

# **Brockway Mountain Hawk Watch**

## **Summary for Spring 2015 Hawk Count**

Conducted by

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Sponsored by

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## **Introduction**

In 2010, Copper Country Audubon and Laughing Whitefish Audubon launched the Keweenaw Raptor Survey (KRS), a three-year survey at Brockway Mountain (Copper Harbor, Michigan) to study spring raptor migration in the Keweenaw Peninsula (Haas & Gayk 2010). Results from the 2010 through 2012 surveys have been published in previous reports (Henschell 2010, Green 2011 & 2012). It is important to note that there have been informal as well as more systematic counts (Peacock, 1992) undertaken on Brockway over the years. Subsequently, strong local interest lobbied to continue the count on Brockway Mountain and with the continued support of Copper Country Audubon along with Copper Harbor Birding, a spring hawk count was continued from West Bluff as the Brockway Mountain Hawk Watch in 2013, 2014, and 2015. This report is the summary results of the sixth season of systematic counting on Brockway Mountain.

## **The Count**

Systematic counts were conducted daily from 16 March to 15 June, 2015 (the “count season”) from West Bluff (the “count site”), a vantage point on Brockway Mountain located at N47.46399, W87.969541 (approximately 4 miles west of the town of Copper Harbor) and stationed 1328 feet above mean sea-level and approximately 728 above the average surface elevation of Lake Superior. The defined survey count period each day (the “survey period”) is as follows: 15 March thru 31 March, 0900 – 1500 EST (Eastern Standard Time); 1 April thru 31 May, 0800 – 1600 EST; 1 June thru 15 June, 0800 – 1400 EST.

This year was more of an average spring and pleasantly mild compared to the last two years. Unlike last season poor weather or technical difficulties only resulted in seven days of the count being missed with surveys conducted on 86 of a possible 93 count days in the season (with raptors recorded on seventy-nine of the 86 days counted) accounting for a total of 580.75 count hours.

Sightings were posted rather sporadically to the web-blog ([brockwayhawkwatch.org](http://brockwayhawkwatch.org)) and the new facebook page with daily updates made to the HMANA site ([hawkcount.org](http://hawkcount.org)).

In addition to the principal counter, substitute counters this year were Joseph Youngman and Debra Mues. As in preceding springs, a count shelter was erected on-site for temporary relief from cold, wind and rainy weather conditions.

## **Species Accounts**

A standardized hourly count for all species of diurnal raptors (i.e., birds belonging to orders *Accipitriformes* and *Falconiformes* with appropriate changes in taxonomic order applied) was conducted in accordance with protocols defined by HMANA (Hawk Migration Association of North America) 2006

and Haas & Gayk 2010. Where any potential ambiguity existed between protocols, Haas & Gayk 2010 was used. As aids to field identification, Sibley 2000, Wheeler 2003, Liguori 2005 and Clark 2001 (for aging Bald Eagles) were used. Eastbound and westbound raptor flights were recorded on separate data forms (with weather data and observer details on a third sheet).

Over the course of the spring 2015 survey, 9,187 eastbound raptors of 17 species (Appendix B.1) and 2,040 westbound raptors of 16 species (Appendix B.2) were observed migrating past the count site. Unlike a year ago when most species were recorded in average numbers, the totals for this year were near or at all time lows. No species set new high counts this season. Appendix A at the end of the report summarizes the results for all raptor species. Appendices G.1 and G.2 compare the six seasons of the official count by year and by month.

### **Turkey Vulture (*Cathartes aura*) “TV”**

In all, 732 eastbound TVs were recorded this spring; Over a thousand less than last year and setting a new season low count. The first TV this spring was recorded April 2<sup>nd</sup>, slightly later than the six year average of March 31. The biggest flight was 55 on April 15, which is at the early end of the broad migration window for this species and fell well below the six year average high of 100. While May was the busiest month for vultures it only topped April by ~100 birds thus running a mid-line between the KRS years when April recorded the highest totals for this species and in 2013 and 2014 when May had a higher total. Although I'm sure the later springs the last two years played a role in the later flights. The eastbound tally made up about 12% of the overall number, the 246 westbound vultures made up about 12% of that flight as well.

### **Black Vulture (*Coragyps atratus*) “BV”**

The one Black Vulture recorded on May 31 represents the third record for the count. Interestingly all have occurred on odd years.

