

Raptor Migration Summary – Spring 2010

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Six foot snow cover and record hot weather limited migration count efforts and totals in the 2010 spring migration season. One of the heaviest February snowfalls on record for south-central counties kept Allegheny Front from tallying early season migrants. Spring counts ended during the second-hottest April and May for northeastern states in more than 100 years. Precipitation was below-normal and skies were often cloudless during peak migration for Broad-winged Hawk in April, perhaps promoting broad front movement and high altitude flight as birds crossed the state. At Presque Isle, winds often pushed birds away from the shoreline resulting in lower counts than were observed in 2009.

Migration Summary

Five Pennsylvania watchsites tallied 13,554 migrant raptors of 16 species in 216 days of coverage between 25 February and 15 May 2010. Although no kites were seen from official watchsites, an adult Mississippi Kite was observed flying southwest from Hawk Mountain's South Lookout on 8 May (R. Duque and B. Peralta, observers). The largest one-day spring count for any site occurred at Presque Isle on 1 March when 2780 hawks of 11 species were counted including 2407 Turkey Vultures.

Table 1: Pennsylvania watch-sites reporting for spring 2009

Site	Hours	Total
Allegheny Front	356	1569
Council Cup	9	58
Hawk Mountain	224	834
Presque Isle	192	9797
Tussey Mountain	227	1327
Total	1100	13554

Hours of effort dipped in 2010 (1100) primarily due to the unusual weather. Despite a late start to their season, Allegheny Front led in watchsite hours with 356, and Presque Isle led in migrant totals with 9797 birds (Table 1, Figure 1). Spring migration count effort has shifted geographically in recent years as sites in southern Pennsylvania enjoy less coverage (e.g., Tuscarora Summit, Rose Tree Park), whereas Presque Isle has been added in the northwest along the

Lake Erie shore. Only one site conducted counts in February (Tussey Mountain), and only three sites counted into May (Hawk Mountain, Allegheny Front, and Presque Isle). Passage rates for the state were 12.42 birds per hour, with individual sites ranging from 3.7 to 50.8 migrants per hour (Table 3).

Turkey Vulture state totals (7464) surpassed the Broad-winged Hawk counts (1638) for the first time. This switch occurred on the heels of an expanding northern population of vultures, better coverage of lakeshore flights, and unusually hot and clear weather during peak Broad-winged Hawk flight period. Many watchers suspected the bulk of the northbound Broad-winged Hawks flew over the state without detection due to the ideal flight conditions. The unusually low Broad-winged Hawk peak one-day counts at spring sites highlight this pattern (Table 2). Osprey, another migrant which passes through the state primarily in April, also was below-average (281) (Table 3). In contrast, two early migrants were tallied in above-average numbers: Golden Eagle (288) and Red-shouldered Hawk (373) (Table 3). Two sites set new records for Black Vulture, reflecting their expanding range. Lastly, Bald Eagles were seen from every site in good numbers, although the timing of peak flights varied substantially between western ridges and other sites (Table 2).

Site Highlights

Allegheny Front (Bedford) – Six feet of snow closed access to Allegheny Front for late February and early March. Counts did not begin until 9 March and daily coverage was delayed to 16 March. Despite this challenge, stalwart counters manned the site for 52 days and covered more hours than any other watchsite (356). Counters tallied 1569 migrant raptors before the last count day on 5 May (Table 1, 3). Soon after they opened access, watcher Tom Dick recorded the highest one-day count for the season—164 hawks—including 28 Golden Eagles, 28 Red-shouldered Hawks, and 34 Red-tailed Hawks. An early Peregrine Falcon was recorded, as well as a Northern Goshawk.

In 2010, Allegheny Front set a new season record for Black Vulture (27) and tallied an above-average 87 Golden Eagles for the season (Table 3). The Cooper's Hawk count also was above-average (89), whereas Broad-winged Hawk, Sharp-shinned Hawk, Bald Eagle, and Osprey counts were below average (288, 135, 14, and 61 respectively). Rate of passage at Allegheny Front was 4.4 birds per hour overall and the top three most numerous migrants were Red-tailed Hawk (27% of total hawks), Broad-winged Hawk (18%), and Turkey Vulture (17%) (Table 3).

Council Cup (Luzerne) – Three days of April counts at Council Cup yielded 58 raptor migrants of seven species. Gusty west winds on 21 April brought the highest count for the season (26 raptors) including three immature and one adult Bald Eagle. Five Osprey were seen including one sparring with an immature Bald Eagle for about two minutes before continuing north. The Council Cup rate of passage was 6.4 birds per hour of coverage with the predominant migrants being Broad-winged Hawks (29% of total) and Turkey Vultures (22%) (Table 3). The Osprey and Bald Eagle counts were notable for the low number of hours covered at this Susquehanna River site (5 and 4, respectively). With greater coverage this site could prove an important monitoring site for these two species.

