Brockway Mountain Hawk Watch

Summary for Spring 2017 Hawk Count

Conducted by

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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 eighth season of systematic counting on Brockway Mountain.

The Count

Systematic counts were conducted daily from 15 March to 15 June, 2017 (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 resulted in fourteen days of the count being missed (almost a week more than 2015, but only one day more then last season) with surveys conducted on 79 out of a possible 93 count days in the season (with raptors recorded on seventy-four of the 79 days counted) accounting for a total of 536.5 count hours.

Sightings were posted to the web-blog (www.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 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 2017 survey, 10,142 eastbound raptors of 15 species (Appendix B.1) and 703 westbound raptors of 14 species (Appendix B.2) were observed migrating past the count site. Totals for this year were all below the 8 year average. Appendix A at the end of the report summarizes the results for all raptor species. Appendices G.1 and G.2 compare the eight seasons of the official count by year and by month.

Turkey Vulture (*Cathartes aura*) "TV"

In all, 796 eastbound TVs were recorded this spring; This is almost 100 birds less then last year and below the average of 989. The first TV this spring was recorded April 1, exactly on the eight year average of April 1st. The biggest flight was 59 on May 10, which towards the later half of the broad migration window for this species. May was easily the biggest month for vultures this spring, likely due to April being cold and snowy. 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 129 westbound vultures made up about 5% of that flight.

Osprey (*Pandion haliaetus*) "OS"

Osprey totals for the eight years of the official count have been all over the map with this year's total of 24 coming in just above record low of 21 first set in 2011 . This is well below the eight year average of 57. The first Osprey seen was April 17, only a day behind the average date of April 16. The day high count was 7 on April 25, 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 split between April and May with 91% of the overall total this year seen in those months. Three westbound Ospreys were seen. This is well below previous years, but not surprising given the low eastbound count.

Golden Eagle (*Aquila chrysaetos*) "GE"

Thirty-one 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. And it is below eight year average of 41. 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 on March 19 is on par with the eight-year average of March 20. The peak flight was 3 seen March 30. This peak falls early in the broad pulse of migration from mid-March to early May with 35% seen in April, and 45% seen in May. The last east-bound individual was seen May 20. Three west bound individuals were recorded between March 19 and April 24. The breakdown with regards to age class for eastbound eagles was 2 juveniles, 22 sub adults, 4 adults, and 3 unknown.

Northern Harrier (*Circus cyaneus*) "NH"

Northern Harriers had a slightly below average spring with the 105 recorded this season a bit below the eight year average of 115. 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 March 30 landing in the towards the start of that time frame. The peak passage was 20 on April 25. The bulk of the migration this spring was split between April (51%) and May (45%) of the season total passing by in those months. The age/sex breakdown for eastbound migrants was as follows: 1 juvenile, 53 females, 26 males, 22 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 recorded during the count in 2017.

Sharp-shinned Hawk (*Accipiter striatus*) "SS"

This season's count of 843 is a new record low of the count, beating out the 864 recorded in 2014. And well below the eight year average of 1,619. The earliest was recorded April 2, about average for this species. Even given the lack of good migration days, the peak flight of 236 on May 10 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 67% of the entire flight recorded in that time frame. 58 westbound Sharp-shinneds were recorded this spring, accounting for 8% of

the westbound flight. The breakdown of those individuals assigned to an age class was strongly skewed towards adult with 89% recorded as such. Looking at previous seasons, 2016, 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 disproportionate. Sharpies were not assigned ages in 2010.

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

No Cooper's Hawks were seen this spring. A first for this count.

Northern Goshawk (*Accipiter gentilis*) "NG"

The 14 Goshawks recorded this spring is one above the record low set last spring but still noticeably below the eight year average of 22. 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 April 2 is well outside that time frame, presumably the poor weather played a roll? Most were seen in the month of April with 64% of the season total passing by in that month. The peak flight of three occurred on April 14. No westbound Goshawks were recorded this spring. The age designation of east-bound Northern Goshawk was 10 juveniles and 4 adults.

