NorthEast Hawk Watch
2015 Hawk Migration Report

Bald Eagle. Photo by Vic Berardi

2015 NorthEast Hawk Watch Sites

NorthEast Hawk Watch

The *NorthEast Hawk Watch* promotes the systematic study of migrating hawks in New England, southeastern New York and northeast New Jersey. Membership is open to anyone. Annual dues are $10 payable to "NEHW" c/o treasurer: Joe Wojtanowski, PO Box 142, Poquonock, CT 06064.

Visit the website of *NorthEast Hawk Watch* at www.battaly.com/nehw/ to download a membership application, view seasonal site totals at all sites and daily counts at selected sites, download PDFs of previous reports, and find directions to hawkwatch sites in the northeast.

All counts can be easily reported online through a free service offered by the Hawk Migration Association of North America (HMANA). To sign up, visit www.hawkcount.org and click on "Account Request" link. To receive daily reports from all sites using the hawkcount program, subscribe to BIRDHAWK, which is also free and can be done by visiting the HMANA homepage at www.hmana.org and following the simple instructions there.

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NEHW Website:
www.battaly.com/nehw

Don Hopkins (L), the founder of NEHW and the first editor of the NEHW Hawk Migration Report, and Seth Kellogg (R), the longest-serving editor of the NEHW Hawk Migration Report.

Seth Kellogg, Long-time Editor of the Annual NorthEast Hawk Migration Report, Steps Down

Members of the NorthEast Hawk Watch (NEHW) might detect some differences between this year's report and those they've received for decades. That is because Seth Kellogg, a leading presence in the northeastern hawk watching community for over forty years, retired as Editor of the annual NEHW Hawk Migration Report when he completed the 2014 report.

Everyone with an interest in hawks, in raptor conservation, owes a debt of gratitude to Seth for his labors on behalf of hawks for more than four decades. Very early in the life of the Hawk Migration Association of North America (HMANA), Seth became editor of its Newsletter, editing reports on hawk flights and producing and analyzing seasonal site tables from across the continent. He made major improvements to the HMANA Newsletter BEFORE the invention of desktop computers. He edited and laid out newsletters that included massive tables of counts from across North America on a typewriter without benefit of digital memory, much less computers, relying on his skills and whiteout. I clearly remember the excitement with Seth's first issues of the Newsletter, which was the glue that held together a young organization of hawk watchers from across a continent.

Seth eventually laid down the mantle of editor for HMANA, but he was still the editor for the eastern continental region, which included roughly 100 different sites in the most densely covered region in the world. In 1993 HMANA recognized Seth's unique contributions with the Maurice Broun Award, honoring individuals "who have made outstanding, long-term, or major contributions to HMANA and its goals."

Meanwhile, the role of compiler and editor of the annual NorthEast Hawk Migration Report had passed from Neil Currie to Seth in 1988. Neil had been lead editor on the report for 11 years, developing it into the best source of information on hawk migration in any region in the world. Seth brought to the report as broad and deep a perspective on hawk migration as any amateur and perhaps many professional raptor biologists in North America. After stepping down as editor of the HMANA Newsletter, Seth had continued to write the eastern continental report for HMANA as many

new hawk watches developed. In 2003, HMANA recognized Seth's unique continuing contributions to the field and to the association, including the NortEeast Hawk Watch a second time by presenting him with HMANA's highest honor, the Joseph Taylor Award for "heroic contributions above and beyond the call of duty." Not many people receive two lifetime achievement awards from any organization!

The development of personal computers, the Internet, and in 2002 HMANA's introduction of HawkCount forever changed communication of hawk migration data. Watch sites began loading their own daily reports into HawkCount for the world to see in near-real time. Previously, you had to wait to the following fall to see a report on the migration a year earlier. The evolution of Hawk Count changed the nature of the HMANA Newsletter, but not the value of the NEHW Hawk Migration Report. Unlike HMANA's publications, the NEHW Migration Report provides a long-term historical perspective (over 40 years) for more than fifty sites across New England (it was originally the New England Hawk Watch), and parts of two other states and one Canadian province determined to be along the same flight lines! HawkCount made it much easier for Seth to obtain and organize daily and seasonal data from sites, but his data and analysis covered not just the season's migration as it unfolded at individual sites, but the movement of raptors across the region on a daily basis across the season and across decades, providing a truly unique perspective on long-term raptor migration and population trends in our region long before the development of the Raptor Population Index (RPI).

Seth continued to compile and edit the NEHW report through 2014, over a quarter century, but that was only part of his contributions to the hawk and birding communities. Seth has been an officer of NEHW for decades, a leader in two state breeding bird censuses, Editor of the Bird News of Western Massachusetts, the voice of the Western Mass Voice of Audubon, and Editor of the monthly field records for Bird Observer, the journal of record for Massachusetts. He also conducted daily coverage at Blueberry Hill in Massachusetts for many years.

Thousands of people across decades and the continent owe a debt of gratitude to Seth for everything he has done to help us understand raptor migration and advance raptor conservation. We in the northeast are especially fortunate. Thank you, Seth, for all that you have done for us, given to us, and shared with us, and for enriching our understanding and love of birds of prey.

Trudy Battaly and Iain MacLeod Succeed Seth Kellogg as Editors of the NEHW Hawk Migration Report

Everyone on the NEHW board knew that it was not possible to replace Seth Kellogg, as Editor of the NEHW Hawk Migration Report, but we had to find a successor, as the NEHW report is a unique source of extensive data and insightful analysis on hawk migration, the raison d'etre for the existence of NEHW. We were fortunate in that two of the northeast's most accomplished migration researchers volunteered to work together to develop future reports: Gertrude (Trudy) Battaly of New York and Iain MacLeod of New Hampshire. Trudy will compile and edit the report, and Iain will do design, lay out and production. You'll notice some changes that we hope you'll appreciate, and we encourage you to share your thoughts on and ideas for the report with Trudy (merlin@pipeline.com) and Iain (pandiain.im@gmail.com).

Paul M. Roberts, President
NorthEast Hawk Watch

Trudy Battaly


Iain MacLeod

From the Editor

Thanks for your data! If you are like most hawk watchers I know, you went to your hawk watch last year with an insatiable appetite for super views of Osprey, Sharpies, and Broadwings, and hoped for that special sighting of a Goshawk or Roughleg. But, when you found that hawk in the sky, counted it, and submitted the data to hawkcount.org, you contributed to an on-going database that provides us with information about raptors that we would not have without you! So, thank you! Thanks also to Jason Sodergren for his development of that site, hosted by HMANA, and for making the data readily available.

For decades Seth Kellogg has interpreted that data for you in this Report. His experience and background provided insight that brought clarity and understanding to the season's flight. Thank you Seth!

I would like to invite all hawk watchers to contribute articles or comments about your sites and your experiences. Not only is hawk watching a skill, it is an experience, sometimes challenging, but always rewarding and inspirational. So, share your experiences with us and we will either include it in the next Report or post it on our web page, www.battaly.com/nehw.

This Report contains a compilation of your data in tables of daily counts from all over the NorthEast; a summary table of all sites with their season totals, and descriptions of the 2015 season at each watch site, along with comparisons to their recent history. There is an overview of the count across the region, both spring and fall, and a discussion of trends for each species, including graphics to show those trends and clarify species distributions. In keeping with Seth's tradition, there is also a Broadwing section which includes discussion of where the hawks were flying and where they weren't during the 2015 fall season, topped off with a map of the Broadwing flight path.

In addition, there is an article by Drew Panko, who has been looking at hawk migration data for more than three decades. Drew presents a puzzle regarding Bald Eagles and Osprey and challenges all of us for answers.

This is your data, together with the data from neighboring sites, and the sites across the region. Your data is a very important component of this overview, and your many hours of effort to collect it is very much appreciated. Please check the data for your site and let me know if there are any errors. Also, if you submit any changes to hawkcount for past data, please send me an email so I can update the history files.

I join you in your efforts to understand hawk migration and contribute to raptor conservation.

Trudy Battaly, NEHW Report Co-Editor
merlin@pipeline.com

Abbreviations used in tables and charts in this Report include: YR: year, DYS: number of days, HRS: hours, BV: Black Vulture, TV: Turkey Vulture, OS: Osprey, BE: Bald Eagle, NH: New Hampshire, SS: Sharp-shinned Hawk, CH: Cooper's Hawk, NG: Northern Goshawk, RS: Red-shouldered Hawk, BW: Broad-winged Hawk, RT: Red-tailed Hawk, RL: Rough-legged Hawks, GE: Golden Eagle, AK: American Kestrel, ML: Merlin, PG: Peregrine Falcon, SK: Swallow-tailed Kite, MK: Mississippi Kite, UR: Unidentified Raptor, TOT: Total Hawks, XBV: Total Hawks w/o Broad-wing Hawk, Black Vulture, and Turkey Vulture, PH: Total Hawks/ hour, XPH: XBV/hour

You Can Help NEHW

We suggest that you consider giving a NEHW membership to hawk watching or birding friends. It is only $10 for a 36-pp annual report that provides data and analysis on over four decades of hawk watching in the northeast. Nobody in North America provides a more comprehensive report on each year's migration by site, by species, and by day for any region.

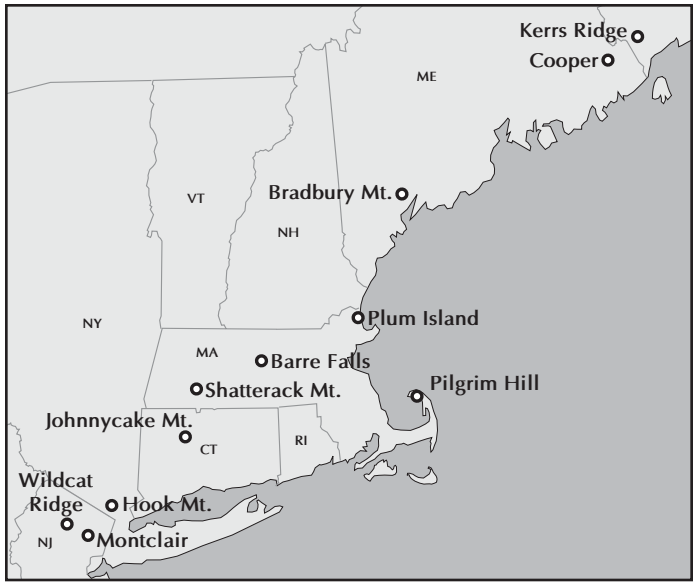
NEHW has developed a new membership brochure that you can download from our web site at www.battaly.com/nehw. We want to recruit more people, including young adults and kids, to hawk watching. They are, in fact, the future of hawk watching and raptor conservation. Consider giving a brochure to friends or members of your local bird or nature club.

Visit the NEHW web site at www.battaly.com/nehw to check out the snappy NEHW license plate holders, available for only $5 each plus postage and handling. You can also buy them directly from a NEHW director near you. The license plate holders announce to everyone who sees your car that you are a hawk watcher, and that you "COUNT", and they help other interested in hawks learn about NEHW!

2015 Northeast Spring Season

Sites

Eleven hawk watch sites in the Northeast reported counts for the Spring 2015 migration season. The sites are geographically distributed across the northeast from the New York metropolitan region in the southwest to New Brunswick in the northeast. The three sites located in the NY metropolitan region include Wildcat Ridge (WC) and Montclair (MC) in New Jersey, and Hook Mountain (HM) in New York. Another three sites are located in the mid-New England region: Johnnycake Mountain (JC) in Connecticut, and Shatterack Mountain (SH) and Barre Falls (BF) in Massachusetts. The coastal region includes three sites: Pilgrim Heights (PH) and Plum Island (PI) in Massachusetts, and Bradbury Mountain (BR) in Maine. The northern most region includes two sites, both of which are near but not on the coast. These include Cooper (CO) in Maine, and Kerrs Ridge (KR) in New Brunswick.



Coverage

Coverage varied from as little as three days to a full season of 60 days. The two sites with two months of coverage, Montclair and Bradbury Mountain, are situated near the extremes geographically, providing good flight comparisons. Together, these two sites accounted for 54% of the hawks counted and an average of 54 hawks per day. The three sites with 25 to 35 days of coverage, Plum Island and Pilgrim Heights to the north and Wildcat Ridge to the south, accounted for 23% of the hawks and an average of 31 hawks per day.

The six sites with less than 20 days of coverage include Kerrs Ridge, Cooper, Barre Falls, Shatterack Mountain, Johnnycake Mountain and Hook Mountain. Together, they accounted for 22% of the hawks and an average of 62 hawks per day. In spite of the strong positive correlation between the number of days of coverage and the number of hawks counted ($r = 0.93$, $p < 0.0001$), this high per day average undoubtedly occurred because counters at these sites selected good flight days. For example, with only 4 days covered, Shatterack Mountain had the highest per day count of 117 hawks, because their count included the two peak flight days for the region, April 21 and 22. Overall, an average of 46 hawks per day were seen throughout the Northeast during the 2015 spring season.

[The correlation coefficient, r, measures the strength of the linear relationship between two variables, year and species counts. The p-value measures the probability that the outcome will occur assuming $r = 0$. A strong significance occurs when r is larger and p is smaller.]

The Count—An Overview

11,632 hawks of 18 species were tallied at the eleven sites. The most prevalent species were Broad-winged Hawks (5374), Turkey Vultures (1277), and Sharp-shinned Hawks (1204). This was the second time in 27 years that Turkey Vultures outnumbered Sharpies. The least prevalent were Golden Eagle (2), Northern Goshawk (5), and Rough-legged Hawk (8). Both Kites made a showing again this year. There were two Swallow-tailed Kites—one each at Pilgrim Heights and

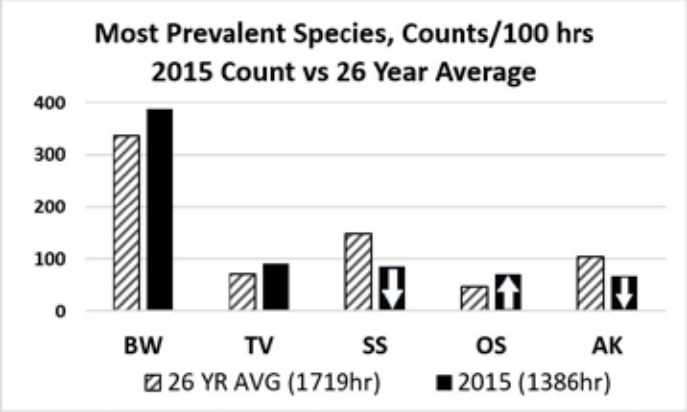
Northeast Spring 2015 Seasonal Totals

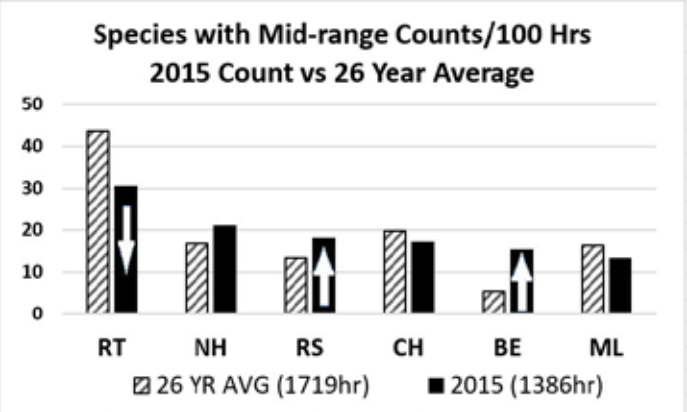
SITE	Days	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PG	UR	MK	SK	TOTAL	Hwk/Dy
Kerrs Ridge	8	23	0	10	103	4	15	60	0	0	1	476	6	0	0	18	6	0	13	0	0	**712**	89
Cooper	10	56	0	5	2	9	2	5	2	0	0	3	0	0	0	1	1	0	2	0	0	**32**	3
Bradbury Mountain	60	458	0	374	382	102	101	610	85	4	104	1190	236	3	1	307	75	8	46	0	0	**3628**	60
Plum Island	26	147	2	182	63	0	108	46	13	1	2	6	10	0	0	247	43	4	17	0	0	**744**	29
Pilgrim Heights	35	142	1	486	62	9	9	108	23	0	12	226	65	0	0	83	31	2	3	8	1	**1129**	32
Barre Falls	16	69	0	8	53	15	5	35	4	0	7	281	26	1	1	30	6	1	15	0	0	**488**	31
Shatterack Mountain	4	19	0	2	21	4	1	15	0	0	0	419	0	0	0	4	0	0	1	0	0	**467**	117
Johnnycake Mountain	3	12	4	2	12	2	1	7	6	0	1	189	0	1	0	4	0	0	0	0	0	**229**	76
Hook Mountain	12	44	9	5	58	25	13	37	18	0	17	412	24	2	0	42	6	7	13	0	0	**688**	57
Wildcat Ridge	25	116	6	0	46	10	0	44	15	0	8	649	32	0	0	20	0	0	3	0	0	**833**	33
Montclair	56	301	9	203	183	32	37	237	72	0	99	1523	25	1	0	190	18	11	39	2	1	**2682**	48
TOTALS	**255**	**1386**	**31**	**1277**	**985**	**212**	**292**	**1204**	**238**	**5**	**251**	**5374**	**424**	**8**	**2**	**946**	**186**	**33**	**152**	**10**	**2**	**11632**	46
26-Year Average		1719	45	1229	828	92	287	2554	339	14	228	5776	749	4	3	1810	279	34	204	5.9	1.7	14496	

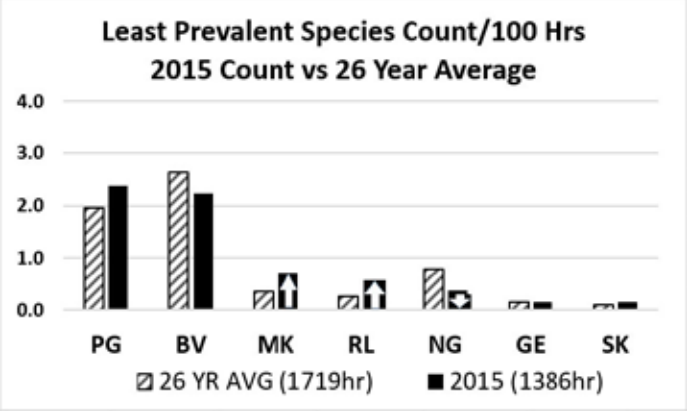
BV: Black Vulture, TV: Turkey Vulture, OS: Osprey, BE: Bald Eagle, NH: Northern Harrier, SS: Sharp-shinned Hawk, CH: Cooper's Hawks, NG: Northern Goshawk, RS: Red-shouldered Hawk, BW: Broad-winged Hawk, RT: Red-tailed Hawk, RL: Rough-legged Hawk, GE: Golden Eagle, AK: American Kestrel, ML: Merlin, PG: Peregrine Falcon, UR: Unidentified Raptor, MK: Mississippi Kite, SK: Swallow-tailed Kite

Montclair, and ten Mississippi Kites—eight at Pilgrim Heights and two at Montclair. There were more Mississippi Kites than Rough-legs, Goshawks, or Golden Eagles! Are we on the cusp of a new Era, with Sharpies relinquishing second place and Mississippi Kites headed for 13th?

Flights for 2015 were standardized to counts per 100 hours for comparison to other years. Five species had Spring counts that were well above the 26 year average. These include Osprey (+48%), Red-shouldered Hawk (+37%), Bald Eagle (+186%), Mississippi Kite (+109%), and Rough-legged Hawk (+126%). Species that were well below average include Sharp-shinned Hawk (-42%), American Kestrel (-35%), Red-tailed Hawk (-30%), and Northern Goshawk (-54%).







BW: Broad-winged Hawk, TV: Turkey Vulture, SS: Sharp-shinned Hawk, OS: Osprey, AK: Americna Kestrel, RT: Red-tailed Hawk, NH: Northern Harrier, RS: Red-shouldered Hawk, CH: Cooper's Hawks, BE: Bald Eagle, ML: Merlin, PG: Peregrine Falcon, BV: Black Vulture, MK: Mississippi Kite, RL: Rough-legged Hawk, NG: Northern Goshawk, GE: Golden Eagle, SK: Swallow-tailed Kite. Note: graphs have different scales. Arrows are placed on species with more than a 30% change above or below the average.

Generally, the coastal region counted more falcons—67% of the American Kestrels, 80% of the Merlins, and 42% of the Peregrines. The coastal region also counted more Northern Harriers (72%), Sharp-shinned Hawks (64%), and Turkey Vultures (81%) than the other regions. The metropolitan region counted more Black Vultures (77%) and Broad-winged Hawks (48%). Montclair counted 16 species of hawks, more than any other site, missing only Northern Goshawk and Golden Eagle.

The Species

Broad-winged Hawks—Are numbers Up or Down?

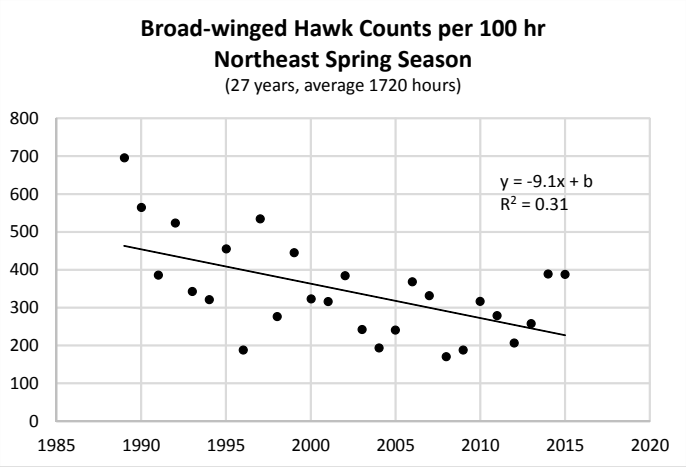
As our most prevalent species, Broad-winged Hawks (BW) define the season for many hawk watchers. The 5374 BWs counted during Spring 2015 occurred mostly during April. We expect spring migration to move northward with time, and one way to measure this is to determine median dates. A median date for a watch site is the date when half of that season's BWs have flown past and the other half is yet to come. Median Dates were: April 21 for the metropolitan region, April 22 for the mid- New England region, April 25 for the coastal region, and April 26 for the northern region. As expected, median dates for BW flight is later as the hawks fly northeast—it makes sense. (Cooper had no coverage from April 22 to Apr 28; and Pilgrim Heights had a late flight on May 30.) In conjunction with this, the period when the middle 80% of the BWs migrate through the region is different in time and duration for the two full coverage watches. The 80% passage flight for BWs at Montclair in 2015 was April 12 to April 25, or 13 days. For Bradbury Mt. it was April 13 to May 6, or 23 days.

Broad-winged Hawk Peak Days

BW Peak Days	date	count	Median Day
Kerrs Ridge	4/23	144	4/26
Cooper	4/29	2	4/29
Bradbury Mountain	4/22	158	4/25
Plum Island	4/25	6	4/25
Pilgrim Heights	5/30	67	5/24
Barre Falls	4/16	85	4/22
Shatterack Mountain	4/21	237	4/21
Johnnycake Mountain	4/22	145	4/22
Hook Mountain	4/21	241	4/21
Wildcat Ridge	4/21	408	4/21
Montclair	4/21	872	4/21

Interestingly, the peak flight counts seem to decrease as the hawks travel northward. A correlation comparing the peak count to the sum of latitude and longitude borders on significance (r = -0.60, p = 0.0507), suggesting a relationship between them. This may be a measure of dispersal into the larger area of breeding habitat in the Northeast.