Hawk Mountain Sanctuary (Berks and Schuylkill) – Five migrant raptors sailed north past the ridge top on 26 March to begin the 2010 count. A total of 834 diurnal raptors were counted in 224 hours from 26 March to 15 May. Counts were up 30% from last year's total of 643 but still 23% below the 10-year average of 1109. Above-average season counts were recorded for Turkey Vulture, Osprey, and American Kestrel, and new season records were set for Black Vulture (45), Bald Eagle (34) and Cooper's Hawk (70) (Table 3). In contrast, Red-tailed Hawk and Broad-winged Hawk totals (80, 298) were below the 10-year average (Table 3). Hawk Mountain's overall rate of passage was 3.7 birds per hour, with Broad-winged Hawk and Osprey representing the greatest proportion of

Table 2. Peak count dates for selected species at selected Pennsylvania watch sites.

Site	Br.-winged Hawk		Bald Eagle	
	Count	Date	Count	Date
Allegheny Front	60	4/20	5	3/17
Hawk Mountain	88	4/27	5	4/20
Presque Isle	345	4/24	7	4/30
Tussey Mountain	35	4/19	5	3/5

the flight (36% and 16%, respectively) (Table 3).

The highest one-day count of Broad-winged Hawk (88) and Osprey (28) occurred on 27 April among 129 total migrants (Table 1, 3). Totals also included seven Black Vultures and three Bald Eagles. As testament to their widespread recovery, Bald Eagles were sighted nearly every day (>80%) from Sanctuary lookouts, although many appeared to be moving locally and not migrating. Light northwest winds on April 20 carried five adult Bald Eagles northward past the lookout, a one-day peak count of migrants (Table 2).

Presque Isle (Erie) – Northerly winds kept overall counts at this relatively new site below last year's tallies. Despite the weather, Presque Isle led the state in total spring migrants (9797) at a rate of 50.9 birds per hour (Table 1, 3). Counts began 7 March and continued through 12 May with the highest number passing north on 1

Turkey Vultures led to the high one-day count of the season, 2780. Compiler Jerry McWilliams and three other counters enjoyed rarities such as a Rough-legged Hawk and two Northern Goshawks amidst the 11 raptor species sighted for the day. Hundreds of blackbirds poured past throughout the morning as well. North winds kept Broad-winged Hawks south of the shore and out of view of the watchsite through the peak of their migration in mid to late April.

When winds turned to the southeast on 24 April, Presque Isle recorded the highest one-day count for Broad-winged Hawks (345). Lower season totals were observed for Osprey, Bald Eagle, Broad-winged Hawk, and American Kestrel (Table 3), however higher numbers were observed in some early season migrants, including Turkey Vulture, Cooper's Hawk, Northern Goshawk, Red-shouldered Hawk, and Red-tailed Hawk. Turkey Vultures comprised 71% of the total flight (Table 3). Counters recorded the

April. A strong south wind on 1 April pushed hundreds of birds toward the lake shore, with many remaining low through mid-day. A parade of 2407

season-high count of Bald Eagles for the state (7) on 30 April among a late season push of 345 migrants. The flight was highlighted by four immature Bald Eagles gliding past in unison and a lone adult Peregrine Falcon shooting breathlessly low past the watchsite.

Tussey Mountain (Centre) – Tussey Mountain launched their spring season on 25 February amid wind-driven snow and northwest winds. A lone Turkey Vulture headed north, perhaps on faith. Four Golden Eagles followed suit two days later before snow increased and visibility diminished. Counters recorded above-average season counts of Red-shouldered Hawk (67) and Golden Eagle (201), but below-average counts for Broad-winged Hawk (100), Turkey Vulture (165) and Red-tailed Hawk (394). Rate of passage for all raptors was 4.2 per hour, with Red-tailed Hawks numbering 1.2 per hour. The top three most abundant migrants for Tussey were Red-tailed Hawk (30% of flight), Golden Eagle (15%), and Sharp-shinned Hawk (13%) (Table 3). The prominence of Golden Eagle at Tussey Mountain underscores the critical importance of the west-central ridges, e.g. Tussey Mountain and Allegheny Front, for eastern Golden Eagles heading north.

Tussey recorded a banner flight of Golden Eagles on 8 and 9 March,



tallying 61 eagles in the two day period (33 and 28 respectively). Counter Jon Kauffman reported northwest winds and clear skies on the 8th kept many of the morning eagles low along the ridge. Many of the day's eagles were adults and some showed full crops indicating recent feeding. Other migrants for the two days included Red-tailed and Red-shouldered hawks along with the site's first American Kestrel and Northern Harrier of the season (Table 3).

