

# Keweenaw Raptor Survey Report

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## COUNT PERIOD

The first year of the Keweenaw Raptor Survey (KRS) was conducted from 15 March - 15 June 2010. The majority of the survey was conducted at the West Bluff Overlook, located at 47° 27' 50.38" N, 87° 58' 09.82" W, elevation 1313 ft a.s.l. However, the first two days were conducted from a lookout east of West Bluff Overlook because road conditions prevented access to the Overlook. Survey times were from 0800 – 1400 EST from 15 March – 15 April and from 0800 – 1600 from 16 April – 15 June, weather and flight conditions pending. A total of 579.1 hours of count were conducted this year, the majority (460.1 hours) conducted by Max Henschell, the official KRS Raptor Counter for 2010. Other official counters included Skye Haas (53 hours), Joseph Youngman (37 hours), and Zach Gayk (29 hours).

## WEATHER

Weather was highly variable throughout the count period. Wind gusts of up to 50 MPH were recorded, while other days winds were calm. The count also experienced days of rain and snow. Temperatures were above average for April and May, while June was cooler than average. Temperature, wind speed and barometric pressure are summarized below. Wind direction, precipitation, cloud cover and visibility can be found in appendices A.1 – A.4.

### *Temperature*

The average March temperature during the KRS was 3.8 (low: -7.6, high: 18.7; appendix A.1); typical average late March temperatures in Copper Harbor range from -5C to 5C. The average April temperature was 8.4C (low: -2.4; high: 20.7; appendix A.2). Average April daily high temperatures in Copper Harbor range from 2C in the early part of the month to around 10C in the latter part of the month. The average temperature in May was 14.5C (low: 0.1, high: 31.1; appendix A.3). Normal day-time highs range from 10 - 15C. The Average June temperature during the count was 14.5C (low: 6.4, high: 21.8; appendix A.4). Average day time highs in Copper Harbor for June range from 15 - 20C.

### *Wind Speed*

Average wind speed for the portion of March covered by the KRS count period was 10.4 MPH (high: 22.5 MPH; appendix A.1). The average wind speed for the month of April was 9.5 MPH (high: 27.4 MPH; appendix A.2). The average wind speed for May was 15.8 MPH (high: 19.4 MPH; appendix A.3). The average wind speed for 1-15 June was 6.8 MPH (high: 20.9 MPH; appendix A.4)

### *Barometric Pressure*

The average pressure for 15-31 March 2010 was 29.96 inHg (low: 29.47 inHg, high: 30.39 inHg; appendix A.1). The average barometric pressure in April was 29.91 inHg (low: 29.35 inHg, high: 30.44 inHg; appendix A.2). The average pressure for the month of May was 29.97 inHg (low: 29.30 inHg, high: 30.30 inHg; appendix A.3). The average barometric pressure for 1-15 June was 29.90 (low: 29.59 inHg, high: 30.09 inHg; appendix A.4).

## RAPTOR FLIGHT

The Keweenaw Raptor Survey was designed to count members of the orders Falconiformes (diurnal raptors) and Ciconiiformes (family Cathartidae - vultures). Sixteen species from these two orders were recorded during the 2010 KRS, as well as 5 classes of unknown diurnal raptors (table 1). Just over 9500 birds were recorded for an average of over 100 birds per day (table 1).

### *Turkey Vulture*

A total of 756 Turkey Vultures were recorded eastbound during the KRS (Table 1). 633 birds were adults, while the remaining 123 were unknown birds (appendix A), however the lack of juvenile/subadult birds may have been a result of errors in the identification of these age classes. The first Turkey Vulture of the season was recorded on 31 March (table 1). This bird was the earliest Turkey Vulture on record in the Keweenaw Peninsula. Between this date and the end of the count, an average of just under 10 birds were recorded per day (table 1). The peak Turkey Vulture count occurred on 15 April, with 71 birds recorded (table 1). This species was difficult to quantify later in the season, since there was consistently a group of 20+ birds roosting in the greater Copper Harbor area (MAH pers. obs.) and these birds seemingly wandered along the ridges throughout the day. A total of 434 westbound Turkey Vultures were recorded over the course of the KRS (57.4% of eastbound total; appendix C).