### **Osprey (*Pandion haliaetus*) “OS”**

Osprey totals for the six years of the official count have been all over the map with this year's total of 33. The second lowest total on record and well below the six year average of 68. The first Osprey seen was April 19, about a week behind the average date of April 14. The season high-mark of 5 seen on May 7, perhaps a typical peak time but again with such variation in yearly totals, this determination is a bit difficult. The species year to year moves throughout the month of May in fairly consistent numbers with about 81% of the overall total this year seen in that month. Fifteen westbound Ospreys were seen, a not too different tally as the last two years, surprising given the near record low count.

### **Golden Eagle (*Aquila chrysaetos*) “GE”**

The 24 Golden Eagles this season is only one bird above the all time low set in 2011. This total is well below the six year average of 42, but on par with the KRS seasonal totals. As has been stated before with regards to this species, the early date is artificial with migrants presumably coming through before the beginning of the count. However, the first sighting this spring of March 19 is on par with the six-year average of March 18. The peak flight was the 5 seen April 25. This peak falls late in the broad pulse of migration from mid-March to early May with nearly 60% seen in April, the largest percentage for any one month. The last east-bound individual was seen May 6. Eighteen west bound individuals were recorded between March 19 and May 28, with the late date tying the latest recorded date for the six years of the official count. The breakdown with regards to age class for eastbound eagles was 8 juveniles, 10 sub adults, and 6 adults.

### **Northern Harrier (*Circus cyaneus*) “NH”**

Surprisingly, Harriers did not have a record low year! However the total of 95 is the third lowest season total for the count and a bit below the six year average of 116. Early arrival dates for this species are greatly affected by the openness of the spring with first dates recorded from as early as mid-March to as late as mid-April; this year's date of April 2 landing in the middle of that time frame. The peak passage was 27 tallied May 7, later than on a typical year and even later than last year. The bulk of the migration was more or less evenly split between

April and May unlike previous seasons when the largest passage was clearly during April, further confirming the weather affect on the migration of this species. The age/sex breakdown for eastbound migrants was as follows: 10 juveniles, 20 females, 14 males, 39 brown individuals (birds clearly not adult male but too distant to separate juvenile from adult female) and 12 of undetermined age or sex.

### **Sharp-shinned Hawk (*Accipiter striatus*) “SS”**

This season's count of 1,310 is the second lowest season total of the count and below the six year average of 1,848, but is well above last season's low of 864. The earliest was recorded March 27, similar to the arrival dates for 2011, 2013, and 2014, but about a week and a half later than the early springs of 2010 and 2012. Even given the lack of good migration days, the peak flight of 464 on May 7 is on the late end of the peak migration window from late April into early May. The largest number by month was seen in May with 76% of the entire flight recorded in that time frame. 146 westbound Sharp-shinneds were recorded this spring, accounting for 7% of the westbound flight. The breakdown of those individuals assigned to an age class was strongly skewed towards adult with 91% recorded as such. Looking at previous seasons, 2014, 2013 and 2012 also show a similar breakdown of ages in Sharp-shinneds while 2011 shows a larger proportion of individuals aged as juvenile although not nearly as disproportionately. Sharpies were not assigned ages in 2010.

### **Cooper’s Hawk (*Accipiter cooperii*) “CH”**

Two Cooper’s Hawks were seen this spring, well below the six year average of 13 and beating the previous low of 7 set in 2011. The early arrival date of April 12 lands exactly on the six year average of April 12.

### **Northern Goshawk (*Accipiter gentilis*) “NG”**

The 16 Goshawks recorded this spring is a new record low but only marginally below those years of the KRS and the six year average of 21. The recorded arrival dates for this species have varied only by a few days since 2010, ranging from March 15 to March 19. This year’s date of March 19 is in keeping with that trend. Most were seen in the month of April with a peak flight of three noted March 19. Seven westbound Goshawks were seen this spring accounting for .003% of the westbound total. The age designation of east-bound Northern Goshawk was 11 juveniles and 5 adults.

