Easterly winds in September 2016 funneled Broad-winged Hawks to the Appalachians, leaving several southeastern Pennsylvania watchsites wanting more. A dearth of strong cold fronts reduced October's usual parade of migrants at most sites and may have contributed to below-average statewide counts for Sharp-shinned and Cooper's Hawks, Osprey, and American Kestrel. Despite the lackluster winds and the warmer-than-normal temperatures through October and November, Red-shouldered and Red-tailed Hawk counts were near average statewide.

Pennsylvania's 13 watchsites recorded 112,222 raptors in 1170 days and 8104 hours of counting between 1 August and January 2017, a rate of 13.9 hawks per hour statewide. Total raptors were 22% higher than in 2015 but 9% below the ten-year average for the state (Table 1). Count effort was 8% above-average and included the return of Bucktoe Creek Preserve of Chester County to the watch-site line-up, but there was no report from the Pipersville Broadwinged Hawk watch and the Tuscarora Summit watch was again not conducted.

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Four species showed above-average counts statewide. Bald and Golden Eagles, were up 45% and 6% respectively, with 3028 Bald Eagles and 1101 Golden Eagles counted. The Red-shouldered Hawk count was 1179 and Merlins totaled 713, both up 7% statewide (Table 1). The Bald Eagle total represented a new record and their abundance brings a new challenge for watchsites, separating migrants from residents.

Below-average counts were tallied for 10 of 16 regularly recorded species. Two open-habitat species that have shown widespread declines in the region were recorded in low numbers in 2016 - Northern Harrier, with 709 counted statewide, and American Kestrel, with 1410 counted (Table 1, Figure 1). The statewide counts were 31% and 25% below the 10-year averages respectively, and for harriers the total was the lowest ever recorded in the state (Table 1). The Osprey tally was 1987, down 24% compared to the 10-year average and the second-lowest count ever. All three accipiters were low: Sharp-shinned Hawk (18,149), down 31%; Cooper's Hawk (2154), down 26%; and Northern Goshawk (145), down 13% (Table 1). Decreases in Osprey sightings correspond to patterns shown at most eastern flyway watchsites where

significant declines were documented during the last decade (see www.rpi-project.org). This decline in migrants is in contrast to a growing nesting population within the state.

An interesting Osprey observation occurred this autumn, giving a clue to nesting locations of Ospreys counted during the autumn season Pennsylvania's watches. Dr. Rob Bierregaard reported the pathway of a satellite-tagged adult male from a nest in northern New Hampshire in summer 2016. "Wausau" left his nest territory on 4 September and the next day entered eastern Pennsylvania, flying south along the Delaware River to the Kittatinny Ridge near Delaware Water Gap and then turning to follow the Ridge southwest. He went to roost that evening on the Kittatinny Ridge near Route 309 in Lehigh County, just west of Bake Oven Knob and east of Hawk Mountain. (R. Bierregaard, pers. Comm.). Although the transmitter was not on in early morning, Dr. Bierregaard reports Wausau was aloft early on the 6th and may have passed by Hawk Mountain where a lone Osprey was recorded just before 7 am that morning on steady northwest winds. His transmitter indicates he flew southwest off the Ridge possibly just west of Hawk Mountain between 8 am and 9 am as his location was north of Lancaster at 9 am and he soon exited Pennsylvania to fly south past Baltimore. To see his entire journey and other eastern Osprey tracks for 2016 visit Ospreytrax website (http://www.ospreytrax.com).

Allegheny Front (Somerset and Bedford Counties) - Watchers at Allegheny Front tallied an above-average 8764 hawks in 813 hours and 105 days of counting between mid-August and mid-December 2016 (Table 1). Mid-September brought several days of over 1000 Broad-winged Hawks, with the largest one-day count of 1079 on 17 September

(Table 2). Moderate northeast winds on 6 September brought the rarest migrant for the fall when a Swallow-tailed Kite approached the site from the northwest and circled overhead three times before continuing south. What a cooperative bird!

The highest one-day count of Bald Eagles, 13, soared past on 25 September, helping bring the season's total of Bald Eagles to 136, the highest autumn count in recent history. In contrast, the Golden Eagle count of 138 was 30% below-average (Table 1). The largest one-day count of Golden Eagles for the autumn, 20, flew past on 1 November along with 44 Red-tailed Hawks, 18 Sharp-shinned Hawks, a single Bald Eagle, and 8 other raptors.

Above-average counts also were tallied for Broad-winged Hawk (5058), Sharpshinned Hawk (1251), and Peregrine Falcon (39) (Table 1). A particularly great day for Peregrines occurred 5 October when 9 Peregrines and 3 Merlins zipped past. Belowaverage counts were observed for seven species, including Cooper's Hawk (118), 43% below the 10-year average and Redshouldered Hawk (31), and 43% below average (Table 1).

Table 2. Peak one-day migration counts for selected species.

	Broad-winge	ed Hawk	Bald Eagle	
Site	Count	Date	Count	Date
Allegheny Front	1,079	9/17	13	9/25
Bake Oven Knob	1,801	9/20	23	8/22
Bucktail Creek Pres	675	9/25	15	11/26
Council Cup	361	9/16	-	
Hawk Mountain	3,018	9/20	22	12/3
Jack's Mountain	910	9/21	9	9/11
Little Gap	3.389	9/20	22	8/25
Militia Hill	2,694	9/24	15	9/24
Rocky Ridge Park	1,181	9/21	4	10/22
Rose Tree Park	399	9/24	12	9/25
Second Mountain	2,665	9/16	12	Several
Stone Mountain	312	9/16	12	10/22
Waggoner's Gap	1,973	9/21	35	9/24

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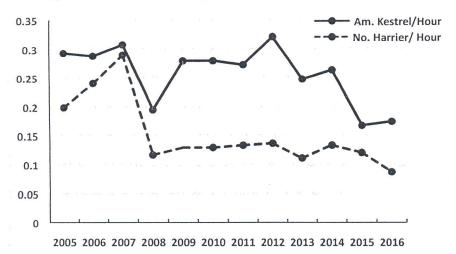
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Figure 1 Number of Autumn Migrants per Hour at Pennsylvania Watchsites



species were above-average, with the count of 352 Bald Eagles 41% above the ten-year average. Broad-winged Hawk (6477) and Red-tailed Hawk (2144) were 20% and 26% above-average, respectively (Table 1). Six species were below-average (Table 1), including Osprey (280), 34% below-average; Sharp-shinned Hawk (2111), 32% below-average; and American Kestrel (75), 50% below-average (Table 1).

Bucktoe Creek Preserve (Chester County) -Bucktoe Creek Preserve relaunched their autumn count in 2016, tallying 4266 hawks in 678 hours over 91 days from 1 September through 30 November. Their highest oneday count occurred 25 September with 625 Broad-wings (Table 2), 6 Bald Eagles, and 8 American Kestrels among 724 total raptors. The highest eagle days were 26 November with 15 Bald Eagles and 14 October with 2 Golden Eagles. Average counts for this site are based on three years of data in the last decade. Higher counts of Broad-wings were recorded in 2010 than 2016, but winds were not favorable for Broad-wings at southeastern watch-sites in 2016. Welcome back Bucktoe Creek Preserve! We are excited to have this site active again and look forward to reports in years to come.

Council Cup (Luzerne County) - The Council Cup site was covered for three days in September totaling 14 hours, a decline in coverage by more than 50% compared to prior years; not surprisingly, the total count of 369 raptors was also well below average (Table 1). The best day occurred on 16 September when compiler Donald Kapral recorded 361 Broad-winged Hawks, one Osprey, and one American Kestrel along with 8 non-migrating Bald Eagles. This northeast site near the Susquehanna River can have some interesting flights and is not a far drive for northeastern birdwatchers. If you have time to contribute, contact details for compiler be found

www.hawkcount.org in the site profile section.

Hawk Mountain Sanctuary (Berks and Schuylkill counties) - Hawk Mountain recorded 17,587 raptors between 15 August and 25 January, with 127 days and 1127 hours of counting. The total count was 7% below the ten-year average (Table 1). A new record was set for Bald Eagle with 489 tallied for the official season of 15 August to 15 December and 508 for entire season (Table 1). Above-average counts also were recorded for Turkey Vulture (595), 5% above average; Merlin (193) up 8%; and Broad-winged Hawk (9361), 19% above average (Table 1). Sharp-shinned Hawk (2958) and Cooper's Hawk (370) were 34% and 36% below average, respectively. The Osprey count (343) was down 29% and Northern Harrier (118) down 30%. Hawk Mountain's peak one-day count occurred on 20 September when 3018 Broad-winged Hawks were recorded along with 8 other species including 20 Sharp-shinned Hawks, 4 Bald Eagles, and 4 Ospreys. The highest one-day count for Bald Eagle came late in the year, when 22 Bald Eagles soared past on 3 December, along with 17 Red-tailed Hawks and one Golden Eagle. The highest count of Golden Eagles occurred 28 October, with 15, accompanied by 14 Bald Eagles and 146 Red-tailed Hawks.

Jack's Mountain (Mifflin County) – Jack's Mountain counters recorded 5029 raptors during 97 days and 600 hours of counting. The total raptor count was 18% above average, possibly because coverage has increased at the site in recent years; effort in 2016 was the highest since 2001. Most species were above-average, excepting the American Kestrel (35), which was 25% below the ten-year average (Table 1). Bald Eagles were seen regularly through the fall with a peak one-day count of 9 on 11 September and a season-record tally of 148. The Golden Eagle count of 144 was the

second-highest on record for the site, reaffirming the importance of this ridge for eagle migration. Northwest winds on 6 November brought the season's one-day peak for Golden Eagle, 17, including 16 adults and one immature.

