

Brockway Mountain Hawk Watch

Summary for Spring 2021 Hawk Count

Conducted by

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Submitted

Sponsored by

Keweenaw Bird Research Group

theKBRG.org

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 and continues to run the count to the present day. This report is the summary results of the twelfth season of systematic counting on Brockway Mountain.

The Count

Systematic counts were conducted daily from 15 March to 15 June, 2021 (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 warmer than last spring, with most snow gone from the road up the mountain by early April resulting in the drive opening April 23 - nearly two weeks earlier than 2020. Poor weather or technical difficulties resulted in 12 days of the count being missed (roughly on par with most years) with surveys conducted on 81 out of a possible 93 count days in the season (with eastbound raptors recorded on seventy-seven of the 81 days counted) accounting for a total of 539.7 count hours.

Sightings were posted to the web-blog (thekbrg.org) and the facebook page with daily updates made to the HMANA site (hawkcount.org).

In addition to the principal counter, substitute counters this year were Joseph Youngman, Debra Mues, and Nancy & Bill Leonerd. 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 2021 survey, 7,210 eastbound raptors of 15 species (Appendix B.1) and 3105 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 to record lows, the totals for this year were only below average (only saved by how poor last spring was). 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 twelve seasons of the official count by year and by month.

Turkey Vulture (*Cathartes aura*) “TV”

A total of 738 eastbound TVs were recorded this spring; over 200 more than last spring, but nearly 200 below the average. The first TV this spring was recorded on March 30th, which is on par for the average return date. The biggest flight was 53 on May 2nd. May was the biggest month for vultures accounting for 53% of the season total, while April accounted for 30%. A total of 331 westbound Turkey Vultures were counted this spring, more than double last season.

Osprey (*Pandion haliaetus*) “OS”

A total of 10 eastbound Osprey were recorded this season (three below last seasons total) setting a new low for the count and is well below the twelve-year average of 46. This is the third spring in a row with falling Osprey numbers. More data will help to further clarify if this trend is weather related. The first Osprey was seen on April 9th, which is a week ahead of the average arrival date of April 16th. The peak month for Osprey was May with 60% of the overall total of Osprey this year seen in that month (granted that was only 6 birds). A total of 3 westbound Osprey were seen. This is well below previous years, but not surprising given the record setting low eastbound count.

Golden Eagle (*Aquila chrysaetos*) “GE”

A total of 32 eastbound Golden Eagles were recorded this season falling below the twelve-year average of 41 but still above the record low of 23 set in 2011. 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. The first sighting this spring was on March 15th. The peak flight was 5 seen on March 27th. This peak falls on the early side of the broad pulse of migration from mid-March to early May with 38% seen in March, and 53% seen in April. The last recorded individual was seen May 12th. The breakdown with regards to age class for eastbound eagles was 22 sub adults, 9 adults, and 1 unknown. There were 18 westbound Golden Eagles recorded this season.

Northern Harrier (*Circus cyaneus*) “NH”

Northern Harriers numbers rebounded from last season with an eastbound count of 75; 27 above the low set last spring. First arrival dates for Northern Harriers are highly variable from year to year depending on snow cover, with first dates recorded from as early as mid-March to as late as mid-April; this year's date of March 20th landing at the start of that time frame. The peak passage was 27 on April 18th. The bulk of the migration was in April with 77% of the season total passing by in that month. The age/sex breakdown for eastbound migrants was as follows: 21 females, 14 males, 19 brown individuals (birds clearly not adult male but too distant to separate juvenile from adult female), 2 juvenile, and 19 of undetermined age or sex. During the 2021 season, 11 westbound Harriers were counted.

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

This season's eastbound count of 775 is the second lowest total on record (but higher than last year), and below the twelve-year average of 1,430. The earliest Sharp-shinned Hawk was recorded March 21st, which is on the early side for the species. The peak flight was 141 on May 2nd, a typical time frame for the peak. The largest

number by month was seen in May with 78% of the SS eastbound flight recorded in that time frame. A total of 289 westbound Sharp-shinned Hawks were recorded this spring.

