

# Brockway Mountain Hawk Watch

## Summary for Spring 2016 Hawk Count

Conducted by

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Sponsored by

**Keweenaw Bird Research Group**

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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. In 2016 the Keweenaw Bird Research Group took over the count in an effort to solidify the long term viability of the count. This report is the summary results of the seventh season of systematic counting on Brockway Mountain.

## The Count

Systematic counts were conducted daily from 18 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 15 June, 0800 – 1600 EST.

This spring was a bit cooler than last spring, but still nothing like the springs of '13 and '14. Poor weather or technical difficulties resulted in thirteen days of the count being missed (almost a week more than last season) with surveys conducted on 80 out of a possible 93 count days in the season (with raptors recorded on seventy-two of the 80 days counted) accounting for a total of 536.33 count hours.

Sightings were posted rather to the web-blog ([brockwayhawkwatch.org](http://brockwayhawkwatch.org)) and the 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, Debra Mues, Zachary Gayk, and Andrew Meyer. 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 2016 survey, 11,022 eastbound raptors of 16 species (Appendix B.1) and 2,603 westbound raptors of 15 species (Appendix B.2) were observed migrating past the count site. Unlike a year ago when most species were recorded in below average numbers, the totals for this year were average. 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, 866 eastbound TVs were recorded this spring; While only 69 more than last year it is enough to avoid setting a new season low count. The first TV this spring was recorded April 5, slightly later than the seven year average of April 1st. The biggest flight was 77 on April 17, which is at the early end of the broad migration window for this species. While April was the biggest month for vultures it only topped May by three 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 in 2013 and '14 played a role in the later flights. Like last spring the eastbound tally made up about 12% of the overall number, while the 235 westbound vultures made up about 11% of that flight as well.

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

Osprey totals for the seven years of the official count have been all over the map with this year's total of 21 tying the record low first set in 2011. This is well below the seven year average of 69. The first Osprey seen was April 19 (the exact same day as the first one last spring!), almost a week behind the average date of April 15. The day high count was 3 on May 6, perhaps a typical peak time but again with such variation in yearly totals, this determination is a bit difficult. The peak month for Osprey was May with 66% of the overall total this year seen in that month. Eight westbound Ospreys were seen. This is well below previous years, but not surprising given the record tying low count.

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

The 39 Golden Eagles this season falls somewhere in the middle, its not the record low of 21 set in 2011 and its not close to the record high of 81 set in 2013. Its not surprising than, that it's on par with the seven year average of 43. 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 on March 25 is late compared to the seven-year average of March 20. The peak flight was 5 seen April 14 and May 5. This peak falls late in the broad pulse of migration from mid-March to early May with 51% seen in April, and 33% seen in May. The last east-bound individual was seen May 11, while the last west bound individual was seen May 25. Sixteen west bound individuals were recorded between March 20 and May 25, with the late date this season just missing the late date for the seven years of the official count. The breakdown with regards to age class for eastbound eagles was 3 juveniles, 33 sub adults, 3 adults, and 1 unknown.

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

Northern Harriers had an above average spring with the 122 recorded this season a bit above the seven year average of 116 and a nice increase over last spring's 95. 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 10 landing in the towards the end of that time frame. The peak passage was 34 on April 14 and 36 tallied April 15 both of which represent new day high counts for the count! The bulk of the migration was in April with 80% of the season total passing by in that month. The age/sex breakdown for eastbound migrants was as follows: 1 juvenile, 30 females, 20 males, 68 brown individuals (birds clearly not adult male but too distant to separate juvenile from adult female) and 3 of undetermined age or sex. Six westbound Harriers were counted during the count in 2016.

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

This season's count of 1,020 is the second lowest season total of the count and below both last year's total and the seven year average of 1,849, it is still above the record low of 864. The earliest was recorded April 13, One of the latest first recorded dates on record. Even given the lack of good migration days, the peak flight of 197 on May 6 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 61% of the entire flight recorded in that time frame. 148 westbound Sharp-shinneds were recorded this spring, accounting for 5% of the westbound flight. The breakdown of those individuals assigned to an age class was strongly skewed towards adult with 83% 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”**

Four Cooper's Hawks were seen this spring, well below the seven year average of 14 and one above the previous low of 3 set last spring. The early arrival date of April 15 lands just a bit later than the seven year average of April 13.

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

The 13 Goshawks recorded this spring is a new record low, beating out last spring's record low of 16 and noticeably below the seven year average of 20. The recorded arrival dates for this species have varied only by a few days since 2010, ranging from March 15 to March 20. This year's date of March 20 is in keeping with that trend. Most were seen in the month of April with 62% of the season total passing by in that month. The peak flight of two occurred on April 15. Three westbound Goshawks were seen this spring accounting for .002% of the westbound total. The age designation of east-bound Northern Goshawk was 12 juveniles and 1 adults.

