

## MOUNT LORETTE, FALL 2014

With a note on the Steeples, BC, site and the reconnaissance count at Vicki Ridge, AB

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### ***Summary and highlights***

*This was the 23<sup>rd</sup> consecutive year that some form of fall count has been conducted by RMERF in the Front Ranges of the Alberta Rocky Mountains, and was the 22<sup>nd</sup> conducted at Mount Lorette. Despite generally good weather and favourable observing conditions, only one day lost to inclement weather, and a well conducted count the combined species count of 3332 and the Golden Eagle count of 2845 were 18.7% and 18.9% below average respectively and the declining trend for Golden Eagle at the site is maintained. Despite 11 days of 100+ Golden Eagle counts the single day high count of 264 Golden Eagles was the second lowest maximum count ever, although the count of 181 birds on November 3 was by far the highest ever for that month. The Golden Eagle immature:adult was 0.36, 29.4% above average and the highest since 2008, indicating a successful breeding season. Osprey (5) and Red-tailed Hawk (53) occurred in record numbers and 17 Northern Harriers was the second highest total. With the exception of Red-tailed Hawk that was 7 days later than average, most species were close to average median occurrence and the combined species median passage date of October 12 was less than a day later than average. Of the 9 species with sufficient data, 5 had immature:adult ratios above average and 4 were below average. The Steeples site on the western flanks of the Rocky Mountains near Cranbrook, BC produced 277 birds at a passage rate of only 7.49/hour, and the lowest ever count of 64 Golden Eagles despite 37 days spent in the field. At a new reconnaissance count at Vicki Ridge in SW Alberta 11 days counting produced 405 migrants of 13 species including a disappointing total of 103 Golden Eagles, but impressive counts of 32 Northern Goshawks and 103 Rough-legged Hawks.*

### **Introduction**

The Mount Lorette site is located in the Kananaskis Valley in the Front Ranges of the Rocky Mountains (50°58'N 115°8'W) 70 km due west of Calgary and immediately north-east of the Nakiska Ski Hill on Mount Allan. At this point the valley trends north-south and cuts obliquely across the NW-SE oriented trend of the Front Ranges. To the east of the observation site the Fisher Range has an average elevation of about 2500 m with Mount McDougall rising to 2726

m. Mount Lorette itself is 2487 m and is a geological continuation of the Fisher Range across the Kananaskis Valley to the NW. To the west the mountains of the Kananaskis Range are somewhat higher and include Mount Kidd (2958 m), Mount Bogart (3144 m) and Mount Allan (2819 m). The observation site is in a cleared area on the valley floor known as the Hay Meadow at about 1433 m. The site allows 360° views of the surrounding mountains and allows monitoring of raptors moving along the mountain ridges to the east and west, and especially those crossing the valley between Mount Lorette and the north end of the Fisher Range. The site is unique in that it allows observation of approximately the same high percentage of a population of migratory Golden Eagles both in spring and fall at exactly the same site, which has in the past been occupied for up to 190 days in a year. When downslope cloud obscures these mountains an alternate site at Lusk Creek, 13 km NE of the Hay Meadow site, is used to observe birds moving along the westernmost foothills ridge that have been displaced to the east from the Front Ranges. Birds seen here when active observation is occurring at Hay Meadow are not included in the official count.

**Table 1** summarizes the fall counts from 1992 to 2014 at the principal observation count for each year. Migrating Golden Eagles were first seen moving over Mount Lorette on March 20, 1992, and the first extended (33 day, 280 hour) count was conducted that fall that yielded 2661 migrant raptors of which 2044 were Golden Eagles<sup>1</sup>. Subsequently full-season fall counts (averaging 88 days, 865 hours) were conducted annually at Mount Lorette to 2005 with the exception of 1997 when a full count was conducted at Plateau Mountain and 2002 when serious illness to a key member of the team reduced the count to just 14 days. From 2006 to 2009 the principal fall observation site was moved to the Piitaistakis-South Livingstone location close to the Municipality of Crowsnest Pass in SW Alberta, during which time extended comparison counts were conducted at Mount Lorette during the main period of Golden Eagle migration. The Lorette counts in 2006, 2007 and 2008 lasted for 32 days, 25 days and 30 days respectively and are considered to be too short for statistical comparison with previous counts from which data from a standard count period September 20 to November 15 have been recalculated. The only exception is 2009 where a 46-day count from September 20 to November 9 has been included. The period September 20 to November 15 captured an average of 97% of the total Golden Eagle count at Mount Lorette between 1992 and 2005. Long-term averages of several other raptor species, however, will differ more widely from full count statistics where significant movement usually occurs before September 20 (e.g. Red-tailed Hawk) or after November 15 (e.g. Bald Eagle). In this report data variances (number, median passage dates, age ratios) are given for the period September 20 to November 15 for averages of the 16 years 1993-1996, 1998-2001, 2003-2005 and 2009-13.

At Mount Lorette this season observers spent a total of 56 days (583.4 hours) of a possible 57 days at the site between September 20 and November 15 (**Table 2**), the days and hours being 3.1% and 4.5% above average respectively. Again no systematic daily count was held this season at the Piitaistakis-South Livingstone site, but a new reconnaissance count was conducted on Vicki Ridge near Beaver Mines, Alberta on 11 days between October 5 and November 8. Vicki Ridge is located 17 km SSE of the Piitaistakis-South Livingstone site and monitors some of the birds that would have passed south along the Livingstone Range. The Steeples site on the western flanks of the Rocky Mountains near Cranbrook, BC, was occupied for 37 days between 1.5 and 7 hours a day from September 22 to November 13, which is the second highest number

of days spent there since 2009.

Detailed daily summaries of this Mount Lorette count and Mount Lorette and Piitaistakis-South Livingstone counts from past years can be accessed on a blog published on the RMERF website [www.eaglewatch.ca](http://www.eaglewatch.ca).

## Mount Lorette, Alberta

### Weather

**Table 3** summarizes the season's weather. The most notable feature of the count was the temperature which almost throughout was significantly above normal. The average daily high in September was 18.1°C, in October was 12.6°C and November 1-8 was 6.6°C. An arctic cold front that passed south on November 9 brought the only prolonged cold weather of the count with an average high temperature of -7.7°C between November 9 and 15. The lowest minimum temperatures also occurred in this period with -26°C recorded on both November 12 and 15. The highest maximum temperature was 26°C on September 22 and the lowest maximum was -12°C on November 11. Because of the warmth most precipitation fell as rain with 11 days in September and October experiencing drizzle, light rain or showers, and 4 days with significant heavy rain including October 15 which was the only complete day lost because of poor weather conditions. Only 2 days in September and October had brief periods of snow at the site. A cold front passing on November 1 brought 12 cm of snow, and the arctic front that passed on November 9 produced two days of significant snowfall. November 11 and 15 experienced period of snow fog in the valley, but overall very little observation time was lost owing to the weather. The eastern ridges were occluded by more than 10% cloud on 14 active days (25%), but 8 of these days were in November which included 3 days (1st, 9th and 10th) where the ridges were completely obscured all day. Regrettably, once again, the Environment Canada weather station (Nakiska Ridgertop) situated 4 km west of the Hay Meadow site on Olympic Summit (Mount Allan) at 2543 m was inoperative this season and ridge wind information had to be estimated by observers. It should be noted that experience has demonstrated that wind velocities tend to be underestimated by observers located in the valley, and on cloudless days or when the ridges were cloaked in cloud estimating wind direction and velocity proved to be impossible. Observers assessed ridge winds to be from the SSW-W 71.4%, NW 7.1%, S 3.6% and N-NE 5.4% of the time. It was impossible to assign a direction on 12.5% of active days because of cloudless or overcast conditions. Most of the time winds favourable to migration prevailed. Observers assessed these winds as light 14.3% of the time, as light to moderate (1-40 km/h) 17.9% of the time, as moderate (11-40 km/h) 15.7%, as moderate to strong (11-100 km/h) 23.2%, as strong (>41 km/h) 16.1%, as strong to very strong (40-100 km/h+) 1.8%, as very strong (100 km/h+) 1.8% and light to strong (1-40 km/h+) 1.8%. On three days (5.4%) it was not possible to assess the wind velocity. It appeared like last year that wind velocities at ridge-level were less than average.

Five active days (8.9%) were either completely cloudless or had a maximum cloud cover of less than 20% and only 6 active days (10.7%) experienced a cloud cover that was between 80 and

100%. Most other active days saw wide diurnal variation in percentage cloud cover with 55.4% of active days reaching a maximum cover of 90-100% and 51.8% having minimal cover of 0-10%. Generally throughout the count cloud cover produced good observing conditions. In summary, weather conditions were generally conducive to raptor movement up to November 9, and for observers it was certainly the most comfortable season for a long time.

### **General flight dynamics** *September 20 to November 15*

Migrant raptors were recorded on 55 of the 56 active field days between September 20 and November 15 (**Table 2**). A total of 13 days (23.2%) between October 4 and November 3 had a passage of at least 100 migrants. The highest single-day count occurred on October 9 with the passage of 300 birds which is the second lowest maximum count ever at the site, the lowest ever for valid counts being 295 in 2001. On the other hand counts of 103 birds (101 Golden Eagles) on November 2 and 185 (181 Golden Eagles) on November 3 was unprecedented for the month. It appears that the generally favourable migration conditions in September and October did not produce the usual “big days” experienced in mid-October, which instead occurred in early November following the passage of a cold front on November 1.

The combined species total of 3332 is 18.7% below the long-term average (**Table 4**) and is the fourth-lowest valid fall count for the site. The September count (**Table 5A**) of 194 was the lowest ever and 61.3% below average, the October count (**Table 5B**) of 2672 was the fifth-lowest (-17.4%), but the November count (**Table 5C**) of 466 was 52.8% above average and the second highest ever, just two birds short of the highest November count of 468 in 2001. The combined species median passage date of October 13 is slightly earlier (< 1 day) than the average for the count period September 20-November 15. Three species, Northern Harrier, Golden Eagle and Peregrine Falcon coincided with their long-term average median passage dates; 6 species were later than average: Bald Eagle (+ 2 days), Sharp-shinned Hawk (+1 day), Cooper’s Hawk (+3 days), Red-tailed Hawk (+7 days), Rough-legged Hawk (+1 day) and Merlin (+1 day); while northern Goshawk was 5 days earlier than average (**Table 7**). Of the 15 species recorded (**Table 4**) 6 occurred in above average numbers: Osprey 5 (+95.1%), Northern Harrier 17 (+70%), Red-tailed Hawk 53 (+60.9%), Merlin 7 (+0.9%), Gyrfalcon 3 (+6.7%) and Peregrine Falcon 9 (+69.4%); while counts of 9 species were below average: Bald Eagle 157 (-37%), Sharp-shinned Hawk 96 (-27.9%), Cooper’s Hawk 20 (-13.3%), Northern Goshawk 35 (-23.6%), Broad-winged Hawk 5 (-22.3%), Rough-legged Hawk 48 (-9.8%), Golden Eagle 2845 (-18.9%), American Kestrel 2 (-20%) and Prairie Falcon 1 (-48.4%). Turkey Vulture, Swainson's Hawk and Ferruginous Hawk were not recorded this season.

The final count was Turkey Vulture 0, Osprey 5, Bald Eagle 157, Northern Harrier 17, Sharp-shinned Hawk 96, Cooper’s Hawk 20, Northern Goshawk 35, *Accipiter* sp. 8, Broad-winged Hawk 5, Swainson’s Hawk 0, Red-tailed Hawk 53, Ferruginous Hawk 0, Rough-legged Hawk 48, *Buteo* sp. 5, Golden Eagle 2845, eagle sp. 12, American Kestrel 2, Merlin 7, Gyrfalcon 3, Peregrine Falcon 9, Prairie Falcon 1, *Falco* sp. 3, and indeterminate raptor 1, for a total of 3332 migrant raptors.

A daily summary of the counts can be found on the Foundation's website.

## Golden Eagle

Observers counted a total of 2845 migrating Golden Eagles on 52 days between September 20 and November 15 (**Table 2, Figure 1**). The highest single-day count was 264 on October 9, which is the second lowest maximum count (the lowest was 256 in 2001) and 36.91% below the average maximum count. There were, however, 11 days which saw movement in excess of 100 birds. Eight of these occurred between October 5 and 13, with October 7 producing 98 birds: this period saw the passage of 1518 birds which comprised 53.4% of the total count for the species. More remarkable were the counts of 101 and 181 birds on November 2 and 3 respectively, which followed the passage of a cold front on November 1. The November 2 count was only the 4<sup>th</sup> 100+ count for the month and that of November 3 was by far the highest November count ever. The two-day count of 282 Golden Eagles alone represented the 5<sup>th</sup> highest count for November and was 37.1% above the average count for the month. Despite the persistence of the movement the total was still 18.9% below the long-term average. The monthly counts (**Table 5**) show that only 92 birds moved in September (-74.8% and by far the lowest ever September count); 2365 moved in October (-18.8%) and 388 in November which is the highest ever count for the month and 88.6% above average. Golden Eagles comprised 85.4% of the total count this season. The flight comprised 1704 adults, 162 subadults, 459 juveniles and 520 birds of unknown age yielding an immature:adult ratio of 0.36 that is 29.4% above average. The ratio of juvenile birds to subadults and adults was 0.25 which is 78.38% above average and the highest ratio ever recorded at the site, indicating a very productive breeding season.