Cooper's Hawk (*Accipiter cooperii*) "CH"

A single eastbound Cooper's Hawk was seen this spring (May 13); well below the eleven-year average of 11 but one above the low of 0 set in 2017. The early arrival date of April 22nd was set by the lone westbound CH of the season, which lands about a week later than the average arrival time frame.

Northern Goshawk (*Accipiter gentilis*) "NG"

The 30 Northern Goshawks recorded this spring is the second highest total for the count (but still ten below the record of 40 from 2010) and well about the twelve-year average of 22. The recorded first arrival dates for this species have varied only by a few days ranging from March 15 to March 24, this spring it was in the middle at March 20. Typically most are seen in the month of April, this year was no different with 60% of the season total occurring in that month. The peak flight was 6 on April 4th. This spring, 7 westbound Northern Goshawks were seen. The age designation of eastbound Northern Goshawk was 9 juveniles, 10 adults, and 11 unknown.

Bald Eagle (*Haliaeetus leucocephalus*) "BE"

A total of 677 Bald Eagles were recorded this season. While still below the twelve-year average of 906, it is over 200 better than last spring. The largest single day tally was 60 on May 16th. The bulk of this season's flight was split between April (30%) and May (41%). The westbound total for Bald Eagles this season was 212. The age class breakdown this year was as follows: 71 juveniles, 335 sub adults, 218 adults and 53 of unknown age.

Red-shouldered Hawk (*Buteo lineatus*) "RS"

The 20 eastbound Red-shouldered Hawks recorded this spring is the second highest count on record, just missing the record of 21 set in 2013! The first was seen March 20th, which is a bit early for the first recorded date. Migration was spread across the season, with a peak of 7 on April 5th. There was 1 westbound Red-shouldered Hawk recorded this season. The age breakdown for the season was 3 un-aged, 9 juveniles and 8 adults.

Broad-winged Hawk (*Buteo platypterus*) "BW"

A total of 3,405 eastbound Broad-winged Hawks were observed this season, which is well below the twelve-year average of 7,939. BWs typically make up a large percentage of the count and this year was no different with them representing 47% of the entire eastbound count for 2021. The peak flight was 545 westbound on May 15th, well below the all-time day high count of 2,098 from 2014. The first Broad-winged Hawk was seen April 30th, on the later side of the average arrival time. As with other seasons, the largest portion of the overall flight came through in May; the 2,204 seen in that month making up 65% of the final count of BWs. June accounted for an average percentage, with 35% of the season total of BWs; a higher percentage than past seasons but not unexpected considering the poor weather in May impacting the flight. The age breakdown was as follows: 1654 (48%) adults, 645 (19%) 1st spring, and 1106 (32%) of undetermined age. The westbound total for Broad-winged Hawks this season was 1846, which makes up about 59% of the total westward tally flight count, on par with previous springs.

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

Zero Swainson's Hawks were recorded this season, a first for the count.

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

The 885 eastbound individuals recorded this spring is below the twelve-year average of 1,083, but better than four other past seasons. The first arrival date was March 20th, which is about average. This season's main flight was split between April (52%) and May (40%). The season high count of 91 on April 18th was a bit below typical day highs. Age characters were recorded as the following: 661 (75%) adult (3 dark, 1 Krider's), 162 (18%) first spring (1 dark-morphs) and 58 (6%) of unknown age. There were 181 westbound Red-tailed Hawks recorded this season.

Rough-legged Hawk (*Buteo lagopus*) “RL”

This season’s eastbound total of 342 is the third highest count on record and the third time the total has broken 300, and is well above the average of 202. The first Rough-legged Hawk of the season was recorded on March 20th, on the early side of the arrival period. The largest single flight was 120 on April 9th, which is a new day high count. Also worth mentioning were the 84 counted on April 5th. Both of these days were well ahead of the average peak window which is typically during the last week of April into early May. Most were seen in April with the 277 recorded that month representing 81% of the entire RL flight for the season. Broken down to color morphs, 234 (68%) were light- morphs, 58 (17%) were dark-morphs and the remaining 50 were unknown (14%). There were 48 westbound Rough-legged Hawks recorded this spring.