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

Bald Eagles had the second lowest total on record with this season's 663 just above the record low of 545 set in 2011. This seasons total is well below the six year average of 1,066. Truly the symbol of this hawk watch, they were seen migrating throughout the entire count period and were recorded on 63 of the 72 days when a count was conducted and raptors were recorded. The largest single tally was 44 eagles seen April 15. The bulk of this seasons flight was split between April (33%) and May (45%), while March and June had about even numbers with 11% and 12% 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 6% of the overall numbers, the westbound tally of 161 eagles was almost 17% of that movement. The age class breakdown this year was as follows: 23 juveniles (3%), 391 sub adults (59%), 206 adults (31%) and 43 (6%) of unknown age.

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

Red-shouldered's were seen in slightly lower numbers than last spring. The 11 recorded this spring is just below the seven year average of 13. The first was seen April 15, about two weeks later than the average date of March 30. Peak migration was in April with 8 recorded. This is typical 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 seven years of the official count, there is yet to be a Red-shouldered encountered in the month of June. One westbound Red-shouldered was recorded this season accounting for 0.0003% of that flight. The age breakdown for the season was 7 juveniles and 4 adults.

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

A total of 6,558 eastbound Broad-wings were observed this season, which represents 59% of the entire flight for 2016 and is well below the seven year average of 10,224. This is nearly two-thousand more than were recorded last season and one hopes the upward trend continues next spring. The peak flight was 1,298 on May 6 and on par with expectations but still below the all time day high count of 2,098 from 2014. The first Broad-wing was seen April 17, exactly on the average arrival date of April 17. As with other seasons, the largest

portion of the overall flight came through in May; the 5,278 seen in that month making up 80% of the final count. June featured a nice flight for the end of the season with 19% of the season total recorded in those two weeks. The age breakdown was as follows: 3,993 (60%) adults, 1,695 (26%) juveniles and 870 (13%) of undetermined age. 1,781 westbound Broad-winged's made about 68% of the westward tally, well above the 40% from last spring and matching the 68% from 2014.

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

Only one eastbound Swainson's Hawk (light-morph adult) was recorded this season which is a new low and below the seven year average of 4. This season's individual occurred on May 29, this arrival date much later than the April 30 average. No west bound individuals were recorded this season.

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

The 1,371 individuals recorded this spring stands as the third highest total of the seven years and above the seven year average of 1,213. The early arrival date was March 25, similar to first dates in 2010, 12, and 15. This seasons flight was split between April (50%) and May (43%). The season high count of 125 on April 15 is over 100 birds less than last season's high of 245. Age characters were recorded as such: 961 (70%) adults (10 dark-morphs, 1 luescistic), 342 (25%) juveniles (4 dark-morphs) and 68 (5%) of unknown age. The 222 westbound Red-tails made up just over 8% of that total.

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

This seasons total of 161 is below both last seasons total of 211 and the seven year average of 190, but still well above the all time low of 98 set in 2011. The first Rough-legged of the season was recorded on April 13, much later than the seven year average of March 25. The largest single flight was 60 on April 15 which is well ahead of the average peak window which is during the last week of April into early May, but on par with last seasons peak. Most were seen in April with the 148 recorded representing 98% of the entire flight. Broken down to color morphs, 137 (85%) were light- morphs and 24 (15 %) were dark-morphs. Of those aged, 10 were juveniles, 85 were adults and 56 were of unknown age. Eleven westbound Rough-legs were recorded this spring accounting for .004% of the west bound total.

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

This seasons total of 67 is below the sixth year average of 118 and ties the record low from 2012. 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 13 is near the end of that window. The largest flight was 12 on April 15. 54% of this seasons total was seen in April, while May accounted for another 40%. The breakdown as to sex was 23 females (34%), 34 males (50%) and 10 of unknown sex. Two westbound Kestrels were noted this spring accounting for .0007% of the westbound total.

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

The twenty-two Merlin tallied this year is below the six year average of 33, but a few above last springs 19. The April 13 arrival date is nearly a two weeks later then the seven year average date of March 30. This species does not show a particularly strong peak of migration with sightings scattered throughout the spring but a high count of 3 was seen on May 9. 73% of the season total was seen during May. Six brown (female or immature) individuals were noted along with 12 adult males and 4 of unknown designation. Six westbound Merlins were recorded this spring although in some instances, these may have been local breeders.

### **Peregrine Falcon (*Falco peregrinus*) "PG"**

Peregrines came through in below average numbers this spring with the 25 counted below the seven year average of 40, but above the record low of 13 set in 2013. The April 14 arrival date is a day early of the April 15 average. 80% of the season total occurred in May with the single biggest flight happening on May 6 with 9 individuals recorded. The age breakdown was 23 adults and 2 juveniles. One westbound Peregrine was recorded this spring accounting for .0001% of that tally.