Counter Nick Bolgiano tallied the one-day high count for Tussey on 3 April: 131 raptors of 11 species. Southeast winds stirred a season-peak count of Sharp-shinned and Red-tailed hawks (48, 43) as well as Osprey (10). The site's only two Peregrine Falcons also glided north. Northwest winds on 19 April ushered in the highest one-day count of Broad-winged Hawks (35) for the site. Other migrants included 9 Red-tailed Hawks, 5 Sharp-shinned Hawks, 3 Osprey, and 2 American Kestrels. The last two Golden Eagles were seen on 21 April bringing the season total for the species to 201, the highest for the state.

Conclusion

The spring 2010 season was challenged by abundant snow in early season, contrary winds, and record high temperatures in late season. Counters still recorded above-average state counts for six out of sixteen species and more than 13,000

migrating raptors. Most sites reported many close-flying raptors and a diversity of other migrants from Common Loons to Ruby-throated Hummingbirds. Next spring when the first warm winds stir from the south, join fellow birders at a nearby lookout to celebrate Pennsylvania's returning raptor migrants. For information on Pennsylvania watchsites, directions, contacts, and daily counts, please see <www.hawkcount.org>.

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Key to Species Headers for Table 3

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



Turkey Vulture (*Cathartes aura*). Better coverage of the Lake Erie shore, an expanding northern population of Turkey Vultures, and unfavorable conditions for hawkwatching during the peak of Broad-winged Hawk migration were all possible factors that led to Turkey Vultures surpassing Broad-wings in total individuals for the spring season for the first time. Turkey Vultures accounted for 55% of the total spring flight in 2010. (Photo by Geoff Malosh)

Table 3. Spring 2010 count results for Pennsylvania watch sites.

ALLEGHENY FRONT (Bedford) - Bob Stewart, compiler

Month	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	UNID.	MIKI	STKI	TOTAL
March	125.5	16	230	1	12	6	49	41	4	62	0	218	1	65	6	5	3	19	0	0	738
April	196	11	38	50	2	17	84	46	2	6	270	206	1	21	16	2	0	14	0	0	788
May	34.5	0	0	10	0	1	2	2	0	0	18	5	0	0	0	0	0	4	0	0	43
Total	356	27	268	61	14	24	135	89	6	68	288	431	2	87	22	7	3	37	0	0	1569
Total/hr	0.08	0.75	0.17	0.04	0.07	0.38	0.25	0.02	0.02	0.19	0.61	1.21	0.01	0.24	0.06	0.02	0.01	0.10	0.00	0.00	4.41
% flight	1.72	17.08	3.89	0.89	1.53	8.60	5.67	0.38	4.33	18.36	27.47	0.13	5.54	1.40	0.45	0.19	2.38	0.00	0.00	0.00	100.00
10-yr. Average	389.7	11.4	334.5	110.5	19.3	29.0	164.3	63.2	6.2	58.5	419.0	433.6	1.9	72.1	23.3	6.1	4.9	85.73	0.00	0.0	1843.18

COUNCIL CUP (Luzerne) - Donald Kapral, compiler

Month	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	UNID.	MIKI	STKI	TOTAL
April	9	0	13	5	4	0	6	0	0	0	17	8	0	0	1	0	0	4	0	0	58
Total	9	0	13	5	4	0	6	0	0	0	17	8	0	0	1	0	0	4	0	0	58
Total/hr	0.00	1.44	0.56	0.44	0.00	0.00	0.67	0.00	0.00	0.00	1.89	0.69	0.00	0.00	0.11	0.00	0.00	0.44	0.00	0.00	6.44
% flight	0.00	22.41	8.02	6.90	0.00	10.34	0.00	0.00	0.00	0.00	29.31	13.79	0.00	0.00	1.72	0.00	0.00	5.90	0.00	0.00	100.00

HAWK MOUNTAIN (Berks/Schuylkill) - Blanca Peralta, Ramiro Duque, and Laurie Goodrich, compilers

Month	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	UNID.	MIKI	STKI	TOTAL
March	2.25	0	0	0	0	0	1	2	0	0	0	2	0	0	0	0	0	0	0	0	5
April	155.5	34	36	109	23	14	64	58	0	0	264	63	0	14	2	1	23	0	0	0	705
May	86.25	11	0	25	11	2	11	10	0	0	34	15	0	2	0	0	2	0	0	0	123
Total	224	45	36	134	34	16	76	70	0	0	298	80	0	16	2	1	25	0	0	0	833
Total/hr	0.20	0.16	0.60	0.15	0.07	0.34	0.31	0.00	0.00	0.00	1.33	0.36	0.00	0.00	0.07	0.01	0.00	0.11	0.00	0.00	3.72
% flight	5.40	4.32	16.09	4.08	1.92	8.40	9.12	8.40	0.00	0.00	35.77	9.60	0.00	0.00	1.92	0.24	0.12	3.00	0.00	0.00	100.00
10-yr. Average	244.7	11.3	22.4	119.2	12.7	30.4	137.6	36.3	0.6	10.3	453.6	140.2	0.0	1.2	5.6	0.7	0.3	9.6	0.3	0.0	1108.7