American Kestrel (*Falco sparverius*) “AK”

This season’s eastbound total of 37 is well below the twelve-year average of 87 and only avoided setting a new low because of the 19 from last spring. First arrivals for Kestrels are also affected by the lateness/earliness of the spring with dates ranging from mid March to mid April; this year’s arrival date of April 2nd is near the middle of that window. The largest flight was 8 on April 9th. 56% of this season’s total was seen in April, while May accounted for 32%. The breakdown as to sex was 11 females (30%), 16 males (43%) and 10 of unknown sex. Zero westbound Kestrels were noted this spring.

Merlin (*Falco columbarius*) “ML”

The 25 eastbound Merlin tallied this year is just under the twelve-year average of 26. The March 30th arrival date is average for the species. 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 both April 5th and May 2nd. 32% of the season total was seen in April and 44% in May. There were 3 westbound Merlin recorded this spring, although with local breeders in the area this is no doubt a conservative number.

Peregrine Falcon (*Falco peregrinus*) “PG”

Peregrines came through in below average numbers this spring with the 9 eastbound counted setting a new record low, breaking the previous low of 10 set last year and well below the twelve-year average of 29. The April 2nd arrival date was early. The single biggest flight happened on April 23rd with 2 individuals recorded. A total of 8 westbound Peregrines were counted this spring.

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

1 UA, 60 UB, 1 UF, 13 UE, and 74 UR were recorded going eastbound 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 species encountered in 2021.)

Overall, 56 additional bird species were recorded on Brockway Mountain this spring. Significant numbers of migrants included 11,800 Canada Geese, 162 Common Loons, and 376 Sandhill Cranes. Rare and vagrant bird species seen in Copper Harbor or Brockway included Black Vulture, Green Heron, Iceland Gull, Snowy Owl, House Wren, Warbling Vireo, 2 Northern Mockingbirds, Loggerhead Shrike, Smith's Longspur, Eastern Towhee, Field Sparrow, Harris's Sparrow, Lark Sparrow, multiple Hoary Redpolls, 2 Yellow-headed Blackbirds, 2 Eurasian Tree Sparrows, and House Sparrow.

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.

March had below average precipitation and above average temperatures, with daytime temperatures slightly above freezing to well above freezing (12°C on March 21st). A dominant wind out of the north was recorded on five days of March, while four days recorded a dominant wind out of the south. Snow was recorded on two days and fog or haze was recorded on two days of the month. The count was missed on four days due to weather.

April started warmer than last season with a daytime high of 12°C on the 12th before the weather shifted to a northerly airflow with no day breaking the single digits for the rest of the month. Northerly winds were dominant on 12 days of the month, while 5 days recorded a dominant wind out of the south. Snow was recorded on five days of the month. Fog, haze, or rain was also recorded on five days of the month. Due to inclement weather, five days of the month had no count.

May trended warmer from a low of 5°C on the 10th to a high of 26°C on the 25th. A dominant wind out of the north was recorded for 7 days, while 8 days recorded a dominant wind out of the south. Snow was recorded twice during the month of May, 4 days recorded rain and 8 days recorded fog or haze. There was no count on two days of the month due to inclement weather. While the April count was low, the month of May is largely the reason why this season's total was again so low. A significant 17 days of the month had winds considered poor for migration, 11 of which occurred in the first half of the month. Looking at other hawk counts around Lake Superior this was the peak for Broad-winged Hawks moving through the region. This led to a second spring in a row without a day recording a count over 1000 birds, which led to another low season total (albeit ~2000 better than last spring).

June was above average with temperatures ranging from the low 20's to a high of 30°C on June 6th. A dominant wind out of the north occurred on 6 days while 8 days recorded a dominant wind out of the south. Rain occurred on 4 days and 1 day recorded fog or haze.