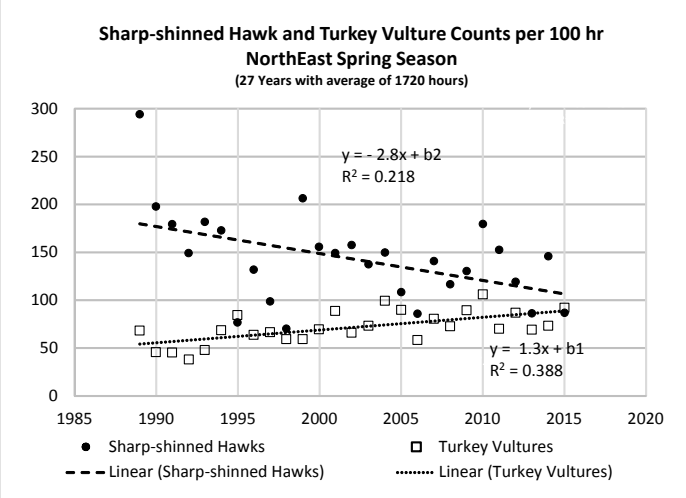
The 5374 BW count was less than the 27 year average of 5776. However, when converted to hawks per 100 hours, the 2015 count is actually greater than average—388 BW/100 hrs compared to the average of 344 BW/100 hrs. The per 100 hour count in 2014 was greater than average as well. Despite this, the long-term trend is decreasing, not increasing. A graph of the BWs per 100 hours shows a significant declining trend for the Northeast (r = -0.56, p = 0.002). When reverted to full counts, this represents a loss of about 156 BWs per year in the Northeast. This means that on average we can expect about 4000 fewer BWs in spring migration today than occurred in 1989. Perhaps the higher than average counts of the last two years foretells the beginning of a trend shift—increasing instead of decreasing—something we can watch for over the next few years.



Sharp-shinned Hawks—Losing 2nd place to Turkey Vultures?

Sharpies (SS) are our beloved "bread-and-butter" birds. They keep the action going at the northeastern sites throughout the season. Their flight period lasts through most of the Spring season, and they are seen on most days. At Montclair they were counted on 45 of the 56 days (peak count 19), and 48 of 60 days at Bradbury Mt (peak count 108). The big question is: "Are Sharpies losing 2nd place to Turkey Vultures (TV) during Spring migration? Or is 2015 an isolated year like 1995 when the count was 702 Sharp-shinned Hawks and 772 Turkey Vultures?" Analysis of counts per 100 hours for these two species for the last 27 years indicates that Sharp-shinned Hawks are declining (r=-0.467, p=0.014) and Turkey Vultures are increasing (r=0.623, p=0.0005). But, are Sharpies really losing 2nd place?

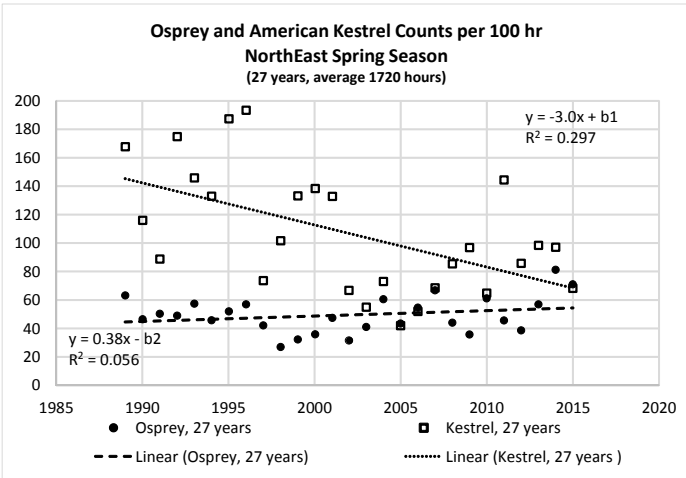
The trend shows the counts for these two species approaching the same value, and predicts 2019 as the year of equal numbers, about 100 hawks in 100 hours. The variation in counts suggests that both TVs and SSs will fluctuate for a few years, but then the TVs will prevail, as Sharpies continue their decline. This is an unfortunate forecast for those of us who love watching those Sharpies as they barrel through our watch sites! The absence of their steady passage will substantially change the character of hawk watching at many sites. We are indeed on the cusp of a new era—our Sharpies are losing 2nd place to Turkey Vultures!



American Kestrels—Outranked by Osprey?

Even though Osprey (OS) ranked higher than Kestrels (AK) in 2015, the OS trend is only slightly increasing at 7 OS/year, and is not significant (p=0.236). Instead, the switch in rank with Kestrels is due to the significantly strong Kestrel decline of 51 AK/year (p=0.003), resulting in about 1300 fewer Kestrels per year today than in 1989. General observations suggest that Osprey are breeding at more sites in the Northeast, and Spring migration totals are likely to reflect that. So, OS could retain the upper rank.

However, even though Kestrels have declined and recent counts have stayed relatively low, this graph shows an increase since 2002. Regression indicates there is an increase of about 56 Kestrels/year since 2002. (This is near significance at p=



0.053.) So, will the Kestrels relinquish rank to Osprey? Only time will tell.

Other Species

For those species with mid-range counts, only two have significant trends—Red-tailed Hawks (RT) are declining (p=0.015), and Bald Eagles are increasing exponentially (p=0.000). Red-tails are still seen regularly throughout the northeast, so their decline may be a consequence of migration timing, or coverage, or even a change in overwintering range. The Bald Eagle explosion is a wonderful success story of raptor conservation—the result of efforts by individuals and governments to restore the species after the DDT era. There are no significant trends for Northern Harriers, Red-shouldered Hawks, Cooper's Hawks, or Merlins.

For the least prevalent species, two species have a significant increase since 1989—Black Vulture (p=0.0003) and Peregrine Falcon (p=0.001). There are no significant trends for Northern Goshawk, Rough-legged Hawk, or Golden Eagle.

The historical summary for the Spring season at the Northeastern sites and daily counts at the eleven spring watches for 2015 follow.

SPRING HISTORICAL SUMMARY PER 100 HOURS: 1989–2015

YEAR	SITES	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	MK	SK	TOT
1989	15	1608	0.0	68.3	63.2	1.9	30.2	294.2	20.1	1.2	13.7	695.3	52.5	0.2	0.1	167.7	15.4	1.2	20.0	0.0	0.0	**1413.7**
1990	20	1927	0.1	45.7	46.4	1.7	14.7	198.0	12.1	1.3	12.6	564.4	47.5	0.3	0.1	116.0	14.5	1.5	27.2	0.0	0.0	**1097.4**
1991	21	1957	0.7	45.3	50.3	1.5	17.6	179.4	13.1	1.9	14.6	385.7	66.3	0.7	0.3	88.8	14.6	1.6	24.0	0.0	0.0	**891.5**
1992	21	1638	0.0	38.0	48.9	1.6	17.9	149.3	12.6	1.3	15.1	523.4	62.9	0.7	0.1	174.9	14.5	2.1	16.4	0.0	0.0	**1079.9**
1993	22	1780	0.0	47.9	57.3	1.7	19.0	181.8	22.4	0.9	19.8	342.4	58.5	0.1	0.3	145.8	17.5	1.4	7.5	0.0	0.0	**979.9**
1994	33	1564	2.5	68.7	45.7	1.5	17.8	173.0	28.5	1.1	15.3	320.8	47.8	0.4	0.2	132.9	13.9	1.2	14.5	0.0	0.0	**903.8**
1995	26	914	2.7	84.5	52.0	1.2	13.5	76.8	5.7	0.1	11.1	454.7	29.9	0.0	0.1	187.4	7.1	0.7	9.1	0.0	0.0	**936.4**
1996	20	1061	2.3	63.7	56.9	2.5	19.4	132.0	8.2	0.4	17.4	187.7	67.1	0.4	0.1	193.4	9.8	1.9	9.9	0.0	0.0	**773.0**
1997	25	1253	2.6	66.6	42.1	2.2	13.6	98.7	10.1	1.0	7.9	534.5	52.0	0.1	0.3	73.6	5.5	0.3	22.6	0.0	0.0	**933.5**
1998	21	1235	2.1	59.3	26.9	1.7	11.3	70.4	9.5	0.7	8.1	276.1	27.0	0.0	0.0	101.7	4.6	1.0	11.1	0.0	0.0	**611.3**
1999	8	1758	2.0	59.2	32.2	3.3	18.1	206.5	23.5	0.5	17.1	444.8	26.4	0.0	0.1	133.2	16.0	1.6	13.1	0.0	0.0	**997.6**
2000	14	1824	1.3	69.5	35.9	7.9	10.9	155.8	23.7	0.6	9.7	323.1	38.9	0.1	0.1	138.4	22.2	2.7	10.9	0.1	0.0	**850.6**
2001	10	1881	2.8	88.8	47.3	3.2	17.3	149.2	18.8	0.3	11.2	315.8	40.3	0.0	0.1	132.9	22.3	1.8	13.3	0.0	0.0	**866.3**
2002	9	1886	2.7	66.0	31.4	3.2	12.5	157.6	30.5	0.7	9.3	383.9	30.1	0.0	0.1	66.8	16.1	2.0	4.4	0.6	0.0	**819.7**
2003	7	2021	2.5	73.3	41.0	4.2	10.2	137.6	20.4	0.2	10.2	242.0	35.5	0.2	0.2	54.9	17.5	1.4	7.8	0.0	0.0	**658.4**
2004	8	1803	2.2	99.4	60.5	4.7	19.6	149.8	31.9	0.7	11.0	193.2	52.4	0.4	0.3	73.0	21.5	1.8	7.8	0.3	0.0	**730.8**
2005	7	1419	3.1	89.9	43.4	4.4	9.6	108.5	20.7	0.8	11.8	240.6	53.3	0.2	0.1	41.9	7.1	1.3	10.6	0.1	0.0	**647.1**
2006	8	1466	3.0	58.3	54.6	3.5	7.3	85.9	12.8	0.1	8.0	368.1	40.5	0.1	0.2	52.0	7.8	1.5	9.6	0.1	0.0	**713.7**
2007	12	1711	3.6	80.5	66.7	9.0	14.8	140.9	22.6	0.5	11.8	331.3	46.9	0.6	0.2	68.5	11.8	2.5	8.6	0.6	0.0	**821.0**
2008	11	2288	2.2	72.6	44.0	7.7	18.1	116.7	17.4	0.7	9.6	170.5	29.3	0.7	0.0	85.4	19.9	3.4	7.5	0.2	0.0	**612.5**
2009	9	2313	4.2	89.5	35.6	6.5	17.1	130.5	24.4	0.5	18.0	188.0	39.5	0.3	0.2	96.8	13.9	2.9	7.0	0.0	0.0	**675.1**
2010	14	2329	8.4	106.0	61.1	7.4	16.4	179.6	23.5	0.6	12.5	316.6	33.2	0.0	0.2	64.9	26.3	3.0	8.8	0.4	0.0	**869.3**
2011	13	2061	5.7	70.1	45.6	13.1	19.2	152.7	21.7	0.8	14.3	278.5	38.6	0.2	0.1	144.4	28.4	2.3	10.0	0.5	0.0	**846.3**
2012	11	2107	4.0	86.9	38.5	11.5	19.8	119.4	25.7	1.0	11.5	206.3	47.6	0.0	0.2	85.8	17.8	2.3	10.9	0.0	0.0	**689.9**
2013	10	1568	1.4	69.3	56.9	9.9	21.9	86.3	12.4	1.3	17.9	257.4	37.6	0.4	0.1	98.5	13.1	1.5	9.4	0.3	0.0	**695.4**
2014	8	1320.92	3.2	73.4	81.2	15.1	23.9	145.9	17.9	0.8	27.0	388.8	42.8	0.3	0.2	97.1	18.6	3.3	9.8	0.5	0.2	**949.7**
2015	11	1386.25	2.2	92.1	71.1	15.3	21.1	86.9	17.2	0.4	18.1	387.7	30.6	0.6	0.1	68.2	13.4	2.4	11.0	0.7	0.1	**839.1**
AVE	**14.6**	**1706.6**	**2.5**	**71.6**	**49.5**	**5.5**	**16.8**	**143.1**	**18.8**	**0.8**	**13.5**	**345.3**	**43.5**	**0.3**	**0.2**	**106.8**	**15.2**	**1.9**	**11.9**	**0.2**	**0.0**	**848.3**

Daily Counts at the Eleven Northeastern Watch Sites, Spring 2015

(Unidentified raptors are not included. Totals, though correct, appear to be incorrect.)

KERRS RIDGE, BOCABEC, NEW BRUNSWICK, CAN.

Todd Watts

Date	Hrs.	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PG	TOT
4/14	3.0	2	6	0	4	8	0	0	0	18	2	0	0	2	1	0	**45**
4/22	0.3	0	5	0	3	10	0	0	0	30	0	0	0	2	0	0	**52**
4/23	2.0	0	28	1	1	4	0	0	1	144	1	0	0	6	0	0	**186**
4/25	1.5	1	7	0	1	1	0	0	0	29	0	0	0	0	0	0	**42**
4/26	3.3	0	7	0	0	5	0	0	0	39	0	0	0	0	0	0	**53**
5/1	3.5	4	13	2	3	7	0	0	0	47	3	0	0	3	3	0	**86**
5/2	7.5	3	34	1	3	20	0	0	0	135	0	0	0	3	1	0	**202**
5/3	2.3	0	3	0	0	5	0	0	0	34	0	0	0	2	1	0	**46**
TOT	**23**	**10**	**103**	**4**	**15**	**60**	**0**	**0**	**1**	**476**	**6**	**0**	**0**	**18**	**6**	**0**	**712**

COOPER, ME

Karen E. Holmes

Date	Hrs.	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PG	TOT
4/12	5.5	2	0	5	0	1	1	0	0	0	0	0	0	0	1	0	**12**
4/13	6.5	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
4/14	2.5	0	1	0	0	1	1	0	0	1	0	0	0	0	0	0	**4**
4/15	6	1	0	1	0	1	0	0	0	0	0	0	0	1	0	0	**4**
4/16	5.5	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
4/18	7	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	**4**
4/19	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4/20	7	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**1**
4/21	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
4/29	7	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	**3**
TOT	**56**	**5**	**2**	**9**	**2**	**5**	**2**	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**1**	**0**	**32**

HOOK MOUNTAIN, ROCKLAND LAKE, NY

Ajit I. Antony, Liza Antony, Steve Bauer, others

Date	Hrs.	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PG	TOT
3/11	1.3	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**6**
3/17	2.5	3	2	0	4	0	3	1	0	1	0	3	0	0	0	0	0	**18**
3/22	2.5	0	2	0	3	0	0	0	0	2	0	5	0	0	1	0	0	**13**
3/31	2.3	0	0	0	4	0	0	2	0	1	0	0	0	0	0	0	0	**7**
4/5	4.5	0	0	5	3	3	3	4	0	6	0	7	1	0	15	0	0	**48**
4/11	5.3	0	0	27	3	0	6	4	0	2	30	1	0	0	7	1	2	**83**
4/12	6.0	0	0	12	4	3	9	0	0	3	90	2	0	0	9	1	1	**134**
4/15	5.0	0	0	3	0	4	4	0	0	2	39	0	0	0	1	1	0	**54**
4/17	1.5	0	1	1	0	0	1	0	0	0	1	0	0	0	0	0	0	**4**
4/18	4.8	0	0	2	1	2	7	1	0	0	1	5	1	0	6	2	1	**30**
4/21	4.8	0	0	7	1	1	1	6	0	0	241	0	0	0	2	1	3	**268**
4/28	3.3	0	0	1	2	0	3	0	0	0	10	1	0	0	1	0	0	**23**
TOT	**43.5**	**9**	**5**	**58**	**25**	**13**	**37**	**18**	**0**	**17**	**412**	**24**	**2**	**0**	**42**	**6**	**7**	**688**

SHATTERACK MOUNTAIN, RUSSELL, MA

Tom Swochak, Janice Zepko, Seth Kellogg, John Boral

Date	Hrs.	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PG	TOT
4/15	3.5	0	0	2	0	0	0	0	0	0	2	0	0	0	0	0	0	**4**
4/21	5.3	0	0	12	2	1	3	0	0	0	237	0	0	0	3	0	0	**258**
4/22	5.5	0	2	6	0	0	11	0	0	0	159	0	0	0	1	0	0	**180**
4/23	4.8	0	0	1	2	0	1	0	0	0	21	0	0	0	0	0	0	**25**
TOT	**19**	**0**	**2**	**21**	**4**	**1**	**15**	**0**	**0**	**0**	**419**	**0**	**0**	**0**	**4**	**0**	**0**	**467**

BRADBURY MOUNTAIN, POWNAL, ME

Andrew Wolfgang, Derek Lovitch, Jeannette Lovitch

Date	Hrs.	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PG	TOT
3/15	4.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3/16	8	1	0	5	0	1	1	0	0	0	3	0	0	0	0	1	**12**
3/17	5.5	12	0	0	0	1	0	0	0	0	3	0	0	0	0	0	**16**
3/18	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3/19	8	1	0	0	0	0	0	0	0	0	2	1	0	0	0	0	**4**
3/20	8	54	0	5	0	2	0	0	0	0	8	0	0	0	0	0	**70**
3/21	8	1	0	0	0	0	1	1	0	0	1	0	0	0	0	0	**4**
3/23	8	2	0	2	0	0	0	0	1	0	2	1	0	0	0	0	**9**
3/24	8	43	0	6	0	0	2	0	2	0	12	0	0	0	0	0	**65**
3/25	8	31	0	4	0	0	3	0	4	0	7	0	0	0	0	0	**49**
3/26	6.25	39	0	1	0	0	5	0	17	0	15	0	0	0	0	0	**77**
3/27	7	7	0	1	0	1	1	0	2	0	2	0	0	0	0	0	**14**
3/28	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3/29	8	0	0	4	0	1	1	0	0	0	6	0	0	0	0	0	**12**
3/30	8	1	0	0	1	1	0	0	0	0	2	1	0	1	1	0	**8**
3/31	8.25	18	0	5	0	1	4	0	1	0	6	0	0	0	1	0	**37**
4/1	8.25	6	0	2	0	2	0	0	2	0	8	0	1	0	0	0	**22**
4/2	8	30	1	0	6	5	6	0	15	0	12	0	0	1	5	1	**87**
4/3	8.25	97	2	1	12	39	8	0	23	0	49	0	0	16	1	0	**254**
4/4	7.75	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	**1**
4/5	8	0	1	2	1	9	1	0	1	0	7	0	0	2	0	0	**24**
4/6	8.25	2	0	1	1	1	2	0	0	0	1	0	0	0	0	0	**8**
4/7	7.5	0	2	2	0	2	2	0	0	0	0	0	0	1	3	0	**12**
4/8	8	3	1	1	3	2	2	0	0	0	3	0	0	2	1	0	**19**
4/9	8	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	**1**
4/11	8.25	0	13	4	6	13	2	0	0	0	4	0	0	2	0	0	**45**
4/12	8.5	8	18	2	5	84	5	0	11	3	20	0	0	8	5	0	**179**
4/13	8.75	9	102	2	38	108	2	0	6	137	8	0	0	119	6	1	**538**
4/14	8	8	12	3	2	15	1	0	5	37	1	0	0	5	0	1	**91**
4/15	8	0	16	2	1	5	2	0	1	19	1	0	0	1	0	0	**48**
4/16	8	0	20	3	1	23	3	1	6	67	9	0	0	17	2	0	**155**
4/17	7	0	11	0	1	13	1	0	1	20	2	0	0	2	0	0	**52**
4/18	8	0	17	1	2	11	1	1	2	8	5	0	0	11	0	0	**59**
4/19	8.25	0	21	0	4	18	2	0	3	28	3	0	0	10	4	0	**95**
4/20	5.75	0	3	0	0	2	0	0	0	0	0	0	0	0	0	0	**5**
4/21	3	0	14	1	0	7	0	0	0	6	0	0	0	0	0	0	**28**
4/22	8	1	21	2	2	15	0	0	1	158	5	0	0	14	3	1	**224**
4/23	8.25	0	5	0	2	1	0	0	0	104	0	0	0	0	1	0	**113**
4/24	8	0	3	0	0	3	0	0	0	7	0	0	0	0	2	0	**15**
4/25	8.25	0	4	2	0	4	1	1	0	35	3	0	0	0	0	0	**51**
4/26	8.25	0	6	5	0	7	2	0	0	32	1	0	0	1	1	0	**56**
4/27	7	0	2	1	0	3	2	0	0	6	0	0	0	0	0	0	**14**
4/28	8	0	4	1	0	2	1	0	0	7	0	0	0	1	0	0	**16**
4/29	8	0	4	0	0	15	1	0	0	52	0	0	0	1	0	0	**73**
4/30	8.25	0	2	1	0	9	0	0	0	16	0	0	0	5	2	0	**36**
5/1	8	0	3	1	1	16	2	0	0	24	1	0	0	6	5	0	**59**
5/2	8.25	0	14	1	0	18	4	0	0	91	2	0	0	11	7	0	**153**
5/3	8	0	10	0	3	18	3	0	0	68	2	0	0	22	6	0	**132**
5/4	8.25	0	13	6	5	85	4	0	0	106	6	0	0	33	5	1	**265**
5/5	8	0	2	0	1	2	2	0	0	22	1	0	0	1	0	0	**31**
5/6	8	0	4	2	0	5	0	0	0	21	3	0	0	2	2	0	**39**
5/7	8	0	2	1	1	4	1	0	0	9	1	0	0	1	0	0	**20**
5/8	8	0	2	1	0	3	0	0	0	0	0	0	0	1	0	0	**7**
5/9	8	0	2	2	0	3	2	0	0	17	0	0	0	1	2	1	**30**
5/10	8	0	5	4	0	11	2	0	0	35	7	0	0	3	4	1	**73**
5/11	8	0	1	0	2	0	0	0	0	1	0	0	0	0	1	0	**5**
5/12	8	0	13	10	0	11	0	0	0	19	0	0	0	2	2	0	**57**
5/13	8	0	3	1	0	2	0	0	0	10	0	0	0	0	0	0	**16**
5/14	8	0	2	0	0	5	0	0	0	17	1	0	0	1	2	0	**29**
5/15	8.25	0	1	1	0	1	0	0	0	8	0	0	0	2	1	0	**14**
TOT	**458**	**374**	**377**	**102**	**101**	**610**	**85**	**4**	**104**	**1190**	**236**	**3**	**1**	**307**	**75**	**8**	**3628**

PLUM ISLAND, NEWBURYPORT, MA

T. Mara, M. Stone, C. Jackson, U. Goodine,
B. Secatore, P. Roberts, others

Date	Hrs.	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PG	TOT
3/16	3.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3/31	6.0	2	90	1	0	11	1	1	1	0	0	3	0	0	0	1	0	**113**
4/1	5.5	0	1	0	0	9	0	0	0	0	0	1	0	0	1	0	0	**12**
4/2	2.5	0	3	0	0	3	0	0	0	0	0	1	0	0	0	0	0	**8**
4/3	5.0	0	0	3	0	5	0	0	0	0	0	0	0	0	7	1	0	**16**
4/5	5.8	0	0	3	0	10	2	0	0	0	0	0	0	0	10	1	0	**26**
4/11	10.5	0	63	11	0	12	7	1	0	2	0	1	0	0	81	21	0	**201**
4/12	11.0	0	17	18	0	14	8	1	0	0	0	1	0	0	58	6	1	**126**
4/13	8.0	0	0	5	0	7	2	0	0	0	0	2	0	0	2	0	0	**20**
4/14	2.0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	**3**
4/15	10.0	0	0	3	0	14	6	1	0	0	0	0	0	0	32	4	0	**61**
4/17	4.5	0	5	3	0	1	0	0	0	0	0	0	0	0	7	0	0	**16**
4/21	4.5	0	1	3	0	2	3	4	0	0	0	0	0	0	5	1	1	**21**
4/22	5.5	0	1	0	0	3	2	0	0	0	0	0	0	0	10	0	0	**16**
4/23	7.0	0	0	3	0	3	2	0	0	0	0	0	0	0	8	0	0	**16**
4/24	7.5	0	1	1	0	6	4	1	0	0	0	0	0	0	5	2	0	**21**
4/25	9.8	0	0	3	0	2	1	3	0	0	6	0	0	0	4	1	0	**20**
4/26	3.8	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	**3**
4/27	2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
4/28	2.3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	**2**
5/3	10.0	0	0	0	0	2	3	0	0	0	0	0	0	0	10	3	2	**23**
5/4	7.0	0	0	0	0	1	3	0	0	0	0	0	0	0	1	0	0	**6**
5/5	2.0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
5/8	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5/10	7.3	0	0	3	0	0	2	0	0	0	0	1	0	0	2	2	0	**10**
5/13	4.5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	**1**
TOT	**147**	**2**	**182**	**63**	**0**	**108**	**46**	**13**	**1**	**2**	**6**	**10**	**0**	**0**	**247**	**43**	**4**	**744**