### *Osprey*

A total of 47 Osprey were recorded eastbound: 43 adults and 4 unknown birds (table 1; appendix B). The first Osprey was recorded on 14 April and 6 were recorded on several count days (table 1). Between 14 April and the end of the count, the average number of Ospreys per day was less than 1 (table 1). Of note were several Osprey observed carrying fish over the Mountain, including one carrying what appeared to be the distal half of a fish. All birds carrying fish were observed flying in with the fish and flying out of sight still carrying the fish (MAH pers. obs.). Fifteen Osprey were recorded westbound (31.9% of eastbound total; appendix C).

### *Bald Eagle*

821 Bald Eagles were recorded eastbound during the KRS, representing 5 age classes and 2 “unknown” categories (table 1; appendix B). The first Bald Eagles were recorded on 15 March and were recorded throughout most of the count period, with an average of fewer than 9 per day (table 1). The most common age class was adults (343, appendix B), followed by pre-basic I, pre-basic II, pre-basic III and subadults (appendix B). Individuals that were not indefinable to age class accounted for just over 100 birds (appendix B). This was perhaps the most asked about bird by visitors. Many were impressed that nearly 1000 birds were seen during the KRS. 506 Bald Eagles were recorded westbound (61.6% of eastbound total; appendix C).

### *Northern Harrier*

A total of 145 Northern Harriers were recorded eastbound during the count period, with the first bird occurring on 18 March (table 1). The daily average was just over 1.5 birds per day (table 1). The majority of Northern Harriers were “brown”-type, either juvenile or female individuals (appendix B). A total of 18 Northern Harriers were recorded westbound (12.4% of eastbound total; appendix C).

### *Sharp-shinned Hawk*

Sharp-shinned Hawk was the second most common raptor during the KRS. A total of 1581 were recorded eastbound, and occurred throughout nearly the entire count period, with a peak on 1 May of 393 birds, about two-thirds of which were adults (table 1). The daily seasonal average was just over 17 birds per day (table 1). The majority of birds recorded were adults (868; appendix B). 242 Sharp-shinned Hawks were recorded westbound (15.3% of eastbound total; appendix C).

### *Cooper’s Hawk*

Cooper’s Hawk is the perhaps most uncommon of the accipiters in the Keweenaw. Twenty-two Cooper’s Hawks were recorded eastbound during the KRS (table 1). The first occurred on 31 March and were seen in all months except June (table 1; appendix B). Four individuals were recorded on two separate dates, 1 May and 15 May (table 1). Juveniles were the most commonly occurring age class, while almost half went unidentified (appendix B). One Cooper’s Hawk was recorded westbound (4.5% of eastbound total; appendix C).

### *Northern Goshawk*

A total of 29 Northern Goshawks were recorded eastbound throughout the survey period, with the first occurring on 17 March (table 1). An average of less than 0.5 per day was recorded, with a peak of 5 birds on 31 March. Most (18) were juvenile birds (appendix B). An interesting sight was a juvenile Northern Goshawk that was missing nearly all of its tail (MAH pers. obs.). Eleven Northern Goshawks were recorded westbound (37.9% of eastbound total; appendix C).

### *Red-shouldered Hawk*

The second least common buteo during the count, a total of 9 Red-shouldered hawks were recorded headed east during the count period (table 1). Most occurred in late March and early April, with a high of two on 6 April (appendix B; table 1). The majority (7) were adults, while the two juvenile birds were both recorded in mid-May (appendix B). One Red-shouldered Hawk was recorded westbound (11.1% of eastbound total; appendix C).

### *Broad-winged Hawk*

Broad-winged Hawk was the most common raptor recorded during the KRS. A total of 4505 were recorded eastbound, with a peak of 988 on 1 May (table 1). Over three-quartered of the birds recorded were adults (3804; appendix B). A large, late push of juvenile Broad-wings in late May to early

June was expected, though was never witnessed (appendix B). Many of the juvenile Broad-wings seen were in various stages of molt and feather wear, including individuals missing nearly all of their retrices or remeges (MAH pers. obs.)! The season average was over 52 birds per day, yet Broad-wings were present for only half the count period (table 1). From the first arrival date to the end of the count, the daily average was over 78 birds per day (table 1). A total of 993 were recorded westbound (22% of eastbound total; appendix C).