The highest cumulative hourly counts were 382 (1600-1700), 360 (1500-1600), 302 (1300-1400) and 299 from (1400-1500) MST. Five birds were recorded between 0600 and 0700 while only 9 birds occurred after 1800; this may in part result from some observers starting late and leaving early. (**Figure 2, Table 6**). The highest single-hour passage was only 55 between 1600 and 1700 on October 9, while the second highest hour was 49 between 0900 and 1000 on October 13. Reflecting the evenness of the daily counts there was no exceptional hourly movement this year either. The hourly distribution pattern (**Figure 2**) closely approximates the cumulative distribution of the complete fall counts conducted at the site up to 2005, which was the last year that a complete count occurred there (**Figure 3**). This shows an almost perfect negatively skewed distribution curve peaking at 1500-1600 (MST), and individual year counts up to 2005 rarely varied from this average count. The 2014 count is the first time this pattern has been observed since 2005. The species median passage date of October 12 coincided with the average date, adult birds were 2 days earlier than average on October 14, while immature birds were also 2 days later than average on October 10. It is unusual for all age classes to fall within a two-day period and this is the second consecutive year that this has happened.

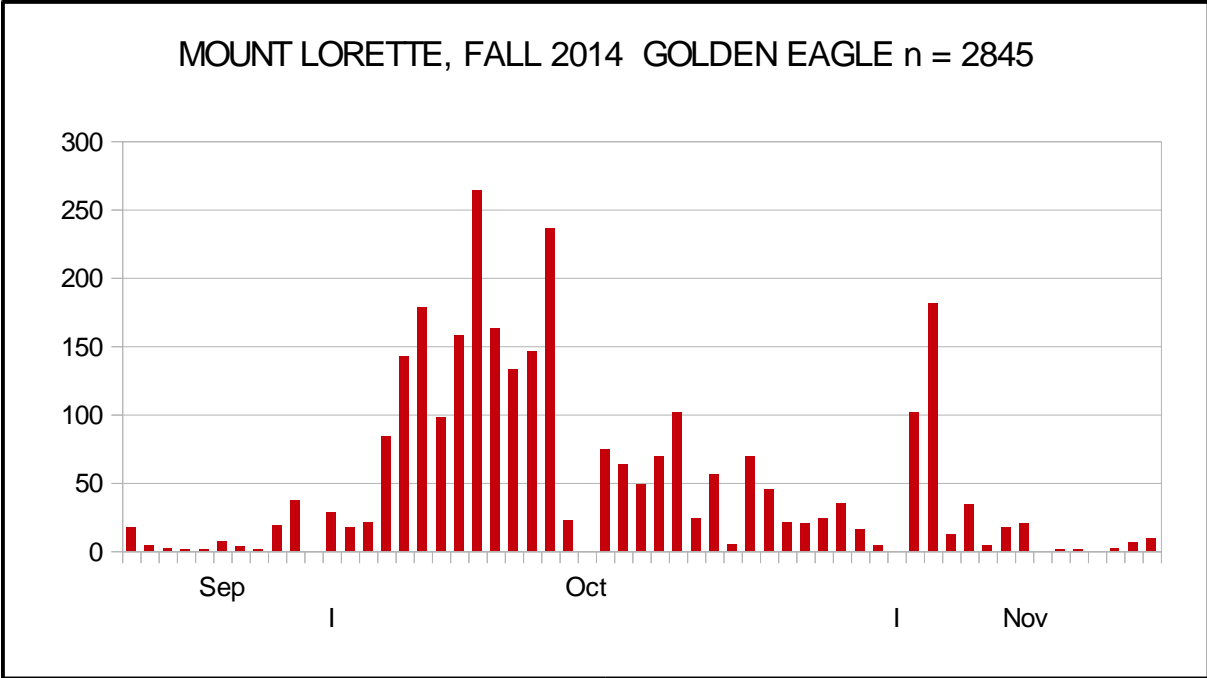


Figure 1

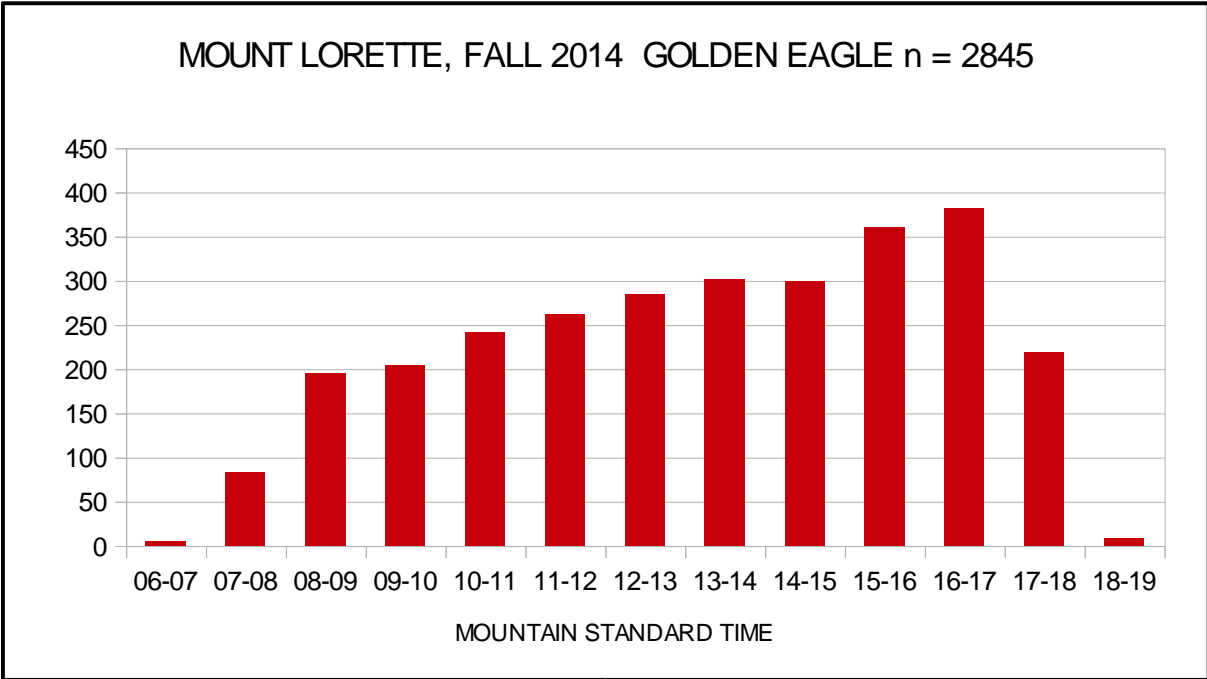
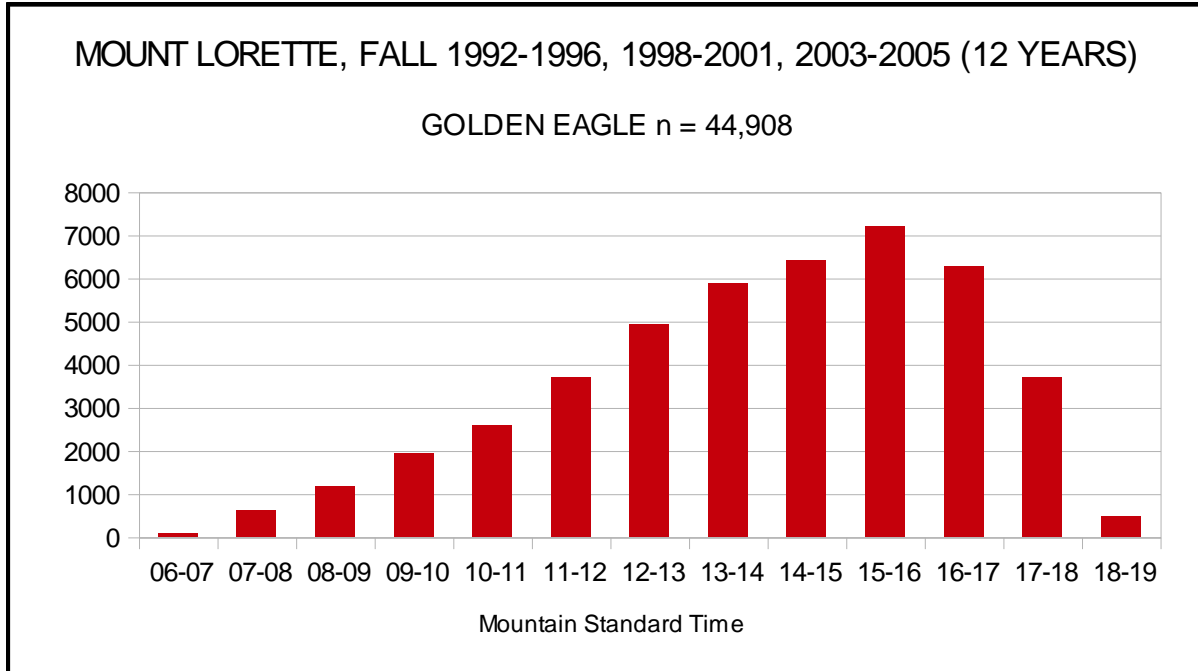


Figure 2



**Figure 3**

### Fall Golden Eagle Trend

**Figure 4** shows the linear trend of all counts from 1993-2014 excluding 2002, while **Figure 5** shows the trend excluding 2002 and the short counts of 2006, 2007 and 2008. Both show a clear diminishing trend with the removal of the short counts ameliorating but not significantly altering the trend. A similar trend is also seen in spring counts at the site after 1995. This season's count, although slightly higher than last year, does not alter the declining trend for the species at the site seen since 1993. This declining fall trend was also seen at a number of other sites in western North America up to 2005<sup>2</sup>. In the Rocky Mountains region, both Mount Lorette (1993-2005), and the Bridger Mountains (Montana) (1992-2005) showed marginally significant declining trends, the Manzano Mountains (New Mexico) (1983-2005) showed a significant decline (especially since 1996), and the Wellsville Mountains (Utah) showed a significant decline since 1993. In the Intermountain Basin region the Goshute Mountains (Idaho) (1983-2005), Lipan Point (Arizona) (1991-2005) and the Grand Canyon combined count (Arizona) (1997-2005) all showed significant declines, while Boise Ridge (Idaho) (1993-2005) showed a non-significant increasing trend. With the exception of Boise Ridge (which has an average count of only 52 birds) the declines at all sites started in the early to mid-1990s.

