

Thirty-Sixth Annual Fall Diurnal Raptor Migration Study at Holiday Beach Conservation Area, Amherstburg, Essex County, Ontario, Canada

Justin Bosler, HBMO 2009 Hawk Counter
justin.bosler@gmail.com

Abstract

The 36th Annual Hawk Count at Holiday Beach Conservation Area in Amherstburg, Ontario, Canada was conducted from 1 September through 30 November 2009. An outstanding 83,151 raptors of 16 species were tallied during the fall migration period. This season's total is approximately 5.6% greater than the 20-year average (78,746 from 1989-2008) recorded at Holiday Beach. Turkey Vultures had a record setting year with an impressive 43,841 individuals. Three other species showed in near record numbers, including Bald Eagle, Merlin, and Peregrine Falcon. Cooper's, Red-tailed, and Swainson's Hawks, along with Golden Eagle, also topped their 20-year averages in the 2009 fall season. The Red-shouldered Hawk numbers were up markedly from the 10-year average and slightly less so from the 20-year average. Species recorded in below average numbers included Sharp-shinned Hawk, Northern Goshawk, Rough-legged Hawk, and American Kestrel.

History of site

Southwestern Ontario is largely an area of flat, featureless farmland. There are only two geographic features of note in the region. One is the proximity of the Great Lakes, which influence bird migration in the area to a great extent. The second is the shape of the province, roughly funnel-shaped with the narrow end to the southwest. These features confine southbound bird migrants, especially hawks, to specific flight corridors.

Holiday Beach Conservation Area (HBCA) was formerly a Provincial Park but is now administered by the Essex Region conservation Authority. It is strategically located at the extreme southwestern tip of southern Ontario.

Holiday Beach Migration Observatory (HBMO) was founded in 1986 as a way to broaden the goals of the raptor count to include public education, site improvement, conservation, and broader scientific study of the migration phenomenon in this area. In 1988, HBMO persuaded Detroit Edison to donate a 40-foot —Hawk Tower, which is where the hawk count is now conducted. In 1999 and 2000, HBMO provided data that allowed the HBCA and the nearby Big Creek Marsh to be designated an Important Bird Area by Bird Studies Canada, giving the site international recognition." (*Hawks of Holiday Beach*, 2002)

Migration Summary

Two sources of supportive data are presented in this paper. Table 1 is a summary of 21-years (1989-2009) of seasonal totals of raptors counted and recorded at HBCA. Table 2 is a summary comparison of migrant changes during a 20-year period (1989-2008) and a 10-year period (1999-2008).

In 2009, a total of 83,151 diurnal raptors were recorded between 2 September and 30 November at Holiday Beach Conservation Area. For the season, an hourly and daily average of 129 and 934 raptors, respectively, was attained. Sixteen raptor species were recorded in 2009, which is up one from the season average. The season total of all raptors was up nearly 55% from last year's total of 37,719 raptors and was 5.3% above the 20-year average (1989-2008) (Table 2).

The September flight period is dominated by Osprey, Northern Harrier, Broad-winged and Sharp-shinned Hawks, American Kestrel, and to a lesser extent, Bald Eagle. A total of 26,654 raptors of 14 species were recorded in September. Invariably, October is recognized as the month with the maximum diversity of raptors; 16 species in 2009. In addition, October may also have the greatest overall numbers (52,685 in 2009) when the September Broad-winged Hawk flight is well below average.

Several species moving through in large numbers in October include Turkey Vulture, Sharp-shinned, Cooper's, Red-shouldered, and Red-tailed Hawks, along with Peregrine Falcon. November sees a final push of Turkey Vulture, Red-shouldered and Red-tailed Hawks.

November also brings peak numbers of Rough-legged Hawk and Golden Eagle. An unusually good start to the month was short lived with the last significant flight of the season (225 raptors) on 17 November. Overall, the November flight amassed a total of 3,812 raptors of 13 species.

The official site coordinator, along with the help of several volunteer counters, logged a total of 644.5 hours of observation in 89 days for the 2009 fall migration season.

The total hours of observation were close to 1.3% greater than the 20-year average, and a much-needed recovery from the reduced coverage in 2008, with an all-time low of 423.5 hours of observation. Two days received zero coverage; 1 September due to the lack of an observer, and 23 October due to continuous, heavy rain.

Otherwise, the raptor count from the Hawk Tower was conducted during a majority of daylight hours in all but the worst weather conditions.

Weather Summary

It was mild fall weather wise, with an average daily high of 15.6 degrees Celsius. The maximum daily high of 27.2 degrees Celsius was recorded on 5 September and a minimum daily high of 3.0 degrees Celsius on 30 November. September was warmer (+0.8°C) and drier than average with an average daily high temperature of 23.3 degrees Celsius and a precipitation total of 57.6 mm.

Favorable winds for raptor migration were present for a better half of the month with a northerly component on as many as 21 days. October was cooler (-2.4°C) and wetter than average with an average daily high temperature of 13.2 degrees Celsius and a precipitation total of 98.4 mm.

A couple of strong cold fronts in October preceded a few of the season's best raptor flights. November was warmer (+2.1°C) and dryer than average with an average daily high temperature of 10.4 degrees Celsius and a precipitation total of 19.4 mm. There was a trace accumulation of snow in November.

