Eagles (15), and Merlins (27; single-day record). A total of 1859 birds passed on 16 Oct., including peak counts of Black Vultures (19), Turkey Vultures (341), Sharp-shinned Hawks (1058), Cooper's Hawks (167), and American Kestrels (56). Twelve Rough-legged Hawks were counted at Waggoner's Gap (3; 14 Dec.), more than at any other watchsite. Peak counts for other species included the Red-shouldered Hawk (24; 27 Oct.), Red-tailed Hawk (387; Oct. 30), and Northern Harrier (28; 5 Nov.).

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

Table 1. Watchsites reporting for autumn 2005 (Aug. - Dec.).

Watchsite	County	Hours of Observation
Allegheny Front	Bedford	758
Bake Oven Knob	Lehigh	844
Hawk Mountain	Berks/Schuylkill	1121
Jack's Mountain	Mifflin	273
Little Gap	Northampton	562
Militia Hill	Montgomery	442
Rocky Ridge	York	179
Rose Tree Park	Delaware	657
Second Mountain	Lebanon	996
Stone Mountain	Huntington	257
Tuscarora Summit	Fulton	338
Waggoner's Gap	Cumberland	1115

Table 3. Peak count dates for Osprey, Bald Eagle, and Broad-winged Hawk at Pennsylvania watchsites in autumn 2005.

Watchsite	Osprey		Bald Eagle		Broad-winged Hawk	
	Count	Date	Count	Date	Count	Date
Allegheny Front	17	24 Sep	6	25, 11 Sep	29 0	13 Sep
Bake Oven Knob	56	22 Sep	13	16 Oct	1287	25 Sep
Hawk Mountain	44	22 Sep	11	16 Oct	1811	25 Sep
Jack's Mountain	23	19 Sep	3	19 Sep	88 6	19 Sep
Little Gap	39	25 Sep	14	16 Oct	1034	22 Sep
Militia Hill	30	25 Sep	6	21 Sep, 16 Oct	4242	19 Sep
Rocky Ridge	9	24 Sep	10	3 Sep	2163	24 Sep
Rose Tree Park	18	24 Sep	20	16 Oct	69 0	21 Sep
Second Mountain	15	15 Oct	10	24 Sep	1123	25 Sep
Stone Mountain	15	15 Oct	4	23 Oct	15 3	11 Sep
Tuscarora Summit	8	22 Sep	4	11, 24 Sep	41 9	19 Sep
Waggoner's Gap	32	15 Oct	15	15 Oct	63 8	12 Sep

Table 2. Hawkwatch Results for Autumn 2005 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	Unld	Total
August	17	90.5	1	0	10	2	4	24	4	0	4	71	16	0	0	7	0	0	9	152
September	30	246	7	0	69	37	12	249	53	1	3	1,121	247	0	0	17	16	19	85	1936
October	31	194.75	5	382	39	4	23	714	132	2	65	2	961	1	5	40	16	31	176	2,598
November	30	180	6	45	0	2	10	18	14	3	40	0	305	2	110	6	2	0	41	604
December	12	48	1	0	0	3	0	1	1	2	5	0	24	1	16	0	0	0	6	60
Total	120	758	20	427	118	48	49	1,006	204	8	117	1,194	1,553	4	131	70	34	50	317	5,350
Total per hr.			0.03	0.6	0.16	0.06	0.06	1.3	0.27	0.01	0.15	1.6	2.0	0.01	0.17	0.09	0.04	0.07	0.42	7.1
% of flight			0.4	8.0	2.2	0.9	0.9	19	3.8	0.1	2.2	22	29	0.1	2.4	1.3	0.6	0.9	5.9	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	Unld	Total*
August	17	120.5	41	96	32	33	4	16	7	0	1	50	28	0	0	13	0	0	15	336
September	30	285.75	89	306	349	75	29	659	54	2	5	4677	186	0	1	75	21	25	72	6625
October	31	230	97	297	145	43	56	2858	405	23	109	43	1924	2	48	139	124	27	176	6517
November	27	208	99	324	0	23	63	140	26	32	63	0	1484	4	68	3	5	3	38	2375
Total	105	844.3	326	1,023	526	174	152	3,673	492	57	178	4,770	3,622	6	117	230	150	55	301	15,853
Total per hr.			0.4	1.2	0.6	0.2	0.2	4.4	0.6	0.1	0.2	5.6	4.3	0	0.1	0.3	0.2	0.1	0.4	18.8
% of flight			2.1	6.5	3.3	1.1	1.0	23	3.1	0.4	1.1	30	23	0	0.7	1.5	0.9	0.3	1.9	100.0