Bald Eagle (*Haliaeetus leucocephalus*) "BE"

Bald Eagles had the second lowest total on record with this season's 567 just above the record low of 545 set in 2011. This seasons total is well below the eight year average of 953. Truly the symbol of this hawk watch, they were seen migrating throughout the entire count period. The largest single tally was 52 eagles seen April 25. The bulk of this seasons flight was split between April (43%) and May (31%), while March and June had about even numbers with 14% and 12% of the season totals respectively. This is typical 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 5% of the overall numbers, the westbound tally of 101 eagles was almost 14% of that movement. The age class breakdown this year was as follows: 29 juveniles (5%), 95 sub adults (17%), 83 first year (PBI) (15%), 144 second year (PBII) (26%), 22 third year (PBIII) (4%), 186 adults (33%) and 8 (1%) of unknown age.

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

Red-shouldered's were seen in lower numbers than last spring. The 7 recorded this spring is below the eight year average of 12. The first was seen April 7, about a week later than the average date of April 1. Peak migration was in April with 4 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 eight years of the official count, there is yet to be a Red-shouldered encountered in the month of June. No westbound Red-shouldered Hawks were recorded this season. The age breakdown for the season was 6 juveniles and 1 unknown.

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

A total of 6,421 eastbound Broad-wings were observed this season, which represents 63% of the entire flight for 2017 and is well below the eight year average of 9,295. The peak flight was 1,364 on May 10 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 22, a few days later then the average arrival date of April 18. As with other seasons, the largest portion of the overall flight came through in May; the 5,083 seen in that month making up 79% of the final count. June featured a weak flight for the end of the season with 8% of the season total recorded in those two weeks. The age breakdown was as follows: 5,035 (78%) adults, 573 (9%) juveniles and 813 (13%) of undetermined age. 297 westbound Broad-winged's made about 42% of the westward tally.

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

Three eastbound Swainson's Hawk (One light-morph adult, two intermediate morph adults) were recorded this season which is an increase over last season and just below the eight year average of 4. The first recorded date this season of April 22 is a week earlier than the April 30 average. No west bound individuals were recorded this season.

Red-tailed Hawk (*Buteo jamaicensis*) "RT"
The 1,121 individuals recorded this spring is just below the eight year average of 1,227. The early arrival date was March 28, similar to first dates in 2010, 12, 15, and 16. This seasons flight was split between April (36%) and May (49%). The season high count of 134 on May 10 well below expected high counts, which typically are in the 200+ bird range. Age characters were recorded as such: 848 (76%) adults (4 dark-morphs), 244 (22%) juveniles (2 dark-morphs) and 29 (3%) of unknown age. The 95 westbound Red-tails made up just over 14% of that total.

Rough-legged Hawk (*Buteo lagopus*) "RL"
This seasons total of 107 is well below the eight year average of 180 and just a hair above the all time low of 98 set in 2011. The first Rough-legged of the season was recorded on April 2, a bit later than the eight year average of March 27, but a over a week earlier then last spring. The largest single flight was 39 on April 8 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 two seasons peak. Most were seen in April with the 80 recorded representing 75% of the entire flight. Broken down to color morphs, 70 (85%) were light- morphs and 24 (15 %) were dark-morphs. Of those aged, 9 were juveniles, 71 were adults and 4 were of unknown age. Six westbound Rough-legs were recorded this spring accounting for .002% of the west bound total.

American Kestrel (*Falco sparverius*) "AK"
This seasons total of 69 is below the eight year average of 105 and just misses the record low of 67 set in 2012 and 15. 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 8 is in the later half of that window. The largest flight was 17 on May 10. 60% of this seasons total was seen in May, while April accounted for another 35%. The breakdown as to sex was 23 females (34%), 34 males (50%) and 12 of unknown sex. These are almost the exact same numbers as last season. Two westbound Kestrels were noted this spring accounting for .002% of the westbound total.

Merlin (*Falco columbarius*) "ML"
The thirteen Merlin tallied this year is below the eight year average of 29 and ties the record low first set in 2012. The April 03 arrival date is nearly a week later then the eight year average date of March 31. This species does not show a particularly strong peak of migration with sightings scattered throughout the spring but a high count of 3 were seen on April 8. Three brown (female or immature) individuals were noted along with 8 adult males and 2 of unknown designation. Three 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 17 counted well below the eight year average of 35 and sets a new record low! The April 14 arrival date is on par with the average and is the same date as last spring. 64% of the season total occurred in May with the single biggest flight happening on May 3 with 4 individuals recorded. The age breakdown was 15 adults and 2 unknown. No westbound Peregrine Falcons were recorded this spring.