Discussion

The fall 2009 raptor total (83,151) was up approximately 5.6% from the 20-year average and 28% above the 10-year average (Table 2). Species with above average totals in 2009 included Turkey Vulture, Bald Eagle, Cooper's Hawk, Red-shouldered Hawk, Red-tailed Hawk, Merlin, Peregrine Falcon, and Golden Eagle. Of these, Turkey Vulture was tallied in record numbers (43,841 individuals) while Merlin tied its all-time record high (122), and Bald Eagle and Peregrine Falcon achieved their second highest total in 36 years of migration monitoring at 168 and 108 individuals, respectively. A total of two (2) Swainson's Hawks was also above average. Osprey, Northern Harrier, Sharp-shinned Hawk, Northern Goshawk, Broad-winged Hawk and Rough-legged Hawk were recorded in below average numbers. Rough-legged Hawk and American Kestrel totals were the third and fourth lowest-ever recorded at Holiday Beach.

Diurnal Raptor Species Accounts

Turkey Vulture (*Cathartes aura*)

The unsightly and ubiquitous Turkey Vulture will never garner much respect away from a hawk-watch, but most hawk-watchers will admit they are a joy to watch, especially in migration. In 2009, a new record season total was set for Turkey Vulture at 43,841 individuals.

This total surpassed the previous record high of 41,543, set in 2005, by nearly 2,300 individuals, and is more than double the 20-year average (20,836) and a 68.8% increase from the 10-year average (Table 2). Although impressive, this was not overly unexpected given the species' burgeoning population (linear population growth) and recent northern range expansion.

In typical fashion, the protracted vulture migration commenced in mid-September and continued through mid-November, with the peak flight occurring from 10-18 October; during which time 76% of the season's total or 33,351 vultures were tallied. Remarkably, the October total alone comprised more than 95% of the season's flight. The third and fourth highest single day counts at 6,788 and 6,332 occurred on 13 and 14 October, respectively. A spectacular movement of 20,032 vultures on 9 October 2005 remains the highest single day count in 35 years of migration monitoring at Holiday Beach. The last observation of the season occurred on 17 November when 19 vultures fought strong northeast winds to stay ashore. Not surprisingly, Turkey Vultures comprised a whopping 52.7% of the raptor total in 2009.

Black Vulture (*Coragyps atratus*)

There were zero observations of Black Vulture in 2009 despite reports of singles well to the east at the Toronto Islands in Toronto in late August and at Turkey Point Marsh in Port Dover, Ontario in late September. To date there are only three records of this species at Holiday Beach: 22 Sep 1979, 31 October 1991, and most recently, 30 Sep 2003 (OBRC 2004).

Osprey (*Pandion haliaetus*)

Perhaps the most under-censused migratory raptor at Holiday Beach is the Osprey. By 1 September the Osprey migration is well underway. August totals from other Eastern U.S. hawkwatching sites, coastal and non-coastal alike, suggest that the species is moving in significant numbers by that time (i.e. 61 in August 2009 at Waggoner's Gap, ca. 6 mi. NW of Carlisle, PA; Grove 2009).

Since no August data has ever been collected at Holiday Beach, a complete picture of the exact timing of migration cannot be established. However, the September-November time frame encompasses the bulk of the species' migration through which population trends can be assessed.

A season total of 94 Ospreys trends 16.26% below the 20-year average (112) and 2.4% below the 10-year average of 96 (Table 2). Ironically, the all-time season high of 186 in 2007 was immediately followed by the all-time low of 48 in 2008. In 2009, the peak flight occurred during 7-16 September, with the highest single-day count of 18 on 15 September.

Nearly 77% of the season total passed in September. As expected, the flight petered out considerably by early October. Two late Ospreys on 28 October were the last of the season. Ospreys comprised only 0.1% of the raptor total in 2009.

Bald Eagle (*Haliaeetus leucocephalus*)

Only that of the Peregrine Falcon rivals the successful comeback of the Bald Eagle.

The increase in numbers seen year after year at Holiday Beach is a testament to the strict protection, conservation, and continual monitoring of populations across Canada and the U.S. A near-record high season total of 168 Bald Eagles was tallied in 2009, a mere seven eagles shy of the season high of 175 recorded in 2007.

Season totals greater than 100 were not obtained until as recently as 2005. The 2009 season total of 168 is close to 2.5 times greater than the 20-year average (69) and about a 87.7% increase from the 10-year average of 90 (Table 2).

Having one of the more protracted migrations, Bald Eagles can be expected anytime throughout the season from 1 September to 30 November. However, a mid-September peak is typical as was seen this season during 15-18 September, or more widely the period of 9-19 September.

A second peak in numbers is usually evident in early October as well. The maximum single-day flight of the season occurred on 15 September when 14 eagles were tallied. Nearly doubling that count is the all-time single-day high of 26 on 9 September 2003.

Separating true migrants from the resident breeding eagles and their offspring, and occasional lingering stopover transients, was difficult, if not impossible, at times, in which case a best judgment was made. At least one family group was present at Big Creek Marsh throughout the season.