Little Gap (Northampton County) -Counters at Little Gap recorded an aboveaverage 14,322 hawks with 104 days and 696 hours of counting. The count was 5% above the ten-year average of 13,693 hawks (Table 1). Little Gap set a new season-record for Bald Eagle, 335, with a one-day peak count of 22 on 22 August (Table 1, 2). Seven other species showed above-average counts including Black Vulture, Turkey Vulture, Broad-winged Hawk, Red-tailed Hawk, The American Kestrel upswing counted at this site, 209 compared to the average of 181, was in contrast to below-average counts observed at many sites (Table 1). Below-average counts were recorded for Osprey (211), down 37%; Sharp-shinned Hawk (2271), down 28%; and Cooper's Hawk, (268), down 21% (Table 1). September 20 brought the highest one-day count for the season and the highest one-day total for Broad-winged Hawks statewide, 3389 (Table 2). Counters were kept busy after the morning fog lifted, sighting many close kettles. The next day, 21 September, 1606 Broad-winged Hawks were counted plus 62 Sharp-shinned Hawks, 17 American Kestrels, 3 Merlins, and 3 Peregrine Falcons, for the second-highest one-day count for the site.

Militia Hill (Montgomery County) -Watchers at Militia Hill counted 7553 raptors in 61 days and 446 hours of watching (Table 1). The total count was 44% below-average with most species below-average. One exception was Bald Eagle (114), which was 9% above average. The Broad-winged Hawk count of 5649 was 48% below the average of 10,765 (Table 1). The highest one-day count of Broad-winged Hawks was 2694, on 24 September, along with an impressive 42 Ospreys, 64 Sharp-shinned Hawks, 29 American Kestrels, and the season's one-day peak of 15 Bald Eagles (Table 2). One of the rarest migrants of the season also came on the 24th, an adult Mississippi Kite, observed gliding overhead through telescope and binoculars. The next day, 1492 Broad-wings and 10 Bald Eagles were sighted, contributing to the second-highest one-day count of the season, a total of 1543 raptors. The highest one-day count of Sharp-shinned Hawk, 50, was tallied on 9 October along with 7 Cooper's Hawks, 10 American Kestrels, 3 Red-shouldered Hawks, 3 Merlins, 3 Ospreys, 2 Bald Eagles, and one Peregrine Falcon.

Rocky Ridge (York County) – Counters at the part-time watch in Rocky Ridge Park tallied 3945 hawks in 98 hours on 21 days from 24 August to 26 October. The total count was 86% above-average – primarily

due to above-average numbers of Broadwinged Hawks (3496), 71% above-average. Rocky Ridge tallied 2 days of Broad-winged Hawk counts above 1000 with 1041 on the 20th and 1181 on the 21st, the highest one-day count for the season (Table 2). Counters also recorded 3 Ospreys, 2 Northern Harriers, 45 Sharp-shinned Hawks, and 10 American Kestrels on the 21st, bringing the one-day count to 1241. Above-average counts were observed for most species, except Bald Eagle (12), which was 75% below the ten-year average (Table 1).

Rose Tree Park (Delaware County) – Rose Tree Park recorded a below-average 2990 raptors during 79 days and 496 hours in autumn 2016 (Table 1). Total raptors were 51% below the ten-year average partly due to the low Broad-winged Hawk count (825), 76% below average. Rose Tree Park reported below-average counts for most raptors, except Black Vulture (75), 36% above-average (Table 1). The rarest migrant of the autumn, a Mississippi Kite, was observed for several minutes in late morning on 7 September, before it glided south.

Counters recorded a one-day peak count for Broad-winged Hawks (399) on 24 September along with 17 Ospreys, 5 American Kestrels, 5 Merlins, and 2 Peregrine Falcons. The following day brought the site's one-day peak count for Bald Eagle, 12, and another 287 Broadwings (Table 2). North to northeast winds on 3 October brought an exciting mid-autumn flight to Rose Tree Park including 113 Sharpshinned Hawks, 75 Broad-winged Hawks, 37 American Kestrels, 19 Ospreys, 19 Cooper's Hawks, 8 Peregrine Falcons, and 7 Merlins, mostly during the afternoon. October 26 brought the highest count of Red-shouldered Hawks, 21; mostly adult birds and some appearing in small kettles with other raptors. Second Mountain (Lebanon County) -Second Mountain recorded 9688 hawks in 137 days and 818 hours between 15 August and 31 December. The site set a new season record for Bald Eagle, 269, compared to the ten-year average of 182 (Table 1). Three other species were above-average including Black Vulture (520), up 46%; Broad-winged Hawk (5966), up 39%; and Golden Eagle (103), up 13% (Table 1). All other species except Turkey Vulture were below-average. The largest dip was seen for Sharp-shinned Hawk (1020), 53% below the ten-year average (Table 1). Second Mountain observers tallied their highest one-day Broadwinged Hawk count, 2665, on 16 September along with 10 Ospreys (Table 2). The peak one-day count of 12 Bald Eagles occurred on several different days in September and October including 20 September when the Bald Eagles were accompanied by an early adult Golden Eagle and 31 American Kestrels (Table 2). On 10 October, another 12 Bald Eagles were recorded, accompanied by 2 immature Golden Eagles and an impressive parade of 257 Turkey Vultures.

Stone Mountain (Huntingdon County) -Stone Mountain observers tallied 3608 migrating raptors during 88 days and 518 hours of counting (Table 1). Count effort for the site was the highest on record although the total number of migrating raptors was 11% below-average. The 166 Bald Eagles set a new record, with a one-day peak count of 12 on 22 October (Table 2). Broad-winged Hawk numbers were slightly low at 1519, compared to 1568 on average (Table 1). The highest one-day count for the site and highest count of Broad-winged Hawks occurred on16 September when Stone Mountain counters tallied 312 Broad-winged Hawks, 6 Ospreys, 4 Bald Eagles, 4 Sharp-shinned Hawks, one Northern Harrier, and one Redshouldered Hawk (Table 2). In contrast to some sites, watchers counted above-average numbers of Osprey, 84, compared to 74 on average (Table 1). Only 51 American Kestrels were recorded, 39% below the tenyear average. The count of 80 Cooper's Hawks was also low, 38% below average (Table 1). November 5 and 6 brought the best Golden Eagle days, with 15 and 10 recorded, respectively. The last significant flight of Golden Eagles, 11, sailed south on 22 November. The Golden Eagle total of 116 was near the ten-year average of 117.

Waggoner's Gap (Cumberland County) -Waggoner's Gap recorded 20,367 raptors in 138 days and 1023 hours from 1 August to 31 December. The total was 12% below the ten-year average of 23,272. Counters set a new season record for Bald Eagle, recording 576 compared to the prior record of 535. Counts of most species lower than average, including American Kestrel (219), 28% belowaverage (Table 1). Season totals were buoyed by a great Broad-winged Hawk flight in September. With 9436 counted, Broadwinged Hawks were 18% above the tenyear average of 7971 (Table 1) and counters saw eight September days with greater than 500 birds. The highest one-day total occurred on 21 September, when 1973 Broad-wings moved through. The day before, 1740 sailed past the lookout, helping boost the season tally.

Waggoner's Gap watchers recorded the highest statewide one-day Eagles on Sept 24 when 35 were tallied. A lone sub-adult Golden Eagle also was sighted that day. Accipiters were well below average with the lowest counts in more than 14 years (Table1). Northwest winds on 10 October brought the highest one-day count of Sharp-shinned Hawks, 550, along with 27 Cooper's Hawks and 5 Golden Eagles. A Golden Eagle parade was enjoyed November 4, 5, and 6 when 28, 20, and 27 were tallied, respectively. Two Rough-legged Hawks, dark morphs, were sighted, one on 2 December and one on 10 December; however, the total was slightly below the ten-year average of 3.5 (Table 1).

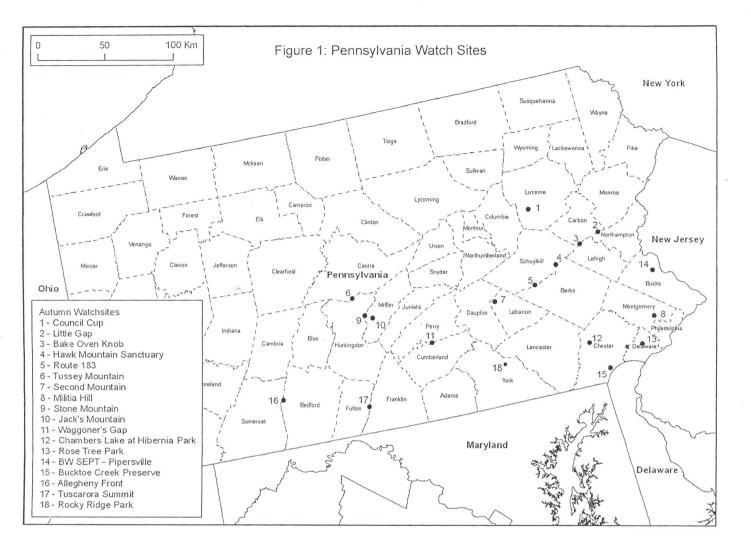
## Conclusions

In 2106 we salute the element of change and flux in hawk migration counts. Pennsylvania may host more watch sites than most (all?) states or provinces in North America and therein fills a useful role in regional monitoring. The data collected from Pennsylvania watchsites, both where they coincide and where they differ, provide an index to the breadth of change in raptor populations across the continent. records or above-average counts of Bald Eagles contrast with continued declines in field-nesting raptors, e.g. American Kestrel and Northern Harrier, and may also directly intersect with dips in Osprey numbers. The lower counts of Sharp-shinned and Cooper's Hawks (except note Waggoner's Gap) could signal changes in migration behavior or timing, as has been documented for Redtailed Hawk in recent years. Further monitoring and research will clarify the pattern and its' possible source - having the data collected and archived by Pennsylvania hawkwatchers is essential to understanding.

## Acknowledgements

I thank Pennsylvania's hawk counters for their many hours of counting, as well as the site compilers for organizing the data and sharing their results. Data was provided by www.hawkcount.org with permission of site compilers, a website maintained by the Hawk Migration Association of North America and managed by Jason Sodergren, database manager. Locations of sites and daily counts viewed at HMANA's www.hawkcount.org site. I thank David Barber for the site map and Grace Auld for her assistance with tables. This is Hawk Mountain Sanctuary contribution number

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



We must sadly report that the hawk watch community has lost two long-time hawk watchers from the Jacks Mt. site in Mifflin County. Ron Singer was the compiler for decades, watching and counting raptors at Jacks since 1975. Ron passed away March 5 of complications following surgery. Gloria Bickel began joining Ron and the other Jacks counters around 1992, becoming one of the leading reporters from the site. Gloria died this past November 19. The work of Ron and Gloria at Jack's added substantially to our knowledge of raptor migration through Appalachians and they will be greatly missed by Pennsylvania birders. Our condolences to his family, friends, and fellow Jack's Mountain watchers.