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

46 UB, 9 UE, and 3 UR were recorded going east-bound this year

### **Non-raptors**

In addition to the standardized raptor counts, daily passive 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, Common Loon, 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 61 species encountered in 2016.)

Overall, 61 additional bird species were recorded on Brockway Mountain this spring with 8,853 migrants and resident individuals noted. Significant numbers of migrants included 7,452 Canada Geese, 169 Common Loons, 491 Sandhill Cranes, 28 American White Pelicans, and 338 Bohemian Waxwings (which lingered to May 20 setting a new late date for the Keweenaw). Rare and vagrant bird species seen in Copper Harbor and on Brockway included 1 Long-eared Owl, Loggerhead Shrike, 6 Northern Mockingbirds, Harris's Sparrow (lingering from winter to early May), 2 Lark Buntings, 1 Lark Sparrow, 2 Yellow-headed Blackbirds, Painted Bunting, and 3 Eurasian Tree Sparrows.

### **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 2016 was on par with last spring. March was about 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 3 days recorded a dominant wind out of the south. One day recorded snow and 6 days recorded fog or haze. Six days of the count were missed due to weather and technical difficulties.

April overall was cooler than last season with daytime temperatures at or below freezing for nearly the first half of the the month, while the second half had a slow warming trend. Northerly winds were dominant on 13 days of the month, while 9 days recorded a dominant wind out of the south. Seven days of the month recorded snow, and nine days recorded fog, haze, or rain. Four days of the month had no count due to inclement weather.

May continued the warming trend with only one day recording temperatures below freezing for the entire month, the low for the month was -1°C on May 14 and the high for the month was 28°C on May 6. Sixteen days had a dominant wind out of the north, while 11 days recorded a dominant wind out of the south. Snow was recorded once during the month of May, one day recorded rain and 14 days recorded fog or haze. One day of the month had no count due to due to inclement weather. The west drive up to the mountain as opened at the start of the month. Blackflies hit the mountain by the 20th and maintained a noticeable presence through the end of the count.

June was about average with temps ranging from the low teens to 20. Six days had a dominant wind out of the north while four days recorded a dominant wind out of the south. Only one day recorded rain and 3 days recorded fog or haze.

## Visitors

Unlike past years the drive up the mountain was closed until early May thus keeping visitors to a bare minimum for the first half of the count. However once the drive opened there was a steady stream of tourists that continued to increase through the end of the season. This season noted a drop in questions about the about the lack of a gift shop on the mountain, however those questions were replaced with “does the road keep going?” and much to my chagrin I was perceived to be the resident expert on any question one could come up with most of which had nothing to do with raptor migration. Light numbers of birders made it to Brockway during this spring, most in May.

## 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, Debra Mues, Zach Gayk, and Andrew Meyer. 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 wonderful breakfasts. And to the town of Copper Harbor which continues to be one of the best gems of a town in Michigan.

SPECIES	FIRST	MAX	MAX DATE	LAST	E. TOTAL	W. TOTAL
Turkey Vulture	5 Apr	75	17 Apr	14 Jun	866	235
Black Vulture -	-	-	-	-	0	0
Osprey	19 Apr	3	6 May	14 Jun	21	8
Bald Eagle	18 Mar	44	15 Apr	14 Jun	663	161
Northern Harrier	10 Apr	36	15 Apr	12 Jun	122	6
Sharp-shinned Hawk	13 Apr	197	6 May	14 Jun	1020	148
Cooper's Hawk	15 Apr	1	17 Apr	6 May	4	0
Northern Goshawk	20 Mar	2	15 Apr	14 Jun	13	3
Red-shouldered Hawk	15 Apr	2	15 Apr	9 May	11	1
Broad-winged Hawk	17 Apr	1298	6 May	14 Jun	6558	1781
Swainson's Hawk	29 May	1	29 May	29 May	1	0
Red-tailed Hawk	25 Mar	125	15 Apr	14 Jun	1371	222
Rough-legged Hawk	13 Apr	60	15 Apr	19 May	161	11
Golden Eagle	25 Mar	5	14 Apr	25 May	39	16
American Kestrel	13 Apr	12	16 Apr	14 Jun	67	2
Merlin	13 Apr	3	9 May	1 Jun	22	6
Peregrine Falcon	14 Apr	9	6 May	13 Jun	25	1
Unidentified Accipiter	-	-	-	-	0	0
Unidentified Buteo	1 May	41	1 May	8 May	46	0
Unidentified Falcon	-	-	-	-	0	0
Unidentified Eagle	8 May	9	8 May	8 May	9	0
Unidentified Raptor	8 May	1	8 May	8 May	3	2
		1882		<b>TOTAL</b>	<b>11022</b>	<b>2603</b>

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