

Greenlaw Mountain Hawk Watch Season Report - Fall 2020

Our twelfth season of fall observations and data collection has been completed. The record low or near record low numbers of 2019 haven been followed this year by more “normal” counts of the regularly occurring species. The number of observation hours logged this year were near average. Some of our most active participants were unavailable this year. Nevertheless, volunteer participation remained strong. As always, migrating raptors were observed in close, up high, out on the horizon and on occasion, moving below the watch. There was some type of excitement almost every day.

Data was collected on forty-two days between August 26 and November 14 with a total of 285 observation hours logged. Thirty-eight volunteer observers contributed a total of 347 hours of their time. The total number of migrating hawks counted for the season was 6822. A total of fifteen raptor species were observed migrating past the site (species accounts can be found later in the report).

Count Protocols

As in previous seasons, most of this year's counts were conducted on days considered to have favorable winds and lacked significant precipitation. Hawks moving roughly east to west, or on occasion north to south, were considered migrants. The presence of resident raptors required some species to be watched more closely during certain portions of the season in order to ensure accuracy of our counts. Partial and full-year residents near the site included Bald Eagle, Broad-winged Hawk, Red-tailed Hawk, American Kestrel, Merlin, Osprey, Sharp-shinned Hawk, Northern Goshawk and Turkey Vulture. Eagles and vultures are typically the most difficult to monitor as the daily movements of these resident birds can be great. The official counter used 10x binoculars and 25x wide angle spotting scope for scanning and/or identification.

A Quick Look at the Season

August

Our observation season begins late in the month, so there is only a brief window of opportunity to observe migrant raptors. Observations produced very modest counts of migrants. Osprey and Bald Eagle moved in the most significant numbers. As a matter of fact, the first day of observations produced the single day high count of Osprey for 2020. Resident raptors observed near the watch included Turkey Vulture, Osprey, Bald Eagle, Sharp-shinned Hawk, Northern Goshawk, Broad-winged Hawk, Merlin and American Kestrel. These residents often interact with migrants passing overhead.

Total number of migrant raptors: 187 (11-year average 108)

Observation hours: 34 (11-year average 22.95).
Observation days: 5 (11-year average 4).

September

Modest movements were observed during the first week of the month. A good push of Broad-winged occurred on the 11th. A blanket of low clouds quickly broke up during mid-afternoon allowing rapid development of thermals. 546 Broad-winged Hawks were counted. The largest kettles of the day contained roughly 50 individuals. More modest flights of Broad-wings occurred on the 12th and 14th. A good movement of Sharp-shinned Hawks also occurred on the 12th. Heavy movement of Broad-wings occurred on the 15th with a total of 2631 hawks recorded. Many of these birds passed directly overhead including a stream of 250+ Broad-wings. The largest kettle of the day contained 125 hawks. Low birds were numerous at times. Another strong movement of Broad-wings occurred on the 19th (1110 hawks). Large streams containing as many as 285 Broad-wings were observed. A more modest flight of Broad-wings occurred the following day. The next five days were relatively slow. Poor weather dominated the last week of the month.

Resident Merlin and American Kestrel remained in the vicinity of the hawk watch into the 3rd and 4th weeks of the month, which is significantly later than the first years of observations at Greenlaw Mountain. The reason for this is not known. Two possibilities are changes in weather and/or prey base.

Total number of migrant raptors: 5507 (11-year average 3821)
Observation hours: 109.25 (11-year average 117.4)
Observation days: 14 (11-year average 18)

October

The 3rd brought a good flight of hawks with 142 counted. This total included 37 American Kestrel, 6 Peregrine Falcons, 12 Northern Harriers, 38 Sharp-shinned Hawks plus counts of several other species. A few dozen late Broad-winged arrived the next day. Modest flights occurred during the next week including sightings of Snow Geese. An adult Golden Eagle was observed on the 12th. Minutes after this bird passed overhead, a Townsend's Solitaire was spotted at the watch site. The bird perched in the open for several minutes, repeatedly flying to the ground grabbing insects. This bird was also observed on the 14th. Strong movements of Turkey Vultures occurred on the 18th and 25th. Good movements of Red-tailed Hawks were observed on the 25th and 30th. Rough-legged Hawks made the count on the 30th and the 31st.

Some of this month's frontal passages produced surprisingly strong winds deterring movements of smaller raptors. Efforts were made to collect data on some of the "off days".