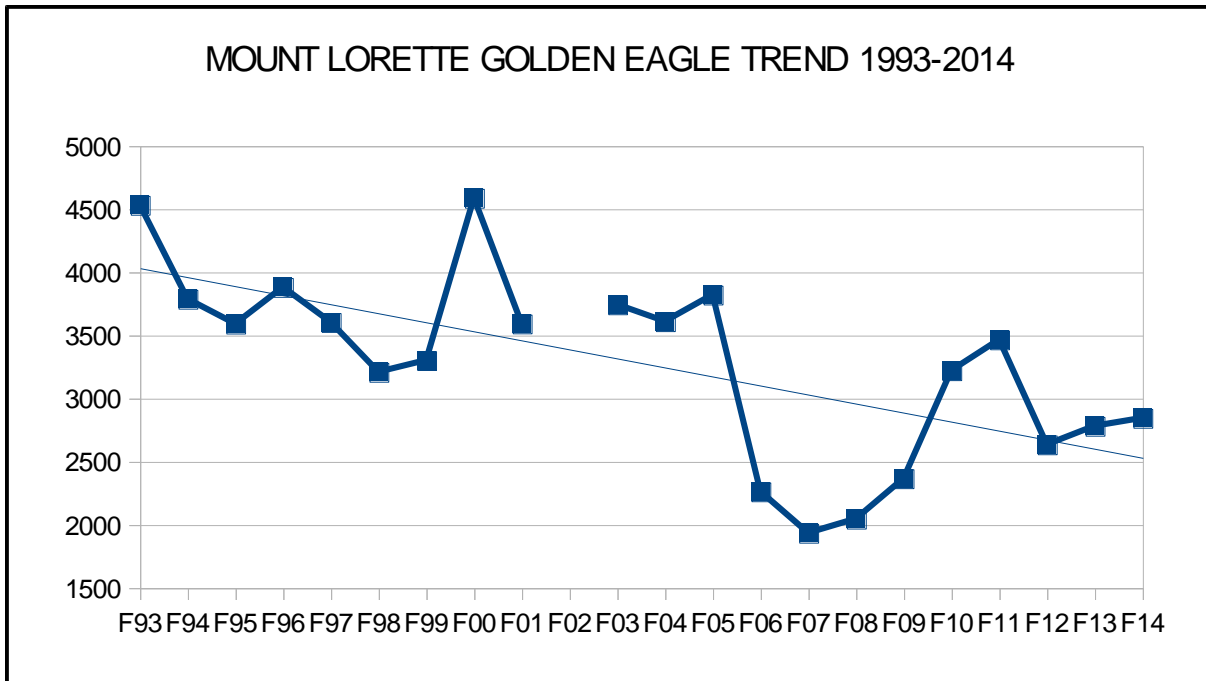


Figure 4

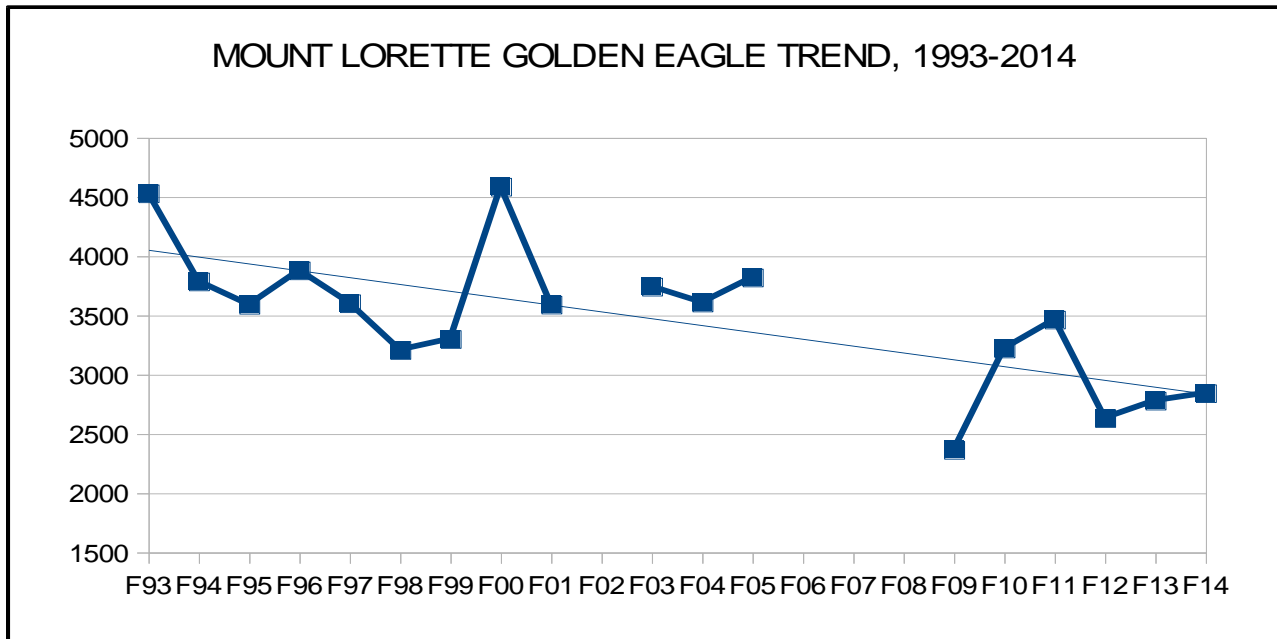


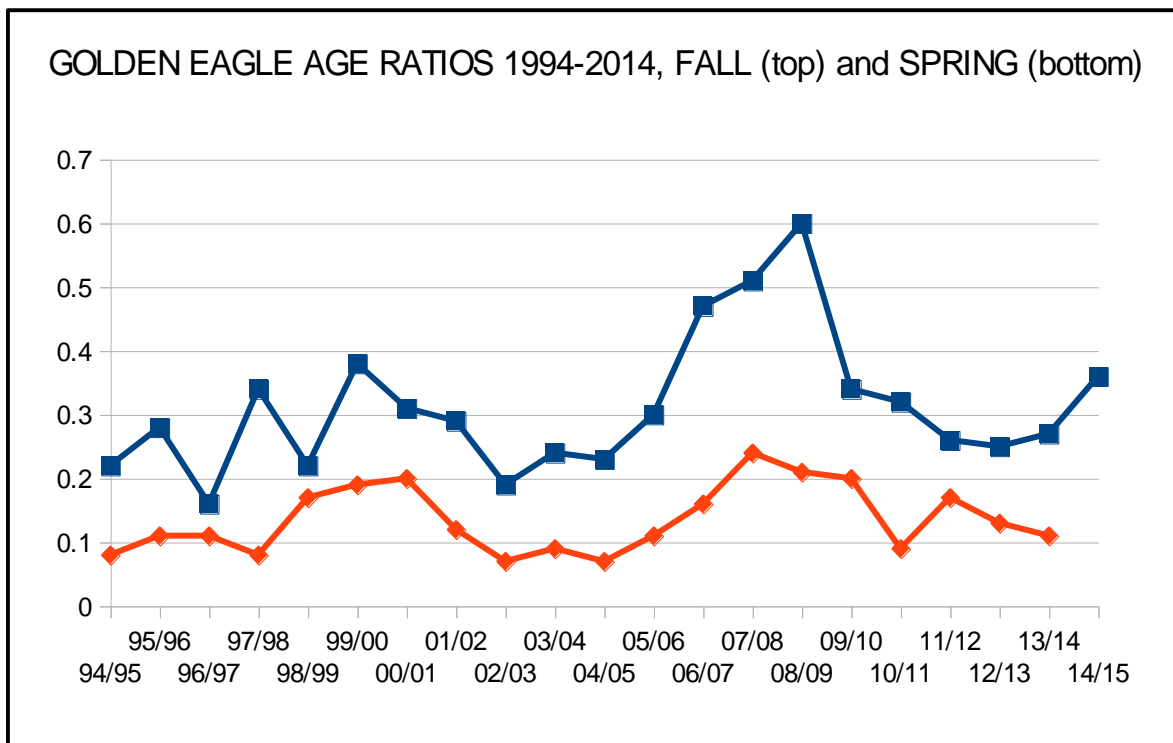
Figure 5

### Golden Eagle Age Analysis

Figure 6 shows the trend of fall immature:adult ratios since 1994. Note that the 1997 count was at Plateau Mountain and the 2006-9 counts were at Piitaistakis-South Livingstone with the rest conducted at Mount Lorette. As the age ratios have been found to be very similar between counts



at Plateau Mountain, Piitaistakis-South Livingstone and Lorette, it is reasonable to combine data from three sites along the migration trend: when plotted, the points form a consistent trend pattern. There is a generally increasing trend to 1999, followed by a decrease to 2002, then a steady increase to 2008 followed by a decrease to 2012. The 2013 count showed a slight rise in the ratio, which was the first since 2007 and the 2014 ratio strengthens this rising trend. This trend (which is paralleled by the spring trend) almost certainly reflects the reproduction cycles of the northern Snowshoe Hare population<sup>(3, 4, 5)</sup>. It is interesting to note that the fall 2000 spike in numbers (**Figures 4 and 5**) occurred a year after the apparent peak in the snowshoe hare cycle and may represent a more complete southward movement of a population at its peak resulting from an increasing dearth of a fall and winter prey species. This also raises the possibility that part of the apparent overall decline in the species seen at the site may result from progressively more birds wintering north of the counting sites as hare numbers recover (“shortstopping”), but even allowing for this it appears that numbers counted during the second cycle (i.e. after 2000) are significantly lower than the first (<1993-1999). It appears that fall 2009 marked the start of the declining phase of the hare cycle, 9 or 10 years after the previous peak and the 2014 ratio clearly indicates that there was a productive breeding season and that there is now a clear upswing in the cycle.



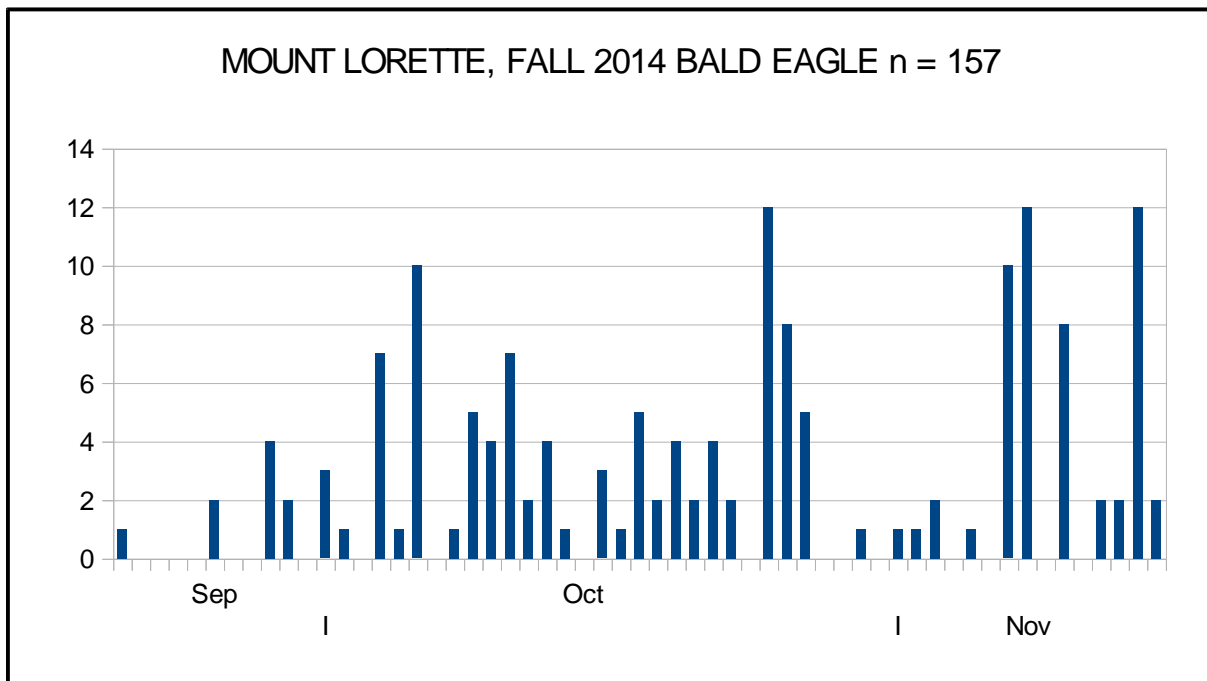
**Figure 6**

### **Bald Eagle**

The count of 157 birds seen on 39 days between September 20 and November 15 was a considerable increase from last year’s record low count of 95 but was still 37.0% below average (**Figure 7**). It is interesting to note that the six lowest fall counts at the site have occurred in the

last six years. It is possible that increasingly warm falls have resulted in water bodies to the north remaining ice-free for later in the year resulting in delayed migration of the species, but the passage of the arctic front on November 9 and the resultant plunge in temperatures did not appear to trigger any increase in Bald Eagle movement this year (**Table 2**). The idea that on mild years the species migrates later appears to be borne out by the high number of south-bound Bald Eagles seen after November 25 at the Beauvais Ridge count in 2011 and early 2012 documented in the fall 2011 report.

The monthly counts (**Table 5**) were 9 in September (-52.8%) which is the 3<sup>rd</sup> lowest count ever, 95 in October (-35.6%) and 53 in November (-32.9%). The highest single-day counts were 12 on October 25 and November 8 and 14, which are the second lowest ever and are 49.34% below the average high count. The flight comprised 92 adults, 21 subadults, 38 juveniles and 6 birds of unknown age giving an immature:adult ratio of 0.64 which is 21.0% above the average ratio. The median passage dates for the species, for adults and for juvenile birds were October 25, October 20 and October 25 which were 2 days later, 4 days earlier and 5 days later than average respectively.



**Figure 7**

**Other Species**

**Turkey Vulture** Not recorded. A single bird seen on September 20, 1998 remains the only fall record of the species at the site during the current count period.

**Osprey** Five birds were observed on 3 days between September 25 and 28 with 2 birds occurring on both of those dates. This is the highest total recorded for the count period and is 95% above

the average count. The median passage date was September 27.

**Northern Harrier** A total of 17 birds were seen on 11 days between September 20 and October 9. The total is 70% above average and is the second highest for the period behind the 27 counted in 1995. The highest daily count was 3 on October 5 and the median passage date for the species was October 4 which coincides with the long-term date. The flight comprised 8 adult birds (3 males and 5 females), 7 juveniles and 2 undifferentiated female/juvenile birds. The immature:adult ratio of 0.88 is 30.2% below average.