#### *Swainson's Hawk*

Brockway Mountain might be one of the best locations to see Swainson's Hawks during migration in the Upper Midwest. A total of 7 were recorded headed east during the KRS, with the first occurring on 20 April (table 1). All three morphs were recorded and both age classes (Appendix 1). The high count was two on 1 May when an adult intermediate morph and a light juvenile flew through together (table 1; appendix 1; MAH, ZG pers. obs.). No Swainson's Hawks were recorded westbound.

#### *Red-tailed Hawk*

Red-tailed Hawk was the second most common buteo recorded during the KRS with 727 (table 1). The first was recorded on 22 March and were recorded throughout most of the count period with a peak of 79 on 31 March (table 1; appendix B). The majority (528) were light-morph adults (appendix B). A surprisingly low total of 2 dark-morph birds were recorded, one adult and one juvenile (appendix B). 178 were recorded westbound (24.5% of eastbound total; appendix C).

#### *Rough-legged Hawk*

136 Rough-legged Hawks were recorded headed east over the duration of the count period, with the first occurring on 23 March (table 1). The majority of birds were adults (75), while 20 dark-morph Rough-legged Hawks were recorded (appendix B). The single day high was 20 birds on 15 April (table 1). The latest date of this species was 24 May. Two individuals, one unknown and one dark-morph, were recorded that day (appendix B). Twenty-eight Rough-legged Hawks were recorded westbound (20.6% of eastbound total; appendix C).

#### *Golden Eagle*

Thirty-one Golden Eagles were recorded eastbound during the count (table 1). The first occurred on 21 March, when three were recorded (table 1). This date was also one of three on which 3 individuals were recorded. The other dates were 29 March and 31 March (table 1). The majority of birds (23) were non-adults (appendix B). Twenty-four Golden Eagles were recorded westbound (77.4% of eastbound total; appendix C).

#### *American Kestrel*

The American Kestrel was the most common falcon recorded, with a total of 91 birds recorded eastbound (table 1). They occurred in every month, with the first occurring on 31 March (table 1). A high count of 15 occurred on 14 April (table 1). The majority (57) of birds were males (appendix B). At least

one pair of American Kestrels were nesting in the area. In the second half of the count, a pair was regularly seen mid-day flying through and hunting on the hill (MAH pers. obs.). A resident of Brockway Mountain spoke of many dozens of American Kestrels moving over the mountain in a single day on most years, though this was most observed this year (BD pers. comm.; MAH pers. obs.). Twenty-one American Kestrels were recorded westbound (23.1% of eastbound total; appendix C).

#### *Merlin*

Forty-two Merlins were recorded eastbound during the KRS (table 1). Many (16) went unidentified (appendix B). The first Merlin was recorded on 26 March and peaks of 4 were recorded on 2 and 13 April (table 1). There are a number (at least 3) of pairs of Merlins nesting in and around Copper Harbor. Some of these pairs could conceivably have been recorded on multiple occasions throughout the count. Nine Merlin were recorded westbound (21.4% of eastbound total; appendix C).

#### *Peregrine Falcon*

Twenty-five Peregrine Falcons were recorded eastbound this year (table 1). The majority (18) were adults (appendix B). The first was recorded on 20 April and in late April a pair was seen on two consecutive weekends calling in the valley and landing on the cliff face (MAH, JY pers. obs.). Though there was no evidence that they nested, the Brockway Mountain cliff face could be a suitable area for nesting for this species. Five were recorded headed west (20% of eastbound total; appendix C).

#### *Owls*

Three species of owls were recorded during the count period. These include a Barred Owl heard calling in the valley from mid-April through June, a Northern Saw-whet Owl heard on two consecutive days calling from the valley, 17 and 18 March and a fly-through Snowy Owl on 2 May being harassed by the local Common Raven pair (appendix D).