Unlike last year, songbird movements were very obvious throughout the month (robins, blackbirds, waxwings, finches, etc.). Pine Grosbeaks began to appear on the 12th. Evening Grosbeaks, White-winged and Red Crossbill and Bohemian Waxwings were also seen along with one Northern Shrike. Several birds of interest passed directly overhead, but were not identified. Unknown to many, Greenlaw Mountain has lots of potential for uncommon to rare bird sightings.

Total number of migrant raptors: 1063 (11-year average 814)

Observation hours: 125.5 (11-year average 115.6)

Observation days: 19 (11-year average 18)

November

This month's observations began with a very modest flight of Bald Eagle on the 3rd. Showers were observed on three sides of the watch for much of the day, likely cutting off the flight path of migrating raptors and deterring movement. A modest movement of Red-tailed Hawks was recorded on the 4th. The next ten days were unseasonably warm. The last day of counting was conducted on the 14th. Only 14 migrating raptors were recorded.

Total number of migrant raptors: 65 (11-year average 82)

Observation hours: 16.25 (11-year average 24)

Observation days: 4 (11-year average 5)

Analysis of Flight Trends

Yearly flights are strongly influenced by weather. The number of birds counted in fall migration can directly reflect the weather's effect on wintering birds, spring migration, breeding success, as well as its effect on daily flights during the fall months. Unfavourable wind conditions occurring during migration can cause raptors to move across a broader geographical area and at lower altitudes. When this occurs, detectability can be reduced. Deviation from 'normal' weather during the breeding season can strongly affect reproductive success and the number of immature birds counted during migration. These results can be favourable or adverse. Human influences can also impact flight trends. Typically, these trends can only be detected through long-term monitoring.

Extreme weather seems to be becoming the norm. Wet breeding seasons, post tropical events, draughts and major rain events have occurred repeatedly in recent years. Climatologists tell us that this will likely continue. Raptor populations could be adversely affected.

The 2020 season count totals for most species were close to their eleven-year average. When considering the low counts of 2019, this is very good news. It seems that raptor populations bounced back from what appeared to have been a tough year. However, long term declines of at least three species continue.

The line graphs shown in the species accounts section shows that Osprey, Bald Eagle and Peregrine Falcon counts are holding steady or increasing. Perhaps coincidentally, these are the birds of prey that have received the greatest protections by government and the strongest efforts in helping them recover from the effects of DDT, sport hunting and persecution. Counts for several other regularly occurring raptors are demonstrating a slow decline. We cannot draw any conclusions from these numbers. However, it might not be a coincidence that the most well protected species appear to be doing well, while others appear to be declining.

Declining populations of songbirds and insects could be responsible, at least in part, for declining populations of Sharp-shinned Hawks and American Kestrel (see threats below). A recent study showed that 52% of the world's birds of prey are in decline.

The value of this project and its ability to detect trends increases significantly with the addition of each season's data. Maintaining a consistent effort is extremely important. Minimizing bias is also of high importance.

Threats

Human caused threats to raptors include pesticide use, habitat destruction, invasive species (including cats), and collisions with structures and/or their support lines, as well as power-lines. Extreme weather and other aspects of climate change represents an increasing threat.

Various studies are documenting major reductions and/or shifts of insect populations. Many birds of prey feed heavily on insects. Those that do not, often feed on other insect eating bird species.

"Modern" farming methods greatly contribute to climate change and kill large numbers of insects placing more stress on bird populations including birds of prey. One of the contributors to climate change is the tilling of soil. This practice allows large quantities of carbon to escape into the atmosphere. Application of pesticides kill beneficial insects as well as those considered to be "pests". These impacts ripple through ecosystems, directly and/or indirectly affecting birds of prey.

Changes to agricultural practices could increase insect and songbird populations, as well as sequester carbon. Small birds of prey such as American Kestrel and Sharp-shinned Hawk were once common on farms throughout North America. Alternatives to the ecologically expensive farming practices currently dominating North American food production do exist. The documentary "Kiss the Ground" explores the problem as well as solutions. Numerous books also explore the topic.

Birds of prey benefit from healthy ecosystems, which are in increasingly short supply. Climate change is considered to be the greatest threat to birds and biodiversity as a whole.