Visitors

The drive up the mountain opened April 23 - nearly two weeks earlier than last year. Once the drive opened tourist numbers slowly increased throughout the season with a peak of over 500 on May 30 and a season total of 2,910

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References

- Binford, L. C. 2006. Birds of the Keweenaw Peninsula, Michigan. Miscellaneous Publications No. 125, Museum of Zoology, University of Michigan.
- Baerwald, T.G. 2020. Brockway Mountain Hawk Watch Summery Report. Keweenaw Bird Research Group
- Baerwald, T.G. 2019. Brockway Mountain Hawk Watch Summery Report. Keweenaw Bird Research Group
- Baerwald, T.G. 2017. Brockway Mountain Hawk Watch Summery Report. Keweenaw Bird Research Group
- Baerwald, T.G. 2016. Brockway Mountain Hawk Watch Summery Report. Keweenaw Bird Research Group
- Baerwald, T.G. 2015. Brockway Mountain Hawk Watch Summery Report. Copper Country Audubon and Copper Harbor Birding
- Brennan, C.G. 2014. Brockway Mountain Hawk Watch Summary Report. Copper Country Audubon and Copper Harbor Birding.
- Brennan, C.G. 2013. Brockway Mountain Hawk Watch Summary Report. Copper Country Audubon and Copper Harbor Birding.
- Clark, W. S. 2001. Aging Bald Eagles. *Birding* 33:18-28
- Green, A. W. 2012. Keweenaw Raptor Survey 2011 End-of-Season Summary. Copper Country Audubon and Laughing Whitefish Audubon.
- Green, A. W. 2011. Keweenaw Raptor Survey 2011 End-of-Season Summary. Copper Country Audubon and Laughing Whitefish Audubon.
- Haas S. and Z. Gayk. 2010. Keweenaw Raptor Survey Count Protocol. Copper Country Audubon and Laughing Whitefish Audubon.
- Hawk Migration Association of North America (HMANA) 2006. Standard Data Collection Protocol for Raptor Migration Monitoring; Retrieved from Raptor Population Index: http://www.rpiproject.org/docs/HMANA_Data_Collection_Protocol_20060611.pdf
- Hawk Migration Association of North America (HMANA) 2010-2014. HawkCount; Retrieved from: <http://www.hawkcount.org/>
- Henschell, M. A. 2010. Keweenaw Raptor Survey 2010 Spring Report. Copper Country Audubon and Laughing Whitefish Audubon.
- Liguori, J. 2005. *Hawks from Every Angle*. Princeton University Press.
- Sibley, D. A. *The Sibley Guide to Birds*. Knopf Doubleday.
- Wheeler, B. K. 2003. *Raptors of Eastern North America*. Princeton University Press
- Van Buskirk, J.V. Changes in the Annual Cycle of North American Raptors Associated with Recent Shifts in Migration Timing. Institute of Evolutionary Biology and Environmental Studies, University of Zurich, CH-8057, Zurich, Switzerland

SPECIES	FIRST	MAX	MAX DATE	LAST	E. TOTAL	W. TOTAL
Turkey Vulture	30 Mar	53	2 May	15 June	738	331
Black Vulture	-	-	-	-	0	0
Golden Eagle	15 Mar	5	27 March	12 May	32	18
Osprey	9 Apr	1	1 May	6 June	10	3
Northern Harrier	20 Mar	27	18 April	4 June	75	11
Sharp-shinned Hawk	21 Mar	141	2 May	13 June	775	289
Cooper's Hawk	22 Apr	1	13 May	13 May	1	1
Northern Goshawk	19 Mar	6	4 April	30 May	30	7
Bald Eagle	15 Mar	60	16 May	14 June	677	212
Red-shouldered Hawk	20 Mar	7	5 April	1 June	20	1
Broad-winged Hawk	30 Apr	545	15 May	15 June	3405	1846
Swainson's Hawk	-	-	-	-	0	0
Red-tailed Hawk	20 Mar	91	18 April	15 June	885	181
Rough-legged Hawk	20 Mar	120	9 April	6 June	342	48
American Kestrel	2 Apr	8	9 April	6 June	37	0
Merlin	30 Mar	3	2 May	7 Jun	25	3
Peregrine Falcon	2 Apr	2	23 April	22 May	9	8
Unidentified Accipiter	22 Apr	1	22 Apr	22 April	1	0
Unidentified Buteo	20 Mar	5	24 May	31 May	60	131
Unidentified Falcon	3 June	1	3 June	3 June	1	1
Unidentified Eagle	15 Mar	5	9 June	4 June	13	3
Unidentified Raptor	5 Apr	31	18 April	15 May	74	11
TOTAL					7210	3105