----- Laurie Goodrich and Greg Grove

PENNSYLVANIA BIRDS

# Table 1. Autumn 2016 count results for Pennsylvania watchsites.

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NOGO		0	0	2	C	7	0	4	0.01	0.0	6.8	-
COHA	-	2	42	52	47		2	118	0.15	1.3	209.9	
SSHA		2	182	1007	VV	†	0	1251	1.61	14.3	1177.8	
NOHA	,		10	19	C	7	0	32	0.04	0.4	50.1	
BAEA	777		65	47	**	-	7	136	0.17	1.6	104.8	
OSPR	2	71	192	18	C		0	106	0.14	1.2	96.2	
TUVU	00	07	9	312	13	2	0	387	0.50	4.4	418.3	
BLVU	4.0	0	ω	6	c		0	33	0.04	0.4	33.4	
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Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	SWHA	Unid	Total
August	17	136.5	45	196	72	59	4	39	10	0	2	168	56	0	2	11	80	0	0	32	705
September	30	239.0	92	289	191	140	26	442	61	0	6	6288	134	0	2	37	55	29	0	106	7885
October	31	238.3	91	327	17	93	42	1518	128	15	79	21	1144	0	58	26	51	22	0	92	3724
November	27	199.8	75	169	0	09	18	112	23	17	62	0	810	0	51	-	4	2	0	13	1420
Total	105	813.5	287	981	280	352	06	2111	222	32	152	6477	2144	0	113	75	118	99	0	243	13734
Total per hr			0.35	1.21	0.34	0.43	0.11	2.59	0.27	0.04	0.19	7.96	2.64	0.00	0.14	0.09	0.15	0.07	0.00	0.30	16.88
% of flight			2.1	7.1	2.0	2.6	0.7	15.4	1.6	0.2	1.1	47.2	15.6	0.0	0.8	0.5	6.0	0.4	0.0	1.8	100.0
Average last 10 yrs	102.9	807.1	284.3	957.3	422.2	248.8	111.1	3118.2	277.2	26.7	120.7	5399.5	1697.1	0.5	100.3	151.8	97.2	54.5	0.0	283.0	13371.0
*Includes Mississippi Kite on 08/16/2016	ite on 08/1	6/2016																			

Bucktoe Creek Preserve(Chester) - Larry Lewis, compiler	serve(Cl	rester) -	Larry L	ewis, cc	mpiler																
Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	SWHA	Unid	Total
September	30	224.5	0	0	103	20	6	147	49	0	80	1127	2	0	0	64	4	-	0	0	1564
October	31	247.5	0	183	24	124	14	582	170	-	74	53	273	0	9	39	17	2	0	9	1568
November	30	206.0	0	221	0	107	16	204	85	0	136	0	355	0	က	-	2	4	0	0	1134
Total	91	678.0	0	404	127	281	39	933	304	-	218	1180	630	0	6	104	23	7	0	9	4266
Total per hr			0.00	09.0	0.19	0.41	90.0	1.38	0.45	00.0	0.32	1.74	0.93	0.00	0.01	0.15	0.03	0.01	0.00	0.01	6.29
% of flight			0.0	9.2	3.0	9.9	6.0	21.9	7.1	0.0	5.1	27.7	14.8	0.0	0.2	2.4	0.5	0.2	0.0	0.1	100.0
Average for 10 yrs	50.3	336.1	0.0	166.7	71.3	137.0	25.0	484.3	159.3	0.7	92.3	1146.7	317.3	0.0	3.7	85.0	15.0	4.3	0.0	3.0	1727.7

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	SWHA	Unid	Total
September	3	13.5	0	0	2	0	0	0	0	0	0	366	0	0	0	-	0	0	0	0	369
Total	3	13.5	0	0	2	0	0	0	0	0	0	366	0	0	0	1	0	0	0	0	369
Total per hr			0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	27.11	0.00	0.00	00.0	0.07	00.0	0.00	00.0	0.00	27.33
% of flight			0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	99.2	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	100.0
Average for 10 yrs	19.6	91.1	1.2	134.1	16.9	35.2	0.9	93.9	9.6	0.0	0.7	330.2	200.4	0.0	0.7	22.8	0.1	1.0	0.0	23.7	877.7

	_								-	
	Total	459	10685	4727	1458	258	17587	15.61	100.0	18969.7
	Unid	17	84	130	20	2	256	0.23	1.5	198.3
	SWHA	0	0	0	0	0	0	0.00	0.0	0.5
	PEFA	-	15	30	2	0	48	0.04	0.3	58.9
	MERL	4	82	93	11	3	193	0.17	1.7	177.8
	AMKE	31	133	53	0	0	217	0.19	1.2	391.7
	GOEA	2	3	52	57	171	131	0.12	0.7	132.0
	RLHA	0	0	0	-	0	7	00.00	0.0	1.2
	RTHA	20	123	1004	926	78	2181	1.94	12.4	2313.0
	BWHA	171	9136	54	0	0	9361	8.31	53.2	7871.7
	RSHA	2	1,	87	47	2	149	0.13	0.8	171.3
	NOGO	0	0	13	18	4	35	0.03	0.2	32.9
	COHA	6	62	262	36	-	370	0.33	2.1	585.1
	SSHA	36	559	2243	115	15	2968	2.63	16.9	4515.5
iler	NOHA	9	40	49	17	9	118	0.10	0.7	169.7
h, comp	BAEA	54	140	127	83	104	208	0.45	2.9	325.5
Soodric	OSPR	62	242	36	3	0	343	0.30	2.0	483.5
Laurie (	TUVU	∞	45	450	91	-	595	0.53	3.4	562.1
ylkill) -	BLVU	9	10	44	31	22	113	0.10	9.0	136.8
nd Schr	Hours	168.3	298.0	289.0	237.3	134.5	1127.0			1100.5
Berks a.	Days	171	30	31	30	19	127			125.2
HAWK MOUNTAIN (Berks and Schuylkill) - Laurie Goodrich, compil	Month	August	September	October	November	December/January	Total	Total per hr	% of flight	Average last 10 yrs

JACK & MOUNIAIN (MIMIN) - Kon Singer, compiler	A (MITTIELL)	- Kon -	olnger, c	compiler														1000 ACC 100			Section Control of the Control of th
Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	SWHA	Unid	Total
September	30	182.8	4	0	25	77	10	103	26	0	2	3090	36	0	0	17	5	3	0	3	3433
October	31	187.0	14	145	13	54	19	468	85	4	25	6	325	0	51	17	6	14	0	11	1263
November	27	173.0	5	2	1	10	4	20	10	-	9	0	143	0	78	-	5	-	0	0	287
December	6	57.3	13	+	0	7	0	-	0	0	-	0	80	0	15	0	0	0	0	0	46
Total	97	009	36	148	71	148	33	592	121	2	34	3099	512	0	144	35	19	18	0	14	5029
Total per hr			90.0	0.25	0.12	0.25	90.0	0.99	0.20	0.01	90.0	5.17	0.85	0.00	0.24	90.0	0.03	0.03	0.00	0.02	8.38
% of flight			0.7	2.9	1.4	2.9	0.7	11.8	2.4	0.1	0.7	61.6	10.2	0.0	2.9	0.7	0.4	0.4	0.0	0.3	100.0
Average last 10 yrs	62.0	352.7	28.2	129.3	57.2	76.6	30.6	572.7	65.3	2.1	14.5	2667.5	450.5	0.0	62.8	47.3	12.4	11.8	0.0	14.6	4242.1
								The same of the same of the same of		-	-	-			The state of the s	-					

LILLE GAP (Northampton) - Michael Schall, compiler	nampton	) - Miche	ael Scha	III, comp	iler																
Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	SWHA	Unid	Total
August	11	65.3	0	5	28	32	2	17	4	0	2	20	22	0	0	17	4	8	0	2	188
September	30	225.8	13	19	156	111	17	533	49	0	5	7971	116	0	3	137	55	17	0	38	9240
October	29	212.3	43	330	27	115	37	1606	171	7	48	20	856	-	47	55	09	22	0	20	3495
November	29	165.8	87	123	0	53	13	115	44	15	36	0	781	-	39	0	ω	က	0	10	1328
December	5	27.0	5	0	0	24	0	0	0	-	-	0	28	0	11	0	0	0	0	-	71
Total	104	0.969	148	477	211	335	69	2271	268	23	92	8041	1803	2	100	209	127	45	0	101	14322
Total per hr			0.21	69.0	0.30	0.48	0.10	3.26	0.39	0.03	0.13	11.55	2.59	0.00	0.14	0.30	0.18	90.0	00.0	0.15	20.58
% of flight			1.0	3.3	1.5	2.3	0.5	15.9	1.9	0.2	9.0	56.1	12.6	0.0	0.7	1.5	6.0	0.3	0.0	0.7	100.0
Average last 10 yrs	90.9	582.5	96.4	462.9	334.8	224.2	102.6	3148.0	338.7	22.4	93.9	6792.6	1578.8	0.7	76.7	181.1	98.5	41.3	0.0	99.5	13693.3

WILLITA HILL (Montgomery) - Andy Fayer, Lynne Jackson, Kich Con	ntgome	y) - And	y rayer,	Lynne -	Jackson,	KICH C	roy,	co-compi	pilers								*Total i	includes one Mississippi Kite on September 18	Mississipp	Kite on Sep	tember 18
Month	Days	rs Hours	s BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	ВМНА	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	SWHA	Unid	*Total
September	(*)	30 213.0	0	0	137	80	15	195	17	0	7	5453	2	0	0	117	6	10	0	24	2909
October	(*)	1 233.3	3 4	575	13	34	7	360	69	0	48	196	54	0	3	53	17	13	0	40	1486
Total	9	1 446.3	3 4	575	150	114	22	555	98	0	55	5649	99	0	3	170	26	23	0	64	7553
Total per hr			0.01	1.29	0.34	0.26	0.05	1.24	0.19	0.00	0.12	12.66	0.13	0.00	0.01	0.38	90.0	0.05	00.00	0.14	16.93
% of flight		- 64	0.1	7.6	2.0	1.5	0.3	7.3	1.1	0.0	0.7	74.8	0.7	0.0	0.0	2.3	0.3	0.3	0.0	0.8	100.0
Average last 10 yrs	59.8	8 448.5	5 27.1	664.5	256.0	105.3	74.4	1056.0	137.5	1.4	63.2	10765.0	113.2	0.2	3.7	261.8	33.2	29.4	0.4	2.79	13659.8
*Including Mississippi Kite on 09/24/2016	ite on 09/24	/2016																			