Species Accounts

Black Vulture

Earliest Observation: None

Latest Observation: None

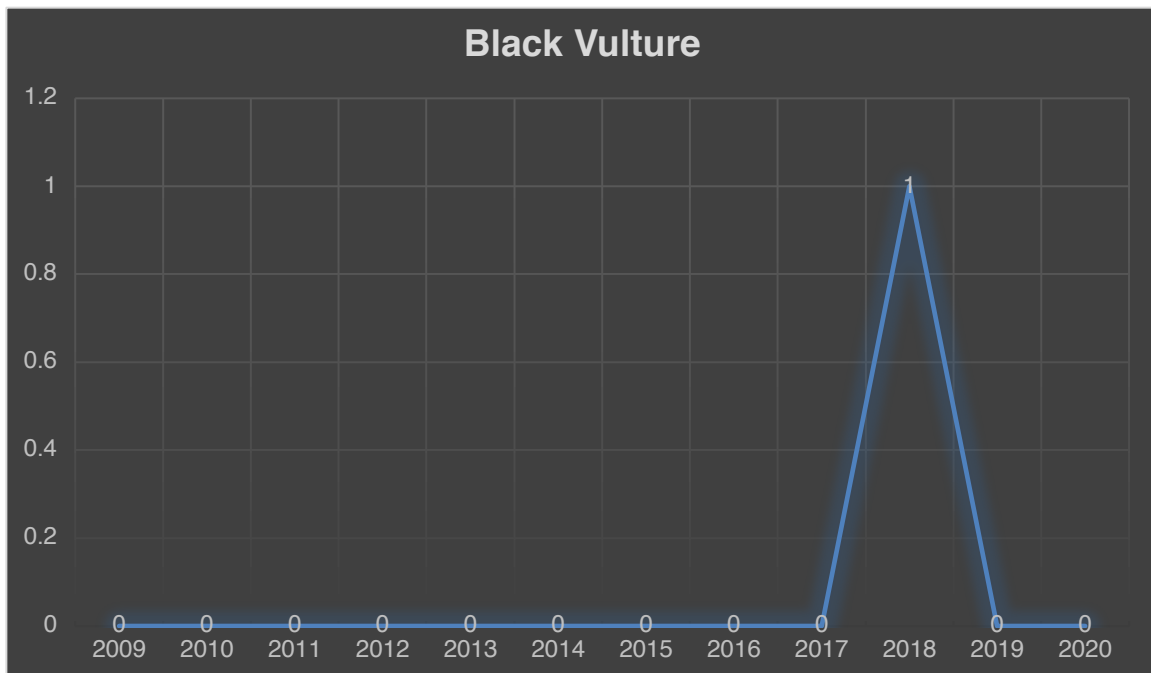
Single Day High Count: None

Peak: None

Season Total 0

Ten-year average: <1

Black Vultures continue to be rare in NB.



Turkey Vulture

Earliest Observation*: August 26

Latest Observation: October 31

Single Day High Count: 79 (October 18)