PILGRIM HEIGHTS, TRURO, MA

Donald Manchester, Michael Brokenshire, others

Date	Hrs.	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PG	MK	SK	TOT
4/1	3	0	8	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	**9**
4/6	2	0	15	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	**17**
4/11	4	0	14	0	0	0	1	0	0	0	0	3	0	0	1	0	0	0	0	**20**
4/12	6	0	34	2	0	1	10	2	0	4	0	6	0	0	6	0	0	0	0	**65**
4/13	5	0	2	0	0	0	8	1	0	2	0	4	0	0	1	0	0	0	0	**18**
4/16	3	0	5	0	0	1	0	1	0	0	1	2	0	0	1	0	0	0	0	**11**
4/18	3	0	18	0	0	0	0	2	0	0	0	1	0	0	1	1	0	0	1	**24**
4/22	5	0	11	3	0	0	1	0	0	0	0	6	0	0	11	5	0	0	0	**37**
4/24	3	0	6	1	0	0	0	0	0	0	1	2	0	0	4	0	0	0	0	**15**
4/25	4	0	13	0	0	0	2	3	0	0	1	2	0	0	14	1	0	0	0	**36**
4/26	2	0	6	0	0	0	1	0	0	0	1	1	0	0	2	0	0	0	0	**11**
5/2	3	0	11	0	0	0	0	0	0	0	0	0	0	0	7	3	0	0	0	**21**
5/3	6	0	17	3	0	1	7	1	0	0	7	8	0	0	5	4	0	0	0	**54**
5/4	7	0	15	8	0	0	11	2	0	0	7	2	0	0	6	3	0	0	0	**54**
5/6	4	0	5	0	0	2	0	0	0	0	0	3	0	0	10	0	0	0	0	**20**
5/7	6	1	50	1	0	1	18	5	0	3	40	3	0	0	3	1	1	0	0	**127**
5/8	7	0	44	6	0	0	14	1	0	1	12	6	0	0	2	2	0	0	0	**88**
5/10	5	0	12	3	1	0	13	1	0	2	5	2	0	0	1	3	0	0	0	**43**
5/11	3	0	11	0	1	0	11	0	0	0	9	0	0	0	0	2	0	0	0	**34**
5/13	4	0	26	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	**29**
5/14	5	0	26	8	0	0	4	0	0	0	8	1	0	0	0	1	0	0	0	**48**
5/15	5	0	46	1	0	1	2	1	0	0	2	2	0	0	0	2	0	0	0	**57**
5/16	5	0	7	3	0	0	3	0	0	0	9	2	0	0	1	1	1	1	0	**28**
5/20	4	0	18	0	0	0	0	0	0	0	2	0	0	0	2	1	0	0	0	**23**
5/21	3	0	5	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	**8**
5/22	4	0	11	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	**14**
5/24	6	0	5	8	0	0	0	0	0	0	15	2	0	0	3	1	0	0	0	**34**
5/25	3	0	0	2	0	0	0	0	0	0	11	1	0	0	0	0	0	0	0	**14**
5/29	5	0	7	3	2	0	0	2	0	0	3	0	0	0	1	0	0	3	0	**21**
5/30	4	0	7	0	4	0	0	0	0	0	67	1	0	0	1	0	0	1	0	**81**
5/31	4	0	13	5	1	0	0	1	0	0	12	0	0	0	0	0	0	0	0	**32**
6/4	3	0	4	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	**8**
6/10	2	0	6	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	**9**
6/11	2	0	5	0	0	0	0	0	0	0	3	0	0	0	0	0	0	2	0	**10**
6/12	2	0	3	1	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	**9**
TOT	**142**	**1**	**486**	**62**	**9**	**9**	**108**	**23**	**0**	**12**	**226**	**65**	**0**	**0**	**83**	**31**	**2**	**8**	**1**	**1129**

MONTCLAIR, NJ

Ray Gilbert, Sean Smith, Andrew Burmester

Date	Hrs.	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PG	MK	SK	TOT
3/16	4	0	3	0	0	0	2	1	0	8	0	0	0	0	0	0	0	0	0	**14**
3/17	3	0	7	0	1	0	11	3	0	13	0	2	0	0	1	1	0	0	0	**39**
3/18	1.5	0	1	0	0	0	2	1	0	5	0	0	0	0	0	0	0	0	0	**9**
3/19	2	0	2	0	0	0	2	0	0	5	0	0	0	0	0	0	0	0	0	**9**
3/21	4	0	0	0	0	0	0	1	0	8	0	0	0	0	0	0	0	0	0	**9**
3/22	4	0	0	0	1	0	2	2	0	3	0	0	0	0	0	0	0	0	0	**8**
3/23	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	**2**
3/28	3	0	25	2	1	0	7	1	0	8	0	11	0	0	2	1	0	0	0	**58**
3/29	5	0	2	0	1	0	1	0	0	1	0	0	0	0	3	0	0	0	0	**9**
3/30	7	0	3	0	2	0	5	3	0	5	0	2	0	0	2	0	0	0	0	**22**
3/31	3	0	4	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	**8**
4/1	7	0	19	9	1	3	9	7	0	7	0	2	0	0	11	0	0	0	0	**68**
4/2	7	0	24	3	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	**31**
4/3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4/4	7	0	0	9	1	0	3	2	0	2	0	0	0	0	9	0	1	0	0	**27**
4/5	7	0	2	7	1	6	10	0	0	9	0	2	0	0	5	0	0	0	0	**42**
4/6	7.5	1	63	13	0	2	12	8	0	9	2	2	1	0	21	1	0	0	0	**137**
4/7	2.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4/8	3.5	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	**5**
4/9	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4/10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4/11	10	0	2	57	4	13	9	14	0	4	90	3	0	0	52	3	1	0	0	**258**
4/12	6.5	0	2	14	2	4	4	5	0	0	260	0	0	0	7	1	0	0	0	**303**
4/13	7	0	11	5	1	0	19	8	0	6	24	0	0	0	30	6	0	0	0	**117**
4/14	3	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	**3**
4/15	7	0	0	2	1	0	7	1	0	1	23	0	0	0	3	1	0	0	0	**41**
4/16	6.5	0	0	0	0	0	4	1	0	0	1	0	0	0	1	0	0	0	0	**7**
4/17	8	0	0	1	1	0	5	0	0	2	3	0	0	0	0	0	0	0	0	**12**
4/18	6	0	0	0	0	0	6	3	0	2	0	0	0	0	1	0	0	0	0	**12**
4/19	6	0	0	1	0	0	2	2	0	0	5	0	0	0	2	0	1	0	0	**13**
4/20	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4/21	7.5	0	13	20	0	6	15	5	0	0	872	1	0	0	10	1	2	0	0	**951**
4/22	6	0	0	3	0	0	6	0	0	0	39	0	0	0	2	0	0	0	0	**50**
4/23	6.5	0	0	7	0	0	19	0	0	0	33	0	0	0	2	0	0	0	0	**63**
4/24	6.5	0	0	0	5	0	2	0	0	0	15	0	0	0	0	0	0	0	0	**22**
4/25	7.5	0	0	2	1	0	8	1	0	0	42	0	0	0	3	0	0	0	0	**58**
4/26	5.5	0	0	3	0	0	3	0	0	0	9	0	0	0	0	0	0	0	0	**17**
4/27	7.5	0	0	1	1	0	9	0	0	0	18	0	0	0	2	1	0	0	0	**33**
4/28	6	0	0	1	3	1	9	1	0	0	31	0	0	0	2	0	1	0	0	**50**
4/29	7	5	11	3	0	0	6	1	0	0	18	0	0	0	6	0	0	0	0	**50**
4/30	6	0	0	1	0	0	5	0	0	0	9	0	0	0	2	0	0	0	0	**17**
5/1	7	0	0	3	0	0	8	0	0	0	1	0	0	0	5	0	0	0	0	**17**
5/2	7	0	0	4	0	1	3	0	0	0	4	0	0	0	0	0	0	0	0	**12**
5/3	5	0	3	1	1	0	2	0	0	0	0	0	0	0	2	0	0	0	0	**9**
5/4	7	2	2	1	0	0	3	0	0	0	1	0	0	0	0	1	0	0	0	**10**
5/5	5	1	4	0	1	1	3	1	0	0	4	0	0	0	0	0	0	0	0	**17**
5/6	5	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**2**
5/7	6	0	0	1	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	**5**
5/8	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5/9	7	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
5/10	5	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	**3**
5/11	5	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	**4**
5/12	6	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**
5/13	8	0	0	0	0	0	2	0	0	0	16	0	0	0	0	0	3	1	0	**22**
5/14	7	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	**3**
5/15	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	**1**
TOT	**301**	**9**	**203**	**183**	**32**	**37**	**237**	**72**	**0**	**99**	**1523**	**25**	**1**	**0**	**190**	**18**	**11**	**2**	**1**	**2682**

JOHNNYCAKE MOUNTAIN, BURLINGTON, CT

Paul Carrier, Ken Merrifield, Rick Roach, Dana Campbell

Date	Hrs.	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PG	TOT
4/15	4	2	0	2	1	1	4	2	0	1	6	0	1	0	1	0	0	**21**
4/16	4	2	2	5	1	0	3	0	0	0	38	0	0	0	1	0	0	**52**
4/22	4	0	0	5	0	0	0	4	0	0	145	0	0	0	2	0	0	**156**
TOT	**12**	**4**	**2**	**12**	**2**	**1**	**7**	**6**	**0**	**1**	**189**	**0**	**1**	**0**	**4**	**0**	**0**	**229**

WILDCAT RIDGE, HIBERNIA, NJ

F. Budney, F. Vanderburgh, T. Gorman, K. McCarthy, others

Date	Hrs.	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PG	TOT
3/17	3.0	6	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**7**
3/21	2.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3/22	4.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3/24	3.0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	**2**
3/28	3.0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	**1**
3/29	4.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3/31	2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4/2	6.0	0	0	1	1	0	0	2	0	1	0	5	0	0	6	0	0	**16**
4/4	3.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4/6	6.5	0	0	3	0	0	7	2	0	2	0	9	0	0	4	0	0	**27**
4/11	4.0	0	0	3	0	0	1	1	0	0	1	1	0	0	1	0	0	**8**
4/12	6.3	0	0	9	1	0	3	4	0	0	53	1	0	0	5	0	0	**76**
4/13	5.0	0	0	5	0	0	5	3	0	0	11	5	0	0	1	0	0	**31**
4/18	8.5	0	0	1	0	0	3	1	0	2	3	2	0	0	0	0	0	**12**
4/19	5.0	0	0	2	0	0	8	0	0	2	22	0	0	0	2	0	0	**36**
4/21	6.0	0	0	5	0	0	3	0	0	0	408	4	0	0	0	0	0	**421**
4/22	5.0	0	0	6	1	0	3	0	0	0	91	1	0	0	1	0	0	**103**
4/23	3.5	0	0	3	0	0	0	0	0	0	4	1	0	0	0	0	0	**8**
4/25	7.0	0	0	1	2	0	1	0	0	0	24	0	0	0	0	0	0	**28**
4/26	7.0	0	0	4	3	0	2	0	0	0	30	0	0	0	0	0	0	**39**
4/27	3.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4/29	5.5	0	0	2	1	0	5	1	0	0	1	1	0	0	0	0	0	**11**
5/2	3.5	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	**3**
5/3	3.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5/4	5.0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	**4**
3/1	3.0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	**4**
3/5	5.0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	**1**
3/6	5.0	0	0	6	0	0	0	0	0	0	0	2	0	0	0	0	0	**8**
3/8	5.0	0	0	0	1	0	4	1	0	1	0	5	0	0	0	0	0	**12**
3/9	3.5	0	0	0	0	0	1	1	0	2	0	1	0	0	0	0	0	**5**
TOT	137	6	0	52	11	0	49	18	0	11	649	44	0	0	20	0	0	**863**

BARRE FALLS, BARRE, MA

David Grant, Donna Schilling, Jim Emerton, others

Date	Hrs.	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PG	TOT
4/2	4	8	2	1	0	0	2	0	4	0	10	1	0	4	0	0	**32**
4/11	5	0	7	0	0	0	0	0	0	0	6	0	0	2	1	0	**19**
4/12	4.5	0	6	4	0	1	0	0	0	1	2	0	0	2	0	0	**18**
4/13	6	0	10	1	2	5	1	0	0	25	3	0	0	5	2	0	**55**
4/15	4	0	4	5	0	1	0	0	0	10	1	0	0	0	0	0	**21**
4/16	6	0	2	0	0	5	0	0	0	85	0	0	1	4	0	0	**100**
4/18	5	0	1	0	0	2	0	0	0	11	0	0	0	1	0	0	**16**
4/19	2.5	0	2	0	0	0	0	0	0	3	0	0	0	0	0	0	**5**
4/22	2.5	0	5	2	1	2	0	0	0	8	2	0	0	2	1	0	**23**
4/23	4	0	5	1	2	3	0	0	0	30	0	0	0	4	0	0	**47**
4/25	3	0	1	0	0	1	0	0	1	4	0	0	0	0	0	0	**8**
4/26	1.5	0	2	0	0	1	0	0	0	5	0	0	0	1	0	0	**9**
4/28	5	0	4	0	0	4	0	0	0	21	0	0	0	0	1	0	**31**
4/29	7	0	1	1	0	2	0	0	1	64	1	0	0	5	1	1	**77**
5/4	4	0	0	0	0	7	1	0	1	8	1	0	0	0	0	0	**19**
5/6	5	0	1	0	0	1	0	0	0	6	0	0	0	0	0	0	**8**
TOT	69	8	53	15	5	35	4	0	7	281	26	1	1	30	6	1	**488**

2015 Northeast Fall Season

During the Fall 2015 hawk watch season, dedicated watchers at 38 sites from Greenlaw Mountain in New Brunswick to Chimney Rock in New Jersey searched the skies for 10,448 hours and counted 193,018 hawks. In the last 36 years, there were only two other years with greater effort.

The Sites

The watch sites span latitudes from N 45.1 in the north to N 40.5 in the south, and are organized here into seven regions, named for their southern-most latitudes. Thus, Region 44 includes sites above N 44, Region 43 above N 43, Region 42 above N 42, etc. Regions 44, 43, and 40 have five sites each. Region 42 has eight sites, and Region 41 has 12 sites. In addition to these five regions is the Coastal Region, which includes three sites along the southern coastline, overlapping Regions 40 and 41.

Region 44

In addition to Greenlaw Mountain, Region 44 includes four sites in Maine: Cooper, Cadillac Mountain, Clarry Hill, and Harpswell Peninsula. This region counted 15% of all hawks in the Northeast, averaging 133 total hawks/day and 30 hawks/day without Broadwings and Vultures (XBV). Greenlaw saw their highest Bald Eagle and lowest Red-tailed Hawk counts, while maintaining their average total hawks. Cooper doubled their effort, added the first Northern Harriers to the site, but struck out on Broadwings. Cadillac Mountain had their lowest counts for Red-tailed Hawk in 13 years, and lowest Bald Eagles in 10 years. They balanced this with 96 Merlin, their third highest in 20 years and 613 Kestrels, the 2015 high for the Northeast. On October 30 they counted a Swainson's Hawk, rare for the Northeast. Clarry Hill increased their effort by eight extra days, and were rewarded with their highest counts for six species. This is not unusual for a relatively new watch site. But, they counted 17,369 Broad-wings, more than any other watch! They also counted 334 Bald Eagles, more than any other site in the Northeast, and ended the season with 20,076 total hawks, the highest total in the NorthEast. In contrast, along the Maine coast, Harpswell Peninsula had their lowest counts for Osprey and Broad-winged Hawk since 1981, their lowest Bald Eagle and Merlin since 1991, and their lowest total hawks. These disparities suggest that the hawks were concentrated in a relatively narrow band during this 2015 season.

Region 43

Region 43 includes Putney Mountain in Vermont and four sites in New Hampshire: Interlakes School, Concord School, Carter Hill, and Pack Monadnock. Region 43 counted 20% of all hawks in the Northeast, averaging 166 total hawks/day and 36 XBV/day. Interlakes School had a better season than 2014, but was still below their average, while Concord

School had an average year. Both of these sites just missed the big flights this year, which were south of their locations. Carter Hill was at the northern edge of this year's big flight. All species except Merlins were at or above average, with notable counts of 21 Northern Goshawks, and 6274 Broad-winged Hawks. Pack Monadnock was in the midst of the big flight. They set new site records for total hawks (19845) and for six species: 132 Bald Eagles, 125 Northern Harriers, 1443 Sharpshins, 16593 Broad-winged Hawks, 546 Red-tailed Hawks, and 13 Golden Eagles. Their 48 Northern Goshawk and their Redtail count were the highest in the Northeast, and their Broad-winged Hawk count was the 2nd highest. And, they counted a Swainson's Hawk on September 22, before the one at Cadillac, and a Rough-legged Hawk on November 16. Putney Mountain, also at the northern edge of the big flight, had a good season with 5831 Broadwings, and site records of 603 Turkey Vultures, 109 Bald Eagles, and 1624 Sharp-shinned Hawks. They counted an impressive 5 Rough-legged Hawks, the highest for the Northeast. The 2015 flightpath through Region 43 was through the southern portion.

Region 42

Region 42 includes Helderberg in New York, Booth Hill in Connecticut, and six sites in Massachusetts: Mount Watatic, Wachusett, Pinnacle Rock, Barre Falls, Shatterack Mountain, and Blueberry Hill. Region 42 counted 17% of all hawks in the Northeast, averaging 139 total hawks/day and 18 XBV/day. Mount Watatic had a good season with 5723 Broad-winged Hawks, a count similar to Putney and Carter Hill. In addition, they achieved three site records: 60 Bald Eagles, 79 Cooper's Hawks, and 45 Merlin. Helderberg had average counts for Cooper's Hawk and Red-tailed Hawk and a new site record of 35 Bald Eagles. Wachussett continued extended coverage resulting in a good season with 11205 Broad-winged Hawks—one of four Northeast sites with more than 10000. They had above average counts for all species except Northern Goshawk. Their 5 Golden Eagle count was a site record; their Bald Eagle count was their 2nd highest; and the Red-shouldered Hawk and Red-tailed Hawk counts were the best in 20 years. With reduced coverage, Pinnacle Rock had below average counts for all species except the Golden Eagle, which was the first in seven years, and the fourth since 1998. Barre Falls had below average counts for all species except Golden Eagle. They counted 3 Goldens, compared to one in each of the last three years. They had low counts for the site for three species—273 Sharp-shinned Hawks, 4 Red-shouldered Hawks, and 38 American Kestrels. Shatterack Mountain increased their effort, resulting in a generally average year. They tied their 40 Bald Eagle record, and set a new site record of 19 Merlin. They also counted 2 Northern Goshawks and 3 Golden Eagles. Blueberry Hill had lower than average counts for all species except Golden Eagle. The Osprey count of 46 is the lowest since 1999 when significant coverage was started. The five Goldens are definitely a highlight. Booth Hill added a day to coverage and succeeded in getting 1454 Broad-winged Hawks for an average season. In general, the 2015 flight path took the hawks through the northernly portion of Region 42.

Region 41

Region 41 includes twelve sites, six each in Connecticut and New York. The Connecticut sites include Middle School, Johnnycake Mountain, Chestnut Hill, White Memorial, Botsford Hill, and Quaker Ridge. The New York sites include Mohonk Preserve, Summitville, Bear Mountain, Mt. Peter, Chestnut Ridge, and Hook Mountain. Region 41 counted 30% of all hawks in the Northeast, averaging 108 total hawks/day and 27 XBV/day. Middle School, with slightly less coverage than usual, had its lowest total hawks in 15 years, but did count 7 Bald Eagles. Johnnycake was also below average for total hawks, but had higher than average Osprey and Bald Eagle, and achieved a site record of two Golden Eagles—pretty neat since their total since 1990 is six. Mohonk returned after four years of minimal/no coverage, and set two site records: 36 Bald Eagles and 16 Merlin. They also had their best Broad-winged Hawk count since 1995. Chestnut Hill increased coverage slightly and also set a site record of 39 Bald Eagles. That's more than the 20 Osprey counted. White Memorial had their second lowest count since 2001, with total hawks at 154. But, they also counted two Northern Goshawks, and had a high of 23 Red-shouldered Hawks. Summitville had half the coverage of previous years, resulting in below average counts for all species. However, a look at the counts per hour shows higher than average numbers. Botsford Hill had below average counts for all species except Bald Eagle and a record 5 Merlin. Their four American Kestrels are a low for the site. Bear Mountain had above average counts for four species—81 Bald Eagles, 3 Northern Goshawks, 7 Golden Eagles, and 7 Peregrine Falcons. These helped to balance the record low of 421 Broad-winged Hawks. With 11256 Broad-winged Hawks, Mount Peter had the third highest Broad-winged Hawk count in the Northeast, and was one of the four sites in the Northeast to see more than 10,000 Broad-winged Hawks. They also had above average counts for three species—24 Merlin, 292 Turkey Vultures, and 107 Black Vultures. However, counts for Red-tailed Hawk and all accipiters were below average. Chestnut Ridge counted a record 119 Black Vultures and their 2717 Turkey Vultures were the highest in the Northeast. Their 6138 Broad-winged Hawks was slightly less than average, but good for the region this year. Their accipiter counts were below average. Hook Mountain had a record high 197 Bald Eagles, and the second highest year for both the 82 Merlin and the 10 Golden Eagles. Otherwise, both accipiters and buteos were below average, with a record low of 1433 Sharp-shinned Hawks. Quaker Ridge had above average counts for vultures and both eagles, with 191 Bald Eagles. Their 17 Golden Eagles and 406 Red-shouldered Hawks were the highest in the NorthEast. They had below average counts for all accipiters,

Red-tailed Hawk, and Broad-winged Hawk. With 5745 Broadwings, they were the only Connecticut site with more than 5000. Their 374 American Kestrel count was the lowest since 1985. The 2015 flight path through Region 41 seems to be toward the southwest, but more west than south.

Region 40

Region 40 includes one site in New York and four sites in New Jersey. The New York site is Lenoir Sanctuary and the New Jersey sites include: State Line, Wildcat Ridge, Montclair, and Chimney Rock. Region 40 counted 13% of all hawks in the Northeast, averaging 75 total hawks/day and 37 XBV/day. In its eighth year State Line had two site records, 857 Osprey and 151 Bald Eagles, and above average counts for all species except Broad-winged Hawks. Their 127 Black Vulture count was the highest in the Northeast. Lenoir counted 1 Golden Eagle and 56 Bald Eagles, but had low counts for several species—51 Sharp-shinned Hawks, 10 Broad-winged Hawks, and 7 American Kestrels, perhaps because of reduced coverage. Wildcat Ridge had above average counts for two species, 13 Merlin and 66 Bald Eagles, but were below average for all other species, including vultures. Their Sharp-shinned Hawk counts for the last three years have been about half of that in previous years. Montclair had a slow season, with a total hawk count at half of average and record lows for four species—39 Northern Harriers, 1223 Broad-winged Hawks, 118 Red-tailed Hawks, and 207 American Kestrels. In spite of this, their Peregrine Falcon count was average and their 107 Merlin slightly above average. They also set a site record of 2067 Turkey Vultures. Chimney Rock had a similar season with total hawks at half of average. They also had record lows for three species—44 Red-tailed Hawks, 428 American Kestrels, and no Peregrine Falcon. Their Osprey and Cooper's Hawk counts were the lowest since 1993. A season highlight was a Rough-legged Hawk, one of the seven counted in the Northeast. With the major flightpath for Broadwings passing to the north, the hawks passing through Region 40 in 2015 were relatively evenly distributed. (Note that Region 40 has less longitudinal difference than other regions.)