ROCKY RIDGE (York) - Randy Phillips, compiler

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA :	SWHA	Unid	Total
August	1	4.5	0	0	1	-	0	0	0	0	0	0	0	0	0	-	0	0	0	0	3
September	11	62.3	0	0	41	9 .	6	509	e	0	0	3496	-	0	0	35	0	0	0	3	3803
October	6	31.3	0	18	4	5	2	78	4	0	-	0	10	0	-	12	2	1	0	1	139
Total	21	0.86	0	18	46	12	11	287	7	0	1	3496	11	0	1	48	2	-	0	4	3945
Total per hr			0.00	0.18	0.47	0.12	0.11	2.93	0.07	00.00	0.01	35.67	0.11	00.0	0.01	0.49	0.02	0.01	0.00	0.04	40.26
% of flight			0.0	0.5	1.2	0.3	0.3	7.3	0.2	0.0	0.0	88.6	0.3	0.0	0.0	1.2	0.1	0.0	. 0.0	0.1	100.0
Average last 10 yrs	13.7	8.99	0.7	19.7	27.0	28.7	7.7	213.7	6.7	0.0	0.7	2037.7	10.3	0.0	0.5	42.3	2.0	1.5	0.0	2.0	2112.0
																			1,6		

ROSE TREE PARK (Delaware) - Holly Merker, compiler Month

Month	Days	Hours	BLVU	000	スプスク	BAHA	ACHA	AHOO	COHA	SSON	KUHA	BWHA	KIHA	KLHA	GOEA	AMKE	MEKL	PEFA	SWHA	Chia	lotal
September	29	188.8	0	0	102	61	15	147	31	0	3	743	3	0	0	65	12	7	0	7	1197
October	31	190.3	ω	319	38	43	29	425	71	0	64	82	66	0	0	81	20	23	0	30	1332
November	19	116.5	19	96	-	27	4	57	12	0	09	0	131	0	-	-	2	0	0	80	461
otal	62	495.5	75	409	141	131	48	629	114	0	127	825	233	0	-	147	34	30	0	45	2990
otal per hr			0.15	0.83	0.28	0.26	0.10	1.27	0.23	0.00	0.26	1.66	0.47	0.00	00.0	0.30	0.07	90.0	0.00	60.0	6.03
Ast Nabt Mississinni Kar	A DO 100/07/2018	7/2018	2.5	13.7	4.7	4.4	1.6	21.0	3.8	0.0	4.2	27.6	7.8	0.0	0.0	4.9	1.1	1.0	0.0	1.5	100.0
Average last 10 yrs	86.2	552.3	54.8	431.2	185.7	133.0	64.1	1052.7	156.7	1.2	167.6	3379.7	322.4	0.2	3.2	158.8	32.2	18.1	0.2	49.8	6211.7

DECOND MOOTH LEGGEN OF TUXU OSPR BAEA NOHAL SSHAL COHAL NOGOL RSHAL BWHAL RTHAL RLHAL GOEAL AMKE MERL PEFAL SWHAL Unid

Control   Cont	Part   130	Month Days Hours BLVU TUVU OSPR Addust	Days 17	Hours 67.0	BLVU	TUVU	OSPR 11	BAEA	NOHA	SSHA	СОНА	NOGO	RSHA	ВМНА	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	SWHA	DILIO T	77
September   Sept	190   125.5	September	30	226.8	71	0	70	58	- 40	233	32	0 0	3	25	15	0	0	7	0	-	0	10	6580
Company   Comp	1971   1971   1972   1941   1971   1971   1971   1972	October	30	225.5	298	516	9	94	29	737	702	0	43	11	245	5 0	35	63	12	10	0	28	2156
Fig.   1909	The color of the	Vovember	30	187.3	94	167	-	99	σ	47	19	m	15	0	216	0	46	2	7	1	0	11	698
Fig. 197   1896   250   701   201	147   1810   620   710   81   28   64   126   126   126   10   10   10   10   10   10   10   1	Jecember	30	111.5	57	11	0	40	2	3	0	3	3	0	39	0	17	0	2	0	0	0	177
Fig. 1909   19	Fig. 10   Color   Co	otal	137	818.0	520	703	88	269	26	1020	123	8	11	5966	999	0	103	- 93	31	15	0	20	9688
EMONITAN   (Furting Corp.   150.0   50.0   50.0   10.0	EMOUNTAIN	Fotal per hr			0.64	0.86	0.11		0.07	1.25	0.15	0.01	0.09	7.29	0.69	00.00	0.13	0.11	0.04	0.02	0.00	90.0	11.84
Fig.   State   1900	EMOUNTAIN   Humin   2006   3574   7337   1498   1820   1026   2180.4   236   20 8   1155   40057   24   20 5   1056   1	% of flight			5.4		0.9			10.5	1.3	0.1	0.8	61.6	5.8	0.0	1.1	1.0	0.3	0.2	0.0	0.5	100.0
Part	EMOUNTAIN (Huntingoon) - Greg Grove, compiler   1	Average last 10 yrs	130.0	900.5	357.4		149.9		- 1	2180.4	236.9	20.8	113.5	4303.7	945.7	2.4	90.5	103.6	37.8	26.1	0.7	57.8	9617
Part	Part	STONE MOUNTAIN	(Huntin	) - (uopt	Greg G	rove, cc	mpiler												*Total	includes on	e Mississipp	Kite on Se	tember 22
1	ther 25 1155 to 0 to	Nonth	Days	Hours	BLVU	TUVU	OSPR	BAEA		SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	SWHA	Unid	*Total
Part	1985   1985	August	3	15.5	0	0	4			4	-	0	0	30	4	0	0	3	0	0	0	0	51
Part	Part   156	September	27	160.3	0	0	9			117	18	0	-	1484	33	0	0	29	2	0	0	0	1827
Part	Part   25   186   3   2   0   0   32   5   1   0   0   3   0   0   0   0   0   0   0	October	26	156.0	20	130	20		27	552	21	2	43	2	332	-	17	17	31	16	0	6	1337
Continue	COMPENSION   Company   C	lovember	25	139.8	0	29	0	32	Ω.	39	10	0	9	0	132	-	76	2	- 0	- 0	0	- 0	341
## 15   19   19   19   19   19   19   19	### CONNERS GAP (Curriberland)	Jecember	- 00	46.5	0	- 6	0		-	0	0	0 1	0	0	21	-	23	0	0	0 8	0	0	25
### 150   10   10   10   10   10   10   10	### 1004 0.31 0.16 0.32 0.08 0.32 0.08 0.32 0.08 0.01 0.22 0.11 0.23 0.10 0.10 0.23 0.08 0.0 0.1 0.14 0.23 0.08 0.0 0.1 0.14 0.23 0.10 0.10 0.23 0.08 0.0 0.1 0.14 0.23 0.10 0.10 0.23 0.10 0.1 0.23 0.10 0.1 0.14 0.23 0.10 0.1 0.14 0.14 0.14 0.14 0.14 0.14	otal	88	518.0	23	160	84			712	80	C)	20	1519	522	3	116	51	3	07	0 0	13	3608
Secondary   Color	Second Figure   Second Figur	otal per hr			0.04		0.16			1.37	0.15	0.01	0.10	2.93	1.01	0.01	0.22	0.10	0.07	0.04	0.00	40.0	6.97
COMENS GAP   Cumberland   Layer   Complex	COMENS GAP (Cumberland)	o or mignt	0	7 000	0.0		2.3			19.7	7.7	10.7	4.7	47.00.0	14.5	0.0	3.2	4.1	20.00	0.5	5 6	0.00	100.0
Days   Hours   ELVI   TUVI   CSPR   BAEA   NOHA   SSHA   COHA   NOGO   RSHA   BHMA   RTHA   RTHA   RTHA   GOEA   AMKE   MERL   PEPA   SWHA   Unid   LDM	Days   Hours   BLVU   TUVU   OSPR   BAREA   NOHA   SSHA   COHA   NOGO   RSHA   BWHA   RTHA   RTHA   RTHA   GOEA   AMKE	VAGGONER'S GAR	Cumb.		. David	Grove	Sompile	1		0.220	0:13		F	200	5.00	2		0.50			5		
the the thick of thic	there		Days		BLVU	TUVU	OSPR	1		SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	SWHA	Unid	Total
19   19   19   19   19   19   19   19	ther         28         233.5         0         274         192         32         1023         62         0         13         131         0         75         68           ber         28         28         28         18         86         28         172         45         13         61         13         0         75         68           ber         29         228         24         2         56         22         172         45         13         69         0         13         0         75         68           ber         138         102         38         57         22         172         45         13         69         0         145         3           ber         138         102         36         0.14         471         0.33         0.03         0.14         471         0.33         0.03         0.14         471         0.33         0.03         0.14         471         0.33         0.03         0.14         471         0.33         0.03         0.14         471         0.33         0.03         0.14         471         0.33         0.03         0.14         471         0.33 <th< td=""><td>ugust</td><td>30</td><td>153.5</td><td>0</td><td>0</td><td>34</td><td></td><td>5</td><td>23</td><td>S</td><td>0</td><td>9</td><td>201</td><td>83</td><td>0</td><td>0</td><td>27</td><td>2</td><td>4</td><td>0</td><td>8</td><td>470</td></th<>	ugust	30	153.5	0	0	34		5	23	S	0	9	201	83	0	0	27	2	4	0	8	470
ther 27 228.0 18 1088 28 1841 85 3857 222 143 61 18 184 185 3857 222 143 61 18 184 185 3857 2228.0 143 185 238 248 6 184 185 3857 18 184 182	128   287   288   288   184   85   3587   22   13   111   27   1175   0   75   56	eptember	28	233.5	0		2		32	1023	62	0	13	9207	131	0	-	133	16	17	0	40	11141
138   1022   2   2   2   2   2   2   2   2   2	138   1022 8   25   1408   2   2   145   2   2   2   145   2   2   145   2   2   145   2   2   145   2   2   145   2   2   2   145   2   2   2   2   2   2   2   2   2	ctober	28	267.0	18					3597	222	13	111	27	1175	0	75	56	54	28	0 0	72	6803
TOTALS FOR LINE   138   10228   471   1306   338   576   147   4820   341   32   193   6435   2382   234   209   0.24   0.21   0.06   0	Fig. 1. 13 102.8	ovember	177	140 8	77	244	NO	20		1/2	457	13	28	0 0	808	) c	145	200	- +	4 0	5 0	ט ע	8171
gitt in the control of the control o	erhr         130         136         136         137         136         139         136         243         253         141         253         143         253         144         253         244         243         244         243         244         244         244         244         244         244         244         244         244         244         244         244         244         244         244         244         244 <td>acquinoa:</td> <td>120</td> <td>4020</td> <td>110</td> <td>4205</td> <td></td> <td>17.24</td> <td>0 14</td> <td>0007</td> <td>244</td> <td>0 6</td> <td>0 6</td> <td>0 100</td> <td>4000</td> <td>7 6</td> <td>17</td> <td>200</td> <td>- 00</td> <td>7 2</td> <td>0 0</td> <td>173</td> <td>70267</td>	acquinoa:	120	4020	110	4205		17.24	0 14	0007	244	0 6	0 6	0 100	4000	7 6	17	200	- 00	7 2	0 0	173	70267
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includes three Mississippi Kites & one Swallow-tailed Kite	includes three Mississippi Kites & one Swallow-tailed Kite	o compared to average		8.2	0.8	-5.4			-30.6	-30.9	-26.3	-13.3	-		-3.3	-24.4	5.7	-24.5	8.9	-3.0	-100.0	-8.2	-8.6
		Includes three Mississ	ippi Kites &	s one Swa	allow-tail	ed Kite																	