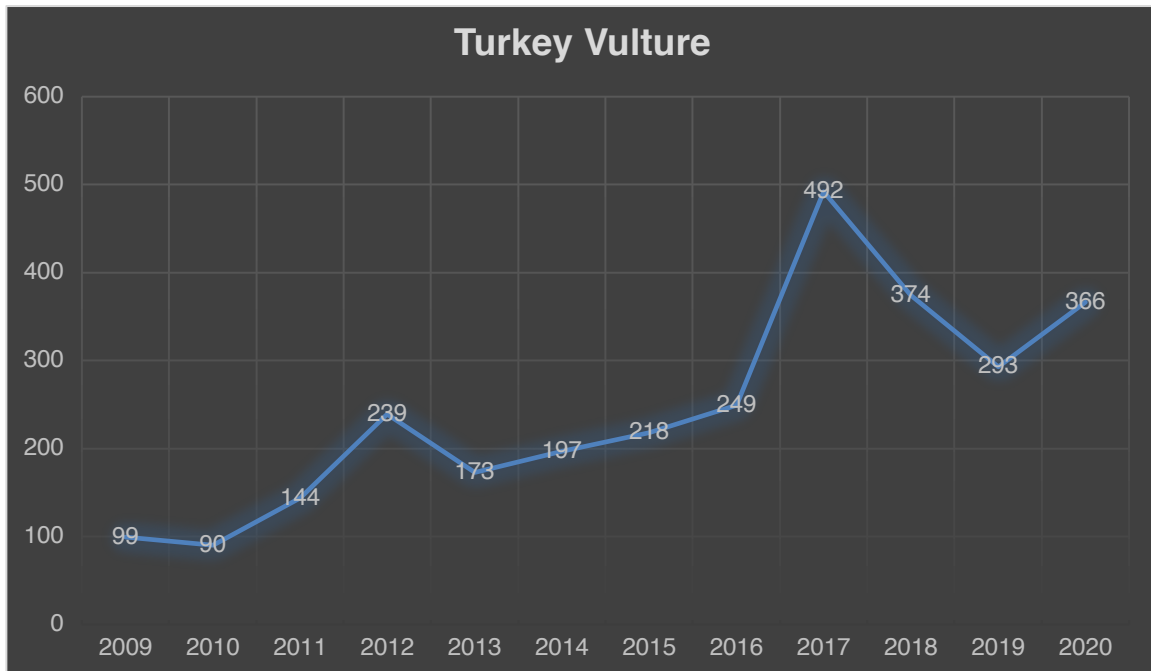
Peak: October

Season Total: 366

Eleven-year average: 233

Our data shows a very clear upward trend. A warming climate and abundant food sources are likely responsible for increasing populations in NB, as well as counts at

Greenlaw Mountain.



Osprey

Earliest Observation: August 26

Latest Observation: October 22

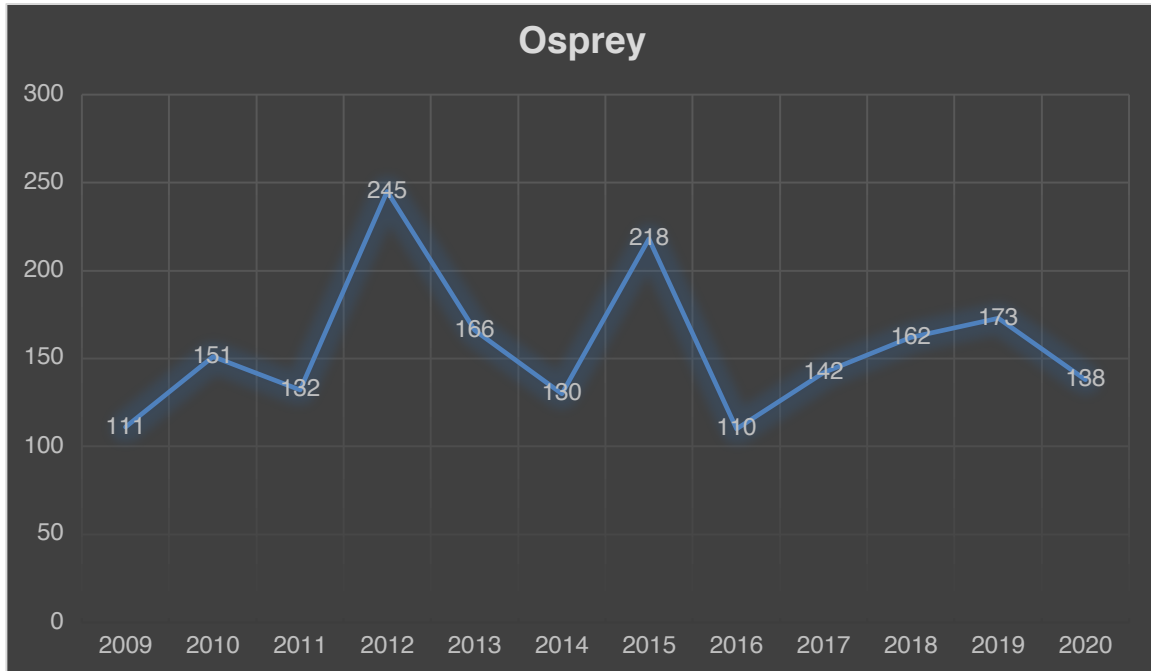
Single Day High Count: 15 (August 26)

Peak: September

Season Total: 138

Eleven-year average: 150

This year, the single day high count for Osprey occurred on the first day of the season. Some early movers could have been missed. Migration counts in New England suggest declining numbers. Our data is not showing a clear trend.



Bald Eagle

Earliest Observation: August 26

Latest Observation: November 14

Single Day High Count: 16 (September 5)

Peak: Movements were somewhat consistent throughout the season.