Coastal Region

This region includes three watch sites—one on Fire Island, New York, and two along the southern shoreline of Connecticut—Lighthouse Point and Boothe Memorial Park. The Coastal Region counted 5.4% of all hawks in the Northeast and 17% of XBV, averaging 58 total hawks/day and 51 XBV/day. Lighthouse Point was below average for all species except Turkey Vulture and Bald Eagle. They had site lows for two species—133 Broad-winged Hawks and 428 American Kestrels, and their 186 Red-tailed Hawks were the lowest since the early 1980s. In spite of this, they still achieved high counts for the Northeast for four species—1027 Osprey, 291 Northern Harriers, 2325 Sharp-shinned Hawks, and 849 Cooper's Hawks. On September 20 they had a Zone-tailed Hawk, which was photographed and sighted again on September 23 at Cape May, NJ and September 24 at Kiptopeke, VA. With only 6 yrs of history, Boothe Park set a site record with 413 Osprey. They also had an above average count of 105 Bald Eagles, but all other species were below average. Fire Island had an average 378 Osprey count and tied the record of 6 Bald Eagles. All other species were below average, with the 344 American Kestrels at the lowest ever and the 73 Peregrine Falcons at their lowest since 1986. Nevertheless, their 1064 Merlin and 73 Peregrine Falcons were the highest in the Northeast. The flight through the Coastal Region occurred mostly in October when there were more winds from the west "pushing" hawks into the coastal area. (personal review of winds at Hartford, CT)

Note: The tables included for major sites have data for 2010 to 2015. The 10 year averages have been computed for the years 2005 to 2014, and the data from 2015 is compared as a percent change from that average. Negative numbers in the bottom row represent decreases; positive numbers represent increases. An * indicates that the numbers are too small for meaningful computation.

Northeast Fall 2015 Seasonal Totals

Reg	Site	Days	Hrs.	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PG	UR	Othr	TOTAL	XBWV
	Greenlaw Mt. NB	42	264.8	0	218	132	58	76	524	7	11	1	3791	106	0	1	158	35	24	83	0	5225	1216
	Cooper ME	7	40	0	8	0	2	8	1	1	0	0	0	0	0	0	4	0	0	0	0	24	16
44	Cadillac Mt ME	67	292.8	0	79	150	27	137	1127	25	5	3	360	15	0	0	613	96	18	99	1SW	2755	2316
	Clarry Hill ME	35	280	0	569	215	334	126	792	59	7	47	17369	369	0	9	113	27	20	20	0	20076	2138
	Harpswell ME	66	129.5	0	63	16	7	37	464	7	0	8	10	20	0	0	81	41	12	27	0	793	720
	Interlakes School NH	2	11	0	15	3	1	0	13	2	0	1	68	1	0	0	0	0	0	4	0	108	25
	Concord School NH	6	19	0	22	2	1	0	4	0	0	0	31	5	0	0	2	0	0	23	0	90	37
43	Carter Hill NH	71	553.8	0	299	134	91	81	1164	140	21	45	6274	345	0	3	171	41	23	55	0	8887	2314
	Pack Monadnock NH	78	586.9	0	137	201	132	125	1443	115	48	141	16593	546	1	13	118	120	54	57	1SW	19845	3115
	Putney Mt VT	73	553.8	0	603	149	109	81	1624	129	19	28	5831	482	5	10	122	36	22	0	0	9250	2816
	Mt Watatic MA	16	106.5	0	11	72	60	8	282	79	0	2	5723	4	0	0	38	45	8	28	0	6360	626
	Helderberg NY	15	104	0	0	16	35	7	27	10	0	0	1714	20	0	0	9	2	1	49	0	1890	176
	Wachusett Mt MA	49	318.8	2	62	205	159	23	406	86	0	18	11205	52	0	5	121	30	34	81	0	12489	1220
	Pinnacle Rock MA	14	41.25	0	5	4	1	1	40	10	0	0	14	9	0	1	3	3	0	2	0	93	74
42	Barre Falls MA	53	234.8	0	94	62	48	20	273	55	3	4	3131	113	0	3	38	11	9	23	0	3887	662
	Shatterack Mt MA	40	203	0	176	40	32	19	467	34	2	23	3009	110	0	3	47	19	5	19	0	4005	820
	Blueberry Hill MA	47	204.5	0	190	46	32	28	327	39	1	24	1694	87	0	5	111	13	4	7	0	2608	724
	Booth Hill CT	3	14.75	0	5	4	9	1	20	2	0	1	1454	0	0	0	3	2	1	0	0	1502	43
	Middle School CT	15	49.75	2	7	9	7	0	4	2	0	1	1409	1	0	0	2	0	0	7	0	1451	33
	Johnnycake Mt CT	15	57.5	2	4	59	40	2	58	9	0	5	1430	0	0	2	49	1	3	2	0	1666	230
	Mohonk NY	37	149.8	0	0	46	36	12	221	20	0	10	2307	47	0	2	46	16	2	43	0	2808	501
	Chestnut Hill CT	19	89	0	2	20	39	5	39	8	0	0	4011	6	0	1	9	1	0	15	0	4156	143
	White Memorial CT	11	21.67	1	51	4	16	0	5	7	2	23	33	4	0	0	2	0	1	5	0	154	69
	Summitville NY	10	34	0	0	9	16	1	44	7	0	2	926	2	0	0	1	3	2	1	0	1014	88
41	Botsford Hill CT	14	65.5	0	0	20	16	5	101	1	0	0	2778	0	0	0	4	5	1	7	0	2938	160
	Bear Mt NY	70	399.5	0	0	56	81	10	262	27	3	9	421	102	0	7	29	5	7	17	0	1036	615
	Mt Peter NY	71	464.5	107	292	114	70	28	1017	74	0	85	11256	289	0	5	75	24	11	34	0	13481	1826
	Chestnut Ridge NY	103	702.5	119	2717	362	100	82	1532	290	4	319	6138	216	0	8	225	26	28	103	0	12269	3295
	Hook Mt NY	75	430.8	32	416	319	197	97	1433	161	3	130	2296	79	0	10	210	82	28	12	0	5505	2761
	Quaker Ridge CT	102	821	47	1469	594	191	156	2160	403	4	406	5745	228	0	17	374	101	40	141	0	12076	4815
	State Line NJ	77	478	127	2278	857	151	86	1433	284	0	144	1613	395	0	1	333	49	52	128	0	7931	3913
	Lenoir Sanctuary NY	23	68.5	23	481	33	56	7	51	28	0	39	10	51	0	1	7	5	4	0	0	796	282
40	Wildcat Ridge NJ	54	321	11	0	82	66	15	418	107	0	16	2332	56	0	0	39	13	3	6	0	3164	821
	Montclair NJ	85	590.2	56	2067	302	120	39	1259	289	1	239	1223	118	0	1	207	107	55	59	0	6142	2796
	Chimney Rock NJ	73	623	0	0	242	210	118	2083	204	0	186	2420	44	1	7	428	181	0	25	0	6149	3729
	Lighthouse Pt CT	95	631.3	6	696	1027	164	291	2325	849	0	62	133	186	0	4	428	250	61	297	1ZT	6780	5945
CO	Boothe Memorial CT	20	82.25	2	37	413	105	8	278	28	0	0	351	7	0	0	57	17	5	14	0	1322	932
	Fire Island NY	65	409.5	0	0	378	6	164	220	41	0	0	0	1	0	0	344	1064	73	2	0	2293	2293
	Totals	**1718**	**10448**	**537**	**13073**	**6397**	**2825**	**1904**	**23941**	**3639**	**134**	**2022**	**125103**	**4116**	**7**	**119**	**4621**	**2471**	**611**	**1495**	**3**	**193018**	**54305**

RECENT YEARS for MAJOR SITES, 2005-2014 AVERAGES, and % CHANGE in 2015

XBWV: Total Hawks w/o BW, BV,TV; PH: Hawks/Hr; XPH: XBWV/Hr

REGION 44

Greenlaw Mountain - St. Andrews, New Brunswick (ave for 2005 - 2014, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2010	48	266.3	0	90	151	52	76	661	14	11	10	2240	222	0	0	193	43	24	102	3889	1559	14.61	5.9
2012	49	257	0	239	245	50	61	602	13	9	5	2100	332	0	0	173	48	23	79	3979	1640	15.48	6.4
2011	42	258	0	144	132	44	60	848	11	19	7	5835	241	0	1	199	33	24	73	7672	1693	29.74	6.6
2013	49	259.5	0	173	166	41	52	520	9	15	3	5405	132	0	0	200	42	12	71	6841	1263	26.36	4.9
2014	40	257.8	0	197	130	42	63	496	6	12	2	1704	148	0	1	155	44	24	70	3094	1193	12	4.6
2015	42	264.8	0	218	132	58	76	524	7	11	1	3791	106	0	1	158	35	24	83	5225	1216	19.74	4.6
ave	46	259.7	0	169	165	45.8	62.4	625	10.6	13.2	5.4	3457	215	0	0.4	184	42	21.4	79	5095	1470	19.64	5.66
%chg	-8	2	*	**29**	-20	**27**	22	-16	-34	-17	-81	10	**-51**	*	*	-14	-17	12	5	3	-17	0	-19

Cadillac Mountain - Acadia National Park, Maine (ave for 2005 - 2014, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2010	52	237	0	42	166	51	156	1548	29	12	1	388	131	1	2	800	89	19	119	3554	3124	15.0	13.2
2011	54	240	0	144	135	42	110	981	19	15	0	3285	93	2	0	431	77	31	57	5422	1993	21.5	7.9
2012	56	247	0	43	200	58	106	750	20	10	0	665	49	2	0	634	74	28	83	2722	2014	11.0	8.2
2013	39	174	0	27	125	53	124	1007	9	5	1	1865	43	0	1	262	39	10	88	3659	1767	21.0	10.2
2014	63	315	0	148	143	73	94	762	16	8	1	646	40	1	0	481	62	31	99	2605	1811	8.3	5.8
2015	67	281	0	79	150	27	137	1127	25	5	3	360	15	0	0	**613**	96	18	100	2755	2395	9.8	8.5
ave	55	251	0	86	169	44	136	1172	24	14	1	893	80	1	1	578	73	25	95	3390	2411	14	10
%chg	**23**	12	*	-9	-11	**-39**	1	-4	**5**	**-64**	*	**-60**	**-81**	*	*	6	**32**	**-29**	5	**-19**	-1	**-29**	-11

Clarry Hill - Union, Maine (ave for 2011 - 2014, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2011	34	241	0	64	268	81	60	614	51	2	15	10798	111	2	2	78	26	20	5	12197	1335	50.6	5.5
2012	24	175	0	341	195	131	37	499	53	5	44	6074	182	0	2	85	27	12	22	7709	1294	44.1	7.4
2013	23	174	0	504	220	180	81	547	36	3	31	13314	150	0	2	91	15	21	14	15209	1391	87.4	8.0
2014	27	227	0	422	245	192	113	749	84	4	40	8650	254	0	2	155	37	39	39	11025	1953	48.6	8.6
2015	35	248	0	569	215	**334**	126	792	59	7	47	**17369**	369	0	9	113	27	20	20	20076	2138	81.0	8.6
ave	27	204	0	333	232	146	73	602	56	4	33	9709	174	1	2	102	26	23	20	11535	1493	58	7
%chg	30	21	*	**71**	-7	**129**	**73**	**32**	5	100	45	79	**112**	*	350	11	3	-13	0	**74**	**43**	40	17

Harpswell Peninsula - Casco Bay, Maine (ave for 2005-06, 2009-2014, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	M	PF	UR	TOT	XBWV	PH	XPH
2010	62	158.3	0	95	157	39	131	1209	44	15	47	556	142	0	4	276	252	89	41	3097	2446	19.6	15.5
2011	56	121	0	50	157	35	41	979	49	4	8	339	24	2	0	304	82	33	41	2148	1759	17.8	14.6
2012	51	114	0	24	122	30	54	790	33	2	3	263	36	0	0	158	101	37	18	1671	1384	14.7	12.2
2013	63	90	0	17	113	21	35	436	20	0	1	1724	13	0	0	84	53	13	26	2556	815	28.3	9.0
2014	59	107	0	36	40	8	35	504	11	0	5	43	17	0	0	77	59	15	53	903	824	8.5	7.7
2015	66	129.5	0	63	16	7	37	464	7	0	8	10	20	0	0	81	41	12	27	793	720	6.1	5.6
ave 8	50	116	0	89	116	58	63	650	31	18	20	1816	74	0	51	145	82	28	28	3141	1252	27	12
%chg	33	11	*	-30	**-86**	**-88**	**-41**	**-29**	**-78**	*	24	**-99**	**-73**	*	*	**-44**	**-50**	**-57**	**-5**	**-75**	**-42**	**-77**	**-53**

REGION 43

Carter Hill - Concord, New Hampshire (ave for 2008-2014, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2010	46	302	3	130	114	54	34	444	203	10	8	2422	66	0	1	159	40	9	591	4288	1733	14.2	5.7
2011	54	320	0	149	107	78	32	300	117	15	13	10763	65	0	1	94	59	19	205	12017	1105	37.6	3.5
2012	65	372	1	224	234	152	86	1276	207	28	100	3671	273	2	2	305	65	44	472	7142	3246	19.2	8.7
2013	75	490	0	333	165	94	66	1197	137	18	59	8915	356	0	0	307	78	17	154	11896	2648	24.3	5.4
2014	73	471	0	170	202	82	87	1151	124	14	25	4237	221	0	0	243	64	36	222	6878	2471	14.6	5.2
2015	71	554	0	299	134	91	81	1164	140	21	45	6274	345	0	3	171	41	23	55	8887	2613	16.0	4.7
ave7	52	302	1	221	128	72	47	678	146	15	31	4659	155	1	1	171	53	22	287	6687	1806	19	5
%chg	36	**83**	*	**35**	4	**26**	**72**	**72**	-4	**41**	**47**	**35**	**122**	*	*	0	-23	4	-81	**33**	**45**	-14	-5

Pack Monadnock - Peterborough, New Hampshire (ave for 2005-2014, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2010	73	627.8	0	145	298	85	115	1248	168	66	109	7606	410	0	10	221	147	53	105	10786	3035	17.18	4.83
2011	50	368	0	127	271	54	58	1124	145	21	43	11831	202	0	9	170	68	40	93	14256	2298	38.74	6.24
2012	76	600.8	0	164	314	105	91	1388	181	63	209	8848	522	1	7	194	108	54	75	12324	3312	20.51	5.51
2013	79	575	0	142	193	101	100	1254	146	25	118	8221	378	1	11	166	89	48	37	11030	2667	19.18	4.64
2014	71	497	0	99	213	120	85	1094	126	22	123	11043	348	1	7	112	80	39	53	13565	2423	27.29	4.88
2015	78	586.9	0	137	201	132	125	1443	115	48	141	16593	546	1	13	118	120	54	58	19845	3115	33.81	5.31
ave10	63	469	0	105	249	73	85	1155	151	38	98	7806	333	0	7	160	79	37	73	10448	2537	23	5
%chg	24	25	*	**30**	-19	**82**	**48**	**25**	-24	**27**	**44**	**113**	**64**	*	**76**	-26	**53**	**48**	-20	**90**	23	49	-2

Putney Mountain - Putney, Vermont (ave for 2005-2014, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2010	50	355	0	65	162	61	71	1145	127	15	47	3844	292	1	5	179	47	38	0	6099	2190	17	6
2011	59	410	0	306	172	55	41	1510	146	34	31	4029	319	3	12	191	44	19	2	6914	2579	17	6
2012	60	454	0	143	267	95	86	1611	201	33	57	6123	824	1	9	300	63	52	1	9866	3600	22	8
2013	75	501	0	262	157	60	51	1193	106	22	35	3772	414	8	4	122	34	24	0	6264	2230	12	4
2014	68	477	0	357	131	74	76	1560	176	28	31	2297	580	1	6	219	44	43	0	5624	2970	12	6
2015	73	554	0	603	149	109	81	1624	129	19	28	5831	482	5	10	122	36	22	0	9250	2816	17	5
ave10	62	388	0	160	175	52	57	1148	112	20	32	3499	411	3	6	170	35	32	3	5913	2254	16	6
%chg	19	43	*	**276**	-15	**111**	**42**	**42**	15	-3	-13	**67**	17	*	**56**	-28	3	-30	-100	**56**	**25**	7	-12

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Mount Watatic - Ashby, Massachusetts (ave for 2005-2014, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	M	PF	UR	TOT	XBWV	PH	XPH
2010	13	91	0	20	81	31	16	346	33	3	24	9018	119	1	2	52	9	2	17	9774	736	107.7	8.1
2011	6	44	0	0	42	20	5	92	15	0	0	3195	1	0	0	17	4	1	23	3415	220	77.2	5.0
2012	9	49	0	15	29	18	4	149	30	0	2	2126	2	0	0	19	5	1	15	2415	274	49.5	5.6
2013	4	30	0	4	22	17	1	19	11	0	0	3776	0	0	0	0	0	0	1	3851	71	127.3	2.3
2014	4	23	0	0	8	12	3	32	0	0	8	3388	17	0	0	13	0	1	4	3486	98	153.2	4.3
2015	16	107	0	11	72	60	8	282	79	0	2	5723	4	0	0	38	45	8	28	6360	626	59.4	5.9
ave10	11	77	0	22	72	22	12	220	24	1	9	5049	43	0	1	47	10	1	12	5544	473	83	6
%chg	45	39	*	**-50**	0	179	**-33**	28	**235**	*	**-78**	13	**-91**	*	*	-20	**355**	**471**	133	15	32	-28	3

Helderberg Escarpment - Voorheesville, New York (ave for 2005-09, 2011-2014, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2009	15	121	7	48	26	5	2	40	0	0	0	1488	7	0	0	13	5	1	18	1781	238	14.72	2.0
2011	11	100	0	0	21	17	6	30	3	0	0	1054	8	0	0	25	3	2	35	1247	193	12.47	1.9
2012	13	100	13	17	23	21	3	24	3	1	4	2981	9	0	0	14	7	7	43	3170	159	31.7	1.6
2013	7	52	29	26	23	25	4	17	3	1	0	2164	7	0	0	5	2	2	14	2323	104	44.67	2.0
2014	15	109	7	0	21	29	5	30	2	2	0	2600	4	0	0	4	1	4	65	2774	167	25.45	1.5
2015	15	104	0	0	16	35	7	27	10	0	0	1714	20	0	0	9	2	1	49	1890	176	18.17	1.7
ave9	14	106	7	31	20	14	4	31	4	1	0	1482	9	0	0	12	4	2	22	1661	141	17.87	1.39
%chg	11	-2	*	-100	-21	**142**	75	-12	**137**	-100	-100	16	**134**	*	*	-23	-44	-53	124	14	25	1.712	21.8

Wachusett - Princeton, Massachusetts (ave for 2005-2014, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	M	PF	UR	TOT	XBWV	PH	XPH
2010	14	88	0	0	41	15	6	83	29	0	2	1360	0	0	0	22	9	2	269	1838	478	20.89	5.43
2011	13	75.5	4	1	55	18	6	77	9	0	0	2364	0	0	0	5	3	2	20	2564	195	33.96	2.58
2012	32	148.5	0	0	157	48	17	223	97	0	2	7777	4	0	0	57	16	6	99	8503	726	57.26	4.89
2013	44	269.8	1	99	169	102	30	350	75	3	5	35070	46	1	0	125	29	24	100	36229	1059	134.3	3.93
2014	48	324	5	157	239	189	29	573	115	8	12	16750	50	1	3	157	35	39	113	18475	1563	57.02	4.82
2015	49	319	2	62	205	159	23	406	86	0	18	11205	52	0	5	121	30	34	81	12489	1220	39.15	3.82
ave10	24	151	1	26	137	52	14	218	52	1	2	8662	13	0	1	66	14	10	100	9369	680	60	5
%chg	103	112	*	139	50	**206**	64	86	67	**-100**	683	29	**291**	*	**900**	85	**110**	**254**	-19	33	80	-34	-16

Pinnacle Rock - Medford, Massachusetts (ave for 2005-2014, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	M	PF	UR	TOT	XBWV	PH	XPH
2010	22	123.5	0	3	37	4	22	298	44	4	2	4	21	0	0	17	17	7	60	540	533	4.4	4.3
2011	21	79.5	0	10	7	13	6	121	27	0	1	0	15	0	0	11	0	2	27	240	230	3.0	2.9
2012	16	78.5	0	7	28	5	2	58	24	0	1	1	9	0	0	14	7	5	11	172	164	2.2	2.1
2013	18	72.5	0	4	3	0	0	67	13	0	0	0	14	0	0	2	4	1	7	115	111	1.6	1.5
2014	22	99.25	0	8	9	5	4	146	28	0	3	0	11	0	0	8	5	4	20	251	243	2.5	2.4
2015	14	41.25	0	5	4	1	1	40	10	0	0	14	9	0	1	3	3	0	2	93	74	2.3	1.8
ave10	17	81	0	6	19	3	7	109	22	1	2	6	18	0	0	12	6	3	23	238	226	3	3
%chg	-20	-49	*	-22	-79	-67	-85	-63	-55	-100	-100	137	-51	*	900	-76	-52	-100	-91	-61	-67	-26	-35

Barre Falls - Barre, Massachusetts (ave for 2005-2014, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2010	48	267.3	1	248	218	65	51	1218	129	6	43	4834	268	1	2	177	61	20	25	7367	2284	27.6	8.5
2011	49	252.8	0	254	165	78	50	1189	198	4	41	5902	322	0	5	158	49	15	37	8467	2311	33.5	9.1
2012	48	249.8	0	361	198	61	28	846	179	5	53	4730	378	1	1	174	37	20	69	7141	2050	28.6	8.2
2013	41	192.3	0	150	110	47	12	431	89	3	16	16112	59	0	1	76	15	13	27	17161	899	89.3	4.7
2014	51	238.5	0	141	75	73	20	484	84	6	25	6839	151	0	1	82	17	11	46	8055	1075	33.8	4.5
2015	53	234.8	0	94	62	48	20	273	55	3	4	3131	113	0	3	38	11	9	23	3887	756	16.6	3.2
ave10	52	271	0	266	167	64	36	952	120	6	41	7244	304	1	3	147	41	14	44	9448	1938	36	7
%chg	2	-14	*	-65	-63	-25	-44	-71	-54	-50	-90	-57	-63	*	20	-74	-73	-35	-47	-59	-61	-54	-54

Shatterack Mountain - Russell, Massachusetts (ave for 2005-2014, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2010	25	147.5	0	59	110	21	29	470	16	1	5	1027	29	0	1	69	5	6	13	1861	775	12.62	5.25
2011	23	129.3		191	38	17	19	508	33	0	10	1230	119	0	1	42	5	3	17	2233	812	17.28	6.28
2012	18	112	0	288	124	25	12	424	29	2	7	906	52	0	0	54	14	13	15	1965	771	17.54	6.88
2013	28	141.9	0	76	45	28	13	293	37	2	13	3216	19	0	0	47	10	8	24	3831	539	26.99	3.8
2014	32	169.3	0	170	63	15	27	517	47	2	20	8942	78	0	0	58	13	16	21	9989	877	59.02	5.18
2015	43	203		176	32	40	19	467	34	2	23	3009	110	0	3	47	19	5	19	4005	820	19.73	4.04
ave10	30	159	1	132	82	22	25	520	31	2	16	3135	115	0	1	63	10	8	18	4180	913	28	6
%chg	45	28	*	34	-61	83	-25	-10	10	18	45	-4	-4	*	275	-25	98	-36	3	-4	-10	-30	-27