Easterly winds in September 2016 funneled Broad-winged Hawks to the Appalachians, leaving several southeastern Pennsylvania watchsites wanting more. A dearth of strong cold fronts reduced October's usual parade of migrants at most sites and may have contributed to belowaverage statewide counts for Sharp-shinned and Cooper's Hawks, Osprey, and American Kestrel. Despite the lackluster winds and the warmer-than-normal temperatures through October and November, Red-shouldered and Red-tailed Hawk counts were near average statewide.

Pennsylvania's 13 watchsites recorded 112,222 raptors in 1170 days and 8104 hours of counting between 1 August and January 2017, a rate of 13.9 hawks per hour statewide. Total raptors were 22% higher than in 2015 but 9% below the ten-year average for the state (Table 1). Count effort was 8% above-average and included the return of Bucktoe Creek Preserve of Chester County to the watch-site line-up, but there was no report from the Pipersville Broadwinged Hawk watch and the Tuscarora Summit watch was again not conducted.

Several kites were sighted during September, including 3 Mississippi Kites: an immature at Bake Oven Knob on 16 August, an adult at Militia Hill on 24 September, and a probable adult at Rose Tree Park on 7 September. A Swallow-tailed Kite was seen by several observers at Allegheny Front on 6 September.

Four species showed above-average counts statewide. Bald and Golden Eagles, were up 45% and 6% respectively, with 3028 Bald Eagles and 1101 Golden Eagles counted. The Red-shouldered Hawk count was 1179 and Merlins totaled 713, both up 7% statewide (Table 1). The Bald Eagle total represented a new record and their abundance brings a new challenge for watchsites, separating migrants from residents.

Below-average counts were tallied for 10 of 16 regularly recorded species. Two open-habitat species that have shown widespread declines in the region were recorded in low numbers in 2016 - Northern Harrier, with 709 counted statewide, and American Kestrel, with 1410 counted (Table 1, Figure 1). The statewide counts were 31% and 25% below the 10-year averages respectively, and for harriers the total was the lowest ever recorded in the state (Table 1). The Osprey tally was 1987, down 24% compared to the 10-year average and the second-lowest count ever. All three accipiters were low: Sharp-shinned Hawk (18,149), down 31%; Cooper's Hawk (2154), down 26%; and Northern Goshawk (145), down 13% (Table 1). Decreases in Osprey sightings correspond to patterns shown at most eastern flyway watchsites where

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An interesting Osprey observation occurred this autumn, giving a clue to nesting locations of Ospreys counted during the autumn season Pennsylvania's watches. Dr. Rob Bierregaard reported the pathway of a satellite-tagged adult male from a nest in northern New Hampshire in summer 2016. "Wausau" left his nest territory on 4 September and the next day entered eastern Pennsylvania, flying south along the Delaware River to the Kittatinny Ridge near Delaware Water Gap and then turning to follow the Ridge southwest. He went to roost that evening on the Kittatinny Ridge near Route 309 in Lehigh County, just west of Bake Oven Knob and east of Hawk Mountain. (R. Bierregaard, pers. Comm.). Although the transmitter was not on in early morning, Dr. Bierregaard reports Wausau was aloft early on the 6th and may have passed by Hawk Mountain where a lone Osprey was recorded just before 7 am that morning on steady northwest winds. His transmitter indicates he flew southwest off the Ridge possibly just west of Hawk Mountain between 8 am and 9 am as his location was north of Lancaster at 9 am and he soon exited Pennsylvania to fly south past Baltimore. To see his entire journey and other eastern Osprey tracks for 2016 visit Ospreytrax website (http://www.ospreytrax.com).

Allegheny Front (Somerset and Bedford Counties) - Watchers at Allegheny Front tallied an above-average 8764 hawks in 813 hours and 105 days of counting between mid-August and mid-December 2016 (Table 1). Mid-September brought several days of over 1000 Broad-winged Hawks, with the largest one-day count of 1079 on 17 September

(Table 2). Moderate northeast winds on 6 September brought the rarest migrant for the fall when a Swallow-tailed Kite approached the site from the northwest and circled overhead three times before continuing south. What a cooperative bird!

The highest one-day count of Bald Eagles, 13, soared past on 25 September, helping bring the season's total of Bald Eagles to 136, the highest autumn count in recent history. In contrast, the Golden Eagle count of 138 was 30% below-average (Table 1). The largest one-day count of Golden Eagles for the autumn, 20, flew past on 1 November along with 44 Red-tailed Hawks, 18 Sharp-shinned Hawks, a single Bald Eagle, and 8 other raptors.

Above-average counts also were tallied for Broad-winged Hawk (5058), Sharpshinned Hawk (1251), and Peregrine Falcon (39) (Table 1). A particularly great day for Peregrines occurred 5 October when 9 Peregrines and 3 Merlins zipped past. Belowaverage counts were observed for seven species, including Cooper's Hawk (118), 43% below the 10-year average and Redshouldered Hawk (31), and 43% below average (Table 1).

Table 2. Peak one-day migration counts for selected species.

	Broad-winger	d Hawk	Bald Eagle	
Site	Count	Date	Count	Date
Allegheny Front	1,079	9/17	13	9/25
Bake Oven Knob	1,801	9/20	23	8/22
Bucktail Creek Pres	675	9/25	15	11/26
Council Cup	361	9/16	-	
Hawk Mountain	3,018	9/20	22	12/3
Jack's Mountain	910	9/21	9	9/11
Little Gap	3.389	9/20	22	8/25
Militia Hill	2,694	9/24	15	9/24
Rocky Ridge Park	1,181	9/21	4	10/22
Rose Tree Park	399	9/24	12	9/25
Second Mountain	2,665	9/16	12	Several
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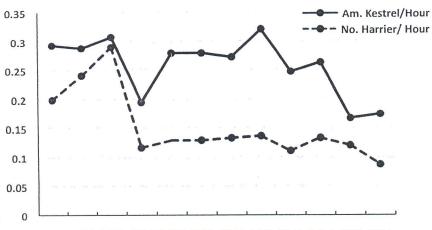
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Figure 1 Number of Autumn Migrants per Hour at Pennsylvania Watchsites



2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016

species were above-average, with the count of 352 Bald Eagles 41% above the ten-year average. Broad-winged Hawk (6477) and Red-tailed Hawk (2144) were 20% and 26% above-average, respectively (Table 1). Six species were below-average (Table 1), including Osprey (280), 34% below-average; Sharp-shinned Hawk (2111), 32% below-average; and American Kestrel (75), 50% below-average (Table 1).

Bucktoe Creek Preserve (Chester County) -Bucktoe Creek Preserve relaunched their autumn count in 2016, tallying 4266 hawks in 678 hours over 91 days from 1 September through 30 November. Their highest oneday count occurred 25 September with 625 Broad-wings (Table 2), 6 Bald Eagles, and 8 American Kestrels among 724 total raptors. The highest eagle days were 26 November with 15 Bald Eagles and 14 October with 2 Golden Eagles. Average counts for this site are based on three years of data in the last decade. Higher counts of Broad-wings were recorded in 2010 than 2016, but winds were not favorable for Broad-wings at southeastern watch-sites in 2016. Welcome back Bucktoe Creek Preserve! We are excited to have this site active again and look forward to reports in years to come.

Council Cup (Luzerne County) -Council Cup site was covered for three days in September totaling 14 hours, a decline in coverage by more than 50% compared to prior years; not surprisingly, the total count of 369 raptors was also well below average (Table 1). The best day occurred on 16 September when compiler Donald Kapral recorded 361 Broad-winged Hawks, one Osprey, and one American Kestrel along with 8 non-migrating Bald Eagles. This northeast site near the Susquehanna River can have some interesting flights and is not a far drive for northeastern birdwatchers. If you have time to contribute, contact details for compiler be found

www.hawkcount.org in the site profile section.