* Total includes one Swainson's Hawk in October.

HAWK MOUNTAIN (Berks/Schuylkill)
Laurie Goodrich, compiler

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	Unld.	Total
August	17	141.65	0	0	34	24	15	15	16	0	0	143	41	0	0	29	1	3	3	324
September	30	329	10	11	316	84	37	575	152	2	2	5096	121	0	1	142	51	25	62	6697
October	31	272	51	289	130	47	62	3734	849	9	190	34	2419	1	49	294	137	24	65	8394
November	30	258.75	49	156	0	24	86	218	90	32	140	0	1796	2	58	3	9	2	17	2682
December	16	119.5	2	1	0	18	8	3	13	10	14	0	160	3	13	0	0	0	4	249
Total	124	1121	112	457	480	197	208	4,545	1,120	53	346	5,273	4,537	6	121	468	198	54	151	18,326
Total per hr.			0.1	0.4	0.4	0.2	0.2	4.1	1.0	0	0.3	4.7	4.0	0	0.1	0.4	0.2	0	0.1	16.3
% of flight			0.6	2.5	2.6	1.1	1.1	25	6.1	0.3	1.9	29	25	0	0.7	2.6	1.1	0.3	0.8	100.0

PENNSYLVANIA BIRDS

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	4	17	0	0	3	4	2	0	0	0	0	1	0	0	0	4	0	0	1	15
September	23	129.5	7	0	64	14	9	91	4	0	0	1780	29	0	0	42	1	0	3	2044
October	18	97	0	71	8	1	3	222	24	1	1	7	258	0	5	17	8	3	10	639
November	5	29.25	2	74	0	2	3	4	2	1	1	0	73	0	14	0	1	0	4	181
Total	50	273	9	145	75	21	17	317	30	2	2	1,788	360	0	19	63	10	3	18	2,879
Total per hr.			0	0.5	0.3	0.1	0.1	1.2	0.1	0	0	6.5	1.3	0	0.1	0.2	0	0	0.1	10.5
% of flight			0.3	5.0	2.6	0.7	0.6	11	1.0	0.1	0.1	62	13	0	0.7	2.2	0.3	0.1	0.6	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	3	9	0	0	1	1	2	2	1	0	0	7	0	0	0	0	0	0	0	14
September	30	206	4	12	314	64	26	498	64	2	2	5340	84	0	0	128	19	15	39	6611
October	31	176.25	69	437	98	41	57	2876	475	23	128	6	2826	4	51	85	44	23	66	7309
November	27	150.5	32	121	1	17	55	128	45	13	39	0	1311	1	50	0	3	1	15	1832
December	5	20.25	3	0	0	2	1	1	4	3	4	0	77	0	1	0	1	0	0	97
Total	96	562	108	570	414	125	141	3,505	589	41	173	5,353	4,298	5	102	213	67	39	120	15,863
Total per hr.			0.2	1.0	0.7	0.2	0.3	6.2	1.0	0.1	0.3	9.5	7.6	0	0.2	0.4	0.1	0.1	0.2	28.2
% of flight			0.7	3.6	2.6	0.8	0.9	22	3.7	0.3	1.1	34	27	0	0.6	1.3	0.4	0.2	0.8	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	236.5	0	0	154	39	24	241	70	0	17	9131	14	0	0	114	4	4	25	9637
October	31	205	15	232	103	23	20	621	114	1	75	42	262	0	4	76	11	10	37	1646
Total	61	441.5	15	232	257	62	44	862	184	1	92	9,173	276	0	4	190	15	14	62	11,483
Total per hr.			0	0.5	0.6	0.1	0.1	2.0	0.4	0	0.2	21	0.6	0	0	0.4	0	0	0.1	26.0
% of flight			0.1	2.0	2.2	0.5	0.4	7.5	1.6	0	0.8	80	2.4	0	0	1.7	0.1	0.1	0.5	100.0