Blueberry Hill - Granville, Massachusetts (ave for 2005-2014, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2010	66	389.3	0	299	142	31	80	766	86	8	39	2743	408	4	6	329	22	9	45	5017	1975	12.89	5.07
2011	74	422.3	0	306	200	53	60	794	95	4	23	3339	224	0	3	310	31	18	20	5480	1835	12.98	4.35
2012	48	315	1	199	128	23	28	623	67	7	30	2158	168	0	4	247	21	6	35	3745	1387	11.89	4.4
2013	70	277	1	226	94	39	34	357	51	5	31	6346	124	0	1	142	21	6	25	7503	930	27.09	3.36
2014	44	212	0	128	49	32	49	373	77	1	40	4658	224	0	2	128	10	5	30	5804	1018	27.38	4.8
2015	47	205	0	190	46	32	28	327	39	1	24	1694	87	0	5	111	13	4	7	2608	724	12.72	3.53
ave10	78	397	1	227	150	50	68	728	90	6	49	4041	334	1	5	281	26	10	40	6107	1838	16	5
%chg	-39	-48	*	-16	-69	-36	-59	-55	-56	-84	-51	-58	-74	*	9	-60	-49	-62	-82	-57	-61	-22	-23

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Middle School - Torrington, Connecticut (ave for 2005-2014, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2010	16	85.3	2	0	18	13	4	35	14	0	3	2079	9	0	1	13	6	0	23	2220	139	26.0	1.6
2011	18	84.3	4	2	28	7	5	34	18	1	6	2488	4	0	0	7	10	1	28	2643	149	31.4	1.8
2012	17	62.8	0	0	23	9	1	28	5	0	0	2009	0	0	0	15	4	0	19	2113	104	33.7	1.7
2013	16	72.0	0	0	13	13	0	23	11	0	0	8987	0	0	0	7	3	1	14	9072	85	126.0	1.2
2014	17	53.8	4	0	4	7	0	13	10	0	2	2185	1	0	0	4	2	0	10	2242	53	41.7	1.0
2015	15	49.8	2	7	9	7	0	4	2	0	1	1409	1	0	0	2	0	0	7	1451	33	29.2	0.7
ave10	20	77	3	2	25	8	3	48	15	1	4	3149	4	0	0	18	6	1	21	3305	151	44	2
%chg	-24	-35	-35	*	-64	-13	-100	-92	-87	*	-73	-55	-73	*	*	-89	*	*	-66	-56	-78	-34	-65

Johnnycake Mountain - Burlington, Connecticut (ave for 2005-2014, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2010	1	7	0	0	10	7	0	25	3	0	0	534	0	0	0	13	1	0	0	593	59	91	9
2011	8	42	7	0	39	22	7	72	15	1	0	5196	0	0	1	20	2	3	0	5385	182	128	4
2012	10	50	5	0	86	30	5	146	12	0	1	5905	0	0	1	47	2	2	0	6242	332	125	7
2013	11	49	0	8	59	37	0	58	3	0	0	3895	0	0	1	19	4	2	0	4086	183	83	4
2014	13	59	24	67	59	50	10	81	8	0	1	3239	6	0	0	63	2	0	0	3610	280	62	5
2015	14	58	2	4	59	40	2	58	9	0	5	1430	0	0	2	49	1	3	2	1666	230	29	4
ave10	8	34	4	8	39	22	4	77	7	0	0	3393	1	0	0	31	3	2	0	3590	186	109	6
%chg	84	69	*	-47	52	81	-49	-24	38	*	*	-58	*	*	400	57	-70	76	*	-54	24	-74	-34

Mohonk Preserve - New Paltz, New York (ave for 2005-12, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2008	21	86	2	61	27	8	7	113	13	0	1	167	10	0	1	6	0	9	14	439	209	5.1	2.4
2009	8	28.5	0	0	11	1	5	19	4	0	0	204	12	0	0	7	0	0	26	289	85	10.1	3.0
2010	13	40.3	0	45	15	1	11	73	14	1	0	584	6	0	0	23	2	0	17	792	163	19.7	4.0
2011	1	4	0	0	0	1	0	20	4	0	1	1	1	0	0	1	0	2	0	31	30	7.8	7.5
2012	3	11.3	0	0	6	1	2	12	3	0	0	353	3	0	0	3	0	0	0	383	30	34.0	2.7
2015	39	150	0	0	46	36	12	221	20	0	10	2307	47	0	2	46	16	2	43	2808	501	18.7	3.3
ave 8	17	70	1	25	21	5	12	142	17	1	2	383	42	0	1	16	1	4	17	688	279	13	4
%chg	131	115	*	*	120	700	0	56	19	*	515	502	13	*	300	188	*	-54	155	308	80	47	-17

Chestnut Hill - Litchfield, Connecticut (ave for 2005-2014, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2010	13	55.5	0	0	25	5	5	56	4	0	0	1676	0	0	1	21	1	0	5	1799	123	32.4	2.2
2011	11	43.5	0	0	24	11	0	40	1	0	0	2623	0	0	0	2	0	0	4	2705	82	62.2	1.9
2012	14	61	0	0	31	21	0	48	12	0	0	4048	0	0	0	18	1	0	8	4187	139	68.6	2.3
2013	15	58	0	1	26	22	0	25	3	0	0	5603	13	0	0	4	0	0	14	5711	107	98.5	1.8
2014	14	64	0	0	34	12	7	49	9	2	0	7712	12	0	1	8	1	0	10	7857	145	122.8	2.3
2015	19	89	0	2	20	39	5	39	8	0	0	4011	6	0	1	9	1	0	15	4156	143	46.7	1.6
ave10	12	54	0	0	28	11	3	47	6	0	0	3604	3	0	0	11	1	0	11	3724	121	68	2
%chg	64	64	*	*	-28	242	100	-18	31	*	*	11	140	*	400	-20	*	*	42	12	19	-31	-28

White Memorial - Litchfield, Connecticut (ave for 2005-2014, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2010	16	50	10	12	29	20	15	61	31	0	6	686	5	0	1	24	3	2	0	905	197	18.1	3.9
2011	4	21	4	0	8	9	1	14	8	0	4	354	8	0	0	0	0	2	0	412	54	19.6	2.6
2012	23	53.97	0	65	9	9	9	2	7	2	21	155	15	0	1	13	33	0	11	352	132	6.5	2.4
2013	18	51.84	7	49	17	25	4	9	9	3	15	3704	10	0	0	6	37	5	17	3917	157	75.6	3.0
2014	13	23.03	0	34	8	12	0	7	21	1	23	1253	5	0	0	4	2	0	8	1378	91	59.8	4.0
2015	11	22	1	51	4	16	0	5	7	2	23	33	4	0	0	2	0	1	5	154	69	7	3.14
ave10	12	33	6	16	15	13	3	17	12	1	7	964	4	0	0	7	8	2	4	1079	93	32	3
%chg	-6	-33	*	219	-73	28	*	-71	-43	150	219	-97	-7	*	*	-71	-100	-33	39	-86	-25	-78	16

Summitville - Summitville, New York (ave for 2005-14, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2010	41	136.3	0	90	77	43	19	371	81	3	20	2640	367	0	8	62	10	11	15	3817	1087	28.0	8.0
2011	37	133	8	163	71	46	18	781	90	2	21	1833	251	0	7	41	8	13	5	3358	1354	25.2	10.2
2012	47	199.3	9	91	106	82	32	766	56	11	44	4385	877	0	17	39	7	10	4	6536	2051	32.8	10.3
2013	28	102.3	0	23	33	40	6	427	23	0	13	1200	491	0	4	58	5	9	6	2338	1115	22.9	10.9
2014	22	72	3	35	23	31	14	229	18	2	15	547	304	0	1	32	3	8	2	1267	682	17.6	9.5
2015	10	34	0	0	9	16	1	44	7	0	2	926	2	0	0	1	3	2	1	1014	88	29.8	2.6
ave10	36	136	8	148	74	39	24	521	74	5	19	1860	398	0	7	41	8	10	15	3250	1234	23	9
%chg	-72	-75	*	*	-88	-59	-96	-92	-91	*	-89	-50	-99	*	-100	-98	-62	-80	-93	-69	-18	30	-71

Botsford Hill - Bridgewater, Connecticut (ave for 2005-2014, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2010	22	80	0	0	62	29	2	170	15	0	0	2129	0	0	0	19	1	0	18	2445	316	30.6	4.0
2011	16	67	0	0	34	13	2	135	26	0	0	1258	2	0	0	26	1	0	12	1509	251	22.7	3.8
2012	13	68	0	0	67	12	7	176	2	0	0	2827	0	0	0	22	2	0	10	3125	298	46.0	4.4
2013	19	79	0	0	24	23	1	75	10	0	0	11167	0	0	0	16	4	0	18	11338	171	143.1	2.2
2014	16	68	0	0	28	21	7	74	12	0	0	3993	0	0	0	7	4	0	22	4168	175	61.1	2.6
2015	14	66	0	0	20	16	5	101	1	0	0	2778	0	0	0	4	5	1	7	2938	160	44.52	2.42
ave10	16	73	0	0	48	15	6	132	13	0	1	3504	1	0	0	25	2	0	19	3767	263	50	4
%chg	-14	-10	*	*	-58	4	-9	-24	-92	*	*	-21	*	*	*	-84	127	*	-63	-22	-39	-11	-32

Bear Mountain - Fort Montgomery, New York (ave for 2005-14, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2010	64	372	0	0	206	114	27	641	46	1	12	2142	323	0	6	39	12	7	14	3591	1449	9.7	3.9
2011	60	319	0	0	54	35	6	208	13	1	3	1584	66	0	1	14	4	8	12	2011	427	6.3	1.3
2012	54	311	0	0	95	74	14	416	41	0	11	1080	105	0	2	57	7	5	20	1928	848	6.2	2.7
2013	62	357	0	0	27	74	11	290	42	3	44	2208	126	0	1	42	13	3	7	2900	692	8.1	1.9
2014	62	335	0	0	29	76	7	287	25	0	9	727	69	2	7	40	12	1	8	1299	572	3.9	1.7
2015	70	400	0	0	56	81	10	262	27	3	9	421	102	0	7	29	5	7	17	1036	615	2.6	1.5
ave10	62	360	3	3	88	63	15	372	34	1	11	1652	139	0	4	45	8	5	18	2463	804	7	2
%chg	12	11	*	*	-36	28	-33	-30	-20	230	-18	-75	-26	*	59	-36	-38	43	-3	-58	-24	-62	-31

Mount Peter - Warwick, New York (ave for 2005-14, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2010	71	468	77	189	203	89	64	1803	119	0	94	8531	574	2	8	207	22	10	69	12061	3264	25.8	7.0
2011	70	410.5	38	221	187	70	41	1334	152	2	94	7417	248	0	4	153	25	18	61	10065	2389	24.5	5.8
2012	66	412.5	4	112	191	130	47	1826	165	1	131	6073	437	0	3	232	23	20	68	9463	3274	22.9	7.9
2013	74	479.3	104	121	124	119	51	1028	64	0	118	7611	582	0	5	112	14	15	37	10105	2269	21.1	4.7
2014	72	467.8	232	570	111	79	46	1119	122	1	136	5685	658	0	10	139	23	12	69	9012	2525	19.3	5.4
2015	71	464.5	107	292	114	70	28	1017	74	0	85	11256	289	0	5	75	24	11	34	13481	1826	29.0	3.9
ave10	67	416	68	205	161	67	54	1273	110	1	83	6370	468	0	6	162	20	15	54	9116	2473	22	6
%chg	6	12	58	42	-29	4	-48	-20	-33	*	3	77	-38	*	-9	-54	18	-26	-37	48	-26	33	-34

Chestnut Ridge - Bedford, New York (ave for 2007-14, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2010	104	754.4	33	1065	385	92	156	2563	315	9	97	4103	168	0	2	334	42	20	89	9473	4272	12.6	5.7
2011	89	634.8	69	4445	558	102	124	3000	771	6	130	13020	733	1	4	410	70	40	368	23851	6317	37.6	10.0
2012	102	723.3	70	1599	406	113	107	2122	313	12	187	6267	364	0	13	488	49	19	253	12382	4446	17.1	6.1
2013	109	747	72	2429	255	104	86	1824	258	6	499	12239	213	0	16	367	46	25	113	18552	3812	24.8	5.1
2014	93	628	102	2804	289	96	156	2216	276	6	341	6100	434	0	13	260	24	31	105	13254	4248	21.1	6.8
2015	103	702.5	119	2717	362	100	82	1532	290	4	319	6138	216	0	8	225	26	28	103	12269	3295	17.5	4.7
ave 8	95	662	58	2082	364	90	119	2183	386	8	203	7382	331	1	8	350	45	25	167	13800	4278	21	7
%chg	9	6	105	31	-1	11	-31	-30	-25	-48	57	-17	-35	*	3	-36	-42	11	-38	-11	-23	-17	-28

Hook Mountain - Nyack, New York (ave for 2005-14, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2010	80	475.3	55	123	340	142	191	2114	293	6	148	3150	261	2	2	248	71	43	54	7243	3915	15.2	8.2
2011	71	383	53	57	309	88	98	2064	251	6	96	16023	105	0	0	196	74	32	16	19468	3335	50.8	8.7
2012	66	385	64	410	410	134	79	1872	197	4	177	2832	136	0	5	323	38	39	10	6732	3426	17.5	8.9
2013	82	506.5	48	163	272	162	125	2048	182	0	180	4933	127	0	8	208	67	39	20	8582	3438	16.9	6.8
2014	77	448	69	288	213	170	131	1910	185	3	308	5428	148	0	6	239	73	32	8	9211	3426	20.6	7.6
2015	76	432	32	416	319	197	97	1433	161	3	130	2296	79	0	10	210	82	28	12	5505	2761	12.7	6.4
ave10	72	423	46	312	289	109	122	1997	215	5	144	5146	182	0	6	238	57	30	31	8930	3426	21	8
%chg	5	2	-31	34	10	80	-20	-28	-25	-39	-10	-55	-57	*	61	-12	43	-7	-61	-38	-19	-41	-22

Quaker Ridge - Greenwich, Connecticut (ave for 2005-2014, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2010	85	664.6	12	346	606	236	247	4167	420	15	319	10943	160	1	15	566	105	21	81	18260	6959	27.5	10.5
2011	82	616.5	11	659	552	149	115	3005	429	7	235	8464	106	0	9	390	119	29	17	14296	5162	23.2	8.4
2012	76	578.5	20	1138	557	239	159	3316	502	3	437	18347	433	0	5	474	82	24	9	25745	6240	44.5	10.8
2013	92	760.8	15	928	470	177	165	2147	424	6	425	16188	223	0	10	484	83	33	171	21949	4818	28.9	6.3
2014	98	812	61	1661	586	210	202	3319	564	7	1046	7046	528	1	14	536	103	36	219	16139	7371	19.9	9.1
2015	102	821	47	1469	594	191	156	2160	403	4	406	5745	228	0	17	374	101	40	141	12076	4815	14.7	5.9
ave10	85	642	31	894	639	172	192	3385	487	9	391	11773	319	1	12	528	100	33	130	19095	6397	30	10
%chg	20	28	54	64	-7	11	-19	-36	-17	-54	4	-51	-29	*	44	-29	1	23	9	-37	-25	-51	-42

REGION 40

State Line - Alpine, New Jersey (ave for 2005-2014, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2010	21	93.17	14	384	61	24	15	644	85	1	20	112	41	0	1	56	17	14	67	1556	1046	16.7	11.2
2011	60	399	12	355	445	46	50	1933	227	0	80	2877	93	0	1	386	57	136	191	6889	3645	17.3	9.1
2012	56	355	62	287	331	101	48	1482	254	9	129	4544	534	0	2	340	44	23	173	8363	3470	23.6	9.8
2013	71	455	196	1126	423	93	71	1656	164	1	190	4896	304	0	4	372	37	37	155	9725	3507	21.4	7.7
2014	73	451.8	15	2428	447	78	126	2221	299	5	512	2654	634	0	1	468	59	56	185	10188	5091	22.6	11.3
2015	77	478	127	2278	857	151	86	1433	284	0	144	1613	395	0	1	333	49	52	128	7931	3913	16.6	8.2
ave 7	44	275	43	672	275	53	47	1241	155	2	134	2596	229	0	1	265	31	39	112	5895	2584	22	9
%chg	76	74	197	239	212	185	82	15	84	*	8	-38	72	*	-22	26	56	35	14	35	51	-25	-11

Lenoir Sanctuary - Yonkers, New York (ave for 2005-09, 2011-14, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2009	26	77.5	14	344	149	77	3	173	23	0	4	1324	36	0	1	42	22	7	2	2221	539	28.7	7.0
2011	43	148.5	59	923	62	44	17	355	69	0	29	562	117	0	2	47	13	15	1	2315	771	15.6	5.2
2012	30	94	53	856	151	80	20	216	54	1	38	1585	77	0	0	61	9	6	9	3216	722	34.2	7.7
2013	41	123.3	61	606	78	78	7	143	19	0	30	794	53	0	0	53	2	9	7	1940	479	15.7	3.9
2014	23	62.5	12	223	40	58	8	120	19	0	30	61	75	0	0	25	2	0	2	675	379	10.8	6.1
2015	23	69	23	481	33	56	7	51	28	0	39	10	51	0	1	7	5	4	0	796	282	11.5	4.1
ave 9	42	142	26	693	113	56	15	329	60	1	41	971	108	0	1	67	20	9	6	2516	826	18	6
%chg	-46	-52	-12	-31	-71	1	-52	-84	-53	*	-5	-99	-53	*	-18	-90	-74	-58	-100	-68	-66	-36	-31

Wildcat Ridge - Hibernia, New Jersey (ave for 2005-2014, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2010	47	309	72	165	118	70	46	1062	171	1	13	4750	60		1	93	10	8	6	6646	1659	21.5	5.4
2011	54	317	63	206	215	80	20	847	145	1	16	8899	70	0	1	79	12	10	4	10668	1500	33.7	4.7
2012	45	307	28	44	138	89	17	741	135	0	14	5904	26		0	82	16	7	8	7249	1273	23.6	4.1
2013	48	266	28	0	84	59	11	474	71	1	22	4314	62	0	4	49	10	8	11	5208	866	19.6	3.3
2014	47	277.5	0	0	76	72	20	409	121	1	17	6465	52	0	0	77	7	5	18	7340	875	26.5	3.2
2015	54	321	11	0	82	66	15	418	107	0	16	2332	56		0	39	13	3	6	3164	821	9.9	2.6
ave10	52	308	61	92	130	57	25	788	136	1	17	4495	110	0	2	82	10	7	19	6030	1382	20	4
%chg	5	4	-82	-100	-37	15	-40	-47	-21	*	-4	-48	-49	*	*	-52	37	-55	-68	-48	-41	-50	-43

Montclair Hawk Lookout - Montclair, New Jersey (ave for 2005-2014, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2010	86	618.8	195	1892	480	175	157	2367	635	5	280	7438	467	1	4	547	132	64	131	14970	5445	24.2	8.8
2011	84	603.5	66	1255	421	124	56	1569	183	0	102	4714	174	0	3	322	85	38	78	9190	3155	15.2	5.2
2012	79	520.5	58	1514	474	194	72	1631	382	0	525	8949	489	0	2	419	108	49	100	14966	4445	28.8	8.5
2013	85	556.8	51	775	200	117	41	1178	161	0	157	8383	145	0	5	259	74	25	46	11617	2408	20.9	4.3
2014	79	534	45	757	414	182	77	1749	288	3	472	6192	165	0	1	415	87	61	21	10929	3935	20.5	7.4
2015	91	590.2	56	2067	302	120	39	1259	289	1	239	1223	118	0	1	207	107	55	59	6142	2796	10.4	4.7
ave10	84	546	62	1199	458	128	98	1929	353	3	277	6705	417	0	3	387	93	51	69	12231	4266	22	8
%chg	9	8	-10	72	-34	-6	-60	-35	-18	-66	-14	-82	-72	*	-68	-47	15	8	-15	-50	-34	-54	-40

Chimney Rock - Brunswick, New Jersey (ave for 2005-2014, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2010	58	620	1	23	560	204	291	3229	446	7	196	8337	235	3	6	1029	291	211	23	15092	6731	24.3	10.9
2011	76	570.6	0	0	535	197	139	2874	375	0	123	7639	130	1	6	700	179	97	16	13011	5372	22.8	9.4
2012	76	556	23	89	547	310	137	2401	406	5	438	16392	454	0	15	741	237	55	24	22274	5770	40.1	10.4
2013	92	644.8	0	0	423	189	108	1948	300	2	298	17895	249	0	22	596	227	31	21	22309	4414	34.6	6.8
2014	76	613.3	0	0	362	220	164	2591	255	2	367	6472	291	0	21	880	268	3	34	11930	5458	19.5	8.9
2015	73	623	0	0	242	210	118	2083	204	0	186	2420	44	1	7	428	181	0	25	6149	3729	9.9	6.0
ave10	73	560	18	117	469	170	165	2356	382	3	225	8844	203	1	12	716	206	89	25	14000	5020	25	9
%chg	0	11	###	-100	-48	24	-28	-12	-47	*	-17	-73	-78	43	-43	-40	-12	-100	0	-56	-26	-60	-33

COASTAL REGION

Lighthouse Point - New Haven, Connecticut (ave for 2005-2014, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2010	102	648.5	1	388	1039	99	547	6528	1580	13	365	831	740	1	7	1790	374	191	617	15111	13891	23.3	21.4
2011	95	568.8	13	713	844	114	258	4721	1544	4	154	3365	550	3	5	1235	216	212	369	14320	10229	25.2	18.0
2012	97	593.3	3	297	1055	226	343	4105	1440	9	154	1724	449	2	4	1267	286	244	328	11936	9912	20.1	16.7
2013	95	681.8	39	416	715	173	282	3077	843	6	209	2676	486	3	10	906	393	147	459	10840	7709	15.9	11.3
2014	101	729.5	17	373	1190	290	403	3706	1548	9	259	475	518	0	4	1046	389	232	566	11025	10160	15.1	13.9
2015	82	631	6	696	1027	164	291	2325	849	0	62	133	186	0	4	428	250	61	297	6779	5944	10.7	9.4
ave10	96	636	8	453	1139	154	419	5097	1305	9	198	1391	560	2	7	1280	375	170	391	12958	11105	21	18
%chg	-15	-1	-26	54	-10	6	-31	-54	-35	-100	-69	-90	-67	*	-42	-67	-33	-64	-24	-48	-46	-48	-46

Boothe Park - Stratford, Connecticut (ave for 2009-2014, % change in 2015)

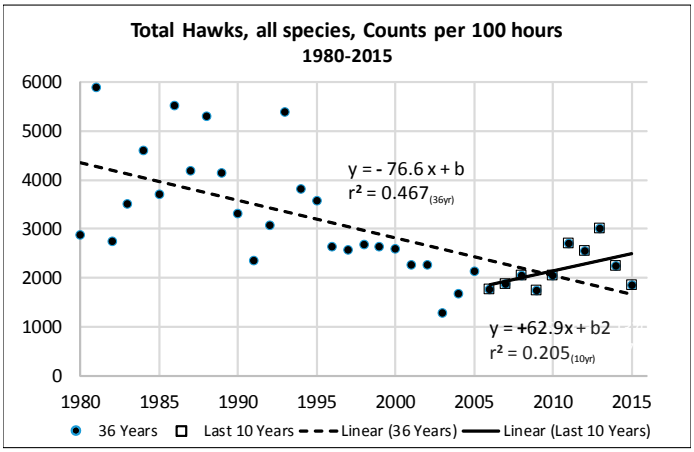
YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2010	42	152.8	11	470	237	61	68	1242	167	2	41	3404	423	0	2	167	36	16	66	6413	2528	42.0	16.5
2011	34	115.5	8	847	146	57	38	1522	247	2	57	8645	456	0	1	111	33	10	35	12215	2715	105.8	23.5
2012	35	140.5	16	135	372	134	25	839	177	0	95	4545	203	0	0	120	23	11	68	6763	2067	48.1	14.7
2013	41	129.9	19	200	173	92	16	334	70	0	22	2339	55	0	0	41	14	14	37	3426	868	26.4	6.7
2014	22	86.42	2	333	97	89	14	527	45	0	13	182	73	0	0	61	17	6	21	1480	963	17.1	11.1
2015	20	82	2	37	413	105	8	278	28	0	0	351	7	0	0	57	17	5	14	1322	932	16.1	11.4
ave 6	33	121	10	382	192	81	31	905	152	1	46	3559	214	0	1	109	24	13	54	5773	1823	47	15
%chg	-40	-32	-79	-90	115	30	-74	-69	-82	*	-100	-90	-97	*	*	-47	-28	-60	-74	-77	-49	-66	-25

Fire Island - Islip, New York (ave for 2005-2014, % change in 2015)

YR	DYS	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV	PH	XPH
2010	64	467	0	0	557	2	523	543	48	0	0	0	0	1	0	1645	2119	326	18	5782	5782	12.4	12.4
2011	63	439	0	0	294	3	149	394	59	1	0	0	4	0	0	539	1268	164	16	2891	2891	6.6	6.6
2012	56	352	0	0	458	3	199	179	40	0	0	1	1	0	0	1027	1346	220	6	3480	3479	9.9	9.9
2013	68	451.3	0	1	337	5	136	111	28	0	1	0	1	2	0	484	916	156	9	2187	2186	4.8	4.8
2014	68	420	0	0	423	5	144	187	34	0	0	0	2	0	1	500	1010	177	6	2489	2489	5.9	5.9
2015	65	409.5	0	0	378	6	164	220	41	0	0	0	1	0	0	344	1064	73	2	2293	2293	5.6	5.6
ave10	63	428	0	0	366	4	244	318	45	1	0	0	1.4	0	0	750	1381	222	11	3342	3342	8	8
%chg	3	-4	*	*	3	71	-33	-31	-9	*	*	*	-29	*	*	-54	-23	-67	-81	-31	-31	-28	-28

The Count: 2015 Compared to other Years

For many of us, the 2015 season meant hours of empty skies waiting for the Broadwings to arrive and for the Sharpie pulse to increase, punctuated with wonderful views of Eagles and Merlins. For others, mostly in the north and west, it meant exciting views of skies filled with hundreds and thousands of hawks. At the regional level, 60% of the sites In Region 44 and 80% of the sites in Region 43 had an increase in the number of total hawks over the 10-year average. But, this percent declined with latitude: 37.5% of Region 42 sites had increases, 25% of Region 41, 20% of Region 40, and none of the Coastal Region. So, the flight pattern for 2015 was relatively narrow, concentrating mostly toward the north, where the hawks flew toward the west/southwest and many never reached the southern sites.