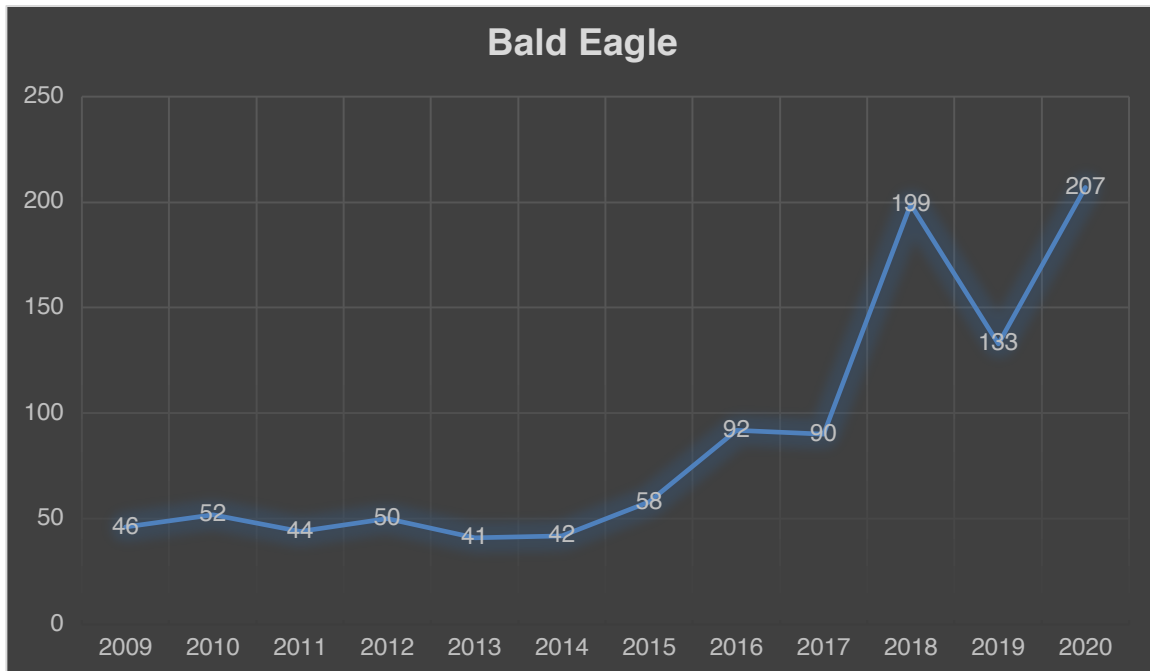
Season Total: 207**

Eleven-year average: 77

2016-19 average: 128

A record high season count. Bald Eagle populations appear to be doing well.

Note - For many years, we were intentionally overcautious while counting Bald Eagles. Only high-flying birds moving east to west were deemed migrants. We now have a better handle on their movements, which is allowing our counts to be more representative of the actual number of eagles passing the site. The spike occurring in 2016 represents the change in counting. Even so, our most recent data suggests a very strong rise in numbers.



Northern Harrier

Earliest Observation: September 5

Latest Observation: November 14

Single Day High Count: 12 (October 3)