Northern Harrier (*Circus cyaneus*)

There is no raptor more enigmatic than the Northern Harrier. Its migration behavior is probably the most varied, while at the same time least understood, of all migratory raptors. It has a tendency of migrating early in the morning and again in late afternoon or evening. A typical observation day for diurnal migrant raptors may be insufficient for monitoring this species' true population trends.

Similar to Bald Eagle, the Northern Harrier also has a protracted migration period, stretching from early September to at least mid-November. A last observed date of 18 November is somewhat early when considering some of the modest flights reported, on occasion, during area Christmas counts well into December. This species often shows two migratory peaks per season; an early one in mid-September, consisting largely of juveniles, and a late one in mid-October of mostly adults. As expected, peak flights occurred during 14-20 September and 14-18 October, with the second-highest and highest daily totals of 36 and 40 on 16 September and 15 October, respectively.

A season total of 686 Northern Harriers was significantly lower (-28.3%) than the 20-year average (957) and down about 15.35% from the 10-year average of 810 (Table 2). However, this apparent decline can be misleading. The wide swing in numbers from year to year is linked to the species' cyclical population trend, which mirrors that of the meadow vole; the preferred prey species during the breeding season.

The meager flight in 2009 can be viewed as a rebound from a record low total of 266 in 2008. On a positive note, juveniles comprised a good percentage of 2008 season's flight, which bodes well for increased totals over the next two falls. Northern Harriers comprised about 0.8% of the raptor total in 2009.

Cooper's Hawk (*Accipiter cooperi*)

Another raptor, which appears to be benefiting from the continual sprawl of urban and suburban landscapes, is the Cooper's Hawk. A rising trend in numbers is apparent at most hawkwatches in the East. A season total of 942 ranks as the third (3rd) highest ever total and betters the 20-year average (600) by a notable 57.1% (Table 2). Even more shocking is an 80.46% increase from the 10-year average (Table 2). The highest ever season total, set in 1991, continues to hold a respectable lead at 1,082.

Cooper's begin migrating in small numbers in early September, increase slightly by mid-September, and peak in numbers the first half of October. Numbers declines considerably by mid-November. The peak flight in 2009 occurred during 10-18 October when 423 individuals, about 45% of the season total, were tallied. The highest daily total of 123 birds was noted on 15 October.

Also moving in big numbers in early to mid-October are Blue Jays, and it is speculated that the timing of Cooper's Hawk migration has evolved to mirror that of an overly abundant supply of prey on the migration route. Cooper's Hawks comprised roughly 1.1% of the raptor total in 2009.

The Cooper's-Sharp-shinned Hawk identification conundrum remains at the forefront of any raptor ID debate. The overlap in size of the two species, particularly female sharpies and male Cooper's, is real and some individuals just have to be left unidentified. Even seasoned hawkwatchers have trouble assigning some individuals to a species.

Sharp-shinned Hawk (*Accipiter striatus*)

Ranking as the third most numerous migratory raptor at Holiday Beach in 2009 was the spirited Sharp-shinned Hawk, or — *sharpie* in classic hawkwatcher jargon. The species' numbers seem to have stabilized after a sharp drop about a decade ago. A season total of 9,703 in 2009 holds steady with the 10-year average of 9,642 sharpies; however, it's down nearly 17.1% from the 20-year average (Table 2). Unlike Cooper's, Sharp-shinned Hawks are an earlier migrant, with a bulk of the season's flight (5,162 in 2009) occurring in September. The flight decreases through the latter half of October and is pretty much complete by early to mid-November with a few stragglers later.

Two peak flights were evident; the first in mid-September (overwhelmingly juveniles) and the second in mid-October (predominantly adults). The larger of the two flights – totaling 2,817 birds or 29% of the season total – occurred during 10-17 October, with the best single day flight of the season at 732 sharpies on 15 October. At 28% of the season total, the 11-18 September flight was very comparable in size.

Its migration appears to be closely tied to the vast number of small songbirds that pass through Canada in September. Sharp-shinned Hawks comprised approximately 11.6% of the raptor total in 2009.

The ratio of Sharp-shinned to Cooper's Hawks has crept incrementally closer to a 10:1 ratio, from a near 20:1 ratio, over the last twenty years.

Northern Goshawk (*Accipiter gentilis*)

It's always a special treat to see this large and powerful Northern Accipiter winging past the Hawk Tower. While it's known for its periodic southward irruptions – usually the result of a food shortage in its breeding range – the Northern Goshawk is one of the scarcest of the regularly occurring raptors at Holiday Beach.

Significant movements, with season totals that approach or surpass 50, occur only every few years. Two record years in 1991 and 1993 saw 77 and 74 goshawks, respectively.

In 2009, a fair 28 Northern Goshawks were tallied, which was down 9.4% and 22% from the 10 and 20-year averages, respectively (Table 2). Not surprisingly, juveniles outnumbered subadults/adults 13 to 1. Interestingly, according to Wheeler, only non-mated adults are known to disperse/migrate southward, as mated pairs tend to stay on breeding territories year round (Wheeler 2003).

The season's first Goshawk, a juvenile, was recorded on 20 September, and was one of the earliest ever and about a week earlier than the average first-of-fall observation. On average a peak flight can be expected in late October to early November.