### **Bald Eagle (*Haliaeetus leucocephalus*) “BE”**

Bald Eagles had a down year with 749 total, ending the upward trend from 2012-2014. This seasons total is the second lowest on record and well below the six year average of 1,061. Truly the symbol of this hawk watch, they were seen migrating throughout the entire count period and were recorded on 58 of the 71 days when a count was conducted and raptors were recorded. The largest single tally was the 61 eagles seen April 2. The bulk of this seasons flight was split between April (35%) and May (36%), while March and June had about even numbers with 14% and 16% of the season totals respectively. This is atypical as in years with late or even average springs the main flight is in April while open springs like 2010 and 2012 migration peaked during March. While the eastbound flight accounted for about 8% of the overall numbers, the westbound tally of 355 eagles was almost 17% of that movement. The age class breakdown this year was as follows: 28 juveniles (3%), 389 sub adults (51%), 300 adults (40%) and 55 (7%) of unknown age.

### **Red-shouldered Hawk (*Buteo lineatus*) “RS”**

Red-shouldereds were seen in about average numbers with the 15 recorded landing in the mid-range of the totals for the six years of the count. The first was seen April 12, about two weeks later than the average date of March 28. Peak migration was in May with 10 recorded. This is atypical compared to other seasons and in fact in two of those seasons there was not a single Red-shoulder recorded after the end of April. Furthermore, for the six years of the official count, there is yet to be a Red-shouldered encountered in the month of June. Two westbound Red-shouldereds were recorded accounting for .0009% of that flight. The age breakdown for the season was 7 juveniles and 8 adults.

### **Broad-winged Hawk (*Buteo platypterus*) “BW”**

A total of 4,636 eastbound Broad-wings were observed this season, which represents about 50% of the entire flight for 2015 and is well below the six year average of 10,230. The peak flight was 637 on May 7, one of the lowest one-day tallies of the six years and well below the all time high of 2,098 from last season. The first Broad-wing was seen April 15, just a few days before the average arrival date of April 17. As with other seasons, the largest portion of the overall flight came through in May; the 3,351 seen in that month making up about 72% of the final count. June featured a nice flight for the end of the season with 34% of the season total recorded in those two weeks. The age breakdown was as follows: 3,346 (73%) adults, 817 (17%) juveniles and 473 (10%) of undetermined age. Among the juveniles tallied was a dark-morph individual, one of the more unexpected but better highlights of the season. Eight hundred-seven westbound Broad-winged's only made about 40% of the westward tally, well below the 68% from last spring.

### **Swainson's Hawk (*Buteo swainsoni*) "SW"**

Two eastbound Swainson's Hawks were seen this year which is a new low and below the six year average of 5. Both of this season's individuals occurred on May 4, this arrival date is a bit tardier than the April 29 average. Both westbound individuals were seen on May 6 and made up .0009% of the westbound total. In terms of age and morphology the two east bound birds were one adult light-morph and one adult dark-morph while the west bound birds were both adult light-morphs.

### **Red-tailed Hawk (*Buteo jamaicensis*) "RT"**

The 937 individuals recorded this spring stands as the third lowest total of the six years and below the six year average of 1,220. The early arrival date was March 24, similar to first dates in 2010 and 2012. The bulk of this seasons flight occurred in April with 55% of the season total recorded in that month, including the season high count of 245 on April 12. Age characters were recorded as such: 743 (80%) adults (8 dark-morphs), 134 (14%) juveniles (2 dark-morphs) and 50 (6%) of unknown age (1 dark-morph). The 207 westbound Red-tails made up just over 10% of that total.

### **Rough-legged Hawk (*Buteo lagopus*) "RL"**

When looking at previous seasons, we see considerable variation in the totals for Rough-legs year to year so it was a pleasant surprise that the 211 recorded this spring is in fact slightly above the six year average of 195! The earliest recorded was March 19 which is slightly ahead of the six year average of March 22. The largest single flight was 80 on April 12 which is well ahead of the average peak window which is during the last week of April into early May. Most were seen in April with the 109 recorded representing 51% of the entire flight. Broken down to color morphs, 158 (75%) were light- morphs and 30 (14 %) were dark-morphs. Of those aged, 12 were juveniles, 41 were adults and 155 were of unknown age. Fifteen westbound Rough-legs were recorded this spring accounting for .007% of the west bound total.