#### NON-RAPTORS

#### *Waterbirds/ Cranes*

The biggest flight over Brockway is not the raptors, but rather waterbirds (Orders Anseriformes - waterfowl, Gaviiformes - loons, Pelicaniformes – pelicans, Phalacrocoracidae- cormorants, Ciconiiformes – herons, Charadriiformes – shorebirds and gulls). These birds are observed from the West Bluff of Brockway Mountain flying over the Keweenaw, with most continuing north over Lake Superior. Over 16,000 Canada Geese were recorded flying over the Keweenaw Peninsula during the KRS, with approximately 12,000 flying through on 12 April (appendix D)! Other waterbirds recorded during the KRS include 290 Common Loons, 2 Red-throated Loons, 47 American White Pelicans, 20 Mallards, 3 Common Goldeneye, 27 Common Mergansers, 27 Double-crested Cormorants, 1 Great-blue Heron, 25 Herring Gulls, 3 Killdeer, 8 Ring-billed Gulls, 1 Upland Sandpiper, and a surprising flock of 47 White-winged Scoters on 21 May (appendix D). 124 Sandhill Cranes were also recorded during the count (appendix D).

#### *Passerines/ Near-passerines*

Seventy-six species of passerines (order Passeriformes) or near-passerines (orders Apodiformes – swifts and hummingbirds; Piciformes – woodpeckers) were recorded during the KRS (appendix D). Most were heard in the valley on the south side of the West Bluff Overlook. Several unusual species were recorded during the count period. An Eastern Towhee was found by Lynn Murphy and Joseph Youngman on 23 May. Zach Gayk heard a Wood Thrush in the valley on 7 June and a Blue Grosbeak was seen and heard on 12 June (pending acceptance by the M.B.R.C). Several species appear to be nesting on the hill. These species heard or seen through the end of the count period were probably on territory: Eastern Phoebe, Alder Flycatcher, Eastern Bluebird, Chestnut-sided Warbler, Mourning Warbler, Clay-colored Sparrow (?), White-throated Sparrow, and Dark-eyed Junco. The nesting pair of Common Ravens fledged five young this year. First seen flying on 23 May, these five birds were seen through the end of the count period flying together and landing near the shack, picking at the ground and squawking continuously.

Table 1 – Eastbound species occurring during the 2010 KRS. The first day a species was recorded is in parentheses after the species name. “Count” indicates the season totals; “High” indicates the single day highest recorded number of a particular species (date(s) in parentheses); “Daily Average” indicates the average seen per day throughout the season; “Occurrence Average” indicates the average number from the first day of a species’ occurrence through the end of the count period.

Species	Count	High	Season Average	Occurrence Average
Turkey Vulture (31 March)	756	71 (15 April)	8.13	9.82
Osprey (14 April)	47	6 (29-30 April, 1 May)	0.51	0.75
Bald Eagle (15 March)	821	98 (31 March)	8.83	8.83
Nothern Harrier (18 March)	145	28 (15 April)	1.56	1.61
Sharp-shinned Hawk (18 March)	1581	393 (1 May)	17.00	17.57
Cooper's Hawk (31 March)	22	4 (1, 15 May)	0.24	0.29
Northern Goshawk (17 March)	29	5 (31 March)	0.31	0.32
Red-shouldered Hawk (31 March)	9	2 (6 April)	0.10	0.12
Broad-winged Hawk (15 April)	4851	988 (1 May)	52.16	78.24
Swainson's Hawk (20 April)	7	2 (1 May)	0.08	0.14
Red-tailed Hawk (22 March)	746	79 (31 March)	8.02	8.67
Rough-legged Hawk (23 March)	119	20 (15 April)	1.28	1.40
Golden Eagle (21 March)	31	3 (21, 29, 31 March)	0.33	0.36
American Kestrel (31 March)	91	15 (14 April)	0.98	1.18
Merlin (26 March)	42	4 (2, 13 April)	0.45	0.51
Peregrine Falcon (14 April)	20	6 (16 May)	0.22	0.32
Unknown Accipitor	30	5	0.32	0.39
Unknown Buteo	110	32	1.18	1.43
Unknown Eagle	27	6	0.29	0.29
Unknown Falcon	2	1	0.02	0.03
Unknown Raptor	23	6	0.25	0.26
Total	9509	1485 (1 May)	104.54	104.54