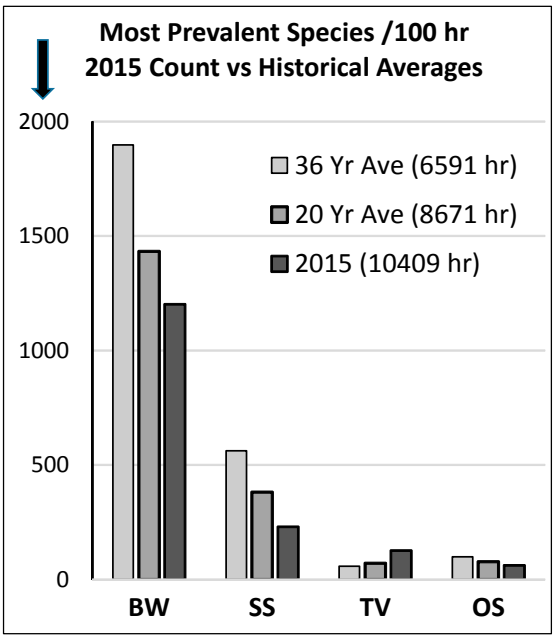
We counted 193,018 total hawks in 10,409 hours. In actual numbers, that is a great deal more than the 28,290 total hawks in 1971 (900 hours), or the 69,818 total hawks in 1980 (2418 hours). However, when we standardize to hawks per 100 hours (h/100), the 2015 count with 1854 h/100 trails behind both 1971 with 3143 h/100, and 1980 with 2888 h/100. (For inspiration and appreciation for the origin of hawk watching in the Northeast, check out the first NEHW Reports by Don Hopkins and Gerry Mersereau at http://www.battaly.com/nehw/history/ Our founders certainly started a mighty project!)

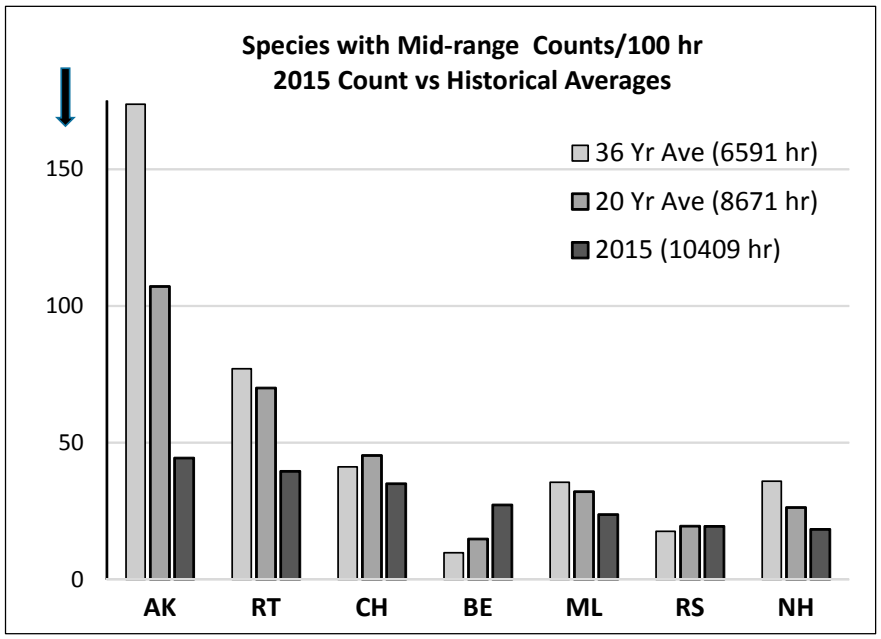
A look at the numbers from all of the last 36 years provides a much better comparison. We can see that the number of total hawks have declined over the years. But we also see that the 2015 total (furthest right) is not the lowest. Furthermore, there is a slight increase in the last 10 years. So we look forward to more hawks coming in the years ahead.

The Hawks: 2015 and Species Trends

To compare the species to each other and to our history, we arrange them in sequence from our most prevalent Broad-wings and Sharpies on the left to the least prevalent Golden Eagles and Rough-legged Hawks on the right. (Note the different scales.) Included for each species are the 2015 count (darkest bar) along with both the 36 year and 20 year averages.

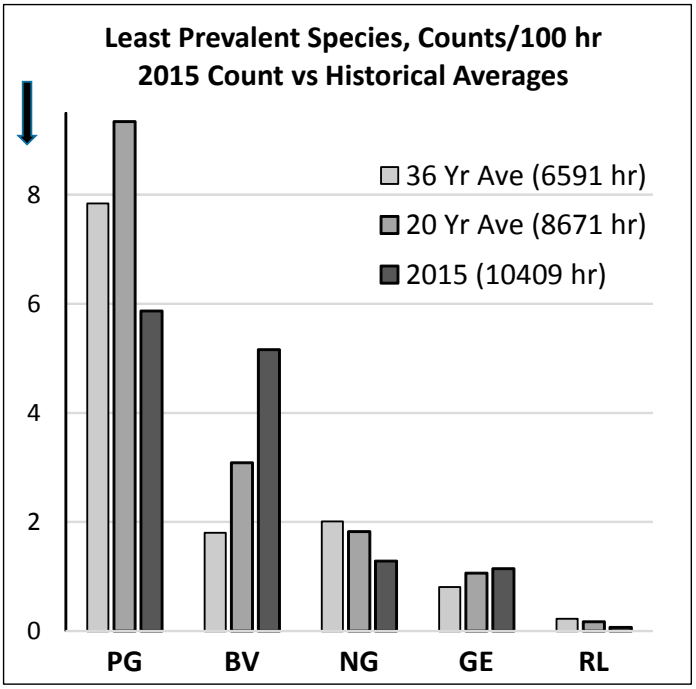
Of the most prevalent species, we see a declining trend for Broad-winged Hawk, Sharp-shinned Hawk, and Osprey. For these species the 36 year average is larger than the 20 year average, and the 2015 count is lower than both. Other species with this same trend include American Kestrel, Red-tailed Hawk, Merlin, Northern Harrier, Northern Goshawk, and Rough-legged Hawk. The reverse is true for Turkey Vulture for which the 36 year average is lower than the 20 year average, and the 2015 count is higher than both. This increasing trend is also evident for Bald Eagle, Black Vulture, and Golden Eagle. Cooper's Hawk, Peregrine Falcon, and Red-shouldered Hawk





have different patterns. Coops and Peregrines increased from the 36 year average to a peak at the 20 year average, but had lower than average counts in 2015. Finally, Red-shouldered Hawk appears to be relatively stable, with a slight rise from the 36 year average to the 20 year average and then a 2015 count that was basically equivalent.

For a better handle on the actual species counts, 20 years of data is included in the Fall Regional Totals Table. Also included is the 20 year average and the percent difference of the 2015 count from that average.



Species in Decline

Sharp-shinned Hawk, the 2nd most prevalent species migrating through the NorthEast, comprises 17% of the hawks counted in our 36 year average, but only 12% of the 2015 count. They have historically been a staple at hawk watches over the whole region, barreling past on most days from the beginning of September to the end of October. 2015 is the first year that I recall struggling on almost every Thursday at Hook (our day to cover) to get a Sharpie in each hour. It was like waiting for a ghost to show up—we knew a Sharpie should be whizzing past, as they always did, but it just was

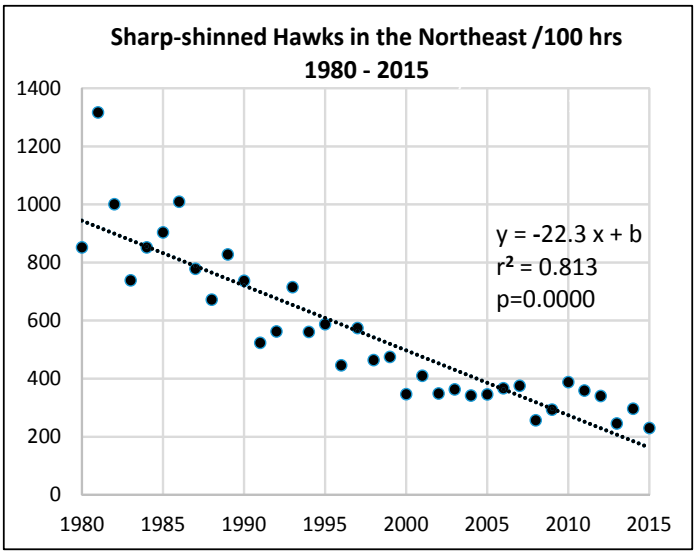
NORTHEAST FALL REGIONAL TOTALS PER 100 HOURS, 1995-2015

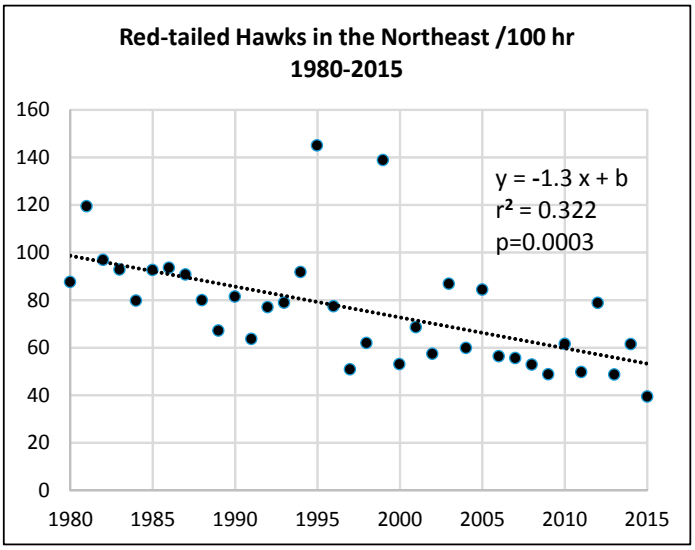
YEAR	Sites	HRS	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	GE	AK	ML	PF	UR	TOT	XBWV
1995	27	5378	0.5	51	107	7.6	39.9	588.1	46.5	2.3	27.8	2264	145.1	0.1	1.6	210.6	41.3	7.0	37	3577	1262
1996	26	5858	0.2	59	78	8.6	17.0	446.2	38.6	1.8	21.3	1688	77.5	0.1	1.0	144.6	34.8	7.6	22	2646	899
1997	25	6126	2.0	46	103	8.3	27.8	574.6	47.3	2.8	18.2	1462	51.0	0.1	0.6	163.0	33.2	7.9	28	2576	1066
1998	29	7650	2.0	56	102	9.0	45.0	464.4	42.4	1.8	18.3	1628	62.0	0.3	1.3	173.6	41.8	8.0	22	2678	992
1999	31	7526	1.4	79	104	10.5	38.0	475.2	49.5	3.4	24.5	1461	139.0	0.4	1.4	171.6	43.7	10.4	25	2638	1097
2000	32	8349	1.9	61	72	9.7	21.8	346.5	37.3	1.6	12.0	1798	53.2	0.1	0.9	115.4	26.6	6.8	22	2586	726
2001	33	8349	2.8	60	66	8.6	25.9	410.0	36.3	1.7	16.0	1396	68.7	0.1	0.7	119.1	30.9	8.3	17	2267	809
2002	38	8020	1.8	57	84	10.8	24.5	349.3	36.8	1.3	12.3	1448	57.6	0.2	0.9	115.8	32.5	8.3	19	2260	753
2003	40	7930	2.0	57	76	11.4	34.5	363.6	43.5	1.5	14.5	435	87.0	0.3	1.0	90.2	31.5	8.9	19	1276	782
2004	39	8024	2.3	58	67	14.2	19.2	341.9	42.4	1.3	16.2	905	59.9	0.2	0.8	91.6	29.7	7.6	17	1674	709
2005	44	8596	5.7	65	68	13.6	20.5	345.9	49.4	1.5	14.7	1316	84.5	0.1	1.1	83.8	34.1	9.3	21	2134	747
2006	45	9658	2.5	66	79	13.5	29.6	367.0	47.8	1.6	18.3	937	56.4	0.1	1.7	80.6	32.6	9.9	17	1759	754
2007	43	10048	3.9	65	74	14.2	34.3	375.4	51.6	2.3	16.5	1027	55.7	0.2	0.8	85.1	31.7	10.1	17	1865	769
2008	44	10589	3.1	83	71	14.9	20.0	257.0	43.8	1.2	14.6	1388	53.0	0.3	1.0	54.0	24.1	11.8	15	2055	581
2009	51	10902	3.7	69	56	17.4	16.9	294.0	42.7	1.7	15.5	1049	48.9	0.1	0.9	65.3	26.5	11.5	19	1739	617
2010	41	10149	4.8	64	71	20.9	33.1	388.2	55.6	2.2	19.9	1136	61.7	0.2	1.0	96.2	40.6	13.6	28	2038	833
2011	44	10104	4.2	116	70	19.9	18.2	359.7	57.0	1.5	14.1	1861	49.8	0.1	0.9	70.0	26.9	11.7	20	2702	720
2012	44	9784	4.4	91	83	30.5	20.6	340.7	55.9	2.3	31.0	1656	78.9	0.1	1.1	87.6	30.2	10.9	23	2548	797
2013	40	10428	6.5	87	53	24.2	17.0	246.1	33.9	1.3	24.9	2367	48.8	0.1	1.2	55.9	23.0	7.4	18	3015	553
2014	39	9948	6.0	117	61	28.1	22.5	296.8	48.3	1.5	39.1	1439	61.6	0.1	1.0	68.0	25.8	9.7	22	2248	686
2015	38	10409	5.2	126	61	27.2	18.3	230.0	35.0	1.3	19.4	1202	39.5	0.1	1.1	44.4	23.7	5.9	14	1854	522
20yrAve	38	8671	3	70	77	15	26	382	45	2	19	1433	70	0.2	1	107	32	9.3	21	2314	808
% diff	0.7	20	67	79	-20	84	-30	-40	-23	-30	-0.3	-16	-44	-60	8	-59	-26	-37	-32	-20	-35

To find the original counts, divide by 100 and multiple by the hours. Eg: AK totals for 2015 = 44.4 / 100 * 10409 = 4621.6

Three species have appreciable increases, including Black Vulture (+67%), Turkey Vulture (+79%), and Bald Eagle (+84%). Golden Eagles are slightly above average (+8%), and Red-shouldered Hawks are at average. All other species are below average. In fact, three species had lower counts in 2015 than in any other year since 1980, including Sharp-shinned Hawk, Red-tailed Hawk, and American Kestrel.

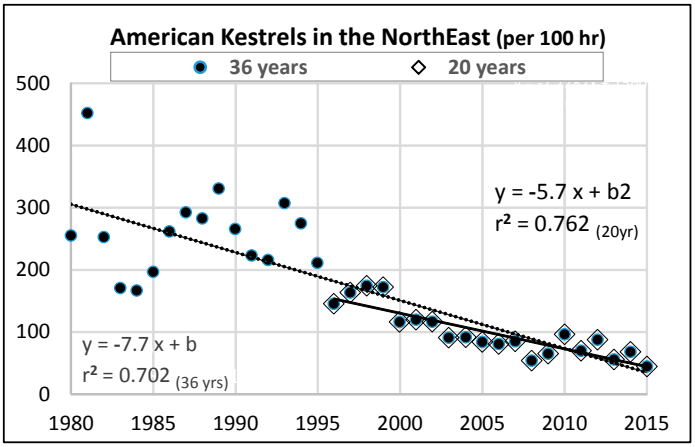
not visible. The graph is a vivid display of the very strong decline that resulted in that 2015 ghost-watch. We have lost 22.3 Sharpies per 100 hrs / year in the NorthEast. With a 36 year average of 6697 hours, that translates to a loss of 1500 Sharpies a year! But, there is still hope. Notice the jump in 2010, after two years of very low counts. That is what I am looking for in 2016, a big jump up—hopefully, no more ghost watches for me!





Red-tailed Hawks are frequently seen at hawk watches, and often provide spectacular views of interactions with other hawks. Very often these are views of local birds, either hunting or defending territory, or escorting migrants through their territory. They are so regular that we tend to take their presence for granted. But, migrating Red-tailed Hawks have been in a slow, relatively steady decline of 87 hawks/ year across the NorthEast (1.3 /100 * 6697). One possible explanation is that, with milder winters and falls, more Red-tails are staying in our region, closer to their breeding grounds.

Our smallest falcon, the American Kestrel, has been in decline since 1994, when it reached a maximum of more than 15,000 in 5500 hours of coverage (the highest h/100 count was 452 in 1981). Since then, it has been declining in the NorthEast at the rate of 5.7 h/100 per year. With a 20 year average of 8671 hours, this translates to 490 fewer Kestrels per year. This is no surprise to the hawk watchers along the barrier beach. At Fire Island in the 1980's a thousand or more Kestrels could fly by in a day, but in 2015 they only counted 344 for the whole season! Eight years ago we considered some explanations for the decline (http://www.battaly.com/fire/trends/), and now we believe that changing wind patterns may be another contributing factor.



Broad-winged Hawks: When and Where

Broad-winged Hawks comprised 65% of all the hawks counted in 2015, and almost all of them migrated past the NorthEast watch sites between September 12 and September 27. Those are the days when counts across the region totaled more than 1,000 Broad-wings each day. Totals of more than 10,000 occurred on five of the seven days from September 15 to September 21, resulting in 84,200 Broad-wings in just seven days! Of course, that is no surprise to hawk watchers across the NorthEast. It is the reason why our founders started counting hawks back in 1971, and the reason we celebrate their migration each year by being there to count them. The peak flight day was September 16, when 30,970 Broad-wings flew past our watches: 8298 at Clarry Hill, more than 3000 at Chestnut Hill and Pack Monadnock, more than 2800 at Mount Peter, and more than 1000 at five other watch sites. The Broad-winged counts for peak days across the NorthEast is seen in the Broad-wing Flight Period table.

The flight began on September 15 at the north in Regions 44, 43, and 42. The next day, on September 16, the Broad-wings were distributed across the whole NorthEast. On the 17th, they were concentrated in an area overlapping Regions 43 and 42—perhaps some of Clarry Hill's birds from the previous day. Another pulse came on September 20-21 with half the number counted on the 16th, but distributed similarly, both to the north and south, with some even in Regions 41 and 40. On September 25-26 an echo flight occurred, way up north in Clarry Hill again!

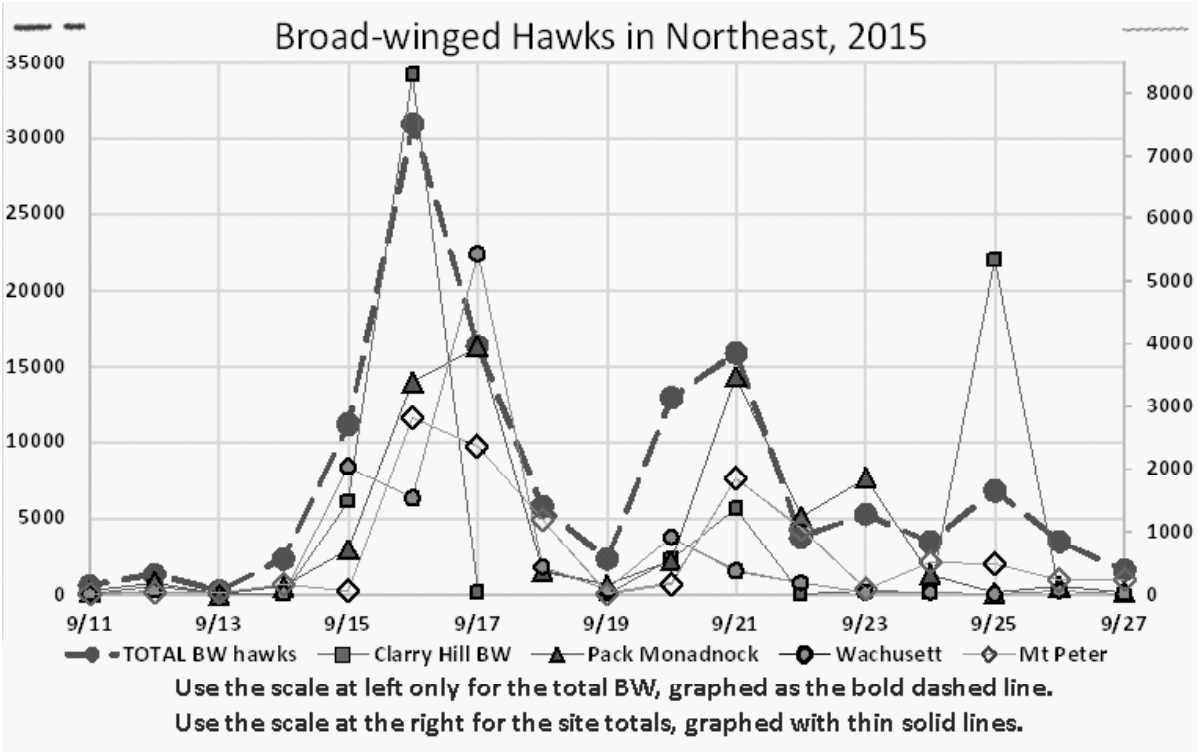
A graph of this day-to-day distribution (page 25) makes it a bit easier to see what happened when. For example, the bold broken line showing the sum of all counts in the NorthEast peaked at more than 30,000 on 9/16 (read the left axis for the Total). Clarry Hill (square) peaked at more than 8000 on 9/16 (read the right axis for sites). Also, the peak day at Wachusett (small circle) and Pack Monadnock (triangle) was a day later than at Clarry Hill, yet Mt. Peter (diamond), way down south in Region 41, peaked on the same day as Clarry Hill.