PRESQUE ISLE (Erie) - Jerry McWilliams, compiler

Month	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	UNID.	MIKI	STKI	TOTAL
March	71	1	1794	0	1	6	49	45	1	199	0	147	5	0	21	1	2	23	0	0	2295
April	101	0	4730	33	17	33	622	51	3	39	853	288	2	0	100	5	2	25	0	0	6812
May	20	0	449	7	4	1	81	2	0	0	82	1	0	0	9	2	1	1	0	0	660
Total	192	1	6982	40	22	40	752	98	4	238	935	456	7	0	130	6	5	49	0	0	9767
Total/hr	0.01	36.36	0.21	0.11	0.21	0.21	3.92	0.51	0.02	1.24	4.87	2.38	0.04	0.00	0.88	0.04	0.03	0.26	0.00	0.00	50.87
% flight	0.01	71.49	0.41	0.23	0.41	7.70	1.00	1.00	0.04	2.44	9.57	4.67	0.07	0.00	1.33	0.08	0.05	0.50	0.00	0.00	100.00
2-yr. Average	162.3	0.5	6386.0	55.0	50.0	44.5	734.0	73.5	2.0	161.5	3091.0	405.5	15.0	0.0	188.5	7.5	2.5	47.5	0	0.5	12066

TUSSEY MOUNTAIN (Centre) - Dan Ombalski, compiler

Month	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	UNID.	MIKI	STKI	TOTAL
February	18.5	0	1	0	0	0	1	0	0	0	0	2	1	5	0	0	0	0	0	0	10
March	208	20	152	2	16	10	99	37	2	64	0	287	2	186	24	1	0	19	0	0	923
April	92.75	0	12	39	6	11	74	20	0	3	100	105	0	10	8	1	2	3	0	0	394
Total	319.25	20	165	41	24	21	174	57	2	67	100	394	3	201	32	2	2	22	0	0	1327
Total/hr	0.08	0.52	0.13	0.08	0.07	0.07	0.55	0.18	0.01	0.21	0.31	1.23	0.01	0.63	0.10	0.01	0.01	0.07	0.00	0.00	4.16
% flight	1.51	12.43	3.09	1.81	1.58	13.11	4.30	1.15	0.15	5.05	7.54	29.69	0.23	15.15	2.41	0.15	1.66	0.00	0.00	0.00	100.00
10-yr. Average	359.40	27.10	238.00	79.40	23.20	42.20	175.40	78.20	2.40	50.50	629.70	507.30	6.00	168.30	49.30	3.90	1.20	44.90	0.00	0.00	2127.00

TOTAL FOR ALL PENNSYLVANIA WATCHSITES

Month	Hours	BLVU	TUVU	OSPR	BAEA	NOHA	SSHA	COHA	NOGO	RSHA	BWHA	RTHA	RLHA	GOEA	AMKE	MERL	PEFA	UNID.	MIKI	STKI	TOTAL
February	18.5	0	1	0	0	0	1	0	0	0	0	2	1	5	0	0	0	0	0	0	10
March	406.75	37	2176	3	31	22	198	125	7	325	0	654	8	251	51	7	5	61	0	0	3981
April	554.25	45	4838	236	52	75	850	175	5	48	1504	672	3	31	139	10	5	69	0	0	8757
May	120.75	11	449	42	15	4	94	14	0	0	134	41	0	11	2	1	7	0	0	0	826
Total	1100.25	93	7464	281	98	101	1143	314	12	373	1638	1369	12	288	201	19	11	137	0	0	13554
Total/hr	0.08	6.78	0.26	0.09	0.09	1.04	0.29	0.01	0.01	0.34	1.49	1.24	0.01	0.26	0.18	0.02	0.01	0.12	0.00	0.00	12.32
% flight	0.69	55.07	2.07	0.72	0.75	8.43	2.32	0.09	0.09	2.75	12.08	10.10	0.09	2.12	1.48	0.14	0.08	1.01	0.00	0.00	100.00
10-yr. Average	1230.2	99.9	2340.4	454.1	102.7	154.7	820.1	255.5	11.0	169.2	3315.2	1300.9	12.2	240.3	254.4	24.70	10.60	248.10	0.40	0.10	9818.7