**Sharp-shinned Hawk** The total of 96 birds counted on 27 days between September 20 and the relatively late date of November 11 was one less than last year's total, is the sixth lowest fall count for the site and is 27.9% below average. The highest single-day count of 11 on September 20 and October 2 is 50% below the average maximum daily count and are the second lowest ever. The monthly counts were 35 in September (-37.3%), 56 in October (-23%) and 5 in November (+1.7%) which included 3 birds recorded on November 11. The flight comprised 23 adults, 10 juveniles and 63 birds of unknown age yielding an immature:adult ratio of 0.44, which is 6.9% above average although the high percentage of unaged birds means that this figure should be treated with caution. The median passage date for the species was October 4, 1 day later than average, adult birds were 2 days earlier than average on October 2 and juveniles were 1 day earlier than average on September 29.

**Cooper's Hawk** A total of 20 birds moved on 11 days between September 20 and the relatively late date of November 8 with a maximum passage of 4 birds on September 20. The flight comprised 8 adults, 4 juveniles and 8 birds of indeterminate age giving an immature:adult ratio of 0.5 which is which is close to average (+4.4%). The median passage date for the species and for adults was October 3, 3 days and 1 day later than average respectively.

**Northern Goshawk** A total of 35 goshawks migrated on 21 days between September 20 and October 26, which is 26.3% below average for the site. The highest single-day counts were 4 on September 28, October 5 and October 13 which are 30.4% below the average high count. The flight comprised 23 adults, 4 juveniles and 8 birds of unknown age giving an age ratio of 0.17 which is 32.7% below average. The median passage date for the species was October 7, 5 days earlier than average while the adult median passage date was October 9, 1 day later than average.

**Broad-winged Hawk** The total of 5 Broad-winged Hawks seen on 3 days between October 4 and 25 was the highest count since 2005, but is still 22.3% below average. Two birds occurred on October 4 and 8. The flight comprised 3 light morph adults and 2 light morph juveniles giving an age ratio of 0.67 which is 8% below average. The median passage date for the species was October 8, 5 days later than average.

**Swainson's Hawk** Not recorded this year. It has only occurred on five of the sixteen valid fall counts at the site and apart from two birds that occurred in 1995 only single birds were involved.

**Red-tailed Hawk** The count of 53 birds on 22 days between September 20 and November 9 was 60.9% above average and the second highest for the site behind the total of 59 counted in 1998. The highest daily count was 11 on October 9, which is 58.6% above average and the 3<sup>rd</sup> highest

daily count at the site. The flight comprised 40 birds of the race *B.j.calurus*, 30 of which were light morphs (24 adults and 6 juveniles), 4 were adult rufous (intermediate) morphs; and 10 were dark morphs (6 adults and 4 juveniles); 1 juvenile was considered to be a "Kridler's Hawk" (*B.j. borealis* var *kridleri*), and 3 were adult morph "Harlan's Hawks" (*B.j.harlani*). There were also 3 indeterminate birds. The overall immature:adult ratio was 0.35 which is 26.2% below average. The species median passage date was October 6, 7 days later than average, adults were 8 days later than average on October 7 and juveniles were 6 days later than average on October 5. This was the only species that moved significantly later than average this year. The median passage date for *B.j.calurus* was October 6 and for *B.j.harlani* was October 13.

**Ferruginous Hawk** The species was not recorded this season. Single birds have been recorded on five previous counts.

**Rough-legged Hawk** A total of 48 birds moved on 18 days between October 8 and November 15 (the last day of the count), with a single-day high count of 6 on October 6 and 9. The total and daily maximum were 9.8% and 44.19% below average respectively. The flight comprised 31 light, 14 dark and 3 indeterminate morphs giving a dark:light ratio of 0.45, which is the second highest ratio recorded and 70% above the average ratio. The median passage date of October 18 was 1 day later than average.

**American Kestrel** Two birds, 1 male and 1 female, were recorded on October 4. The total is 20% below average.

**Merlin** Seven Merlins were counted on 7 days between September 20 and November 3, which is close to an average count (+0.9%). Five birds (1 adult male and 4 of unknown age or sex) were ascribed to the race *F.c.columbarius*, 1 bird was of the race *F.c.richardsoni* (unknown age or sex) and 1 bird was of unknown race, sex or age. The median passage date for the species was October 3, 1 day later than average.

**Gyrfalcon** Three birds were recorded: a grey morph on November 7 and a grey and black morph on November 15. The total is 6.7% above average.

**Peregrine Falcon** A total of 9 birds was counted on 6 days between September 25, when 3 birds were seen, and the very late date of November 15. The count is 69.4% above average and is the third highest at the site. The flight comprised 6 adults, 2 juveniles and 1 bird of indeterminate age, giving an age ratio of 0.33. The median passage date of October 4 was coincident with the long-term average date.

**Prairie Falcon** The only record was a single bird on October 25. The average fall count is two.

### **Observers at Mount Lorette**

**Principal Observers** Jim Davis (10 days), Joel Duncan (10 days), Bill Wilson (9 days), George Halmazna (8 days), Cliff Hansen (7 days), Terry Waters (7 days), Peter Sherrington (4 days) and Alan Hingston (2 days); with the assistance of Kevin Barker (6 days), Ruth Morrow (6 days), Dan Parliament (6 days), Cliff Hansen (5 days), Diane Stinson (3 days), Chris Hunt (1 day), Pat Farley (1 day), Alan Hingston (1 day), Peter Sherrington (1 day), Fiona Waters (1 day).

**Acknowledgments:** RMERF gratefully extends thanks to the members and supporters of the Rocky Mountain Eagle Research Foundation for their continuing financial and logistical support. We thank Cliff Hansen who organized the count and compiled the data. The Rocky Mountain Eagle Research Foundation also gratefully acknowledges the continuing co-operation of the University of Calgary Biogeoscience Institute of the Canadian Rockies and Foothills Field Station at Barrier Lake and the G8 Chair for Wildlife Studies at the University of Calgary

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<sup>5</sup>Sherrington, P. 2003. *Trends in a migratory population of golden eagle in the Canadian Rocky Mountains*. *Bird Trends Canada* 9: 34-39.

## **Steeple Ridge extended reconnaissance count, British Columbia (Vance Mattson)**

### **Introduction**

In the fall of 2009 Vance Mattson conducted the first extended reconnaissance count at or near the Steeple Ridge which is located on the east side of the Kootenay Valley (Rocky Mountain Trench) 25 km NE of Cranbrook, British Columbia. Three sites were used to monitor raptor movement along, or just north of, the NNW-SSE oriented Steeple ridge which forms the southern part of the Hughes Range on the western flank of the Rocky Mountains. Of significance is that it is located about 80 km almost due W of the Piitaistakis-South Livingstone site giving the possibility of simultaneously monitoring movement along the eastern and western flanks of the Rocky Mountains at the same latitude. This year, with the exception of November 18, all counts were conducted at the Bill Nye site (49° 45' 11.10"N, 115° 38' 49.14"W, at 1041m). The

site, located beneath a prominent 'scar' on the face of the mountain) can be accessed from Wasa Lake by following Lazy Lake Road east toward Lazy Lake. It is located south of an unmarked back road approximately 10km from the Lazy Lake Road turn off on Wasa Lake Park Drive on the southern edge of Wasa Lake. The site is located about 5 km southeast from the back road turnoff, although it may require detailed instructions to arrive there. The site offers views of the birds as they pass over, or in front of, the ridge. 'Scarface Peak' (2400m) is the most westerly and visibly craggy peak of Mount Bill Nye (2600m). The fall 2014 season is the sixth reconnaissance count at the site (**Table 8**) and with the exception of September 30 (Wasa) all counts were at the Bill Nye site.

### **Weather and count summary**

A total 37 days (124 hours) were spent observing at the Bill Nye site between September 22 and November 13. Unlike last year the weather was generally warm and clear for much of the count, only becoming more unstable, but still warm, after October 22, with the only prolonged cold, poor weather occurring after the passage of the arctic cold front on November 9, that also impacted counts on the eastern flanks of the Rockies (**Table 10**).

A total of 277 migrant raptors of 9 species were recorded between September 22 and November 8 (**Table 9**). The final count was 1 Osprey, 126 Bald Eagles (70a, 12sa, 46j), 3 Northern Harriers (1 adult female, 2j), 28 Sharp-shinned Hawks (10a, 3j, 18u), 4 Northern Goshawks (3a, 1j, 1u), 26 Red-tailed Hawks (*B.j.calurus*: light morph (15a,12j,2u), 1 adult rufous morph, 2 dark morphs (1a, 1j), 5 of undetermined age, and 1 dark morph adult Harlan's Hawk), 2 dark morph Rough-legged Hawks, 64 Golden Eagles (46a, 3sa, 9j, 6u) and 4 American Kestrels (1 male, 2 female, 1u). Despite the number of days being the second highest spent at the site and 46.6% above average, and the number of hours being the 3<sup>rd</sup> highest and 21.82 above average, the number of raptors/hour at 7.49 was the lowest ever recorded and 28.8% below the average rate. The peak day was October 11 which yielded 63 migrant raptors in 7 hours, including 51 Bald Eagles. Golden Eagles (64) were particularly low considering the amount of time spent in the field, but Bald Eagle numbers (128) were about average. Red-tailed Hawks were seen in unprecedented numbers (38), although the total includes 11 birds seen soaring over Wasa on September 30, and the 31 Sharp-shinned Hawks were the second highest count for the site. The immature:adult ratio for Bald Eagles was 0.82 (compared to 0.64 at Mount Lorette) and the Golden Eagle ratio was 0.26 (compared to 0.36 at Mount Lorette)

### **Observer at Steeples**

All counts were conducted by Vance Mattson.

## **Vicki Ridge reconnaissance count, Alberta (Peter Sherrington)**

### **Introduction**

Vicki Ridge is a north-south oriented foothills ridge located 4.5 km WNW of the Hamlet of Beaver Mines in SW Alberta. It is 17 km SSE of the Piitaistakis-South Livingstone site and monitors some of the birds that would have passed south along the Livingstone Range in the fall. The high point of the ridge is 1670m and most observation was conducted near the south end of

the ridge at 1533 m (49° 27' 59" N 114° 15' 13" W). On very windy days observation was conducted from the end of a well-site access road immediately west of the southern end of the ridge at 1418m. Access to the ridge is from the Seven-Gates Road which goes west from Highway 507 1 km NW of Beaver Mines. The ridge top is a very easy climb from the road and affords excellent 360° views. The ridge has been well-known to locals for a number of years as a good place to observe raptors but no systematic counts had previously been conducted there.

### **Weather and count summary**

The site was sporadically occupied on 11 days between October 5 and November 8 for a total of 37.28 hours at an average of 3.39 hours a day. Like the other two sites the temperature was generally unseasonably warm, and winds were generally moderate to strong W or WSW, although on two days it was essentially calm. The arctic front that moved through the other two sites on November 9 also ended any prospect of further count days here. The count yielded a total of 405 migrants of 13 species at an average rate of 10.87/hour. The count comprised 1 Osprey, 33 Bald Eagles, 4 Northern Harriers, 62 Sharp-shinned Hawks, 15 Cooper's Hawks, 32 Northern Goshawks, 7 unidentified *Accipiters*, 2 Broad-winged Hawks, 28 Red-tailed Hawks, 103 Rough-legged Hawks, 1 unidentified *Buteo*, 114 Golden Eagles, 1 American Kestrel, 1 Peregrine Falcon and 1 Prairie Falcon. The highest count days were 96 on October 5 and 80 on October 25. Apart from the 30 birds in 4.5 hours on October 5, Golden Eagle numbers were disappointing with most birds that moved south from the Livingstone Range apparently using ridges farther to the west. The variety and numbers of other raptors, however, was most gratifying and the 32 Northern Goshawks and 103 Rough-legged Hawks seen were notable. The ease of access to the ridge and the usual closeness of the birds to the observers suggests that future counts there would be profitable and enjoyable.

### **Observers at Vicki Ridge**

Peter Sherrington (9 days), Doug and Teresa Dolman (4 days) and members of the Crowsnest Conservation Society (2 days).