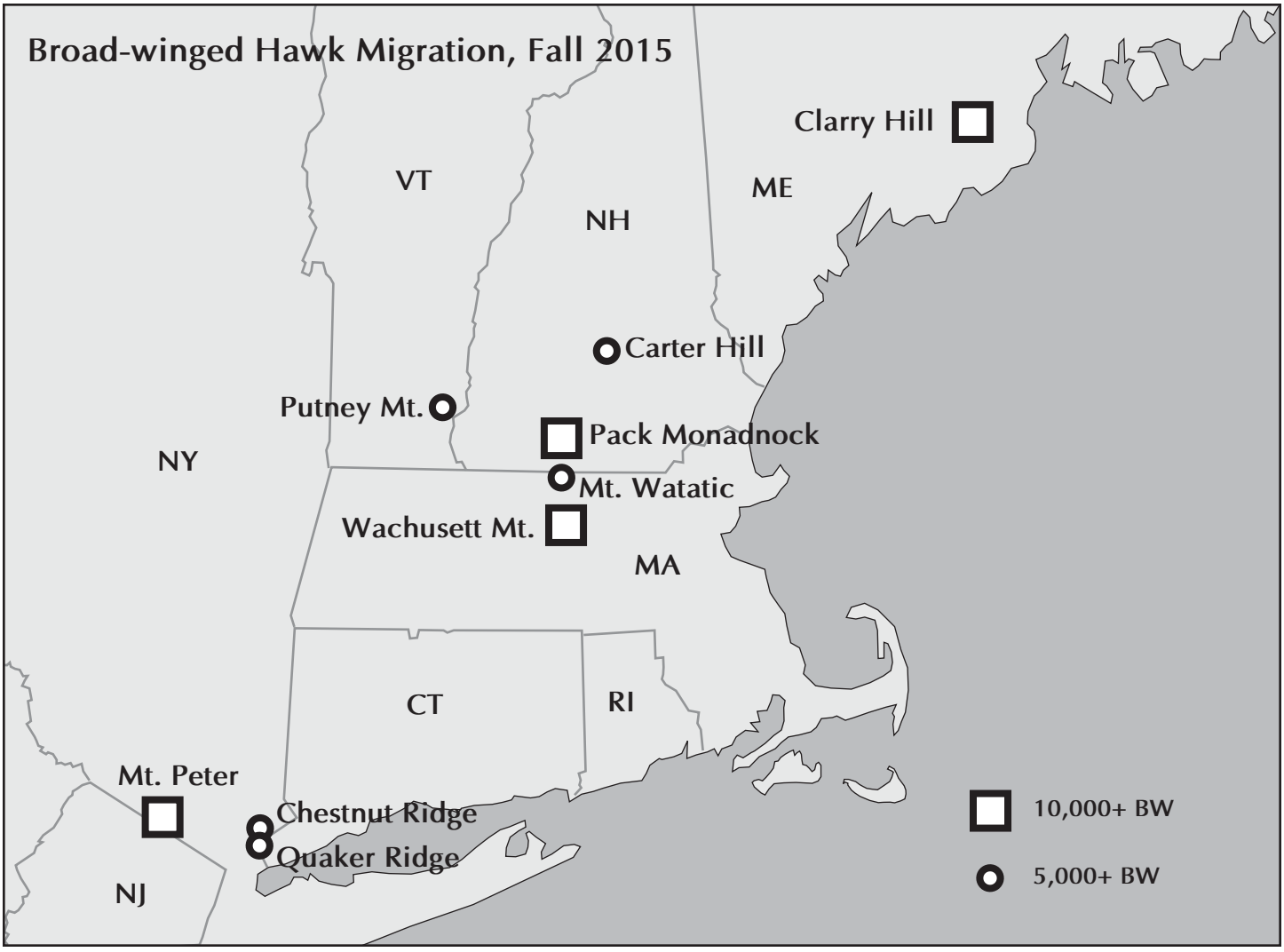
The graph (page 25) helps us to understand the temporal flight, but we need a map to understand the flight path. The flight map (page 25) shows the nine sites that counted the most Broadwings during the 2015 season—four sites with more than 10,000 and five sites with more than 5000. These nine sites clearly show the line of flight from northeast to southwest.

In reviewing the prevailing winds at Hartford, CT for 2015, I found only two days in September with winds from the west. The first was September 15 with WSW 6—the day before our big count. The other was not until September 30, well past the Broad-wing flight. This may be the reason that numbers were so low in the southern portion of the NorthEast. Perhaps the old hypothesis of wind drift is actually correct: without winds from the west, hawks from the north do not get "pushed" into the southern or coastal portions of the NorthEast.

BROAD-WINGED HAWK COMPARATIVE COUNTS DURING FLIGHT PERIOD, 2015

Reg	Sites (total BW >50)	9/15	9/16	9/17	9/18	9/19	9/20	9/21	9/22	9/23	9/24	9/25	9/26
	Greenlaw Mt NB	1646	236			12	323	39	3	426	85	14	601
	Cadillac Mt ME	1	8	4	0	0	0	14	0	0	279	0	277
44	Clarry Hill ME	1480	8298	22		4	554	1364	9	45	25	5341	
	Interlakes Elem NH	26											
	Concord School NH			0	20			0			9	2	0
	Carter Hill NH	77	793	687	493	70	122	568	297	1413	2	670	
	Pack Monadnock NH	709	3388	3959	370	149	529	3471	1246	1858	315	20	436
43	Putney Mountain VT	1185	478	213	1510	256	1212	188	111	22	84	34	3
	Mount Watatic MA	451	735	2475	187	85	476	259					695
	Helderberg Esc NY	346	196	13	195	350	36	127	356	30	18	6	
	Wachusett MA	2027	1537	5433	430	71	911	369	177	23	25	0	31
	Barre Falls MA	522	1089	105	338	27	217	19	0	40	63	2	0
	Shatterack Mt MA	128	68	31	349	13	122	531	66	28	1483	32	42
	Blueberry Hill MA	112	98		233	6	209	309	301	0	34	84	
42	Booth Hill CT		108					1240					
	Middle School CT	7	293	14	0		57	1035	2	0		0	18
	Johnnycake CT	42	192	34	136	55	94	86	86	26			10
	Mohonk Preserve NY		108	289	45	1176	438		5	111	0	4	
	Chestnut Hill CT	414	261	223	0	11	859	50	4	1111	334	22	
	Summitville NY	0		158			364	3					16
	Botsford Hill CT	67	1676	57	15	13	592	259	4	1			0
	Bear Mt NY	14	7	57	110	9		50	1	2	104	47	5
	Mount Peter NY	47	2806	2365	1198	14	167	1845	1051	86	509	477	769
	Chestnut Ridge NY	226	3361	23	19	5	1060	1205	3	6	24	35	220
	Hook Mountain NY	90	1399	7	3	22	6	625	4	10	5	8	95
41	Quaker Ridge CT	411	1728	13	5	0	2681	748	5	12	8	7	15
	State Line NJ	494	830	32	0	0	166	62	1	2	3	1	6
	Wildcat Ridge NJ	138	862	129	95	1	62	237	6	0	35		
	Montclair NJ	14	358	4	1	1	430	293	2	3	6	4	54
40	Chimney Rock NJ	466	54	1	0	0	1026	721	12	7	0	1	56
	Lighthouse Pt CT	0	0	2	17	0	24	3	0		0	12	122
CO	Boothe Memorial CT	19	3	0			170	134	0	0	0		22
	Total	**11159**	**30970**	**16350**	**5769**	**2350**	**12907**	**15854**	**3752**	**5262**	**3450**	**6823**	**3493**


Broad-winged Hawks in Northeast, 2015
35000
30000
25000
20000
15000
10000
5000
0
8000
7000
6000
5000
4000
3000
2000
1000
0
9/11
9/13
9/15
9/17
9/19
9/21
9/23
9/25
9/27
TOTAL BW hawks
Clarry Hill BW
Pack Monadnock
Wachusett
Mt Peter
Use the scale at left only for the total BW, graphed as the bold dashed line.
Use the scale at the right for the site totals, graphed with thin solid lines.


Broad-winged Hawk Migration, Fall 2015
Clarry Hill
VT
ME
NH
Carter Hill
Putney Mt.
Pack Monadnock
NY
Mt. Watatic
Wachusett Mt.
MA
CT
RI
Mt. Peter
Chestnut Ridge
Quaker Ridge
NJ
10,000+ BW
5,000+ BW

PEAK DAILY SITE COUNTS - Fall 2015

BROAD-WINGED HAWK		
Clarry Hill	9/16	8298
Wachusett	9/17	5433
Clarry Hill	9/25	5341
Pack Monadnock	9/17	3959
Pack Monadnock	9/21	3471
Pack Monadnock	9/16	3388
Chestnut Ridge	9/16	3361
Mount Peter	9/16	2806
Quaker Ridge	9/20	2681
Mount Watatic	9/17	2475
Mount Peter	9/17	2365
Wachusett	9/15	2027
Pack Monadnock	9/23	1858
Mount Peter	9/21	1845
Quaker Ridge	9/16	1728
Botsford Hill	9/16	1676
Greenlaw Mt	9/15	1646
Wachusett	9/16	1537
Putney Mountain	9/18	1510
Shatterack Mt	9/24	1483
Clarry Hill	9/15	1480
Carter Hill	9/23	1413
Hook Mountain	9/16	1399
Clarry Hill	9/21	1364
Pack Monadnock	9/22	1246
Booth Hill	9/21	1240
Putney Mountain	9/20	1212
Chestnut Ridge	9/21	1205
Mount Peter	9/18	1198
Putney Mountain	9/15	1185
Mohonk Preserve	9/19	1176
Chestnut Hill	9/23	1111
Barre Falls	9/16	1089
Chestnut Ridge	9/20	1060
Mount Peter	9/22	1051
Middle School	9/21	1035
Chimney Rock	9/20	1026

RED-TAILED HAWK		
Mount Peter	11/14	133
Pack Monadnock	11/16	71
Carter Hill	10/31	63
Clarry Hill	10/26	53
Pack Monadnock	10/23	46
Putney Mountain	11/8	46
Putney Mountain	10/26	45
Pack Monadnock	11/20	42
Clarry Hill	11/4	41
State Line	11/8	41
Pack Monadnock	11/14	40
Putney Mountain	10/30	38
Putney Mountain	11/7	38
Lighthouse Pt	11/8	38
Mount Peter	11/8	38
Clarry Hill	10/31	35
Putney Mountain	11/2	35
Pack Monadnock	11/8	35
Kittatinny Mt	11/18	35

SHARP-SHINNED HAWK		
Cadillac Mt	9/16	284
Lighthouse Pt	10/4	218
Quaker Ridge	9/21	203
Lighthouse Pt	9/20	200
Lighthouse Pt	10/23	190
Chimney Rock	10/17	178
Lighthouse Pt	10/18	152
Chestnut Ridge	10/17	150
Harpswell	10/18	149
Harpswell	10/23	137
Hook Mountain	9/21	135
Lighthouse Pt	10/17	135
Lighthouse Pt	10/5	134
Putney Mountain	10/15	130
Quaker Ridge	10/4	128
State Line	9/16	126
Chimney Rock	10/18	117
Quaker Ridge	9/16	114
Putney Mountain	10/14	109
Lighthouse Pt	9/21	105
Chimney Rock	10/23	104

MERLIN		
Fire Island	10/23	201
Fire Island	9/20	184
Fire Island	10/4	91
Fire Island	10/16	53
Fire Island	10/17	49
Fire Island	10/18	45
Lighthouse Pt	9/14	33
Fire Island	9/15	33
Lighthouse Pt	10/3	32
Fire Island	10/5	32
Fire Island	9/14	31
Fire Island	10/19	23
Fire Island	10/1	21
Cadillac Mt	9/16	20

OSPREY		
Lighthouse Pt	9/11	180
Lighthouse Pt	10/3	133
Boothe Memorial	9/11	107
State Line	9/13	89
Fire Island	9/20	81
Boothe Memorial	9/14	71
Boothe Memorial	9/15	70
Boothe Memorial	9/4	61
Fire Island	9/11	59
Lighthouse Pt	10/1	56
Lighthouse Pt	9/20	51
Lighthouse Pt	9/15	50
Lighthouse Pt	9/21	50
Lighthouse Pt	9/26	49
State Line	9/16	48
State Line	9/25	48
Boothe Memorial	9/21	47
Lighthouse Pt	9/14	44
Quaker Ridge	9/16	44
State Line	9/29	42

TURKEY VULTURE		
Chestnut Ridge	10/19	657
State Line	10/19	522
Lighthouse Pt	10/23	330
Chestnut Ridge	10/17	313
Quaker Ridge	10/19	279
State Line	10/29	273
State Line	10/20	270
Montclair	10/17	252
Montclair	10/19	207
Chestnut Ridge	10/15	202
Montclair	10/23	199
Montclair	10/26	162

AMERICAN KESTREL		
Cadillac Mt	9/16	190
Fire Island	10/23	136
Cadillac Mt	9/15	104
Fire Island	9/20	90
Cadillac Mt	9/21	63
Lighthouse Pt	9/20	56
Cadillac Mt	9/1	54
Lighthouse Pt	9/14	54
Chimney Rock	10/7	47
Chimney Rock	10/6	39
Cadillac Mt	9/24	37
Cadillac Mt	9/4	36
Lighthouse Pt	10/17	36
Quaker Ridge	9/21	34
Chimney Rock	10/15	33
Harpswell	10/23	31
Fire Island	10/18	29
Quaker Ridge	9/25	28
State Line	9/12	27
Quaker Ridge	9/23	26
Chimney Rock	10/17	26
Lighthouse Pt	9/21	25
Montclair	9/21	25
Blueberry Hill	9/25	25

COOPER'S HAWK		
Lighthouse Pt	10/4	120
Lighthouse Pt	10/23	96
Lighthouse Pt	10/18	66
Lighthouse Pt	10/5	57
Lighthouse Pt	10/10	45
Lighthouse Pt	10/16	45
Lighthouse Pt	10/17	45
Lighthouse Pt	10/30	37
State Line	10/4	28
Lighthouse Pt	9/20	26
Chestnut Ridge	10/17	26
Lighthouse Pt	10/3	25
Quaker Ridge	10/15	23
Quaker Ridge	10/6	22
Montclair	10/19	22
Lighthouse Pt	11/14	22
Montclair	10/23	21
Chimney Rock	10/17	20

RED-SHOULDERED HAWK		
Quaker Ridge	11/17	70
Quaker Ridge	11/8	55
Chestnut Ridge	11/15	44
Chimney Rock	11/8	42
State Line	11/9	38
Pack Monadnock	10/27	33
Chestnut Ridge	11/9	33
Chestnut Ridge	10/24	29
Montclair	11/17	29
Quaker Ridge	11/9	27
Chimney Rock	10/31	25
Hook Mountain	11/17	25
Hook Mountain	11/21	25
Chimney Rock	11/3	24
Pack Monadnock	11/17	24
Chestnut Ridge	10/31	22

GOLDEN EAGLE		
Quaker Ridge	11/8	5
Putney Mountain	10/14	3
Carter Hill	10/21	3
Bear Mt	11/2	3
Chestnut Ridge	11/8	3
Wachusett	10/7	2
Putney Mountain	10/20	2
Quaker Ridge	10/23	2
Hook Mountain	10/23	2
Quaker Ridge	10/24	2
Hook Mountain	10/30	2
Clarry Hill	11/4	2

PEREGRINE FALCON		
Fire Island	9/20	9
Chestnut Ridge	10/1	9
Clarry Hill	9/21	7
Fire Island	9/28	7
Fire Island	10/3	7
Fire Island	10/14	7
Fire Island	10/16	7
Lighthouse Pt	9/20	6
Hook Mountain	9/27	6
Quaker Ridge	10/1	6
State Line	9/22	5
Pack Monadnock	10/2	5
State Line	10/11	5
Lighthouse Pt	10/16	5
Lighthouse Pt	10/18	5

BLACK VULTURE		
State Line	11/1	33
Mount Peter	9/22	17
State Line	11/24	17
State Line	11/7	16
State Line	10/16	15
Chestnut Ridge	10/11	14
Mount Peter	10/23	14
Chestnut Ridge	10/12	12
Chestnut Ridge	10/15	11
Wildcat Ridge	11/14	11

NORTHERN GOSHAWK		
Pack Monadnock	10/30	5
Pack Monadnock	10/8	4
Pack Monadnock	10/10	4
Pack Monadnock	10/27	4
Pack Monadnock	10/16	3
Greenlaw Mt	10/25	3
Pack Monadnock	10/26	3
Putney Mountain	10/26	3

ROUGH-LEGGED HAWK		
Putney Mountain	10/19	2
Putney Mountain	10/20	1
Putney Mountain	10/23	1
Putney Mountain	10/27	1
Chimney Rock	11/2	1
Kittatinny Mt	11/4	1
Pack Monadnock	11/16	1
Kittatinny Mt	11/20	1

NORTHERN HARRIER		
Lighthouse Pt	11/14	63
Fire Island	10/23	33
Lighthouse Pt	10/23	24
Lighthouse Pt	10/18	15
Carter Hill	10/21	15
Lighthouse Pt	10/17	14
Clarry Hill	10/24	13
Cadillac Mt	9/3	12
Cadillac Mt	9/4	12
Cadillac Mt	9/21	12
Fire Island	10/18	12
Harpswell	10/23	12
Cadillac Mt	9/16	11
Lighthouse Pt	9/21	11
Clarry Hill	9/24	10

BALD EAGLE		
Boothe Memorial	9/20	36
Clarry Hill	10/27	36
Lenoir	10/17	24
Clarry Hill	10/23	24
Clarry Hill	9/16	22
Clarry Hill	11/16	22
Wachusett	9/15	18
Clarry Hill	9/21	18
Lighthouse Pt	10/4	18
Clarry Hill	10/24	18
Quaker Ridge	9/16	15
Wachusett	9/20	15
Boothe Memorial	9/21	15
Clarry Hill	10/15	15

SWAINSON'S HAWK		
Pack Monadnock	9/22	1
Cadillac Mt	10/30	1

ZONE-TAILED HAWK		
Lighthouse Pt	9/20	1

Two Very Similar Species, Two Very Different Migration Count Trends

Drew Panko, Coordinator, Fire Island Hawk Watch

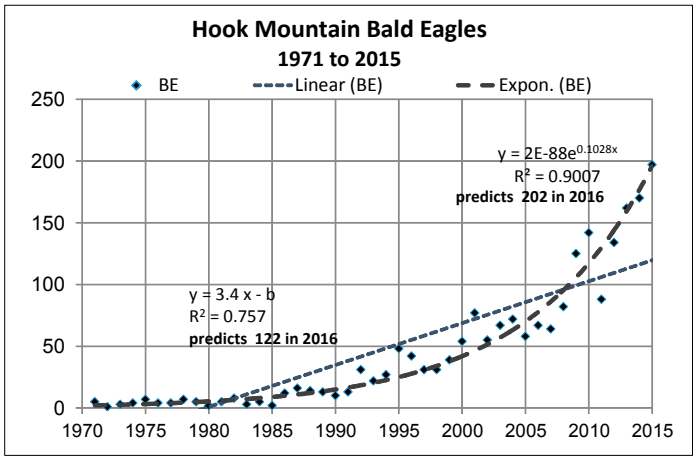
While reviewing the hawk watch data from the six hawk watches in the NYC metropolitan area that have full coverage data for at least 31 years, I noticed a strong contrast between the trends in the hawk watch counts for Bald Eagles (BE) and Osprey (OS). First let's look at the BEs.

Bald Eagle

By all accounts the BEs are doing very well in the Northeast. There are now nests on the lower Hudson River, nearby New Jersey, and Long Island. Each year it seems that another pair or two sets up housekeeping in our area. The universal explanation is that DDT devastated BE populations after WWII and the populations are now recovering. However, it is more than just that. John Bull (1964) cites Fisher's recount of breeding in Ossining NY, along the Hudson up until the 1890s and on Long Island (Gardiner's Island) until the 1930s. He quotes Fables (1955) referring to NJ, "It formerly bred near Delaware Water Gap, Warren County and Greenwood Lake, Passaic County, and in 1952 nested near Splitrock Pond in Morris County….". My reading of this would indicate that we have reestablished the breeding density of BEs that existed circa 1940s and this in spite of the habitat destruction and increase in human population and impacts over the last 70 years! And their growth is showing no signs of slowing.

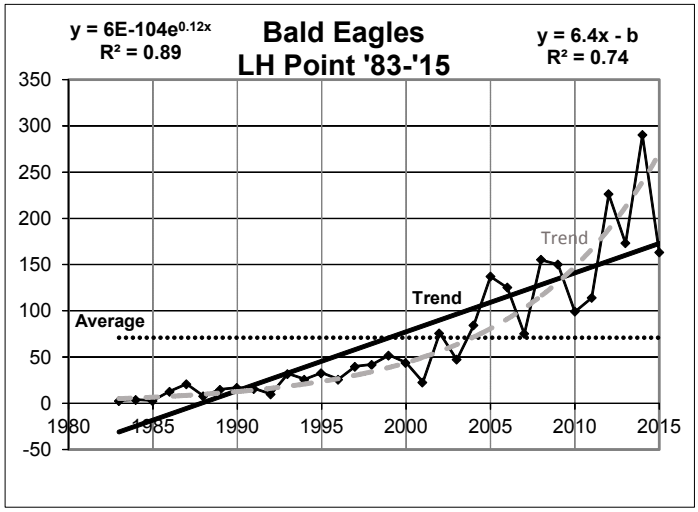
Hawk watch counts confirm this for a large segment of the population in the northeast. Below is a graph of BE counts at Hook Mountain (HM), NY, along the Hudson River, prepared by Trudy Battaly, Hook coordinator.

Looking at this graph, we see that the BE counts have been climbing since 1985 (straight line), and in fact, the growth is exponential (curved line). Counts at Hook were less than 10/year until 1985, and in the last 3 years have exceeded 150/year and are approaching 200/yr!



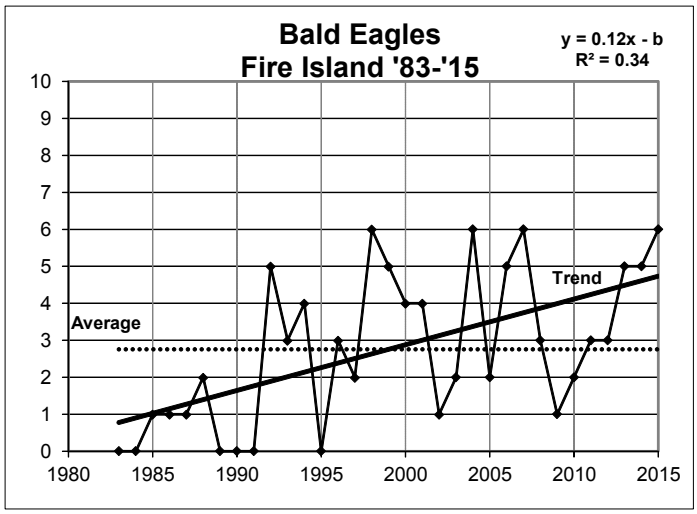
This same trend is seen at all of the metropolitan hawk watches. Included is the graph for BE at Lighthouse Point (LH) in New Haven, CT for comparison.

Hook is an inland site, albeit along the Hudson River, and Lighthouse Point is a coastal site, but the trends are very similar. The exponential growth of a population classically indicates a population invading an unpopulated habitat, and this certainly seems to be the case. As the BE population increases, the curve is expected to stop increasing, and level off parallel to the x-axis. This will signal that the population has filled the available niches and is no longer increasing.



Of the six hawk watches in the area—Lighthouse Point, Quaker Ridge (QR), Fire Island (FI), Hook Mountain, Montclair (MC), and Mount Peter (MP)—only Fire Island does not show this exponential growth. And the reason that it doesn't show this trend is both obvious and a bit mysterious. Up until the mid '90s Fire Island averaged less than one BE a year, and that has increased to only 4 or 5 in recent years. These numbers are just too low to constitute a statistical sample large enough to reflect the trend accurately. In fact, amazingly, it does actually show a statistically significant trend ($p = 4 \times 10\text{-}4$). This demonstrates the power of hawk watch counts. A species as rare as 3 hawks/yr on average can show a statistically significant trend, if the trend is strong enough.