ROCKY RIDGE (York)
Randy Phillips, compiler

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMIKE	MERL	PEFA	Unid	Total
August	7	9.75	0	0	0	2	0	5	1	0	0	2	4	0	0	1	0	1	0	16
September	20	97.75	0	0	32	34	14	152	12	0	6	3169	14	0	0	29	1	0	1	3464
October	11	53.25	0	69	14	29	13	260	18	1	6	1	103	0	2	39	1	0	2	558
November	3	18.25	0	0	0	6	1	16	2	1	1	0	37	0	2	0	0	0	0	66
Total	41	179	0	69	46	71	28	433	33	2	13	3172	158	0	4	69	2	1	3	4104
Total per hr.			0	0.4	0.3	0.4	0.2	2.4	0.2	0	0.1	18	0.9	0	0	0.4	0	0	0	22.9
% of flight			0	1.7	1.1	1.7	0.7	11	0.8	0	0.3	77	3.8	0	0.1	1.7	0	0	0.1	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	M	AKE	MERL	PEFA	Unid.	Total
August	12	79.75	0	0	19	1	15	8	9	0	4	68	6	0	0	5	0	0	0	2	137
September	30	217	1	0	198	11	117	385	124	0	23	2156	23	0	0	124	13	8	34	3217	
October	31	172	264	17	72	20	141	1100	160	6	158	76	168	0	2	147	21	12	38	2402	
November	30	188.5	247	50	5	15	24	226	41	3	93	0	319	0	0	5	17	2	6	1053	
Total	103	657.25	512	67	294	47	297	1,719	334	9	278	2,300	516	0	2	281	51	22	80	6,809	
Total per hr.			0.8	0.1	0.4	0.1	0.5	2.6	0.5	0	0.4	3.5	0.8	0	0	0.4	0.1	0	0.1	10.4	
% of flight			7.5	1.0	4.3	0.7	4.4	25	4.9	0.1	4.1	34	7.6	0	0	4.1	0.7	0.3	1.2	100.0	

SECOND MOUNTAIN (Lebanon)
David Schwenk, compiler

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMIKE	MERL	PEFA	Unid	Total*
August	31	172	0	0	10	8	5	8	2	0	1	115	42	0	0	15	2	0	0	208
September	30	269.5	2	0	115	41	26	321	51	10	6	2956	124	0	6	44	15	7	24	3748
October	31	227.5	74	172	64	20	51	1484	213	35	66	11	607	0	28	46	22	18	32	2943
November	30	211	91	211	1	17	47	74	28	18	44	0	636	3	38	2	0	0	7	1217
December	31	116	61	41	0	10	0	6	1	1	1	0	52	0	2	2	0	0	0	177
Total	153	996	228	424	190	96	129	1,893	295	64	118	3,082	1,461	3	74	109	39	25	63	8,293
Total per hr.			0.2	0.4	0.2	0.1	0.1	1.9	0.3	0.1	0.1	3.1	1.5	0	0.1	0.1	0	0	0.1	8.3
% of flight			2.7	5.1	2.3	1.2	1.6	23	3.6	0.8	1.4	75	36	0	0.9	1.3	0.5	0.3	0.8	100.0

PENNSYLVANIA BIRDS

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	19	99.5	0	0	36	12	7	103	36	0	2	425	43	0	1	29	0	1	11	706
October	16	87.5	0	43	29	10	29	662	226	6	53	0	891	1	30	63	33	8	18	2103
November	15	70	0	0	1	3	16	23	7	3	25	0	301	0	60	1	2	0	5	447
Total	50	257	0	43	66	25	52	788	269	9	80	425	1,235	1	91	93	35	9	34	3,256
Total per hr.			0	0.2	0.3	0.1	0.2	3.1	1.0	0	0.3	1.7	4.8	0	0.4	0.4	0.1	0	0.1	12.7
% of flight			0	1.3	2.0	0.8	1.6	24	8.3	0.3	2.5	13	38	0	2.8	2.9	1.1	0.3	1.0	100.0

* Total includes one Swainson's Hawk in October.