## Appendix

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TABLE 1

RMERF ALBERTA FRONT RANGES FALL COUNTS: PRINCIPAL SITES 1992-2014

	days	hrs.	TV	OS	BE	NH	SS	CH	NG	BW	SW	RT	FH	RL	GE	AK	ME	GY	PG	PR	UA	UB	UE	UF	UU	T	SITE
1992	33	280.4	0	0	194	3	194	36	136	3	0	29	0	16	2044	2	3	1	0	0	0	0	0	0	0	2661	L
1993	55	474.8	0	2	455	13	217	46	82	5	0	47	1	59	4532	1	4	8	4	1	2	0	0	1	0	5480	L
1994	83	737.2	0	1	370	8	210	40	32	15	1	63	0	42	3836	11	21	2	5	7	5	4	1	0	0	4674	L
1995	82	671.7	0	9	378	37	309	39	11	9	2	71	0	69	3704	4	16	4	4	3	1	5	0	1	0	4676	L
1996	83	701.5	0	6	297	20	219	42	9	27	0	59	1	65	3913	20	13	0	5	4	1	6	0	0	0	4707	L
1997	85	858.1	0	4	607	66	589	39	11	0	1	100	1	210	3853	23	22	15	9	6	7	5	0	7	5	5580	PM
1998	95	850	1	5	317	30	152	44	32	20	1	131	2	89	3395	18	8	6	3	4	8	5	1	2	4	4278	L
1999	101	1007	0	14	312	35	238	41	30	26	4	76	0	70	3475	7	12	13	6	1	15	3	1	2	13	4394	L
2000	94	623.6	0	2	510	15	175	25	140	3	0	17	0	68	4587	1	12	2	1	1	7	0	1	1	6	5574	L
2001	101	1112	0	9	448	15	291	41	118	5	1	109	0	56	3683	9	22	6	7	2	15	2	0	3	2	4844	L
2002	14	83.75	0	0	54	4	35	12	4	0	0	1	0	10	1522	1	5	0	0	0	3	2	1	0	1	1655	L
2003	82	896.9	0	11	276	17	198	46	61	6	3	62	0	34	3783	6	19	1	5	1	20	4	2	0	13	4568	L
2004	96	1095	0	18	418	24	179	50	69	6	1	41	0	71	3774	14	13	9	14	4	19	2	5	1	20	4752	L
2005	75	844.2	0	5	304	7	96	22	46	6	1	18	1	80	3949	2	7	3	2	3	16	2	2	2	10	4584	L
2006	84	892.4	0	11	482	76	1247	220	154	10	2	283	1	141	4400	33	45	6	14	18	45	6	6	3	14	7217	P-SL
2007	100	1048	0	17	700	56	1219	191	166	13	1	188	4	83	5445	37	27	9	35	18	57	2	12	2	7	8289	P-SL
2008	95	1037	0	27	466	49	1452	235	245	20	3	209	1	97	5209	18	32	3	35	17	59	11	32	3	15	8238	P-SL
2009	103	1143	0	49	684	100	1015	302	136	45	7	195	10	85	4293	65	29	10	48	12	35	7	4	3	11	7145	P-SL
2010	55	577.2	0	4	165	6	67	15	34	1	0	44	1	23	3222	2	2	0	4	4	16	9	12	1	10	3642	L
2011	55	590.8	0	3	137	2	113	33	42	0	0	28	0	41	3466	2	6	2	10	2	3	2	2	3	2	3899	L
2012	52	530.1	0	2	128	6	63	10	30	1	0	26	0	61	2635	0	5	1	6	2	5	2	2	1	1	2987	L
2013	51	516.9	0	1	95	7	97	18	25	0	0	20	0	32	2782	1	6	0	4	1	6	5	5	3	2	3110	L
2014	56	583.4	0	5	157	17	96	20	35	5	0	53	0	48	2845	2	7	3	9	1	8	5	12	3	1	3332	L
TOTAL	1730	17155	1	205	7954	613	8471	1531	1648	226	28	1870	23	1550	84347	277	336	104	230	112	353	89	101	42	137	110286	
L	MOUNT LORETTE																										
PM	PLATEAU MOUNTAIN																										
P-SL	PITAISTAKIS-SOUTH LIVINGSTONE																										

**TABLE 2**  
**Mount Lorette, Alberta, Fall 2014**  
September 20 to November 15

day #	Date	HRS	TV	OS	BE	NH	SS	CH	NG	BW	SW	RT	FH	RL	GE	AK	ML	GY	PG	PR	UA	UB	UE	UF	UU	TOTAL	Principal observer
1	2014-09-20	12.5	0	0	1	1	11	4	2	0	0	7	0	0	17	0	1	0	0	0	0	1	0	0	1	46	JDa
2	2014-09-21	13.25	0	0	0	0	2	0	1	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	7	BW
3	2014-09-22	9.5	0	0	0	0	0	0	1	0	0	1	0	0	2	0	1	0	0	0	0	1	1	0	0	7	JDa
4	2014-09-23	12	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	GH
5	2014-09-24	11	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	5	CHa
6	2014-09-25	12.33	0	2	2	2	6	3	1	0	0	2	0	0	7	0	0	0	3	0	1	0	0	0	0	29	PS
7	2014-09-26	9.5	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3	TW
8	2014-09-27	11.5	0	1	0	0	1	1	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	6	JDa
9	2014-09-28	13	0	2	4	2	9	1	4	0	0	2	0	0	19	0	1	0	1	0	0	0	0	0	0	45	BW
10	2014-09-29	11.5	0	0	2	0	3	0	0	0	0	0	0	0	37	0	0	0	0	0	2	0	0	0	0	44	CHa
11	2014-09-30	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	CHa
<b>September</b>		<b>121.1</b>	<b>0</b>	<b>5</b>	<b>9</b>	<b>5</b>	<b>35</b>	<b>9</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>92</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>5</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>194</b>	
12	2014-10-01	10.5	0	0	3	1	0	0	0	0	0	1	0	0	28	0	0	0	0	0	0	0	0	0	0	33	JDa
13	2014-10-02	12.25	0	0	1	2	11	0	1	0	0	3	0	0	17	0	0	0	0	0	0	0	0	0	0	35	GH
14	2014-10-03	9.5	0	0	0	0	1	1	1	0	0	2	0	0	21	0	0	0	0	0	0	0	0	0	0	26	TW
15	2014-10-04	12.25	0	0	7	1	4	2	1	2	0	3	0	1	84	2	1	0	1	0	0	0	1	0	0	110	JDa
16	2014-10-05	12.75	0	0	1	3	0	0	4	0	0	1	0	0	142	0	1	0	0	0	2	0	0	0	0	154	BW
17	2014-10-06	11.75	0	0	10	0	6	3	1	0	0	3	0	6	178	0	0	0	0	0	0	0	0	0	0	207	GH
18	2014-10-07	11.17	0	0	0	1	10	0	1	0	0	2	0	0	98	0	0	0	0	0	0	0	0	1	0	113	CHa
19	2014-10-08	11.75	0	0	1	1	5	0	0	2	0	0	0	4	158	0	1	0	0	0	0	0	0	0	0	172	JDa
20	2014-10-09	10.5	0	0	5	1	3	2	2	0	0	11	0	6	264	0	0	0	0	0	1	1	4	0	0	300	JDa
21	2014-10-10	10.5	0	0	4	0	1	0	0	0	0	2	0	0	163	0	0	0	0	0	0	0	0	0	0	170	TW
22	2014-10-11	11.5	0	0	7	0	5	1	1	0	0	1	0	0	133	0	0	0	0	0	0	0	1	0	0	149	JDa
23	2014-10-12	12.58	0	0	2	0	1	0	2	0	0	1	0	0	146	0	0	0	0	0	0	0	0	0	0	152	BW
24	2014-10-13	11.5	0	0	4	2	1	0	4	0	0	3	0	2	236	0	0	0	0	0	0	0	0	0	0	252	GH
25	2014-10-14	10.75	0	0	1	0	0	0	0	0	0	0	0	0	22	0	0	0	0	0	0	0	0	0	0	23	CHa
2014-10-15		NO OBSERVATION																							0		
26	2014-10-16	8	0	0	3	0	1	0	0	0	0	1	0	4	74	0	0	0	0	0	0	0	1	0	0	84	JDa
27	2014-10-17	10.5	0	0	1	0	2	1	0	0	0	1	0	0	63	0	0	0	0	0	0	0	0	0	0	68	TW
28	2014-10-18	11	0	0	5	0	1	0	0	0	0	1	0	5	49	0	0	0	0	0	0	0	0	0	0	61	JDa
29	2014-10-19	12	0	0	2	0	0	0	2	0	0	0	0	0	69	0	0	0	0	0	0	0	0	0	0	73	BW
30	2014-10-20	11.25	0	0	4	0	0	0	1	0	0	1	0	0	101	0	0	0	0	0	0	0	0	0	0	107	GH
31	2014-10-21	11	0	0	2	0	0	0	1	0	0	0	0	0	24	0	0	0	1	0	0	0	1	0	0	29	PS
32	2014-10-22	11.33	0	0	4	0	1	0	1	0	0	0	0	1	56	0	0	0	0	0	0	0	0	0	0	63	PS
33	2014-10-23	9.5	0	0	2	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	7	JDa
34	2014-10-24	9.5	0	0	0	0	0	0	0	0	0	0	0	0	69	0	0	0	2	0	0	0	0	0	0	71	TW
35	2014-10-25	10	0	0	12	0	2	0	1	1	0	0	0	2	45	0	0	0	0	1	0	0	0	0	0	64	JDa
36	2014-10-26	11.33	0	0	8	0	0	0	2	0	0	0	0	2	21	0	0	0	0	0	0	0	0	0	0	33	BW
37	2014-10-27	11	0	0	5	0	0	0	0	0	0	0	0	1	20	0	0	0	0	0	0	0	0	0	0	26	GH
38	2014-10-28	10.33	0	0	0	0	1	0	0	0	0	0	0	4	24	0	0	0	0	0	0	0	0	0	0	29	CHa
39	2014-10-29	10	0	0	0	0	0	0	0	0	0	0	0	0	35	0	0	0	0	0	0	0	1	0	0	36	JDa
40	2014-10-30	9.5	0	0	1	0	0	0	0	0	0	0	0	1	16	0	0	0	0	0	0	0	2	0	0	20	JDa
41	2014-10-31	9	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	1	0	5	TW
<b>October</b>		<b>324.5</b>	<b>0</b>	<b>0</b>	<b>95</b>	<b>12</b>	<b>56</b>	<b>10</b>	<b>26</b>	<b>5</b>	<b>0</b>	<b>37</b>	<b>0</b>	<b>39</b>	<b>2365</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>4</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>11</b>	<b>2</b>	<b>0</b>	<b>2672</b>	
42	2014-11-01	6.5	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	JDa
43	2014-11-02	11.25	0	0	1	0	0	0	0	0	0	0	0	0	101	0	1	0	0	0	0	0	0	0	0	103	BW
44	2014-11-03	11	0	0	2	0	1	0	0	0	0	1	0	0	181	0	0	0	0	0	0	0	0	0	0	185	GH
45	2014-11-04	10.25	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	12	AH
46	2014-11-05	10.25	0	0	1	0	0	0	0	0	0	0	0	0	34	0	0	0	0	0	0	0	0	0	0	35	AH
47	2014-11-06	8	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0	0	0	1	0	0	6	JDa
48	2014-11-07	6.5	0	0	10	0	0	0	0	0	0	0	0	0	17	0	0	1	0	0	0	1	0	0	0	29	TW
49	2014-11-08	9.5	0	0	12	0	3	1	0	0	0	0	0	4	20	0	0	0	0	0	0	1	0	0	0	41	JDa
50	2014-11-09	9.83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	BW
51	2014-11-10	8	0	0	8	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	11	GH
52	2014-11-11	8.5	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	CHa
53	2014-11-12	8.5	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	4	JDa
54	2014-11-13	10	0	0	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4	PS
55	2014-11-14	10.5	0	0	12	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	18	BW
56	2014-11-15	9.25	0	0	2	0	0	0	0	0	0	0	0	1	9	0	0	2	1	0	0	0	0	0	0	15	JDa
<b>November</b>		<b>137.8</b>	<b>0</b>	<b>0</b>	<b>53</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>9</b>	<b>388</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>466</b>	
<b>TOTALS</b>		<b>583.4</b>	<b>0</b>	<b>5</b>	<b>157</b>	<b>17</b>	<b>96</b>	<b>20</b>	<b>35</b>	<b>5</b>	<b>0</b>	<b>53</b>	<b>0</b>	<b>48</b>	<b>2845</b>	<b>2</b>	<b>7</b>	<b>3</b>	<b>9</b>	<b>1</b>	<b>8</b>	<b>5</b>	<b>12</b>	<b>3</b>	<b>1</b>	<b>3332</b>	
Date	HRS	TV	OS	BE	NH	SS	CH	NG	BW	SW	RT	FH	RL	GE	AK	ML	GY	PG	PR	UA	UB	UE	UF	UU	TOTAL		