In 2009, Goshawks peaked in number (14) during 15-18 October – after going unrecorded the first half of October – and were noted irregularly in 1's and 2's through late October and November. The maximum single day count was 6 on 17 October. Two juvenile Goshawks on 18 November were the last of the season.

Red-shouldered Hawk (*Buteo lineatus*)

There are few raptors more stunningly colored and patterned than the adult Red-shouldered Hawk. An astounding 1,096 Red-shouldered Hawks were recorded at Holiday Beach in 2009.

After more than a decade of declining numbers, it was a reassuring to see such a rebound this season since it was 12 years ago that the total exceeded one thousand birds. To put this in perspective, the 2009 total showed a significant 39.5% increase from the 20-year average and a striking 104.3% increase from the 10-year average (Table 2).

A juvenile Red-shouldered kettling with Broad-winged Hawks on 19 September was the first of the season and notably early. As a short-distance migrant, the species is afforded the luxury of lingering later on the breeding grounds, and therefore, delaying their southbound (fall) migration.

Barring a few outliers on either end, a bulk of the population passes between mid-October and mid-November. Typically, a single peak flight occurs in mid to late October annually.

In 2009, the peak flight occurred during 14-18 October when 666 Red-shouldered Hawks were tallied. During this period 257 Red-shouldered were noted on 15 October with a subsequent tally of 221 on 16 October, marking the highest and second highest single day counts of the season, respectively. This same period saw a hefty flight of Red-tailed Hawks as well. A second peak flight, though considerably smaller at 263, occurred during 10-12 November. Two adults on 23 November were the last of the season. Red-shouldered Hawks comprised a little over 1.3% of the raptor total in 2009.

Broad-winged Hawk (*Buteo platyterus*)

The Broad-winged Hawk, our smallest Buteo, is a master of migration. A single long-distance, southbound flight will cover as many as 8,000 miles/12,875 km and traverse two continents.

Currently, it vies for the top spot in overall numbers from year to year, with only Turkey Vulture potentially outnumbering it. However, when favorable migration conditions exist in September, as in 2009, a bulk of the Broadwings tend to sneak past, so to speak, unaccounted for, at very high altitudes.

The effects of wind direction and velocity on the flight path of raptors are significant for those species that depend on thermals for their southward movement. Broadwings exhibit this dependency on wind direction more than other species at Holiday Beach.

With north component winds all birds are forced to move south and fly closer to the shoreline of Lake Erie than if the winds were of a southerly component. The highest flight count of 61,916 Broadwings in one hour occurred on 15 September 1984 with a daily total of 95,499 under constant north winds 12-19 km/h (8-12 mph). When the yearly total of Broadwings is 40,000 or less, the winds were generally strong southerly component pushing the birds 5-10 miles (8-24km) north of the count site.

Numbers of Broadwings may also go unseen when high-pressure systems present cloudless skies and favorable conditions for thermals that ultimately push birds upward beyond the limit of aided vision. The birds then veer southwest over the lake cutting south of the Detroit River mouth and pass over Pointe Mouillé State Game Area in Michigan. There on September 17, 1999 observers counted 543,533 Broadwings while only 32,442 were recorded at Holiday Beach.

Unfortunately, 2009 happened to be one of those off years with a scant 18,292 Broad-winged Hawks. In comparison to the 20-year average, numbers were down by nearly 47% (Table 2). Considering the last big flight was over a decade ago, the 2009 total holds steady with the 10-year average of 20,514 birds. For this particular species a departure from average at a single site in a single year is not necessarily bad news.

In fall, the mass exodus from Canada occurs in about a two-week window starting the second week of September. The peak flight is invariably the third week of September. In 2009, the peak flight occurred during 15-18 September when 86% (15,749) of the season total glided over Holiday Beach.

Late stragglers are often recorded up to mid-October, though early November reports do exist. Three, including two adults, on 17 October were the last observed of the season. Broad-winged Hawks comprised just about 22% of the raptor total in 2009.

Red-tailed Hawk (*Buteo jamaicensis*)

This large and variable Buteo is the most widespread and broadly recognized of our migratory raptors. With a total of 6,162 at Holiday Beach in 2009, the Red-tailed Hawk ranks as our fourth most common migratory raptor. This total nudges past the 20-year average (5,996) by 2.77% and tops the 10-year average (4,436) by 38.9% (Table 2).

Red-tails have a drawn out, or protracted, migration that encompasses the entire fall migration period. Numbers increase through September, peak from mid-October to mid-November, and typically wind down through late November, though a few sizeable flights have been documented at this time.

Two peak flights were observed in 2009. An incredible flight took place in mid-October following a strong Arctic blast. During 13-18 October 3,063 Red-tails were tallied, with 2,519 of those, nearly 50% of the season total, passing in three big days (15-17 October), including the season's maximum single day high of 1,039 on 15 October. A smaller, though still significant, peak that included 1,239 red-tails occurred during 10-12 November.

Widespread wet weather the latter half of November shut down any potential for a late season flight. Red-tailed Hawks comprised approximately 7.4% of the raptor total in 2009.

Rarely documented at Holiday Beach is the Western Red-tailed Hawk. At least two dark morphs of the *calurus* subspecies were well seen and noted in 2009 with 1 juvenile on 15 October and 1 adult on 11 November, and both occurring on peak flight days.