Hawk Mountain Sanctuary (Berks and Schuylkill counties) - Hawk Mountain recorded 17,587 raptors between 15 August and 25 January, with 127 days and 1127 hours of counting. The total count was 7% below the ten-year average (Table 1). A new record was set for Bald Eagle with 489 tallied for the official season of 15 August to 15 December and 508 for entire season (Table 1). Above-average counts also were recorded for Turkey Vulture (595), 5% above average; Merlin (193) up 8%; and Broad-winged Hawk (9361), 19% above average (Table 1). Sharp-shinned Hawk (2958) and Cooper's Hawk (370) were 34% and 36% below average, respectively. The Osprey count (343) was down 29% and Northern Harrier (118) down 30%. Hawk Mountain's peak one-day count occurred on 20 September when 3018 Broad-winged Hawks were recorded along with 8 other species including 20 Sharp-shinned Hawks, 4 Bald Eagles, and 4 Ospreys. The highest one-day count for Bald Eagle came late in the year, when 22 Bald Eagles soared past on 3 December, along with 17 Red-tailed Hawks and one Golden Eagle. The highest count of Golden Eagles occurred 28 October, with 15, accompanied by 14 Bald Eagles and 146 Red-tailed Hawks.

Jack's Mountain (Mifflin County) – Jack's Mountain counters recorded 5029 raptors during 97 days and 600 hours of counting. The total raptor count was 18% above average, possibly because coverage has increased at the site in recent years; effort in 2016 was the highest since 2001. Most species were above-average, excepting the American Kestrel (35), which was 25% below the ten-year average (Table 1). Bald Eagles were seen regularly through the fall with a peak one-day count of 9 on 11 September and a season-record tally of 148. The Golden Eagle count of 144 was the

second-highest on record for the site, reaffirming the importance of this ridge for eagle migration. Northwest winds on 6 November brought the season's one-day peak for Golden Eagle, 17, including 16 adults and one immature.

Little Gap (Northampton County) Counters at Little Gap recorded an aboveaverage 14,322 hawks with 104 days and 696 hours of counting. The count was 5% above the ten-year average of 13,693 hawks (Table 1). Little Gap set a new season-record for Bald Eagle, 335, with a one-day peak count of 22 on 22 August (Table 1, 2). Seven other species showed above-average counts including Black Vulture, Turkey Vulture, Broad-winged Hawk, Red-tailed Hawk, The American Kestrel upswing counted at this site, 209 compared to the average of 181, was in contrast to below-average counts observed at many sites (Table 1). Below-average counts were recorded for Osprey (211), down 37%; Sharp-shinned Hawk (2271), down 28%; and Cooper's Hawk, (268), down 21% (Table 1). September 20 brought the highest one-day count for the season and the highest one-day total for Broad-winged Hawks statewide, 3389 (Table 2). Counters were kept busy after the morning fog lifted, sighting many close kettles. The next day, 21 September, 1606 Broad-winged Hawks were counted plus 62 Sharp-shinned Hawks, 17 American Kestrels, 3 Merlins, and 3 Peregrine Falcons, for the second-highest one-day count for the site.

Militia Hill (Montgomery County) -Watchers at Militia Hill counted 7553 raptors in 61 days and 446 hours of watching (Table 1). The total count was 44% below-average with most species below-average. One exception was Bald Eagle (114), which was 9% above average. The Broad-winged Hawk count of 5649 was 48% below the average of 10,765 (Table 1). The highest one-day count of Broad-winged Hawks was 2694, on 24 September, along with an impressive 42 Ospreys, 64 Sharp-shinned Hawks, 29 American Kestrels, and the season's one-day peak of 15 Bald Eagles (Table 2). One of the rarest migrants of the season also came on the 24th, an adult Mississippi Kite, observed gliding overhead through telescope and binoculars. The next day, 1492 Broad-wings and 10 Bald Eagles were sighted, contributing to the second-highest one-day count of the season, a total of 1543 raptors. The highest one-day count of Sharp-shinned Hawk, 50, was tallied on 9 October along with 7 Cooper's Hawks, 10 American Kestrels, 3 Red-shouldered Hawks, 3 Merlins, 3 Ospreys, 2 Bald Eagles, and one Peregrine Falcon.

Rocky Ridge (York County) – Counters at the part-time watch in Rocky Ridge Park tallied 3945 hawks in 98 hours on 21 days from 24 August to 26 October. The total count was 86% above-average – primarily

due to above-average numbers of Broadwinged Hawks (3496), 71% above-average. Rocky Ridge tallied 2 days of Broad-winged Hawk counts above 1000 with 1041 on the 20th and 1181 on the 21st, the highest one-day count for the season (Table 2). Counters also recorded 3 Ospreys, 2 Northern Harriers, 45 Sharp-shinned Hawks, and 10 American Kestrels on the 21st, bringing the one-day count to 1241. Above-average counts were observed for most species, except Bald Eagle (12), which was 75% below the ten-year average (Table 1).

Rose Tree Park (Delaware County) – Rose Tree Park recorded a below-average 2990 raptors during 79 days and 496 hours in autumn 2016 (Table 1). Total raptors were 51% below the ten-year average partly due to the low Broad-winged Hawk count (825), 76% below average. Rose Tree Park reported below-average counts for most raptors, except Black Vulture (75), 36% above-average (Table 1). The rarest migrant of the autumn, a Mississippi Kite, was observed for several minutes in late morning on 7 September, before it glided south.

Counters recorded a one-day peak count for Broad-winged Hawks (399) on 24 September along with 17 Ospreys, 5 American Kestrels, 5 Merlins, and 2 Peregrine Falcons. The following day brought the site's one-day peak count for Bald Eagle, 12, and another 287 Broadwings (Table 2). North to northeast winds on 3 October brought an exciting mid-autumn flight to Rose Tree Park including 113 Sharpshinned Hawks, 75 Broad-winged Hawks, 37 American Kestrels, 19 Ospreys, 19 Cooper's Hawks, 8 Peregrine Falcons, and 7 Merlins, mostly during the afternoon. October 26 brought the highest count of Red-shouldered Hawks, 21; mostly adult birds and some appearing in small kettles with other raptors. Second Mountain (Lebanon County) -Second Mountain recorded 9688 hawks in 137 days and 818 hours between 15 August and 31 December. The site set a new season record for Bald Eagle, 269, compared to the ten-year average of 182 (Table 1). Three other species were above-average including Black Vulture (520), up 46%; Broad-winged Hawk (5966), up 39%; and Golden Eagle (103), up 13% (Table 1). All other species except Turkey Vulture were below-average. The largest dip was seen for Sharp-shinned Hawk (1020), 53% below the ten-year average (Table 1). Second Mountain observers tallied their highest one-day Broadwinged Hawk count, 2665, on 16 September along with 10 Ospreys (Table 2). The peak one-day count of 12 Bald Eagles occurred on several different days in September and October including 20 September when the Bald Eagles were accompanied by an early adult Golden Eagle and 31 American Kestrels (Table 2). On 10 October, another 12 Bald Eagles were recorded, accompanied by 2 immature Golden Eagles and an impressive parade of 257 Turkey Vultures.

Stone Mountain (Huntingdon County) -Stone Mountain observers tallied 3608 migrating raptors during 88 days and 518 hours of counting (Table 1). Count effort for the site was the highest on record although the total number of migrating raptors was 11% below-average. The 166 Bald Eagles set a new record, with a one-day peak count of 12 on 22 October (Table 2). Broad-winged Hawk numbers were slightly low at 1519, compared to 1568 on average (Table 1). The highest one-day count for the site and highest count of Broad-winged Hawks occurred on16 September when Stone Mountain counters tallied 312 Broad-winged Hawks, 6 Ospreys, 4 Bald Eagles, 4 Sharp-shinned Hawks, one Northern Harrier, and one Redshouldered Hawk (Table 2). In contrast to some sites, watchers counted above-average numbers of Osprey, 84, compared to 74 on average (Table 1). Only 51 American Kestrels were recorded, 39% below the tenyear average. The count of 80 Cooper's Hawks was also low, 38% below average (Table 1). November 5 and 6 brought the best Golden Eagle days, with 15 and 10 recorded, respectively. The last significant flight of Golden Eagles, 11, sailed south on 22 November. The Golden Eagle total of 116 was near the ten-year average of 117.

Waggoner's Gap (Cumberland County) -Waggoner's Gap recorded 20,367 raptors in 138 days and 1023 hours from 1 August to 31 December. The total was 12% below the ten-year average of 23,272. Counters set a new season record for Bald Eagle, recording 576 compared to the prior record of 535. Counts of most species lower than average, including American Kestrel (219), 28% belowaverage (Table 1). Season totals were buoyed by a great Broad-winged Hawk flight in September. With 9436 counted, Broadwinged Hawks were 18% above the tenyear average of 7971 (Table 1) and counters saw eight September days with greater than 500 birds. The highest one-day total occurred on 21 September, when 1973 Broad-wings moved through. The day before, 1740 sailed past the lookout, helping boost the season tally.

Waggoner's Gap watchers recorded the highest statewide one-day Eagles on Sept 24 when 35 were tallied. A lone sub-adult Golden Eagle also was sighted that day. Accipiters were well below average with the lowest counts in more than 14 years (Table1). . Northwest winds on 10 October brought the highest one-day count of Sharp-shinned Hawks, 550, along with 27 Cooper's Hawks and 5 Golden Eagles. A Golden Eagle parade was enjoyed November 4, 5, and 6 when 28, 20, and 27 were tallied, respectively. Two Rough-legged Hawks, dark morphs, were sighted, one on 2 December and one on 10 December; however, the total was slightly below the ten-year average of 3.5 (Table 1).