TABLE 4

MOUNT LORETTE SUMMARY TOTALS, September 20 - November 15, 1993-1996, 1998-2001, 2003-2005, 2009-2013

	days	hrs.	TV	OS	BE	NH	SS	CH	NG	BW	SW	RT	FH	RL	GE	AK	ME	GY	PG	PR	UA	UB	UE	UF	UU	T	
1993	55	474.8	0	2	455	13	217	46	82	5	0	47	1	59	4532	1	4	8	4	1	2	0	0	1	0	5480	
1994	56	516.8	0	0	294	7	175	29	25	15	0	39	0	37	3788	2	15	2	5	4	1	2	1	0	0	4441	
1995	54	463.3	0	2	296	27	251	31	11	5	2	52	0	67	3591	4	12	3	4	2	1	3	0	1	0	4365	
1996	53	485.6	0	2	271	11	173	23	8	25	0	32	1	65	3881	8	9	0	5	2	0	4	0	0	0	4520	
1998	52	483.2	1	1	174	12	80	20	28	14	0	59	1	82	3209	8	2	5	5	1	6	2	0	1	3	3714	
1999	57	596.6	0	4	193	13	134	21	25	18	1	32	0	67	3302	1	6	5	8	1	5	1	1	2	7	3847	
2000	57	623.6	0	2	510	15	175	25	140	3	0	17	0	68	4587	1	12	2	2	1	7	0	1	1	6	5575	
2001	57	646.5	0	4	330	11	183	18	101	3	0	43	0	52	3592	2	9	5	6	0	4	2	0	3	0	4368	
2003	55	615.6	0	3	258	4	131	25	59	1	1	40	0	33	3744	3	8	1	5	1	11	2	2	0	10	4342	
2004	57	658.7	0	4	338	15	125	26	57	5	1	14	0	70	3610	2	8	9	11	4	10	1	4	1	16	4331	
2005	57	662.1	0	3	242	6	89	19	41	6	1	16	1	78	3821	2	3	1	2	3	14	2	2	2	8	4362	
2009*	46	492.3	0	4	100	5	57	10	25	1	0	18	0	16	2367	1	4	1	4	2	3	0	1	1	3	2623	
2010	55	577.2	0	4	165	6	67	15	34	1	0	44	1	23	3222	2	2	0	4	4	16	9	12	1	10	3642	
2011	55	590.8	0	3	137	2	113	33	42	0	0	28	0	41	3466	2	6	2	10	2	3	2	2	3	2	3899	
2012	52	530.1	0	2	128	6	63	10	30	1	0	26	0	61	2635	0	5	1	6	2	5	2	2	1	1	2987	
2013	51	516.9	0	1	95	7	97	18	25	0	0	20	0	32	2782	1	6	0	4	1	6	5	5	3	2	3110	
2014	56	583.4	0	5	157	17	96	20	35	5	0	53	0	48	2845	2	7	3	9	1	8	5	12	3	1	3332	
TOTAL	925	9517	1	46	4143	177	2226	389	768	108	6	580	5	899	58974	42	118	48	94	32	102	42	45	24	69	68938	
Av 93-13	54.3	558.4	0.067	2.56	249	10	133	23.1	45.8	6.438	0.375	32.9	0.313	53.2	3508	2.5	6.94	2.81	5.31	1.94	5.88	2.31	2.06	1.31	4.25	4100.4	
13 cf Av	3.1	4.5	-100.0	95.1	-37.0	70.0	-27.9	-13.3	-23.6	-22.3	-100.0	60.9	-100.0	-9.8	-18.9	-20.0	0.9	6.7	69.4	-48.4	36.2	116.2	481.8	128.6	-76.5	-18.7	
*	Count ended Nov 9, but considered valid																										
1992	short reconnaissance count																										
1997	count at Plateau Mountain																										
2002	no systematic count																										
2006-08	anomalously low , short counts																										

**TABLE 5A**

**SEPTEMBER 20-30, SUMMARY TOTALS, MOUNT LORETTE (excluding 1992,1997,2002,2006,2007,2008)**

	days	hrs.	TV	OS	BE	NH	SS	CH	NG	BW	SW	RT	FH	RL	GE	AK	ME	GY	FG	PR	UA	UB	UE	UF	UU	T
1993	10	102.6	0	2	31	6	98	37	7	0	0	40	1	10	1004	1	1	0	1	0	2	0	0	0	0	1241
1994	11	108.4	0	0	11	1	100	15	6	1	0	21	0	0	218	2	8	0	1	3	1	0	0	0	0	388
1995	11	105.8	0	2	36	20	75	22	1	2	2	26	0	2	222	1	4	0	0	0	1	2	0	0	0	418
1996	10	89.99	0	2	13	3	103	13	1	17	0	19	1	2	131	6	4	0	4	0	0	1	0	0	0	320
1998	10	100.8	1	1	8	7	40	14	10	10	0	44	1	0	170	6	1	0	0	1	6	1	0	0	2	323
1999	11	110.1	0	3	5	7	47	11	1	2	1	22	0	2	278	1	4	2	0	0	2	1	0	0	4	393
2000	11	118.6	0	1	33	7	63	9	1	0	0	5	0	1	497	0	5	1	0	0	6	0	0	0	2	631
2001	11	134	0	4	25	3	52	9	2	0	0	18	0	3	363	1	5	0	2	0	1	1	0	1	0	490
2003	11	132.6	0	3	23	1	69	18	14	1	1	29	0	1	433	3	5	0	3	0	6	0	0	0	5	615
2004	11	141.7	0	4	29	11	76	18	22	1	0	9	0	5	954	1	2	0	6	1	1	1	2	0	6	1149
2005	11	133.7	0	2	13	2	45	9	3	5	1	10	0	0	379	0	1	0	0	1	9	1	0	1	3	485
2009	11	133.3	0	3	10	3	38	7	11	0	0	15	0	3	355	1	0	0	0	2	0	0	0	0	1	449
2010	11	117.2	0	2	30	2	34	4	10	0	0	22	1	1	223	1	0	0	0	1	3	1	0	0	2	337
2011	11	134.6	0	1	11	2	25	3	3	0	0	5	0	1	169	2	0	0	4	0	1	0	0	0	1	228
2012	11	124.5	0	2	17	4	16	4	6	0	0	11	0	0	273	0	4	0	1	0	2	0	1	0	1	342
2013	10	112.8	0	1	10	2	12	4	5	0	0	12	0	0	162	0	2	0	2	0	2	1	1	0	1	217
2014	11	121.1	0	5	9	5	35	9	9	0	0	14	0	0	92	0	3	0	4	0	5	2	0	1	1	194
<b>TOTAL</b>	<b>183</b>	<b>2021</b>	<b>1</b>	<b>38</b>	<b>314</b>	<b>86</b>	<b>928</b>	<b>206</b>	<b>112</b>	<b>39</b>	<b>5</b>	<b>322</b>	<b>4</b>	<b>31</b>	<b>5923</b>	<b>26</b>	<b>49</b>	<b>3</b>	<b>28</b>	<b>9</b>	<b>48</b>	<b>12</b>	<b>4</b>	<b>3</b>	<b>29</b>	<b>8220</b>
Av 93-13	10.8	118.8	0.1	2.1	19.1	5.1	55.8	12.3	6.4	2.4	0.3	19.3	0.3	1.9	364.4	1.6	2.9	0.2	1.5	0.6	2.7	0.6	0.3	0.1	1.8	501.6
14 cf Av	2.3	1.9		142.4	-52.8	-1.2	-37.3	-26.9	39.8			-27.3			-74.8		4.3		166.7	-100.0	86.0	220.0		700.0	-42.9	-61.3

**TABLE 5B**

**OCTOBER SUMMARY TOTALS, MOUNT LORETTE (excluding 1992,1997,2002,2006,2007)**

	days	hrs.	TV	OS	BE	NH	SS	CH	NG	BW	SW	RT	FH	RL	GE	AK	ME	GY	FG	PR	UA	UB	UE	UF	UU	T
1993	30	263.8	0	0	342	6	119	9	60	5	0	7	0	46	3347	0	2	3	3	0	0	0	0	1	0	3950
1994	30	284.8	0	0	187	5	75	14	14	14	0	16	0	22	3404	0	6	1	4	1	0	2	0	0	0	3765
1995	29	254.3	0	0	125	6	174	8	8	3	0	25	0	51	3052	3	8	3	2	2	0	1	0	1	0	3472
1996	31	313.6	0	0	193	8	70	10	5	8	0	13	0	63	3552	2	5	0	1	2	0	3	0	0	0	3935
1998	30	287.5	0	0	95	4	40	4	10	3	0	14	0	61	2837	2	0	1	4	0	0	1	0	1	1	3078
1999	31	336.1	0	1	126	6	85	10	21	15	0	9	0	58	2752	0	2	5	6	1	3	0	1	2	3	3106
2000	31	353.4	0	1	337	7	112	15	110	3	0	12	0	65	3817	1	7	1	1	1	1	0	0	1	3	4495
2001	31	354.4	0	0	208	8	126	9	66	3	0	23	0	48	2903	0	4	3	4	0	2	1	0	2	0	3410
2003	30	342.5	0	0	150	3	60	5	42	0	0	11	0	31	3216	0	3	0	2	1	5	2	1	0	5	3537
2004	31	358.1	0	0	175	3	49	8	34	4	1	5	0	63	2588	1	4	6	4	3	9	0	1	0	9	2967
2005	31	369.4	0	1	188	4	44	10	32	1	0	6	1	73	3297	1	2	0	0	2	5	1	2	1	5	3676
2008	30	314.4	0	1	66	7	25	10	18	3	0	4	0	12	2047	1	6	0	1	1	2	6	13	4	7	2234
2009	29	307.2	0	1	77	2	19	3	13	1	0	2	0	13	1831	0	4	1	4	0	3	0	2	1	2	1979
2010	29	318.5	0	2	78	4	27	8	16	1	0	21	1	20	2648	1	2	0	4	3	11	8	9	1	5	2870
2011	29	324.1	0	1	90	0	84	28	38	0	0	21	0	31	3168	0	5	2	6	0	1	2	2	3	1	3483
2012	28	287.9	0	0	50	1	45	6	20	1	0	13	0	56	2045	0	1	1	4	2	3	2	1	0	0	2251
2013	29	300.1	0	0	60	5	82	14	19	0	0	8	0	32	2573	1	4	0	2	1	2	3	4	3	1	2814
2014	30	324.5	0	0	95	12	56	10	26	5	0	37	0	39	2365	2	3	0	4	1	3	1	11	2	0	2672
<b>TOTAL</b>	<b>539</b>	<b>5695</b>	<b>0</b>	<b>8</b>	<b>2642</b>	<b>91</b>	<b>1292</b>	<b>181</b>	<b>552</b>	<b>70</b>	<b>1</b>	<b>247</b>	<b>2</b>	<b>784</b>	<b>51442</b>	<b>15</b>	<b>68</b>	<b>27</b>	<b>56</b>	<b>21</b>	<b>50</b>	<b>33</b>	<b>47</b>	<b>23</b>	<b>42</b>	<b>57694</b>
Av 93-13	29.9	315.9	0	0.471	149.8	4.647	72.7	10.06	30.9	3.82	0.06	12.35	0.12	43.82	2887	0.76	3.824	1.588	3.059	1.176	2.76	1.88	2.118	1.235	2.471	3237
14 cf Av	0.2	2.723	0	-100	-36.6	158.2	-23	-0.58	-16	30.8	-100	199.5	-100	-11	-18.1	162	-21.5	-100	30.77	-15	8.51	-46.9	419.4	61.9	-100	-17.4

**TABLE 5C**

**NOVEMBER 1-15, SUMMARY TOTALS, MOUNT LORETTE (excluding 1992,1997,2002,2006,2007,2008,2009)**

	days	hrs.	TV	OS	BE	NH	SS	CH	NG	BW	SW	RT	FH	RL	GE	AK	ME	GY	FG	PR	UA	UB	UE	UF	UU	T
1993	15	108.4	0	0	82	1	0	0	15	0	0	0	0	3	181	0	1	5	0	1	0	0	0	0	0	289
1994	15	123.6	0	0	96	1	0	0	5	0	0	2	0	15	166	0	1	1	0	0	0	0	1	0	0	288
1995	14	103.2	0	0	135	1	2	1	2	0	0	1	0	14	317	0	0	0	2	0	0	0	0	0	0	475
1996	12	81.99	0	0	65	0	0	0	2	0	0	0	0	0	198	0	0	0	0	0	0	0	0	0	0	265
1998	12	94.9	0	0	69	1	0	2	4	0	0	1	0	17	201	0	1	1	1	0	0	0	0	0	0	298
1999	15	150.4	0	0	62	0	2	0	3	1	0	1	0	7	272	0	0	0	0	0	0	0	0	0	0	348
2000	15	151.7	0	0	140	1	0	1	23	0	0	0	0	2	273	0	0	0	0	0	0	0	1	0	1	442
2001	15	158.1	0	0	97	0	5	0	33	0	0	2	0	1	326	1	0	2	0	0	1	0	0	0	0	468
2003	14	140.6	0	0	85	0	2	2	3	0	0	0	0	1	95	0	0	1	0	0	0	0	1	0	0	190
2004	15	158.9	0	0	134	1	0	0	1	0	0	0	0	2	68	0	2	3	1	0	0	0	1	1	1	215
2005	15	159	0	0	41	0	0	0	6	0	0	0	0	5	145	1	0	1	2	0	0	0	0	0	0	201
2010	15	142.7	0	0	57	0	6	3	8	0	0	0	0	2	351	0	0	0	0	0	2	0	3	0	3	435
2011	15	132.1	0	1	36	0	4	2	1	0	0	2	0	9	129	0	1	0	0	2	1	0	0	0	0	188
2012	13	117.8	0	0	61	1	2	0	4	0	0	2	0	5	317	0	0	0	1	0	0	0	1	0	0	394
2013	12	104	0	0	25	0	3	0	1	0	0	0	0	0	47	0	0	0	0	0	2	1	0	0	0	79
2014	15	137.8	0	0	53	0	5	1	0	0	0	2	0	9	388	0	1	3	1	0	0	2	1	0	0	466
<b>TOTAL</b>	<b>227</b>	<b>2065</b>	<b>0</b>	<b>1</b>	<b>1238</b>	<b>7</b>	<b>31</b>	<b>12</b>	<b>111</b>	<b>1</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>92</b>	<b>3474</b>	<b>2</b>	<b>7</b>	<b>17</b>	<b>8</b>	<b>3</b>	<b>6</b>	<b>3</b>	<b>8</b>	<b>2</b>	<b>5</b>	<b>5041</b>
Av 93-13	14.1																									