Rough-legged Hawk (*Buteo lagopus*)

This lanky, Arctic-breeding Buteo is an irruptive, low-density migrant at Holiday Beach and elsewhere across the eastern Great Lakes region. This species manages to elude quantification at Eastern hawkwatch sites with its curiously late migration timing.

It was a down year for Rough-legged Hawks with a season total of just 26, which ranks as third lowest all time at Holiday Beach. In fact, it proved to be the second lowest total when taking into consideration total hours of observation; only 2007 with 20 birds in 635.5 hours was lower (Table 1).

Such a poor total plunges about 72% below the 20-year average (Table 2). Aside from a couple of big years, the species has shown an overall declining trend over the last 10-15 years, as evidenced by the latest 10-year average of 50 rough-leggeds.

Rough-legged Hawks, as late migrants, usually do not reach Holiday Beach until early to mid-October with only a few scattered records in late September and an extreme early date of 9 September 2007. Peak numbers arrive from late October to mid-November. Two light morphs on 15 October, though somewhat later than average, were the first of the season in 2009.

The season's peak flight, loosely speaking, occurred during 10-12 November and totaled a paltry 14 Rough-leggeds. Both Red-tailed and Red-shouldered Hawks had their second peak flights during this same time. With some migrants anticipated into December, it was rather disappointing to tally the last of the season as early as 16 November.

Swainson's Hawk (*Buteo swainsoni*)

Nothing gets a birder's adrenaline flowing quite like that of a rare, out-of-range vagrant. At Holiday Beach, the Swainson's Hawk is just that; a rare fall vagrant from the West. Averaging less than one annually, it came as a total shock when two (2) light morphs, migrating among kettles of Turkey Vultures, passed the Hawk Tower at separate times on 13 October.

Surprisingly, there was one other occurrence of two Swainson's Hawks in the same day on 16 September 1993 (OBRC 1995). Fall occurrences at Holiday Beach range from 13 September to 19 October and frequently involve immature or sub-adult birds among kettles of Broadwings.

All September and October Swainson's Hawk sightings through 2001 have been accepted by the Ontario Bird Records Committee (OBRC 2002). Apparently, the 2003 and 2006 records were never submitted, and the 2009 record is pending acceptance. In order to establish the species' true status in the region, each observation should be documented thoroughly, preferably with written details and/or hard evidence, and submitted to the OBRC for review.

Golden Eagle (*Aquila chrysaetos*)

With an expanding breeding population in Québec, the fan-favorite Golden Eagle will most likely continue to increase in number at Holiday Beach. To observe several single birds in a single day is a treat in itself, but to view three or more circling together overhead is truly an awe-inspiring experience.

It was an above average year for Golden Eagles. The fall 2009 total of 93 follows a near-record total of 133 in 2008 and tops the 20-year average (74) by a solid 25.17% (Table 2). A tally of 134 eagles in fall 1999 remains best overall. Unfortunately, a wet and unsettled latter third of November dashed all hopes of reaching 100 eagles.

Golden Eagle is a short to moderate distance migrant. As seen in some other raptors, juveniles tend to migrate first with subadults and adults coming later. For juveniles, migration, on average, commences in early October and rarely as early as mid-September.

In 2009, a high-flying juvenile on 20 September was a very early (fourth earliest on record) first-of-season. To date the earliest occurrence at Holiday Beach was 13 September 1985. Adult migration, on average, is about a half month to full month behind juveniles. Peak numbers of juveniles pass Holiday Beach in late October with adults following in November and infrequently into December.

The peak flight in 2009 occurred during 10-13 November when 25 eagles winged their way westward over Holiday Beach. However, an impressive 14 eagles on 28 October marked the season's highest single day total. Also noteworthy was a seven consecutive days (10-17 November) with at least one Golden Eagle. Alas, the two immature eagles that passed on 17 November were the last of the season, bringing the run to an end. Golden Eagles comprised a little over 0.1% of the raptor total in 2009.

American Kestrel (*Falco sparverius*)

It's hard to believe that one of the most iconic roadside raptors of Eastern North America is facing serious declines and has become a species of special conservation concern across much of its range.

A respectable 1,761 American Kestrels were tallied in 2009. Although this season total is up slightly from the last couple of seasons, it's by no means suggestive of a comeback, and actually ranks as the fourth-lowest all-time total at Holiday Beach.

For greater perspective, the 2009 season total falls more than 37.2% below the 20-year average of 2,806 (Table 2). On a more positive note, it appears as though the sharp decline that was first noted in the mid-1990's is beginning to stabilize when considering that the 2009 total shows a much lower (-8.7%) departure from the 10-year average. There are a number of factors that are believed to be contributing to its decline, but among those, widespread pesticide use and Cooper's Hawk depredation may be the most significant.

Like several other raptors, Kestrels show two distinct peaks in their migration; the first, and major peak, occurring in early to mid-September, and the second in early to mid-October. On average, the September peak tends to produce greater numbers than the mid-October peak.