### **American Kestrel (*Falco sparverius*) "AK"**

This seasons total of 83 is below the sixth year average of 116, but on par with the KRS years of the count. First arrivals for Kestrels are also affected by the lateness/earliness of the spring with dates ranging from March 17 to April 16; this year's arrival date of April 6 is near the middle of that window. The largest flight was the 19 Kestrels seen May 7, a typical time frame for the peak of migration with 59% of all Kestrels seen in the month of May. The breakdown as to sex was 26 females (33%), 29 males (52%) and 28 of unknown sex. Fifteen westbound Kestrels were noted this spring accounting for .007% of the westbound total.

### **Merlin (*Falco columbarius*) "ML"**

The nineteen Merlins tallied this year is below the six year average 32. The April 2 arrival date is nearly a week later than the six year average date of March 26. This species does not show a particularly strong peak of migration with sightings scattered throughout the spring but a high count of 5 was seen on May 7. 51% of the season total was seen during May. Six brown (female or immature) individuals were noted along with 10 adult males and 3 of unknown designation. Eight westbound Merlins were recorded this spring although in some instances, these may have been local breeders.

## **Peregrine Falcon (*Falco peregrinus*) “PG”**

Peregrines came through slightly below average numbers this spring with the 33 counted just a bit off the six year average of 39. The May 3 arrival date is some two weeks behind the April 15 average. 90% of the season total occurred in May with the single biggest flight happening on May 7 with 16 individuals recorded (nearly 50% of the season total), the third largest single-day tally ever for the count. The age breakdown was 31 adults, 1 juveniles and 1 of unknown age. Three westbound Peregrines were recorded this spring accounting for .001% of that tally.

## **Unidentified Accipiter “UA”, Unidentified Buteo “UB”, Unidentified Falcon “UF” Unidentified Eagle “UE” & Unidentified Raptor “UR”**

3 UB, 3 UE, and 192 UR were recorded going east-bound this year

## **Non-raptors**

In addition to the standardized raptor counts, daily simultaneous counts were conducted for all other bird species that were detected visually or aurally during the count season in accordance with KRS protocol (Haas & Gayk 2010). A tabulation of the first and last observation for non-raptor species recorded at West Bluff during the survey period is presented in Appendix C. The maximum daily count with date of peak occurrence is supplied in this table. Season totals are provided for all species, but it is important to use discretion in interpreting them, recognizing that some totals are closer to true values (Canada Goose, Sandhill Crane), and detected individuals are not necessarily unique as there is no guarantee that they were not observed subsequently. (Appendix F is presented as the daily estimated total (DET) for all 78 species encountered in 2015.)

Overall, 61 additional bird species were recorded on Brockway Mountain this spring with 8,375 migrants and resident individuals noted. Significant numbers of migrants included 7,011 Canada Geese, 224 Common Loons, 252 Sandhill Cranes, and 28 American White Pelicans. Most interesting was a good showing of redpolls in March including a Keweenaw record single flock high count of 14 Hoary Redpolls on March 25. Rare and vagrant bird species seen in Copper Harbor included a Night-Heron sp., Eurasian Collared Dove, and a pair of Orchard Orioles in mid June.

## **Weather**

Weather measurements, including wind speed, wind direction, temperature, barometric pressure, percentage of sky covered by cloud-form, visibility, and precipitation type (e.g., haze, rain, snow) were taken at the top of each count hour throughout the count season. These measurements provide atmospheric context for the migration observed each count day. A summary of these variables is presented as Appendix D reworked a bit from previous seasons to give a more complete picture of the weather on any given day.

For the most part 2015 was milder then the previous two springs. March was probably average in terms of both precipitation and temperatures with daytime temps at or slightly below freezing. Seven days of March recorded a dominant wind out of the north, while 6 days recorded a dominant wind out of the south. Two days recorded snow and 6 days recorded fog or haze. Two days of the count were missed due to weather and technical difficulties.

April overall was noticeably warmer then last season with daytime temperatures staying above freezing after the first week and reaching a high of 17°C by the middle of the month. Northerly winds were dominant on 16 days of the month, while 6 days recorded a dominant wind out of the south. Two days of the month recorded snow, and seven days recorded fog, haze, or rain. Two days of the month had no count due to inclement weather. The west drive up to the mountain cleared off by the middle of the month and the entire road was clear by the end of the month.