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	26	164.75	0	0	57	26	15	154	20	0	1	1135	21	0	3	15	2	8	24	1481
October	22	103.25	6	372	14	7	18	427	34	2	11	7	250	0	9	7	2	3	22	1191
November	14	70.25	12	85	1	4	18	31	2	2	5	0	175	1	17	3	3	3	9	371
Total	62	338	18	457	72	37	51	612	56	4	17	1,142	446	1	29	25	7	14	55	3,043
Total per hr.			0.1	1.4	0.2	0.1	0.2	1.8	0.2	0	0.1	3.4	1.3	0	0.1	0.1	0	0	0.2	9.0
% of flight			0.6	15	2.4	1.2	1.7	20	1.8	0.1	0.6	38	15	0	1.0	0.8	0.2	0.5	1.8	100.0

WAGGONER'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	29	184	0	0	17	23	17	29	12	0	0	124	32	0	0	40	0	2	5	301
September	30	277.25	0	0	277	137	56	1020	124	1	6	3982	180	0	5	193	33	11	72	6097
October	25	238	65	1486	154	76	109	5691	854	32	147	16	2471	2	79	163	110	52	107	11614
November	30	246	20	317	2	40	142	271	63	58	102	1	2017	2	123	1	4	1	31	3195
December	29	170	10	11	0	27	8	9	1	12	12	0	238	8	36	0	0	0	4	375
Total	143	1,115	95	1,814	450	303	332	7,020	1,054	103	267	4,123	4,938	12	242	397	147	66	219	21,582
Total per hr.			0.1	1.6	0.4	0.3	0.3	6.3	0.9	0.1	0.2	3.7	4.4	0.0	0.2	0.4	0.1	0.1	0.2	19.4
% of flight			0.4	8.4	2.1	1.4	1.5	33	4.9	0.5	1.2	19	23	0.1	1.1	1.8	0.7	0.3	1.0	100.0

TOTAL FOR ALL WATCHSITES 2005

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	Unid	Total*
August	137	824	42	130	116	89	64	108	36	0	153	479	128	0	29	86	5	6	356	1,503
September	328	2,558	121	634	1,749	527	910	4,025	614	18	5,167	35,993	965	1	158	861	150	160	7,077	52,453
October	309	2,057	884	3,708	787	336	4,254	17,764	2,664	322	853	2,630	10,722	59	557	959	416	252	9,068	47,904
November	241	1,631	665	1,227	35	215	597	1,021	262	274	413	1,797	6,660	71	485	30	39	27	2,838	14,023
December	93	473	76	52	18	50	12	30	17	32	22	160	394	22	54	2	1	4	259	958
Total	1,108	7,542	1,788	5,751	2,705	1,217	5,837	22,948	3,593	646	6,608	41,059	18,869	153	1,283	1,938	611	449	19,598	116,941
Total per hr.			0.2	0.8	0.4	0.2	0.8	3.0	0.5	0.1	0.9	5.4	2.5	0.0	0.2	0.3	0.1	0.1	2.6	15.5
% of flight			1.5	4.9	2.3	1.0	5.0	20	3.1	0.6	5.7	35	16	0.1	1.1	1.7	0.5	0.4	17	100.0
% change from 2004**			16	-14	-25	1	81	19	15	52	82	-3	-4	51	38	17	36	45	4	12

*Total includes 2 Swainson's Hawks
 **Total birds per hour in 2005 vs. total birds per hour in 2004.