In line with this pattern was a peak flight of 690 Kestrels, nearly 40% of the season total, during the period of 9-18 September 2009, with the season's highest single-day count of 166 Kestrels on 16 September. The second, somewhat reduced, peak flight during 10-16 October brought 485 Kestrels over Holiday Beach.

Their migration decreases through late October and declines in early November. A lone Kestrel on 11 November was the last of the season. American Kestrels comprised roughly 2.1% of the raptor total in 2009. With a number of recovery efforts taking place across the Eastern U.S. and Canada, it is crucial for this species to be carefully monitored.

Merlin (*Falco columbarius*)

A small, feisty, and pugnacious falcon of the northern forests, the Merlin is an increasingly common sight at hawkwatches across the East. The expansion of its breeding range in the East, as documented by Breeding Bird Surveys and Atlases, may explain the steady rise in numbers in recent years.

In 2009, Holiday Beach recorded an extraordinary 122 Merlins. Coincidentally, this total ties the all-time record high of 122 set in fall 2006.

Such an impressive total tops the 20-year average of 79 by more than 55.4% (Table 2). More surprisingly, the 2009 total tops the 10-year average (82) by a considerable 49% (Table 2).

The Merlin shows a rather protracted migration from early September through October and dwindling into November, with a semblance of a peak often occurring in mid-September.

Although, in some years a true peak flight period never really develops, as was seen in fall 2009. Instead there was a small, but steady movement picking up in mid-September and continuing through mid-October. The two peak flight days of 15 September and 10 October each tallied 11 Merlins. Interestingly, there were no consecutive days with counts greater than 5.

September and October had very similar totals of 64 and 56 Merlins, respectively. A last observed date of 14 November was about average for the species. Merlins comprised roughly 0.2% of the raptor total in 2009.

Peregrine Falcon (*Falco peregrinus*)

Widely recognized as the poster species of recovery and conservation, the Peregrine Falcon has rebounded tremendously in the East following extirpation in the 1970's.

A season total of 108 falls just short of the all-time high of 114 recorded in 2006 and is a whopping 104.35% increase from the 20-year average and a 91.5% increase from the 10-year average (Table 2).

As usual, the Peregrine migration commenced in early September and continued, albeit minimally, through late November (i.e. 1 on 29 November), though a bulk of the flight (60%) passed in October.

The peak flight occurred during the second week of October, with a total of 25 birds recorded during 10-13 October. Although somewhat variable, the peak flight in 2009 was a full week later than average. A tally of 8 falcons on 10 October was the season's maximum single-day count.

Of aged individuals, immatures outnumbered adults 3 to 2 over the course of the season. Peregrine Falcons comprised slightly more than 0.1% of the raptor total in 2009.

A fraction of the near record-high season total may involve one to two double-counted individuals that lingered in the area for an extended period during the latter third of the season. The official counter was not always able to relay daily events and patterns to each volunteer counter.

Select Non-raptor Observations

A rather typical fall migration season at Holiday Beach Conservation Area in Amherstburg, Essex County, was highlighted by several noteworthy observations, mainly tardy birds, in addition to a few record-setting migration totals. The weather was unusually mild for most of the fall season aside from a couple of strong cold fronts and a deep trough in the jet stream in early to mid-October.

The most noteworthy observation among a total of 24 waterfowl species included a putative, very distant flock of 60 Atlantic Brant on 30 September. The fall's first Tundra Swans were noted on 27 October. At least 2-4 Blue-winged Teal were recorded daily through 29 October. A season high 264 Canvasbacks were tallied on 28 October.

For a species rarely seen in fall, a well-camouflaged Least Bittern photographed from the Hawk Tower on 11 October was remarkably late as well. A small white egret roosting with Great Egrets on 9-10 September was thought to be a juvenile Little Blue Heron; however, an equally rare Snowy Egret could not be safely eliminated given the inadequate views.

Two (2) American Avocets on 11 October, with 1 (or a different individual) lingering from 14-18 October, were the season's top shorebird highlight while a flyover Buff-breasted Sandpiper on 6 October was a close runner-up.

A foraging Common Nighthawk on the afternoon of 29 October was very late for the region, but not unprecedented.

A latus Ruby-throated Hummingbird was noted near the banding lab on 10 October. Much more surprising though were numbers of Chimney Swifts into late October. An astonishing 30 swifts were in view at once over the Park on 26 October with only 2 holdovers noted on 27 October. It is unclear why the swifts chose to linger (or stage) in the area so late, but perhaps it is related to the geography of southwestern Ontario and/or the temperate affects of Lake Erie.

A season total of 17 migrating Red-headed Woodpeckers was certainly above average, with a peak in numbers on 23-24 September. A very rare for the region Pileated Woodpecker was a one-minute wonder on 31 August. Interestingly, there are very few records for Essex County.

An apparently healthy Northern Rough-winged Swallow provided a very late record on 19 November as it buzzed past the Hawk Tower.

Horned Larks started to move in good numbers by mid to late October and declined by mid-November. A season total of nearly 9,000 seemed noteworthy. A hefty 218,200 American Crows were estimated to have passed between 13 October and 17 November.