It is a little mysterious that the BEs are not coming out to the island in greater numbers. The classic reason for relatively low numbers of accipitors and buteos in migration on the island is that they do not like to cross water (Kerlinger 1989). While the reasons for this have not been studied, it is reasonable to assume that the lack of thermals and the presence of hazards such as weather and predation of smaller hawks contribute



to this avoidance. BEs, in other situations, show no hesitancy to cross water and, if anything, are attracted to breeding sites around inland lakes, estuaries, and coast lines, up to and including large water bodies such as the Chesapeake Bay. Breeding BEs have been increasing on Long Island in recent years. Grover (Grover, Lamont, and Scheibel, 2015) report five known nesting locations on the Island, with several more suspected. So, we are left with the hypothesis that, although the waters of Long Island Sound and the bays and inlets along the south shore of Long Island offer attractive habitats for BEs, during migration BE avoid crossing LI sound and other large water bodies to some extent.

Taking a broader look at the region, and trying to compare patterns for BE trends among the regional sites, I constructed a table (page 29) that includes all the regional sites previously mentioned, plus Cape May (CM) and Hawk Mountain (HwkMtn), as references.

The contents of the cells are z-scores, which are based on the mean and standard deviation of the total BE counts unadjusted for coverage. The z-score for a particular year relates to how the BE count for that year compares to all other years at that particular site. All sites have 33 years of data, except QR, which has 31 years and estimated numbers for '96. Negative z-scores occur in years when the count was below the mean, and positive scores occur in years when the count was above the mean. Furthermore each cell is shaded. The lowest 20% (statistically) of the counts for a site are darkest, the highest 20% are white, and the three middle groups have gradations of shading from dark to white. So just sweeping your eyes down the chart you can see a change from dark in the early years to white in recent years. Clearly, there is a pronounced increase over the years at all watches, with some raggedness particularly in the FI data. The column LH*, is the Lighthouse Point data truncated down to the same days of coverage as that of FI in the same year. Comparing FI to LH* you can see that the trend is consistent at LH* but ragged at FI due to the very small number of BEs that venture out to Fire Island.

My Questions—Do any of you have answers?

1. When will the growth curve level off? Obviously when the available niches are filled. But how long, and when will that take place?

2. Compared to pre-colonial times, are there more niches available now, or fewer? How about more recently, 1800's, pre-DDT? Why?

[Notes: DDT was discovered to be insecticidal in 1939. Hawk Mountain averaged 48 BE/yr for 1934-1942, and 325/yr for 2007-2015]

I would like to take this opportunity to request your thoughts on resolving these Questions. You can email me (dpanko@pipeline.com) or the editor of this newsletter (TB, merlin@pipeline.com). A copy of this column (in color!) can be accessed on line at www.battaly.com/nehw/2015/panko . We will do our best to publish your best thoughts online and/or in next year's NEHW newsletter.

Osprey

What about that other large, fish eating raptor that occupies the Northeast with Bald Eagles—the Osprey? It also was decimated by DDT and since the '70's has been reoccupying its historic nesting areas.

The published and anecdotal descriptions of the breeding population of Osprey is very encouraging and every bit as good as the reports of the Bald Eagle's nesting sites.

Here is an email I received this spring:

From: Milan Bull Date: 6/7/16

The Connecticut Audubon Society is seeking additional volunteers to monitor the state's burgeoning Osprey population.

For anyone interested, here is the link to get started:

http://www.ctaudubon.org/2016/06/connecticut-audubon-needs-citizen-scientists-to-monitor-the-states-booming-osprey-population/#sthash.y3pSW71P.dpbs

Evidently Milan Bull, Senior Director of Science and Conservation at the CT Audubon Society, thinks that the nesting population of Ospreys in CT is "burgeoning".

BALD EAGLES

	FI	LH	LH*	QR	HM	MP	MC	CM	HwkMtn	
1983	-1.34	-0.95	-0.93		-1.08	-0.74	-1.24	-1.09	-1.35	
1984	-1.34	-0.94	-0.94		-1.04	-0.80	-1.22	-1.11	-1.20	
1985	-0.85	-0.95	-0.96	-1.12	-1.10	-0.80	-1.13	-1.10	-1.23	
1986	-0.85	-0.81	-0.85	-0.93	-0.91	-0.62	-1.02	-0.93	-1.07	
1987	-0.85	-0.70	-0.71	-0.93	-0.83	-0.77	-0.91	-0.96	-0.99	
1988	-0.37	-0.88	-0.87	-0.94	-0.87	-0.54	-1.02	-1.03	-1.06	
1989	-1.34	-0.78	-0.82	-1.09	-0.89	-0.80	-1.17	-1.06	-1.01	
1990	-1.34	-0.76	-0.73	-0.95	-0.95	-0.74	-0.92	-0.91	-0.89	
1991	-1.34	-0.77	-0.77	-1.08	-0.89	-0.65	-1.11	-1.01	-0.94	
1992	1.09	-0.85	-0.85	-0.91	-0.55	-0.54	-0.79	-0.78	-0.76	
1993	0.12	-0.55	-0.52	-0.35	-0.72	-0.80	-0.57	-0.90	-0.85	
1994	0.60	-0.63	-0.62	-0.84	-0.62	-0.57	-0.64	-0.51	-0.84	
1995	-1.34	-0.53	-0.53	-0.49	-0.22	-0.57	-0.31	-0.43	-0.37	
1996	0.12	-0.63	-0.65	-0.30	-0.34	-0.51	-0.44	0.44	-0.51	
1997	-0.37	-0.43	-0.43	-0.31	-0.55	-0.45	-0.08	0.10	-0.37	
1998	1.57	-0.41	-0.35	0.05	-0.55	-0.51	-0.25	-0.41	0.18	
1999	1.09	-0.27	-0.21	-0.17	-0.40	-0.36	0.94	-0.27	0.10	
2000	0.60	-0.38	-0.37	-0.55	-0.11	-0.18	0.51	-0.46	-0.03	
2001	0.60	-0.67	-0.62	-0.56	0.33	-0.60	-0.33	0.12	-0.05	
2002	-0.85	0.07	0.10	-0.51	-0.09	-0.18	-0.63	-0.16	0.62	
2003	-0.37	-0.34	-0.38	-0.83	0.14	-0.33	0.29	-0.18	0.48	
2004	1.57	0.18	0.19	-0.10	0.23	-0.18	0.75	0.01	0.35	
2005	-0.37	0.92	0.82	0.23	-0.03	0.06	0.18	0.31	0.11	
2006	1.09	0.76	0.63	0.15	0.14	-0.15	0.98	0.77	0.21	
2007	1.57	0.06	0.01	1.16	0.08	0.36	0.77	0.40	0.66	
2008	0.12	1.17	1.12	0.91	0.42	0.33	0.59	0.45	0.68	LOW
2009	-0.85	1.10	1.06	1.20	1.24	0.44	-0.12	1.57	0.32	
2010	-0.37	0.39	0.44	2.04	1.56	1.75	1.91	1.74	2.03	
2011	0.12	0.60	0.62	0.83	0.54	1.19	0.96	1.27	1.23	
2012	0.12	2.17	2.19	2.08	1.41	2.97	2.27	0.63	1.58	
2013	1.09	1.43	1.41	1.22	1.94	2.64	0.83	1.63	1.78	
2014	1.09	3.06	3.09	1.68	2.10	1.46	2.04	2.72	2.13	HIGH
2015	1.57	1.30	1.44	1.41	2.61	1.19	0.89	1.17	1.05	
	FI	LH	LH*	QR	HM	MP	MC	CM	HwkMtn	

FI: Fire Island, LH: Lighthouse Pt, QR: Quaker Ridge, HM: Hook Mt, MP: Mt Peter, MC: Montclair, CM: Cape May, HwkMtn: Hawk Mt

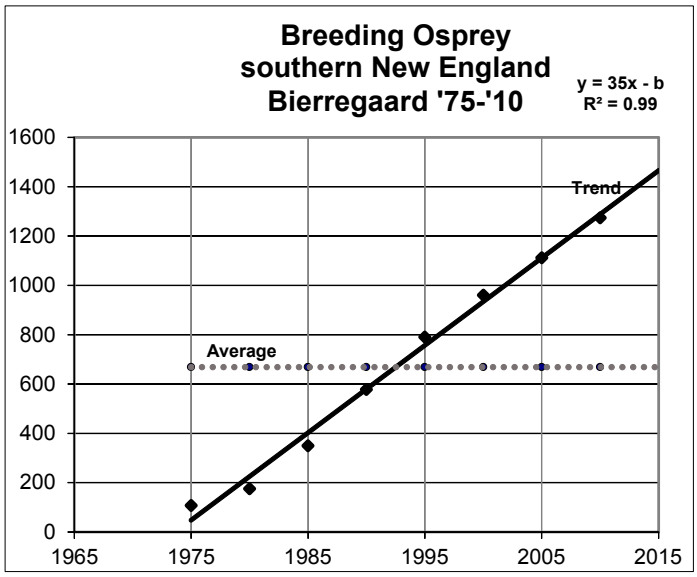
	OSPREY								
	FI	LH	LH*	QR	HM	MP	MC	CM	HwkMtn
1983	-2.20	-1.26	-1.34		-1.19	-0.41	0.16	-1.28	-1.03
1984	-1.70	-0.89	-1.07		-0.65	0.59	0.14	-0.76	-0.04
1985	-1.17	-0.44	-0.55	-1.68	-1.94	-1.14	-0.28	0.10	-1.42
1986	-1.46	-0.08	-0.11	0.09	1.05	1.36	1.85	0.47	1.69
1987	-0.36	0.59	0.74	2.26	1.19	0.80	2.41	1.91	0.67
1988	0.03	1.05	1.13	0.44	-0.24	1.64	0.72	0.00	0.20
1989	-0.28	2.89	2.76	0.47	2.17	-1.30	0.45	0.41	1.38
1990	-0.56	2.51	2.55	2.35	0.78	1.75	1.85	-0.76	2.28
1991	-0.18	1.73	1.95	-0.75	1.20	-0.65	0.02	-1.08	0.17
1992	-0.37	0.44	0.59	-1.03	1.47	-0.37	-0.89	-1.09	-0.42
1993	0.21	2.05	1.74	-0.44	-0.46	0.54	0.02	-0.94	0.92
1994	-0.63	-0.11	-0.41	-1.11	-0.42	-0.74	-0.55	0.22	-0.86
1995	0.47	-0.18	-0.22	0.14	-0.68	-0.97	-0.40	1.93	-0.92
1996	-0.51	-0.21	-0.24	-1.59	-0.89	-0.51	-1.25	2.95	-0.13
1997	-0.54	0.30	0.32	0.05	0.09	1.22	-0.40	1.38	0.63
1998	0.99	-0.04	-0.05	1.74	-0.35	-0.62	0.17	0.20	0.23
1999	0.82	-0.09	-0.06	0.17	-0.20	1.71	1.41	-0.21	0.77
2000	0.24	-0.69	-0.70	-1.08	-1.04	-1.42	0.18	-0.66	-0.72
2001	0.76	-0.82	-0.80	-0.55	0.28	-1.23	-0.45	-0.85	-0.09
2002	-0.10	-0.34	-0.30	-0.09	0.75	0.63	0.42	-0.56	0.96
2003	0.42	-0.35	-0.39	-1.54	-0.85	0.52	0.01	-0.60	0.76
2004	-0.69	-0.60	-0.56	0.10	-1.64	-0.88	-0.43	-0.65	0.70
2005	-0.45	-0.50	-0.44	0.49	-0.34	-0.67	-0.74	-0.25	-0.83
2006	-1.30	-0.05	-0.11	1.17	0.14	0.12	1.32	-0.20	0.72
2007	1.06	-0.49	-0.43	0.97	0.89	1.15	1.29	-0.86	1.06
2008	1.88	0.30	0.34	0.66	-1.27	-0.97	-0.50	-1.32	-0.87
2009	-0.30	-0.69	-0.78	0.03	-0.31	0.40	-1.43	-0.13	-1.03
2010	2.32	-0.60	-0.56	0.03	0.82	1.03	-0.24	1.34	0.59
2011	-0.03	-0.83	-0.78	-0.26	0.38	0.66	-0.61	-0.12	-0.95
2012	1.43	-0.58	-0.49	-0.23	1.81	0.75	-0.28	-0.01	-0.07
2013	0.35	-0.98	-0.95	-0.70	-0.14	-0.81	-1.97	0.23	-1.49
2014	1.12	-0.43	-0.29	-0.08	-0.97	-1.11	-0.65	0.77	-0.89
2015	0.72	-0.62	-0.50	-0.04	0.53	-1.04	-1.34	0.42	-1.96
	FI	LH	LH*	QR	HM	MP	MC	CM	HwkMtn

FI: Fire Island, LH: Lighthouse Pt, QR: Quaker Ridge, HM: Hook Mt, MP: Mt Peter, MC: Montclair, CM: Cape May, HwkMtn: Hawk Mt

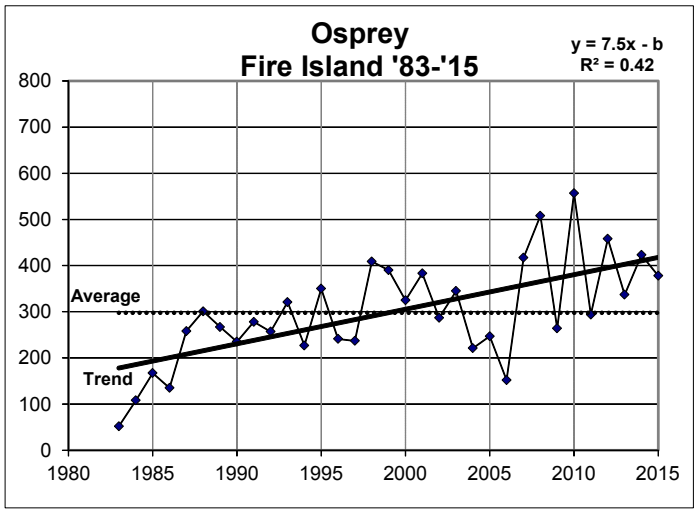
LOW

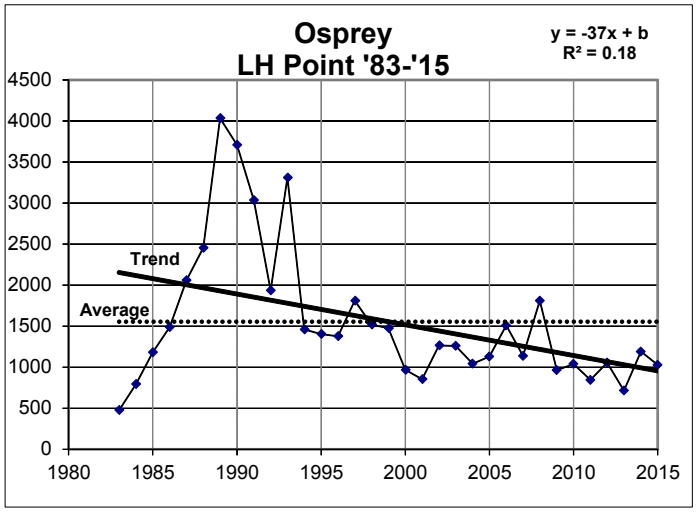
HIGH

Even more convincing are the numbers of breeding pairs cited by Bierregaard in his recent paper (Bierregaard, 2014b). Using the data from his Table #1 we get a graph with a decidedly increasing trend.



From the chart on page 28 the trend in OS numbers from 1983 to present is decidedly mixed. The only site to show a reasonably consistent increase is Fire Island.





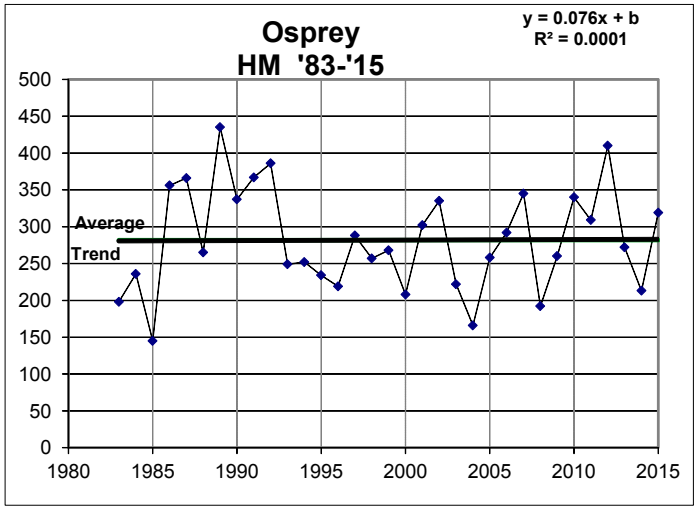
Having prepared OS graphs for the regional sites last winter, I wondered about these success stories. I knew that some hawk watch sites were not seeing increases. I then prepared a regional comparison table for OS, using the same regional sites, plus Cape May and Hawk Mountain.

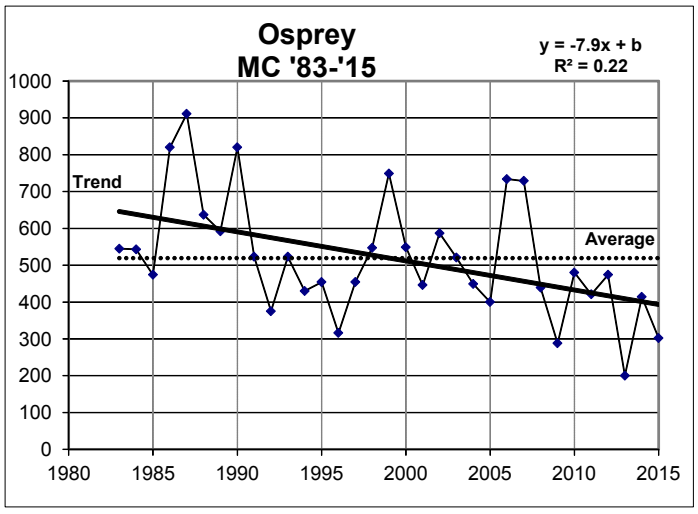
And its increase is not exponential growth, typical of a species moving into vacant habitat, but a moderate linear increase. And it does not jibe with Lighthouse Point, its sister coastal site.

In '89, '90, and '93 Lighthouse Point counted more than 3000 OS/year. Compare that to the numbers from 2010-2015, which are all below 1200 OS/year, obviously a decrease. Now, compare this decrease with the increases seen at Fire Island and Beiregaard's nesting data.

The steady numbers recorded at HM, QR, and MP are typical for inland sites with MC's decline mirroring Lighthouse Point's.

After seeing the neat picture of an increasing species such as the BE reflected in the metro-regions' hawk watch counts, what is happening with the OS? If we are going to claim that hawk watch counts track species' populations, we'd better be able to account for the anomalous counts seen with the OS.





OS do have a migration pattern different from most other raptors. They are obligate long-distance migrators, with adults migrating first and females before males (Kerlinger, 1989 and Martell, 2001). Their young often take off for extended post-breeding wanderings, only to suddenly get the message and take off directly for their South American wintering grounds (http://robbierregaard.org/OspreyMainPage.html). They manage long, over-water movements (Kerlinger, 1985) and, some proportion have been observed migrating at night (Kjellén et al. 2001; Alerstam et al. 2006, DeCandido, email, 2004). At Fire Island we've had very high (for the barrier beach) flight days of 80+ OS/day from 9/10 to 10/5, a particularly wide range of dates for peak days. And while we see them soaring regularly, both along the coast and inland, they also occur on the windy overcast days and times of day when soaring is not optimal—they show up on good weather days and bad, which may be related to their fly-and-forage migration strategy (Strandberg and Alerstam, 2007). But none of these unique characteristics would explain why and how the breeding population of OS in the northeast can be increasing while their counts at hawk watches are, at best, staying the same while decidedly decreasing at some (LH and MC).

There is one interesting difference between the pre-'70's population of Ospreys and the post 90's population pointed out by Bierregaard (Poole,1989 and Bierregaard, 2014a). The distribution of the Ospreys were different. Much of the pre-'70's population was very concentrated in a few places: Gardiner's Island and Shelter Island in NY, Narraganset and Mount Hope Bays in RI, and the CT River estuary. The post-DDT population is spread out much more uniformly, without large colonies. But again I do not see how this would lead to a failure of hawk watch counts to detect an increasing population.

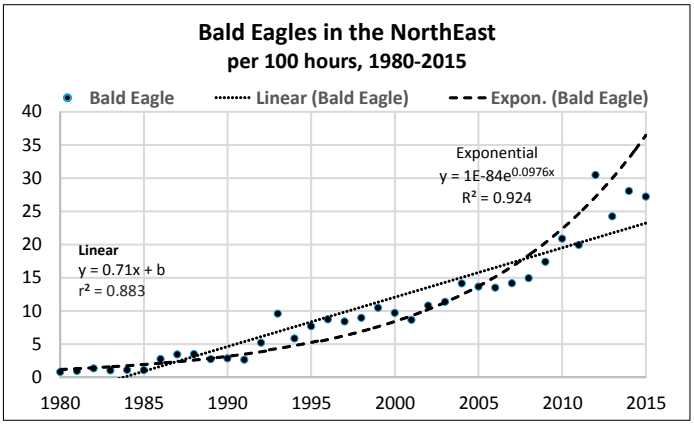
I can't see how we can deny the increase in Osprey breeding in the Northeast. Nor can we deny that OS counts at five of the six metropolitan sites clearly do not show an increase in migrants. The Fire Island counts can be accounted for if we assume that most of the birds counted at Fire are local breeders on Long Island, perhaps with a few coming down the Massachusetts-Martha's Vineyard-Block Island pipeline. But the steady or decreasing counts at the other watches must be explained by a distinct change in the migration path, or timing, of Osprey from the mid-90's. Has there been a consistent change in the weather/wind since then? Or has the species' migration strategy changed?

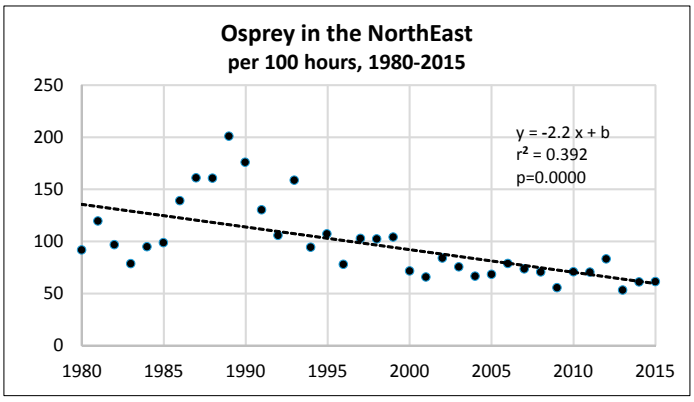
Again I would like to request the thoughts of the readers of this column for their best ideas on resolving this contradiction. You can email me (dpanko@pipeline.com) or the editor of this newsletter (TB). A copy of this column, in color, and with references, can be accessed on line at www.battaly.com/nehw/2015/panko We will do our best to publish your best thoughts online and/or in next year's NEHW newsletter.

Acknowledgements:

This article would not have been possible without hawkcount.org, which is a project of the Hawk Migration Association of North America. Thanks to the compilers and data entry folks from each watch site, including but not limited to, Judith Cinquina (Mount Peter), Steve Mayo (Lighthouse Point), Wayne and Else Greenstone (Montclair), Trudy Battaly (Hook Mountain.), Joe Zeranski and the Greenwhich Audubon Center (Quaker Ridge), Hawk Mountain Sanctuary and Laurie Goodrich (Hawk Mountain), Dave Mizrahi and the Cape May Bird observatory (Cape May), and all the great watchers and good friends at the Fire Island Hawkwatch. For a list of references, see www.battaly.com/nehw/2015/panko.

Editor's Note: Inspired by Drew's comparison of Bald Eagles and Osprey, I graphed the NEHW history for these species for the whole NorthEast. Check out how close these trends are to Drew's metro region observations. TB






Sharp-shinned Hawk. Drawing by Paul Carrier

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Poquonock, CT 06064
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Osprey. Photo by Vic Berardi