**TABLE 6**  
**MOUNT LORETTE: GOLDEN EAGLE: PASSAGE BY HOUR, FALL 2014**

	MST	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	n	T
		5	83	195	204	241	262	284	302	299	360	382	219	9		
	MDT	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20		
SEP	20	0	0	0	0	8	4	2	1	1	1	0	0	0	17	17
	21	0	0	0	1	0	2	1	0	0	0	0	0	0	4	21
	22	-	-	-	0	2	0	0	0	0	0	0	0	0	2	23
	23	0	0	0	0	0	0	0	0	0	1	0	0	-	1	24
	24	0	0	0	0	0	0	1	0	0	0	0	(W)	-	1	25
	25	0	0	0	0	0	0	1	2	0	1	2	1	0	7	32
	26	-	-	0	1	W	W	0	0	1	1	0	0	-	3	35
	27	0	0	0	0	0	0	0	1	(W)	(W)	(W)	(W)	-	1	36
	28	0	0	0	0	0	5	2	3	1	5	3	0	0	19	55
	29	0	1	3	0	2	0	1	0	5	13	11	1	-	37	92
	30	-	0	0	0	W	W	W	w	w	w	w	w	w	0	92
OCT	1	-	-	1	4	1	1	3	9	5	3	0	1	-	28	120
	2	W	W	W	W	W	(W)	5	10	2	0	0	0	0	17	137
	3	-	0	0	1	2	1	4	6	6	1	0	-	-	21	158
	4	0	0	5	6	6	9	5	9	4	3	10	20	7	84	242
	5	1	5	3	4	10	8	17	22	18	16	25	11	2	142	384
	6	0	9	11	22	29	27	19	15	27	8	11	0	-	178	562
	7	0	2	6	8	6	14	11	8	12	13	15	3	-	98	660
	8	0	0	6	8	25	27	21	9	19	9	24	10	0	158	818
	9	-	-	0	0	23	27	35	32	21	31	55	40	0	264	1082
	10	-	6	15	19	22	15	6	7	10	37	20	6	-	163	1245
	11	-	0	10	3	4	7	2	16	24	21	16	30	0	133	1378
	12	4	7	11	21	7	3	3	4	19	19	38	10	0	146	1524
	13	0	15	49	38	18	19	24	11	21	24	17	0	-	236	1760
	14	-	0	0	0	1	1	1	(W)	2	8	6	3	-	22	1782
	15	w	w	w	w	w	w	w	w	w	w	w	w	w	0	1782
	16	w	w	w	w	0	0	13	16	9	15	7	14	-	74	1856
	17	-	3	4	3	4	2	11	16	11	4	5	0	-	63	1919
	18	0	0	10	4	1	1	4	5	9	4	5	6	-	49	1968
	19	0	0	2	0	3	7	13	8	13	7	5	11	0	69	2037
	20	0	5	10	17	7	12	13	17	4	11	5	0	-	101	2138
	21	-	0	0	0	2	2	1	3	3	4	2	7	-	24	2162
	22	0	3	3	1	7	6	4	1	1	7	14	9	-	56	2218
	23	-	0	5	(W)	(W)	(W)	(W)	(W)	(W)	(W)	0	0	-	5	2223
	24	-	1	7	6	2	1	1	8	14	22	7	-	-	69	2292
	25	-	0	0	0	0	1	1	14	11	18	W	W	w	45	2337
	26	0	0	1	3	6	5	3	1	0	1	1	0	-	21	2358
	27	0	0	0	2	1	9	6	2	0	0	0	0	-	20	2378
	28	-	0	3	0	8	4	2	1	0	5	1	0	-	24	2402
	29	-	0	0	6	6	6	7	1	4	3	2	0	-	35	2437
	30	-	0	0	4	0	0	1	5	3	1	2	-	-	16	2453
	31	-	0	0	0	0	0	1	2	1	0	0	-	-	4	2457
NOV	1	w	W	W	W	W	W	W	W	w	w	w	w	w	0	2457
MDT	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20			
MST	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19			
	2	-	W	W	W	(W)	(W)	(W)	1	(W)	13	54	33	0	101	2558
	3	0	25	29	22	18	20	22	20	6	14	4	1	-	181	2739
	4	-	0	0	0	3	4	5	0	0	0	0	0	-	12	2751
	5	-	1	1	0	0	4	8	4	7	3	5	1	-	34	2785
	6	-	-	-	0	3	1	W	W	W	W	W	w	w	4	2789
	7	w	w	w	w	0	3	2	7	3	2	0	-	-	17	2806
	8	-	-	0	0	3	3	2	3	0	4	4	1	-	20	2826
	9	w	W	W	W	W	W	W	W	W	W	W	W	w	0	2826
	10	w	W	W	W	W	W	(W)	1	(W)	(W)	w	w	w	1	2827
	11	-	-	(W)	(W)	(W)	(W)	(W)	1	0	0	W	w	w	1	2828
	12	-	-	0	0	0	0	0	0	0	0	0	0	-	0	2828
	13	-	0	0	0	1	0	0	0	1	0	0	0	-	2	2830
	14	-	0	0	0	0	1	0	0	0	4	1	0	-	6	2836
	15	-	-	(W)	0	0	0	0	0	1	3	5	0	-	9	2845
<b>TOTALS</b>	<b>5</b>	<b>83</b>	<b>195</b>	<b>204</b>	<b>241</b>	<b>262</b>	<b>284</b>	<b>302</b>	<b>299</b>	<b>360</b>	<b>382</b>	<b>219</b>	<b>9</b>	<b>2845</b>		
W	w eather not conducive to raptor migration, directly observed.															
w	w eather not conducive to raptor migration, not directly observed.															
(W)	w eather w ith low probability of raptor migration, directly observed.															
(w)	w eather w ith low probability of raptor migration, not directly observed.															
-	observer not present at site															

**TABLE 7  
MEDIAN PASSAGE DATES AND AGE RATIOS, MOUNT LORETTE, FALL 2014**

	Species		Adults		Immatures		imm:adult	
OSPREY	27-Sep							
BALD EAGLE	25-Oct	2 days late	20-Oct	4 days early	25-Oct	5 days late	0.64	21.04%
NORTHERN HARRIER	04-Oct	=					1.26	-30.16%
SHARP-SHINNED HAWK	04-Oct	1 day late	02-Oct	2 days early	29-Oct	1 day early	0.44	6.18%
COOPER'S HAWK	03-Oct	3 days late	03-Oct	1 day late			0.5	4.35%
NORTHERN GOSHAWK	07-Oct	5 days early	09-Oct	1 day late			0.17	-32.72%
BROAD-WINGED HAWK	08-Oct	5 days late					0.67	-7.97%
RED-TAILED HAWK	06-Oct	7 days late	07-Oct	8 days late	05-Oct	6 days late	0.35	-26.22%
ROUGH-LEGGED HAWK	17-Oct	1 day late						
GOLDEN EAGLE	12-Oct	=	14-Oct	2 days early	10-Oct	2 days late	0.36	29.44%
MERLIN	03-Oct	1 day late						
PEREGRINE FALCON	04-Oct	=					0.25	32.00%
COMBINED SPECIES	12-Oct	0.5 day late						

(Note: statistics are not calculated for less than 4 birds)

**TABLE 8  
YEARLY SUMMARY FALL TOTALS, STEEPLES 2009-2014**

	days	hrs.	TV	OS	BE	NH	SS	CH	NG	BW	SW	RT	FH	RL	GE	AK	ME	GY	PG	PR	UA	UB	UE	UF	UU	T	raptors/hr
2009	41	148	2	1	146	7	37	4	5	0	0	9	0	13	226	1	1	0	0	0	0	0	1	0	0	453	11.05
2010	34	145.5	0	1	191	2	18	0	2	0	0	7	0	8	162	0	0	0	0	0	0	4	4	0	0	399	11.74
2011	23	73.5	0	1	130	0	15	0	2	0	0	18	0	1	93	1	0	0	1	0	0	0	1	0	0	263	11.43
2012	12	36	1	0	74	1	3	0	2	0	0	0	0	5	22	0	0	0	0	0	0	0	0	0	0	108	9.00
2013	16	43	0	0	21	0	12	0	2	0	0	6	0	3	106	0	0	0	0	0	0	0	0	0	0	150	9.38
2014	37	126.5	0	2	128	3	31	0	5	0	0	38	0	2	64	4	0	0	0	0	0	0	0	0	0	277	7.49
TOTAL	163	573	3	5	690	13	116	4	18	0	0	78	0	32	673	6	1	0	1	0	0	4	6	0	0	1650	
Av 09-13	25.2	89.2	0.6	0.6	112	2	17	0.8	2.6	0	0	8	0	6	121.8	0.4	0.2	0	0.2	0	0	0.8	1.2	0	0	274.6	10.52
14 cf Av	46.8	41.82	-100	233	13.9	50	82.4	-100	92.3			375		-67	-47.45	900	-100		-100			-100	-100			0.874	-28.83

**TABLE 9**  
**Steeple, British Columbia fall 2014**  
 September 20 to November 15

	Date	HRS	TV	OS	BE	NH	SS	CH	NG	BW	SW	RT	FH	RL	GE	AK	ML	GY	PG	PR	UA	UB	UE	UF	UU	TOTAL
	2014-09-20	NO OBSERVATION																							0	
	2014-09-21	NO OBSERVATION																							0	
1	2014-09-22	3	0	0	2	0	10	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	17
2	2014-09-23	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2014-09-24	NO OBSERVATION																							0	
3	2014-09-25	2	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2
	2014-09-26	NO OBSERVATION																							0	
4	2014-09-27	4	0	0	2	1	4	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	9
5	2014-09-28	4	0	1	2	0	3	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	8
6	2014-09-29	3.5	0	1	11	0	4	0	2	0	0	7	0	0	2	0	0	0	0	0	0	0	0	0	0	27
	2014-09-30	2.5	0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	11
	<b>September</b>	<b>22</b>	<b>0</b>	<b>2</b>	<b>17</b>	<b>1</b>	<b>22</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>74</b>
7	2014-10-01	2.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	2014-10-02	2.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	2014-10-03	3	0	0	0	0	2	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	5
10	2014-10-04	4	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
11	2014-10-05	4	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
12	2014-10-06	3	0	0	3	0	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	8
13	2014-10-07	3.5	0	0	5	0	1	0	1	0	0	6	0	0	2	0	0	0	0	0	0	0	0	0	0	15
14	2014-10-08	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	2014-10-09	3	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
	2014-10-10	NO OBSERVATION																							0	
16	2014-10-11	7	0	0	51	1	1	0	1	0	0	1	0	0	8	0	0	0	0	0	0	0	0	0	0	63
17	2014-10-12	4.5	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
18	2014-10-13	4	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
19	2014-10-14	3	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
	2014-10-15	NO OBSERVATION																							0	
20	2014-10-16	2.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	2014-10-17	4	0	0	5	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	9
22	2014-10-18	5	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
23	2014-10-19	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
24	2014-10-20	2.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2014-10-21	NO OBSERVATION																							0	
25	2014-10-22	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2014-10-23	NO OBSERVATION																							0	
26	2014-10-24	5	0	0	10	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	13
27	2014-10-25	4	0	0	7	0	0	0	0	0	0	1	0	0	7	0	0	0	0	0	0	0	0	0	0	15
28	2014-10-26	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	2014-10-27	3.5	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
	2014-10-28	NO OBSERVATION																							0	
30	2014-10-29	2.5	0	0	2	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	4
31	2014-10-30	2.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	2014-10-31	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<b>October</b>	<b>88.5</b>	<b>0</b>	<b>0</b>	<b>94</b>	<b>2</b>	<b>9</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>0</b>	<b>2</b>	<b>30</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>155</b>
	2014-11-01	NO OBSERVATION																							0	
33	2014-11-02	5	0	0	11	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0	27
34	2014-11-03	3	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
	2014-11-04	NO OBSERVATION																							0	
	2014-11-05	NO OBSERVATION																							0	
	2014-11-06	NO OBSERVATION																							0	
35	2014-11-07	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
36	2014-11-08	3	0	0	6	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	18
	2014-11-09	NO OBSERVATION																							0	
	2014-11-10	NO OBSERVATION																							0	
	2014-11-11	NO OBSERVATION																							0	
	2014-11-12	NO OBSERVATION																							0	
37	2014-11-13	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2014-11-14	NO OBSERVATION																							0	
	2014-11-15	NO OBSERVATION																							0	
	<b>November</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>31</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>48</b>
	<b>TOTALS</b>	<b>126.5</b>	<b>0</b>	<b>2</b>	<b>128</b>	<b>3</b>	<b>31</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>38</b>	<b>0</b>	<b>2</b>	<b>64</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>277</b>
	Date	HRS	TV	OS	BE	NH	SS	CH	NG	BW	SW	RT	FH	RL	GE	AK	ML	GY	PG	PR	UA	UB	UE	UF	UU	TOTAL