Blue Jays easily topped that total as the most numerous passerine migrant of the fall season at Holiday Beach. Historical annual estimates numbering from 300,000 to 500,000 are quite remarkable; however, a recorded 946,000+ Blue Jays between 12 September and 27 October 2009 is truly astonishing, and undoubtedly, a record total. The peak flight days came in early October with 158,300 on 1 October and 152,750 on 5 October. A large exodus was predicted in response to a poor acorn, beechnut, and hazelnut mast (crop) across Canada.

Three (3) Orange-crowned Warblers on 13 October were noteworthy. A first-fall Tennessee Warbler brightened up an otherwise drab late fall morning on 11 November.

A calling, flyover Dickcissel was a good pick up on the morning of 26 October, although no visual, or documentation, was obtained. Purple Finches migrated south in seemingly low numbers (high count of 72 on 26 October), while Pine Siskins remained scarce throughout the period; which wasn't unexpected given the massive southward irruption the previous fall-winter.

Only one Common Redpoll passed the Hawk Tower this season, on 10 November. Conversely, American Goldfinches were exceedingly numerous.

A protracted early September to late November migration brought more than 61,950 goldfinches over Holiday Beach with a big push of no fewer than 41,880 in October alone. Among several large flights was a whopping 5,330 on 8 October and a very respectable 4,530 on 5 October.

Acknowledgments

I would like to individually thank the following people who participated in this season's hawk count: Martin Blagdurn, Mike Fitzpatrick, Bob Hall-Brooks, Tom Hince, Cindy Isenhoff, Rene Kielbasa, Olga Klekner, Dan Lumm, Jim McCoy, Dorothy McLeer, Karen Padbury, Paul Pratt, Sarah Rupert, and Dave Stimac. I am also extremely grateful for the guidance and support provided to me by Bob Pettit, Claude Radley, Janina Radley, Todd Pepper, and Martha Vardai.

Without the forethought of Jason Sodergren and the continued support from HMANA the HawkCount database would not be possible, and for that I owe them a debt of gratitude. To view HBMO's 2009 fall raptor count summaries online go to: www.hawkcount.org.

Literature Cited

Chartier, A. and Stimac, D. 2002. *Hawks of Holiday Beach*, Holiday Beach Migration Observatory, 2nd ed.

Grove, Dave. Season Statistics for Waggoner's Gap Hawk Watch. *Waggoner's Gap Hawk Watch*. Jan. 2009. Web. 15 Feb 2010. <<http://www.waggoner.com/SeasonStats.htm>>.

Pittaway, Ron. 1995. Ontario Bird Records Committee Report for 1994. *Ontario Birds* Aug. 1995: 53. Web. 1 Mar. 2010. <<http://www.ofo.ca/obrc/includes/1994OBRCReport.pdf>>

Roy, Kayo J. 2002. Ontario Bird Records Committee Report for 2001. *Ontario Birds* Aug. 2002: 54-55. Web. 1 Mar. 2010. <<http://www.ofo.ca/obrc/includes/2001OBRCReport.pdf>>

Wheeler, Brian K. 2003. *Raptors of Eastern North America*, Princeton: Princeton UP, 2003: 183-194.

Appendix

Table 1: Holiday Beach Migration Observatory's Raptor Count Season Totals 1990-2009, Holiday Beach Conservation Area, Amherstburg, Ontario, Canada