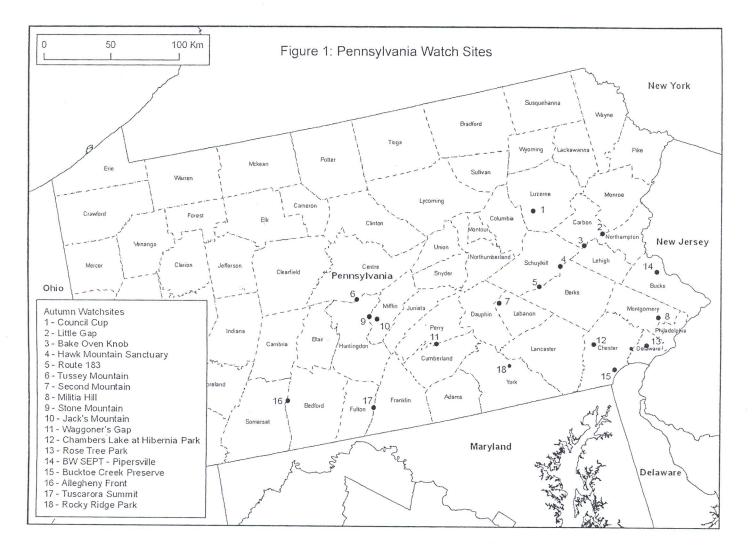
## Conclusions

In 2106 we salute the element of change and flux in hawk migration counts. Pennsylvania may host more watch sites than most (all?) states or provinces in North America and therein fills a useful role in regional monitoring. The data collected from Pennsylvania watchsites, both where they coincide and where they differ, provide an index to the breadth of change in raptor populations across the continent. records or above-average counts of Bald Eagles contrast with continued declines in field-nesting raptors, e.g. American Kestrel and Northern Harrier, and may also directly intersect with dips in Osprey numbers. The lower counts of Sharp-shinned and Cooper's Hawks (except note Waggoner's Gap) could signal changes in migration behavior or timing, as has been documented for Redtailed Hawk in recent years. monitoring and research will clarify the pattern and its' possible source - having the data collected and archived by Pennsylvania hawkwatchers is essential to understanding.

## Acknowledgements

I thank Pennsylvania's hawk counters for their many hours of counting, as well as the site compilers for organizing the data and sharing their results. Data was provided by www.hawkcount.org with permission of site compilers, a website maintained by the Hawk Migration Association of North America and managed by Jason Sodergren, database manager. Locations of sites and daily counts viewed at HMANA's www.hawkcount.org site. I thank David Barber for the site map and Grace Auld for her assistance with tables. This is Hawk Mountain Sanctuary contribution number

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



We must sadly report that the hawk watch community has lost two long-time hawk watchers from the Jacks Mt. site in Mifflin County. Ron Singer was the compiler for decades, watching and counting raptors at Jacks since 1975. Ron passed away March 5 of complications following surgery. Gloria Bickel began joining Ron and the other Jacks counters around 1992, becoming one of the leading reporters from the site. Gloria died this past November 19. The work of Ron and Gloria at Jack's added substantially to our knowledge of raptor migration through Appalachians and they will be greatly missed by Pennsylvania birders. Our condolences to his family, friends, and fellow Jack's Mountain watchers.

---- Laurie Goodrich and Greg Grove

# Table 1. Autumn 2016 count results for Pennsylvania watchsites.

ALLEGHENY FRONT (Bedford/Somerset) - Bob Stewart, compiler

And in case of the last of the	-	Name and Address of the Owner, where the Owner, which the Owner, which the Owner, where the Owner, which the	-		,		-00000000000000000000000000000000000000														
	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	BI HA	Vaca	ANNE	MEDI	2770	10000		
	47	406.2	40	30	*	**	7	0.4	1	-	1			2			MENE	PELA	SWIA	מוס	Total
Jenan		2.00.0	0	07	71	=	-	0	C	0	0	231	47	0	0	ω	-	0	C	14	300
September	30	236.5	8	9	192	65	10	182	42	0	7	4823	200	0	9	20	00	7	C	37	2000
October	31	221.0	6	312	18	47	19	1007	52	2	17	4	814	0	41	13	16	31	0	21	2423
November	30	185.8	0	43	0	11	2	44	17	2	7	0	199	-	06	0	-	-	0	24	442
Jecember	11	28.3	0	0	0	2	0	0	2	0	0	0	9	0	-	0	0	0	0	0	11
Total	119	777.8	33	387	106	136	32	1251	118	4	31	5058	1266	-	138	41	26	39	0	96	8764
Fotal per hr			0.04	0.50	0.14	0.17	0.04	1.61	0.15	0.01	0.04	6.50	1.63	0.00	0.18	0.05	0.03	0.05	00.0	0.12	11.27
% of flight			0.4	4.4	1.2	1.6	4.0	14.3	1.3	0.0	0.4	57.7	14.4	0.0	1.6	0.5	0.3	0.4	0.0	1.1	100.0
Average last 10 yrs	111.6	797.2	33.4	418.3	96.2	104.8	50.1	1177.8	209.9	6.8	55.6	3903.0	1513.1	2.5	195.9	64.0	30.0	27.5	0.1	152.1	8041.1
				-	the state of the s		-		-	Charles of the Contract of the	-	-					-		-	The same of the sa	

BAKE OVEN KNOB (Lehigh) - Bob Hoopes, Dan Kunkle, co-compil	3 (Lehigi	4) - Bob	Hoopes	, Dan Ku	ınkle, cc	3-compil	lers														
Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	SWHA	Unid	Total
August	17	136.5	45	196	72	59	4	39	10	0	2	168	56	0	2	11	80	0	0	32	705
September	30	239.0	92	289	191	140	26	442	61	0	6	6288	134	0	2	37	55	29	0	106	7885
October	31	238.3	91	327	17	93	42	1518	128	15	79	21	1144	0	28	26	51	22	0	92	3724
November	27	199.8	75	169	0	09	18	112	23	17	62	0	810	0	51	-	4	S.	0	13	1420
Total	105	813.5	287	981	280	352	06	2111	222	32	152	6477	2144	0	113	75	118	- 56	0	243	13734
Total per hr			0.35	1.21	0.34	0.43	0.11	2.59	0.27	0.04	0.19	7.96	2.64	0.00	0.14	60.0	0.15	0.07	0.00	0.30	16.88
% of flight			2.1	7.1	2.0	2.6	0.7	15.4	1.6	0.2	1.1	47.2	15.6	0.0	0.8	0.5	6.0	4.0	0.0	1.8	100.0
Average last 10 yrs	102.9	807.1	284.3	957.3	422.2	248.8	111.1	3118.2	277.2	26.7	120.7	5399.5	1697.1	0.5	100.3	151.8	97.2	54.5	0.0	283.0	13371.0
*Includes Mississippi Kite on 08/16/2016	ite on 08/1	6/2016																			

Bucktoe Creek Preserve(Chester) - Larry Lewis, compiler	serve(C	hester) .	Larry L	ewis, co	mpiler																
Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	SWHA	Unid	Total
September	30	224.5	0	0	103	20	6	147	49	0	ω	1127	2	0	0	64	4	-	0	0	1564
October	31	247.5	0	183	24	124	14	582	170	-	74	53	273	0	9	39	17	2	0	9	1568
November	30	206.0	0	221	0	107	16	204	85	0	136	0	355	0	က	1	2	4	0	0	1134
Total	91	678.0	0	404	127	281	39	933	304	7	218	1180	630	0	6	104	23	7	0	9	4266
Total per hr			0.00	09.0	0.19	0.41	90.0	1.38	0.45	0.00	0.32	1.74	0.93	0.00	0.01	0.15	0.03	0.01	0.00	0.01	6.29
% of flight			0.0	9.5	3.0	9.9	6.0	21.9	7.1	0.0	5.1	27.7	14.8	0.0	0.2	2.4	0.5	0.2	0.0	0.1	100.0
Average for 10 yrs	50.3	336.1	0.0	166.7	71.3	137.0	25.0	484.3	159.3	0.7	92.3	1146.7	317.3	0.0	3.7	85.0	15.0	4.3	0.0	3.0	1727.7
						-	-	-	-		-	-	-		-	-	-	The second second second second			

COUNCIL CUP (Luz	ruzerne) -	<ul> <li>Donald Kapral,</li> </ul>	Sapral, (	l, compiler																	
Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	SWHA	Unid	Total
September	3	13.5	0	0	2	0	0	0	0	0	0	366	0	0	0	-	0	0	0	0	369
otal	3	13.5	0	0	2	0	0	0	0	0	0	366	0	0	0	F	0	0	0	0	369
otal per hr			00.00	00.0	0.15	0.00	00.0	0.00	0.00	00.0	00.0	27.11	0.00	00.0	0.00	0.07	0.00	00.0	00.0	00.0	27.33
of flight			0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	99.2	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	100.0
Average for 10 yrs	19.6	91.1	1.2	134.1	16.9	35.2	0.9	93.9	9.6	0.0	0.7	330.2	200.4	0.0	0.7	22.8	0.1	1.0	0.0	23.7	877.7
			The second secon					_	-		_	Total Street, or other Designation of the last of the	The Party Street of the Party Street or the Pa								

HAWK MOUNTAIN (Berks and Schuylkill) - Laurie Goodrich, compile	(Berks	ind Schi	- (III)	Laurie (	Soodrick	h, comp	iler														
Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	SWHA	Unid	Total
August	17	168.3	9	∞	62	54	ဖ	36	ග	0	2	171	20	0	2	31	4	-	0	17	459
September	30	298.0	10	45	242	140	40	559	62	0	+	9136	123	0	3	133	82	15	0	84	10685
October	31	289.0	44	450	36	127	49	2243	262	13	87	54	1004	0	52	53	93	30	0	130	4727
November	30	237.3	31	91	m	83	17	115	36	18	47	0	926	-	57	0	11	2	0	20	1458
December/January	19	134.5	22	τ-	0	104	9	15	-	4	2	0	78	0	17	0	က	0	0	2	258
Total	127	1127.0	113	595	343	208	118	2968	370	35	149	9361	2181	-	131	217	193	48	0	256	17587
Total per hr			0.10	0.53	0.30	0.45	0.10	2.63	0.33	0.03	0.13	8.31	1.94	00.00	0.12	0.19	0.17	0.04	00.00	0.23	15.61
% of flight			9.0	3.4	2.0	2.9	0.7	16.9	2.1	0.2	0.8	53.2	12.4	0.0	0.7	1.2	1.1	0.3	0.0	1.5	100.0
Average last 10 yrs	125.2	125.2 1100.5	136.8	562.1	483.5	325.5	169.7	4515.5	585.1	32.9	171.3	7871.7	2313.0	1.2	132.0	391.7	177.8	58.9	0.5	198.3	18969.7