Unidentified Accipiter "UA", Unidentified Buteo "UB", Unidentified Falcon "UF" Unidentified Eagle "UE" & Unidentified Raptor "UR"
2 UB 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, 42 additional bird species were recorded on Brockway Mountain this spring with 6,087 migrants and resident individuals noted. Significant numbers of migrants included 4,787 Canada Geese (3,000 birds less then last season), 125 Common Loons (44 less then last spring), 390 Sandhill Cranes (almpost 100 less then last spring), 79 American White Pelicans, and 420 Bohemian Waxwings. Rare and vagrant bird species seen in Copper Harbor and on Brockway included Upland Sandpiper, 2 House Wrens, 2 Northern Mockingbirds, Field and Lark Sparrow, 1 Yellow-headed Blackbird, and single House and 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 2017 was on par with last spring or slightly cooler. March was about average in terms of both precipitation and temperatures with daytime temps at or slightly below freezing. Nine days of March recorded a dominant wind out of the north, while 3 days recorded a dominant wind out of the south. Three days recorded snow and three days recorded fog or haze. Six days of the count were missed due to weather.

April overall was slightly warmer than last season with daytime temperatures at or above freezing for majority of the month. Northerly winds were dominant on 9 days of the month, while 7 days recorded a dominant wind out of the south. Seven days of the month recorded snow, and three days recorded fog or haze. Seven days of the month had no count due to inclement weather, including a snow/ice storm at the end of the month. The drive up to the mountain as opened at the end of the month.

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 7 and the high for the month was 19°C on May 26. Twelve days had a dominant wind out of the north, while seven days recorded a dominant wind out of the south, notable was that south winds two days in a row only happened twice this month. Rain was recorded on one day and five days recorded fog or haze. Five day of the month had no count due to due to inclement weather.. Blackflies hit the mountain by the 28th and maintained a noticeable presence through the end of the count.

June was about average with temps ranging from the low teens to 27 (June 10). Three days had a dominant wind out of the north while six days recorded a dominant wind out of the south. Only one day recorded rain and seven days recorded fog or haze.

Visitors

Like last spring the drive up the mountain was closed until late April 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 continued the trend with a noticeable drop in questions 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.

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APPENDIX A: Migrant Raptors – Brockway Mountain, Spring 2017

SPECIES	FIRST	MAX	MAX DATE	LAST	E. TOTAL	W. TOTAL
Turkey Vulture	1 Apr	59	10 May	15 Jun	796	129
Black Vulture -	-	-	-		0	0
Golden Eagle	19 Mar	3	30 Mar	20 May	31	3
Osprey	17 Apr	7	25 Apr	14 Jun	24	3
Northern Harrier	30 Mar	20	25 Apr	12 Jun	105	6
Sharp-shinned Hawk	2 Apr	236	10 May	10 Jun	842	58
Cooper's Hawk -	-		- -		0	0
Northern Goshawk	2 Apr	3	14 Apr	20 May	14	0
Bald Eagle	15 Mar	52	25 Apr	15 Jun	567	101
Red-shouldered Hawk	7 Apr	2	3 May	15 May	7	0
Broad-winged Hawk	22 Apr	1364	10 May	15 Jun	6,421	297
Swainson's Hawk	28 Apr	2	28 Apr	10 May	3	0
Red-tailed Hawk	28 Mar	134	10 May	15 Jun	1121	95
Rough-legged Hawk	2 Apr	39	8 Apr	4 Jun	107	6
American Kestrel	8 Apr	17	10 May	13 Jun	69	2
Merlin	3 Apr	3	8 Apr	10 Jun	13	3
Peregrine Falcon	14 Apr	4	3 May	11 Jun	17	0
Unidentified Accipiter	-	-	-	-	0	0
Unidentified Buteo	3 Apr	2	12 May	12 May	5	0
Unidentified Falcon	-	-	-	-	0	0
Unidentified Eagle	-	-	-	-	0	0
Unidentified Raptor	-	-	-	-	0	0
				TOTAL	**10142**	**703**

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