May continued the warming trend with no days recording temperatures below freezing for the entire month, the

low for the month was 1°C on May 10 and the high for the month was 26°C on May 24. Thirteen days had a dominant wind out of the north, while 9 days recorded a dominant wind out of the south. Snow was not recorded during the month of May, six days recorded rain and 11 days recorded fog or haze. Three days of the month had no count due to inclement weather.

June was about average with temps in the upper teens and low 20's. Six days had a dominant wind out of the north while seven days recorded a dominant wind out of the south. Four days recorded rain and 10 days recorded fog or haze. Blackflies hit the mountain at the start of the month and maintained a noticeable presence through the end of the count.

Compared to 2013 and 2014 this was a mild spring, as such there isn't an obvious excuse as to why this season set a new record low mark for the count. With most species at low or record low numbers the decline was even across the board which makes it more difficult to place the blame on any one point in the season or species. If one subscribes to the theory of a 4-5 year population cycle in raptors (roughly associated with rodent populations) then one shouldn't be that surprised by the low count this season. Weather to the south of us could have also played a role by directing the birds east or west of the Keweenaw. Continued counts on Brockway will provide more insight into whether this was a off year or if this is a long-term downward trend.

## Visitors

Unlike 2013 and 2014, the west drive to the mountain opened up to cars by the middle of April, resulting in a steady stream of tourists that continued to increase through the end of the season. The vast majority of which were deeply concerned about the lack of a gift shop on the mountain. Calvin described it best in last season's report; "(they) seemed to be overly interested in the fact that the old gift shop had been removed from the top of Brockway. Somehow, I was the perceived resident expert on why the building was no longer standing as this was my most-frequently-asked-question. Most of these people seemed to have but a trifling interest in what I was doing". Light numbers of birders made it to Brockway during this spring, notably absent though were nearly all of the big name birders in the UP.

## Acknowledgements

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Most appreciative thanks go to all those individuals directly involved in the day-to-day mechanics of the count without which there would be no hawk watch. These include the substitute counters: Joseph Youngman and Debra Mues. A most gracious thank-you to you! Also, many thanks go to Karen Karl for her ever cheerful help and support throughout the spring and Debra Mues for organizing substitute counters as well as her infectious enthusiasm. Many thanks as well go to Bill & Bonnie Degowski for their continued generosity, technical support, and pasties. And to the town of Copper Harbor which has to be one of the friendliest towns in Michigan.

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**APPENDIX A: Migrant Raptors – Brockway Mountain, Spring 2015.**

<b>SPECIES</b>	<b>FIRST</b>	<b>MAX</b>	<b>MAX DATE</b>	<b>LAST</b>	<b>E. TOTAL</b>	<b>W. TOTAL</b>
Turkey Vulture	2 Apr	49	1 May	15 Jun	797	246
Black Vulture	31 May	1	31 May	31 May	1	1
Golden Eagle	19 Mar	5	25 Apr	27 May	24	18
Osprey	19 Apr	7	17 May	8 Jun	33	15
Northern Harrier	19 Mar	21	12 Apr	31 May	95	19
Sharp-shinned Hawk	28 Mar	462	7 May	15 Jun	1312	146
Cooper's Hawk	12 Apr	1	multiple dates	13 Jun	3	0
Northern Goshawk	19 Mar	3	19 Mar	24 May	16	7
Bald Eagle	18 Mar	64	2 Apr	15 Jun	772	355
Red-shouldered Hawk	12 Apr	2	multiple dates	24 May	15	2
Broad-winged Hawk	15 Apr	637	7 May	15 Jun	4,636	807
Swainson's Hawk	4 May	2	4 May	6 May	2	2
Red-tailed Hawk	24 Mar	245	12 Apr	15 Jun	937	207
Rough-legged Hawk	19 Mar	80	12 Apr	31 May	211	15
American Kestrel	6 Apr	19	7 May	3 Jun	83	15
Merlin	2 Apr	5	7 May	13 Jun	19	8
Peregrine Falcon	12 Apr	16	7 May	6 Jun	33	3
Unidentified Accipiter	-	-	-	-	0	0
Unidentified Buteo	14 Jun	3	14 Jun	14 Jun	3	1
Unidentified Falcon	-	-	-	-	0	0
Unidentified Eagle	30 Mar	3	30 Mar	30 Mar	3	0
Unidentified Raptor	26 Apr	86	3 May	6 Jun	192	28
<b>TOTAL</b>					<b>9187</b>	<b>1895</b>