JACK'S MOUNTAIN (Mifflin) - Ron Singer, compiler

	Total	433	1263	287	46	5029	8.38	100.0	4242.1
						12			
	Unid	8	11	0	0	14	0.02	0.3	14.6
	SWHA	0	0	0	0	0	00.00	0.0	0.0
	PEFA	8	14	-	0	18	0.03	0.4	11.8
	MERL	2	o	2	0	19	0.03	0.4	12.4
	AMKE	17	17	-	0	35	90.0	0.7	47.3
	GOEA	0	51	78	15	144	0.24	2.9	62.8
	RLHA	0	0	0	0	0	00.0	0.0	0.0
	RTHA	36	325	143	80	512	0.85	10.2	450.5
	BWHA	3090	6	0	0	3099	5.17	61.6	2667.5
	RSHA	2	25	9	-	34	90.0	0.7	14.5
	NOGO	0	4	-	0	2	0.01	0.1	2.1
	COHA	26	85	10	0	121	0.20	2.4	65.3
	SSHA	103	468	20	-	592	0.99	11.8	572.7
	NOHA	10	19	4	0	33	90.0	0.7	30.6
	BAEA	77	54	10	7	148	0.25	2.9	76.6
	OSPR	57	13	-	0	. 71	0.12	1.4	57.2
alldillo	TUVU	0	145	2	-	148	0.25	2.9	129.3
ringer, c	BLVU	4	14	5	13	36	90.0	0.7	28.2
7 104 -	Hours	182.8	187.0	173.0	57.3	009			352.7
(MILLIAN)	Days	30	31	27	6	26			62.0
SACK S MOON (All (MINIMI) - NOIL SHIGEL, COMPILE	Month	September	October	November	December	Total	Total per hr	% of flight	Average last 10 yrs

LITTLE GAP (Northampton) - Michael Schall, compiler

LILLE GAP (Normampton) - Michael Schall, compiler	nampton	) - MICH	aei ocha	III, comp	ller																
Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	SWHA	Unid	Total
August	11	65.3	0	5	28	32	2	17	4	0	2	50	22	0	0	17	4	3	0	2	188
September	30	225.8	13	19	156	111	17	533	49	0	2	7971	116	0	3	137	55	17	0	38	9240
October	29	212.3	43	330	27	115	37	1606	171	7	48	20	856	-	47	55	09	22	0	20	3495
November	29	165.8	87	123	0	53	13	115	44	15	36	0	781	-	39	0	80	3	0	10	1328
December	5	27.0	5	0	0	24	0	0	0	-	-	0	28	0	11	0	0	0	0	-	71
Total	104	0.969	148	477	211	335	69	2271	268	23	92	8041	1803	2	100	209	127	45	0	101	14322
Total per hr			0.21	69.0	0.30	0.48	0.10	3.26	0.39	0.03	0.13	11.55	2.59	0.00	0.14	0.30	0.18	90.0	00.0	0.15	20.58
% of flight			1.0	3.3	1.5	2.3	0.5	15.9	1.9	0.2	9.0	56.1	12.6	0.0	0.7	1.5	6.0	0.3	0.0	7.0	100.0
Average last 10 yrs	6.06	582.5	96.4	462.9	334.8	224.2	102.6	3148.0	338.7	22.4	93.9	6792.6	1578.8	0.7	76.7	181.1	98.5	41.3	0.0	99.5	13693.3

MILITIA HILL (Montgomery) - Andy Fayer, Lynne Jackson, Rich Cor	tgomery	') - Andy	Fayer, I	Lynne J.	ackson,	Rich Co	roy,	co-compi	pilers								*Total i	includes one	e Mississipp	*Total includes one Mississippi Kite on September 18	tember 18
Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	SWHA	Unid	*Total
September	30	213.0	0	0	137	80	15	195	17	0	7	5453	2	0	0	117	6	10	0	24	6067
October	31	233.3	4	575	13	34	7	360	69	0	48	196	54	0	3	53	17	13	0	40	1486
Total	61	446.3	4	575	150	114	22	555	98	0	55	5649	56	0	3	170	26	23	0	64	7553
Total per hr			0.01	1.29	0.34	0.26	0.05	1.24	0.19	00.0	0.12	12.66	0.13	0.00	0.01	0.38	90.0	0.05	0.00	0.14	16.93
% of flight			0.1	7.6	2.0	1.5	0.3	7.3	1.1	0.0	0.7	74.8	0.7	0.0	0.0	2.3	0.3	0.3	0.0	0.8	100.0
Average last 10 yrs	59.8	448.5	27.1	664.5	256.0	105.3	74.4	1056.0	137.5	1.4	63.2 1	0.5920	113.2	0.2	3.7	261.8	33.2	29.4	0.4	67.7	13659.8
OLOCALOGO TO OFINITIONISM TOTAL	10140100	240													-						

\*Including Mississippi Kite on 09/24/2016

ROCKY RIDGE (York) - Randy Phillips, compiler

			1100 100					Constitution of the second													
Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	SWHA	Unid	Total
August	1	4.5	0	0	-	-	0	0	0	0	0	0	0	0	0	-	0	0	0	0	3
September	11	62.3	0	0	41	9	თ	509	8	0	0	3496	-	0	0	35	0	0	0	3	3803
October	6	31.3	0	18	4	5	2	78	4	0	-	0	10	0	-	12	2	-	0	-	139
Total	21	98.0	0	18	46	12	11	287	7	0	1	3496	11	0	7	48	2	7	0	4	3945
Total per hr			0.00	0.18	0.47	0.12	0.11	2.93	0.07	00.00	0.01	35.67	0.11	0.00	0.01	0.49	0.02	0.01	0.00	0.04	40.26
% of flight			0.0	0.5	1.2	0.3	0.3	7.3	0.2	0.0	0.0	88.6	0.3	0.0	0.0	1.2	0.1	0.0	0.0	0.1	100.0
Average last 10 yrs	13.7	8.99	0.7	19.7	27.0	59.7	7.7	213.7	6.7	0.0	0.7	2037.7	10.3	0.0	0.5	42.3	2.0	1.5	0.0	2.0	2112.0

ROSE TREE PARK (Delaware) - Holly Merker, compiler

Month	Days	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	SWHA	Unid	Total
September	29	188.8	0	0	102	61	15	147	31	0	3	743	3	0	0	65	12	7	0	7	1197
October	31	190.3	80	319	38	43	29	425	71	0	64	82	66	0	0	81	20	23	0	30	1332
November	19	116.5	29	06	-	27	4	57	12	0	9	0	131	0	-	-	2	0	0	8	461
Total	6.2	495.5	75	409	141	131	48	629	114	0	127	825	233	0	1	147	×	30	0	45	2990
Total per hr			0.15	0.83	0.28	0.26	0.10	1.27	0.23	0.00	0.26	1.66	0.47	0.00	0.00	0.30	0.07	90.0	00.00	60.0	6.03
%pof flight	Cito on Da/m	9/02/2018	2.5	13.7	4.7	4.4	1.6	21.0	3.8	0.0	4.2	27.6	7.8	0.0	0.0	4.9	1.1	1.0	0.0	1.5	100.0
Average last 10 yrs	86.2	552.3	54.8	431.2	185.7	133.0	64.1	1052.7	156.7	1.2	167.6	3379.7	322.4	0.2	3.2	158.8	32.2	18.1	0.2	49.8	6211.7

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7.3         0.91         2.8         0.06         1.05         1.05         1.05         0.01         0.09           geat low         130.0         3.0         1.0         1.0         1.0         1.0         1.0         0.0         1.0         0.0         1.0         0.0         0.0         1.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0< | er         30         225.5         298         516         6         94         29         737         70         0         43           ober         30         187.3         94         167         1         66         94         29         73         70         0         43           ober         43         187.3         94         167         1         66         9         47         19         3         15           ober         43         18.0         520         703         88         269         56         102         123         8         77           ober         130         900.5         357.4         7.3         0.3         10.0         77         125         0.15         0.01         0.09           glast 10 yrs         130.0         900.5         357.4         703.7         149.9         182.0         102.6         2180.4         236.9         20.1         0.01         0.00           glast 10 yrs         130.0         900.5         357.4         703.7         149.9         182.0         102.6         2180.4         236.9         20.8         113.5           Le MOUNTAIN (Huntingdon) - Greg From | er         30         225.5         298         516         6         94         29         737         70         0         43           ober         30         187.3         94         167         1         66         94         29         73         70         0         43           ober         130         181.6         50         703         88         269         56         1020         123         0.01         0.09         3         177           per hr         130         900.5         357.4         7.3         0.9         2.8         0.0         1.25         0.15         0.01         0.09           glast 10 yrs         130.0         900.5         357.4         703.7         149.9         182.0         102.6         218.0         1.25         0.01         0.01           glast 10 yrs         130.0         357.4         703.7         149.9         182.0         102.6         218.0         13.5         0.01         0.09           best ast 10 yrs         150.0         0         0         0         0         0         0         0         0         0         0         0         0         0         0 </td <td>  Second Fig.   Second Fig.  </td> <td>  Secondary   Seco</td> <td>  Section   Sect</td> <td>  Section   Sect</td> <td>  Second Fig.   Second Fig.  </td> <td>  Second Fig.   Second Fig.  </td> <td>  Main of the color of the colo</td> <td>  Second Fig. 18   Seco</td> <td>  Second Part</td> <td>  Second Part</td> <td>  MOUNTAIN (Huntingdon)</td> <td>  Main   Main  </td> <td>  Main column   Main column  </td> <td>  1   20   255.5   228   516   6   94   29   777   710   9   9   15   15   15   15   15   15  </td> <td>  Method   M</td> <td>  Maintain   Maintain</td> <td>  Maintail   Maintail</td> | Second Fig.   Second Fig. | Secondary   Seco | Section   Sect | Section   Sect | Second Fig.   Second Fig. | Second Fig.   Second Fig. | Main of the color of the colo | Second Fig. 18   Seco | Second Part | Second Part                 | MOUNTAIN (Huntingdon) | Main   Main | Main column   Main column | 1   20   255.5   228   516   6   94   29   777   710   9   9   15   15   15   15   15   15 | Method   M | Maintain   Maintain | Maintail   Maintail |