**TABLE 10  
STEEPLES, FALL 2014  
SUMMARY WEATHER**

Day #		TEMP	RIDGE WIND		CLOUD		PRECIPITATION & NOTES	RIDGES	# migrant raptors	
			Direction	Velocity	%	type				
	<b>Sep</b>	<b>20</b>	NO OBSERVATION						no	
	<b>Sep</b>	<b>21</b>	NO OBSERVATION						no	
1	<b>Sep</b>	<b>22</b>	24	SW-N	C-L	20-40	As,Cu,Ac,Ci	sunny	clear	17
2	<b>Sep</b>	<b>23</b>	23	SW	M-S	60-80	As,Cu	partly sunny	clear	0
	<b>Sep</b>	<b>24</b>	NO OBSERVATION						no	
3	<b>Sep</b>	<b>25</b>	26	SW	M	50	Ac	sunny	clear	2
	<b>Sep</b>	<b>26</b>	NO OBSERVATION					partial overcast	clear	no
4	<b>Sep</b>	<b>27</b>	22	SW	M	70	Cu,Ac, thin As	sunny	clear	9
5	<b>Sep</b>	<b>28</b>	19	C-E	C-L	30	Cu	sunny	clear	8
6	<b>Sep</b>	<b>29</b>	17	S	M	50	As,Cu,Ac,Ci	sunny	clear	27
	<b>Sep</b>	<b>30</b>	16	NW	M	80	Cu,Cn,As	cloudy	clear	11
7	<b>Oct</b>	<b>1</b>	15	W	M	30	Cu	sunny	clear	0
8	<b>Oct</b>	<b>2</b>	14	NW	M	40	Cu	sunny	clear	0
9	<b>Oct</b>	<b>3</b>	12	C	C	40	Cu,Ac,As	mostly sunny	clear	5
10	<b>Oct</b>	<b>4</b>	19	C	C	90	AS	cloudy	clear	2
11	<b>Oct</b>	<b>5</b>	20	C	C	20	thin As	sunny	clear	2
12	<b>Oct</b>	<b>6</b>	21	SW-N	M-S	80	As,Cu,Ac	mostly cloudy	clear	8
13	<b>Oct</b>	<b>7</b>	22	W	C-M	20	thin As	sunny	clear	15
14	<b>Oct</b>	<b>8</b>	19	C	C	90	As,Cu	mostly cloudy	clear	0
15	<b>Oct</b>	<b>9</b>	21	C	C	40	As,Cu	sunny	clear	3
	<b>Oct</b>	<b>10</b>	NO OBSERVATION							no
16	<b>Oct</b>	<b>11</b>	19	C-W	C-M	50-100	As,Cu	partly sunny, show ers	clear	63
17	<b>Oct</b>	<b>12</b>	15	C	C	50	As,Cu	mostly sunny	clear	1
18	<b>Oct</b>	<b>13</b>	14	SW-W	M	70-90	As,Cu,Ac,lent	mostly cloudy	clear	6
19	<b>Oct</b>	<b>14</b>	15	W	M	90	AS,Cu	cloudy	clear	2
	<b>Oct</b>	<b>15</b>	NO OBSERVATION					overcast and rain	clear	no
20	<b>Oct</b>	<b>16</b>	12	W	M	100	As,Cu	cloudy	partly obscured	0
21	<b>Oct</b>	<b>17</b>	10	C	C	100	As,Cu,lent	cloudy	clear	9
22	<b>Oct</b>	<b>18</b>	14	S	S	70	Cu,As,Ac	mainly sunny	clear	3
23	<b>Oct</b>	<b>19</b>	17	C	C	60	Cu	sunny	clear	1
24	<b>Oct</b>	<b>20</b>	20	S-SW	M-S	40	Cu,Ac,As	sunny	clear	0
	<b>Oct</b>	<b>21</b>	NO OBSERVATION							no
25	<b>Oct</b>	<b>22</b>	13	S-SE	M	100	As,Cu	light rain	obscured	0
	<b>Oct</b>	<b>23</b>	NO OBSERVATION					overcast and rain	obscured	no
26	<b>Oct</b>	<b>24</b>	13	S-SW	M	50	Cu	mainly sunny	clear	13
27	<b>Oct</b>	<b>25</b>	11	S	M	50-100	Cu,As	sun and cloud	clear	15
28	<b>Oct</b>	<b>26</b>	8	W	M	100	As,Cu	cloudy	obscured	0
29	<b>Oct</b>	<b>27</b>	8	C	C	60	Cu	sunny	clear	3
	<b>Oct</b>	<b>28</b>	NO OBSERVATION					overcast and rain	obscured	no
30	<b>Oct</b>	<b>29</b>	11	S	M	100	As,Cu	cloudy	mostly obscured	4
31	<b>Oct</b>	<b>30</b>	9	C	C	100	As,Cu	cloudy	mostly obscured	0
32	<b>Oct</b>	<b>31</b>	7	S	L	100	Sc,As	cloudy	partly obscured	0
	<b>Nov</b>	<b>1</b>	NO OBSERVATION					overcast and rain	obscured	no
33	<b>Nov</b>	<b>2</b>	9	C	C	60	Cu	sunny	mostly clear	27
34	<b>Nov</b>	<b>3</b>	10	S	M	60-80	Cu,Sc	partly sunny	mostly clear	2
	<b>Nov</b>	<b>4</b>	NO OBSERVATION					poor weather		no
	<b>Nov</b>	<b>5</b>	NO OBSERVATION							no
	<b>Nov</b>	<b>6</b>	NO OBSERVATION					poor weather		no
35	<b>Nov</b>	<b>7</b>	7			60	Cu		clear	1
36	<b>Nov</b>	<b>8</b>	10			60	Cu, thin AS		clear	18
	<b>Nov</b>	<b>9</b>	NO OBSERVATION					poor weather		no
	<b>Nov</b>	<b>10</b>	NO OBSERVATION					poor weather		no
	<b>Nov</b>	<b>11</b>	NO OBSERVATION							no
	<b>Nov</b>	<b>12</b>	NO OBSERVATION							no
37	<b>Nov</b>	<b>13</b>	-9	C	C	0		sunny	clear	0
	<b>Nov</b>	<b>14</b>	NO OBSERVATION							no
	<b>Nov</b>	<b>15</b>	NO OBSERVATION							no
									TOTAL	277

Table

**TABLE 11**  
**Vickie Ridge, Alberta fall 2014**  
 October 5 to November 8

Date	HRS	TV	OS	BE	NH	SS	CH	NG	BW	SW	RT	FH	RL	GE	AK	ML	GY	PG	PR	UA	UB	UE	UF	UU	TOTAL		
2014-10-01																									0		
2014-10-02																										0	
2014-10-03																										0	
2014-10-04																										0	
1 2014-10-05	4.5	0	0	1	0	37	12	2	0	0	7	0	2	30	0	0	0	0	0	5	0	0	0	0	96	D&TD, CNCS	
2014-10-06																										0	
2014-10-07																										0	
2014-10-08																										0	
2 2014-10-09	4	0	0	3	0	6	0	5	1	0	14	0	4	5	1	0	0	0	0	2	0	0	0	0	41	D&TD, CNCS	
2014-10-10																										0	
2014-10-11																										0	
3 2014-10-12	2.5	0	0	1	1	4	1	2	1	0	2	0	2	10	0	0	0	0	0	0	1	0	0	0	25	PS, D&TD	
2014-10-13																										0	
2014-10-14																										0	
2014-10-15																										0	
2014-10-16																										0	
2014-10-17																										0	
2014-10-18																										0	
2014-10-19																										0	
2014-10-20																										0	
2014-10-21																										0	
2014-10-22																										0	
2014-10-23																										0	
4 2014-10-24	3.7	0	1	3	1	3	2	9	0	0	1	0	8	12	0	0	0	0	1	0	0	0	0	0	41	PS	
5 2014-10-25	7	0	0	13	1	4	0	3	0	0	2	0	39	17	0	0	0	1	0	0	0	0	0	0	80	PS, D&TD	
2014-10-26																										0	
6 2014-10-27	2.08	0	0	0	0	1	0	1	0	0	1	0	30	2	0	0	0	0	0	0	0	0	0	0	35	PS	
7 2014-10-28	3.25	0	0	0	0	3	0	5	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	14	PS	
2014-10-29																										0	
2014-10-30																										0	
2014-10-31																										0	
<b>October</b>	<b>27.03</b>	<b>0</b>	<b>1</b>	<b>21</b>	<b>3</b>	<b>58</b>	<b>15</b>	<b>27</b>	<b>2</b>	<b>0</b>	<b>27</b>	<b>0</b>	<b>88</b>	<b>79</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>7</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>332</b>		
2014-11-01																										0	
8 2014-11-02	1.67	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	3	PS	
9 2014-11-03	3.33	0	0	6	0	2	0	1	0	0	0	0	4	28	0	0	0	0	0	0	0	0	0	0	41	PS	
2014-11-04																										0	
2014-11-05																										0	
2014-11-06																										0	
10 2014-11-07	0.75	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2	PS	
11 2014-11-08	4.5	0	0	6	1	2	0	4	0	0	0	0	9	5	0	0	0	0	0	0	0	0	0	0	27	PS	
2014-11-09																										0	
2014-11-10																										0	
2014-11-11																										0	
2014-11-12																										0	
2014-11-13																										0	
2014-11-14																										0	
2014-11-15																										0	
<b>November</b>	<b>10.25</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>15</b>	<b>35</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>73</b>		
<b>TOTALS</b>	<b>37.28</b>	<b>0</b>	<b>1</b>	<b>33</b>	<b>4</b>	<b>62</b>	<b>15</b>	<b>32</b>	<b>2</b>	<b>0</b>	<b>28</b>	<b>0</b>	<b>103</b>	<b>114</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>7</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>405</b>		
Date	HRS	TV	OS	BE	NH	SS	CH	NG	BW	SW	RT	FH	RL	GE	AK	ML	GY	PG	PR	UA	UB	UE	UF	UU	TOTAL		
CNCS	Crow snest Conservation Society																										
D&TD	Doug and Teresa Dolman																										
PS	Peter Sherrington																										

**TABLE 12**  
**VICKI RIDGE, FALL 2014**  
**SUMMARY WEATHER**

Day #			TEMP	RIDGE WIND		CLOUD		PRECIPITATION & NOTES	RIDGES	#
				Direction	Velocity	%	type			
1	Oct	5	19	W	M	"just enough cloud to be able to locate raptors"		clear	96	
2	Oct	9	12	E	L			clear	41	
3	Oct	12	10	WSW	10-20g30	0		clear	25	
4	Oct	24	9-7	WSW-WNW	M-S	70-100	Cu,Ci	clear	41	
5	Oct	25	4-7.5	C-E	0-4	100	As, Ac,Ci	hazy sunshine	80	
6	Oct	27	2-4	E-NW-W	10-15g25	80-90	Cu,Ci	clear	35	
7	Oct	28	6	WSW	gusting 60	30-80	Cu,lent,Ci	clear	14	
8	Nov	2	3-4	E	L	60-10	Cu,Ci	clear	3	
9	Nov	3	3-1.5	W-NW	10-20g30	70-100	Ac,Cu,Ci	clear	41	
10	Nov	7	9	WSW	M	60	Cu,Ac	clear	2	
11	Nov	8	8	W-NW	15-25g40	70-90	Ci,Cu,lent,Ac	clear	27	
<b>(November 9: arctic front arrived at 0500 bringing low temperatures and snow)</b>										
									TOTAL	405