Season	Hrs Observed	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	SW	GE	AK	ML	PG	UA	UB	UE	UF	UR	All Unid	TOTAL	Season	
F 2009	644.5	43,841	94	168	686	9,703	942	28	1,096	18,292	6,162	26	2	93	1,761	122	108	8	17	0	1	1	27	83,151	F 2009	
F 2008	423.5	21,182	48	99	266	3,533	219	7	298	8,953	2,282	23	0	133	597	36	30	1	11	0	0	1	13	37,719	F 2008	
F 2007	635.5	31,339	186	175	1,280	12,389	730	16	509	18,400	6,470	20	0	79	1,611	108	95	4	38	0	4	7	53	73,460	F 2007	
F 2006	612.5	35,665	111	124	1,195	9,814	760	28	492	7,730	4,248	30	3	63	2,113	122	114	2	31	0	3	4	40	62,652	F 2006	
F 2005	571.5	41,543	86	119	807	9,528	773	48	645	7,965	4,730	56	0	74	2,035	117	57	3	95	2	4	6	110	68,693	F 2005	
F 2004	469	14,752	83	61	272	5,506	369	28	403	27,843	2,771	64	0	42	1,369	63	15	9	183	3	1	35	231	53,872	F 2004	
F 2003	559.25	24,579	96	83	1,065	9,705	554	48	460	7,009	3,523	26	2	35	2,214	70	59	6	19	0	4	2	31	49,559	F 2003	
F 2002	631.5	21,810	105	48	859	7,658	448	47	457	4,887	4,964	108	0	66	1,969	94	61	4	58	0	3	23	88	43,669	F 2002	
F 2001	593.25	32,186	101	54	750	14,280	484	48	802	44,310	5,573	37	1	85	2,538	70	35	2	9	1	1	4	17	101,371	F 2001	
F 2000	622.25	18,249	68	70	334	9,786	396	16	836	17,240	4,864	39	1	102	2,197	61	35	7	21	2	3	2	35	54,329	F 2000	
F 1999	650	18,384	79	62	1,276	14,216	487	23	463	60,804	4,934	92	0	134	2,643	78	63	15	107	1	1	55	179	103,917	F 1999	
F 1998	615.5	18,559	164	70	1,214	13,740	355	29	631	50,746	5,900	51	1	28	1,986	77	49	8	96	1	4	32	141	93,741	F 1998	
F 1997	560.75	17,909	166	64	980	15,719	365	47	1,042	31,375	6,927	97	0	50	2,894	93	48	4	14	1	1	154	174	77,950	F 1997	
F 1996	639.25	17,675	107	27	356	10,778	480	23	414	107,877	7,016	72	1	77	1,952	47	50	9	50	0	6	30	95	147,047	F 1996	
F 1995	797.5	16,461	173	52	1,176	15,344	755	59	825	22,381	10,987	170	0	79	4,884	120	82	1	49	0	3	3	56	73,604	F 1995	
F 1994	759.75	19,391	92	36	1,469	10,338	498	17	859	49,830	8,854	69	0	87	3,337	51	54	16	71	0	8	5	100	95,082	F 1994	
F 1993	759	14,227	110	48	1,616	13,914	973	74	1,667	72,428	6,534	71	2	63	3,196	75	50	26	177	0	5	28	236	115,284	F 1993	
F 1992	690.75	14,785	110	37	655	11,715	650	42	1,445	23,918	9,741	123	0	59	2,110	66	39	16	92	12	1	15	136	65,631	F 1992	
F 1991	691.5	16,813	144	91	848	16,182	1,082	77	1,325	18,459	5,731	303	1	81	5,501	95	54	2	257	3	3	72	337	67,124	F 1991	
F 1990	677.5	8,645	85	29	1,129	13,983	760	21	1,045	76,271	6,254	203	0	87	5,333	64	37	13	72	0	0	131	216	114,162	F 1990	
F 1989	769.25	12,567	131	29	1,586	15,830	852	20	1,094	30,158	7,614	197	0	62	5,644	63	30	38	93	0	1	41	173	76,050	F 1989	
Season	Hrs Observed	TV	OS	BE	NH	SS	CH	NG	RS	BW	RT	RL	SW	GE	AK	ML	PG	UA	UB	UE	UF	UR	All Unid	TOTAL	Season	
1989-2008																										1989-2008
20-Yr Avg	636	20,836	112	69	957	11,698	600	36	786	34,429	5,996	93	1	74	2,806	79	53	9	77	1	3	33	123	78,746	20-Yr Avg	
Fall 2009	644.5	43,841	94	168	686	9,703	942	28	1,096	18,292	6,162	26	2	93	1,761	122	108	8	17	0	1	1	27	83,151	Fall 2009	
1999-2008																										1999-2008
10-Yr Avg	577	25,969	96	90	810	9,642	522	31	537	20,514	4,436	50	1	81	1,929	82	56	5	57	1	2	14	80	64,924	10-Yr Avg	
Fall 2009	644.5	43,841	94	168	686	9,703	942	28	1,096	18,292	6,162	26	2	93	1,761	122	108	8	17	0	1	1	27	83,151	Fall 2009	

Table 1: A Comparison of 20-Year (1990-2009) Average Season Count of Raptors, and 10-Year (2000-2009) Average Season Count of Raptors With the Current Year's (2009) Total Count. Red (-) indicates a decline in numbers. Data collected by Holiday Beach Migration Observatory, at Holiday Beach Conservation Area, Amherstburg, Ontario, Canada

20-Year Average				10-Year Average			
Hours	2009	1989-2008	Percent	Hours	2009	1999-2008	Percent
Species	Season	20-Yr Avg	Change	Species	Season	10-Yr Avg	Change
Hours	644.5	636	1.34	Hours	644.5	577	11.73
TV	43,841	20,836	110.41	TV	43,841	25,969	68.82
OS	94	112	-16.26	OS	94	96	-2.39
BE	168	69	143.83	BE	168	90	87.71
NH	686	957	-28.29	NH	686	810	-15.35
SS	9,703	11,698	-17.05	SS	9,703	9,642	0.64
CH	942	600	57.13	CH	942	522	80.46
NG	28	36	-22.01	NG	28	31	-9.39
RS	1,096	786	39.51	RS	1,096	537	104.29
BW	18,292	34,429	-46.87	BW	18,292	20,514	-10.83
RT	6,162	5,996	2.77	RT	6,162	4,436	38.91
RL	26	93	-71.91	RL	26	50	-47.47
SW	2	1	233.33	SW	2	1	185.71
GE	93	74	25.17	GE	93	81	14.39
AK	1,761	2,806	-37.24	AK	1,761	1,929	-8.69
ML	122	79	55.41	ML	122	82	48.96
PG	108	53	104.35	PG	108	56	91.49
UA	8	9	-13.98	UA	8	5	50.94
UB	17	77	-77.97	UB	17	57	-70.28
UE	0	1	-100	UE	0	1	-100
UF	1	3	-64.29	UF	1	2	-58.33
UR	1	33	-96.92	UR	1	14	-92.81
All Unid	27	123	-78.06	All Unid	27	80	-66.12
TOTAL	83,151	78,746	5.59	TOTAL	83,151	64,924	28.07