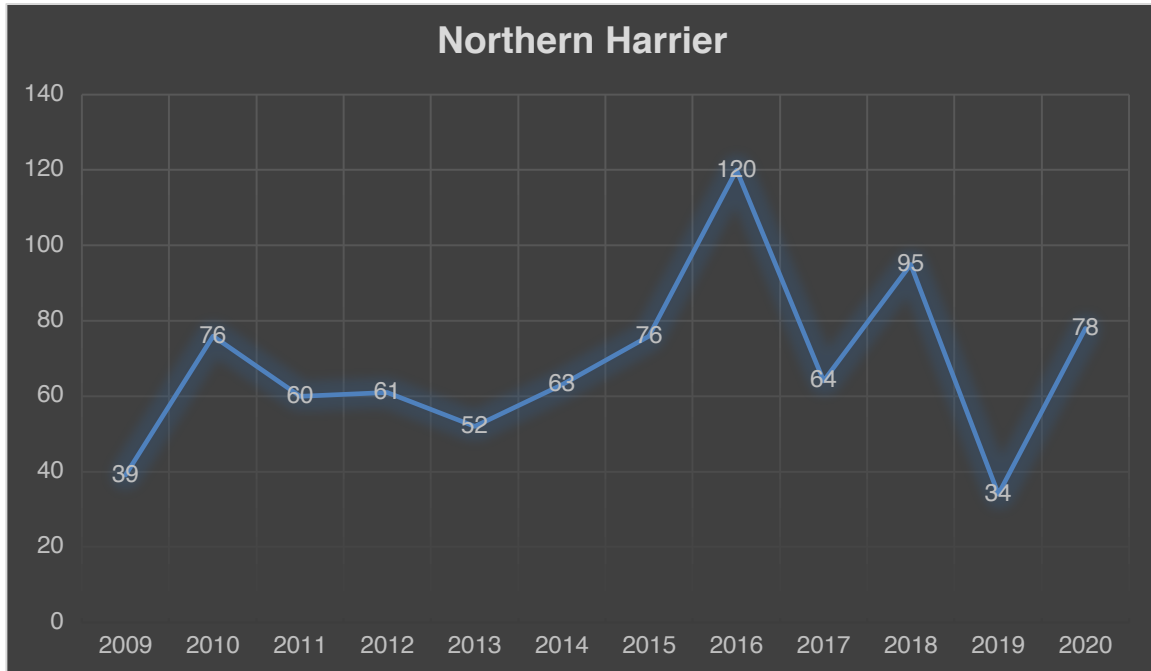
Peak: September/October

Season Total: 78

Eleven-year average: 67

Our counts have major highs and lows. Even so, the population appears stable. This year's counts were above average, having rebounded nicely from last year's record low.

Northern Harriers are ground nesters. As such, they are likely more susceptible to human disturbance. Ground nesters can also be more susceptible to moist conditions resulting from above average rainfall or major rain events.



Sharp-shinned Hawk

Earliest Observation: August 26

Latest Observation: November 14

Single Day High Count: 46 (September 12)

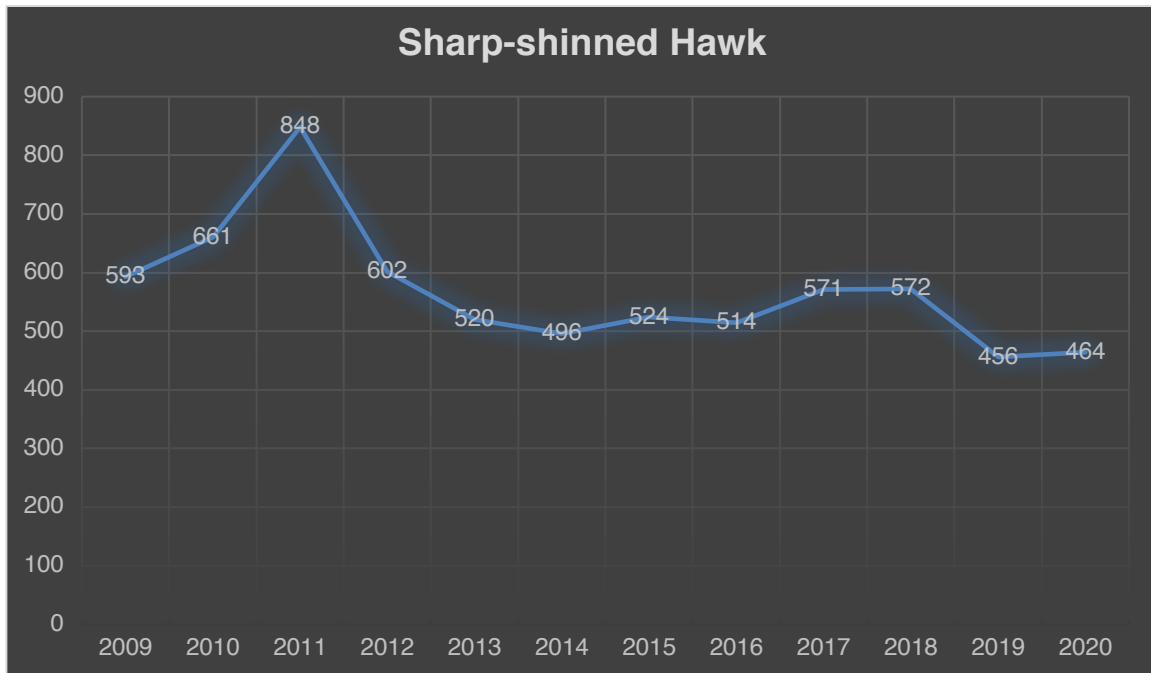
Peak: September/October

Season Total: 464

Eleven-year average: 578

Greenlaw Mountain's 2020 count is near the record low set in 2019. The overall trend at our site is clearly downward. Counts from New England are documenting similar declines.

Sharp-shins prey mostly on songbirds, many of which are being reported in diminishing numbers throughout Eastern North America. These small hawks also take insects on the wing.



Cooper's Hawk

Earliest Observation: September 15

Latest Observation: October 13

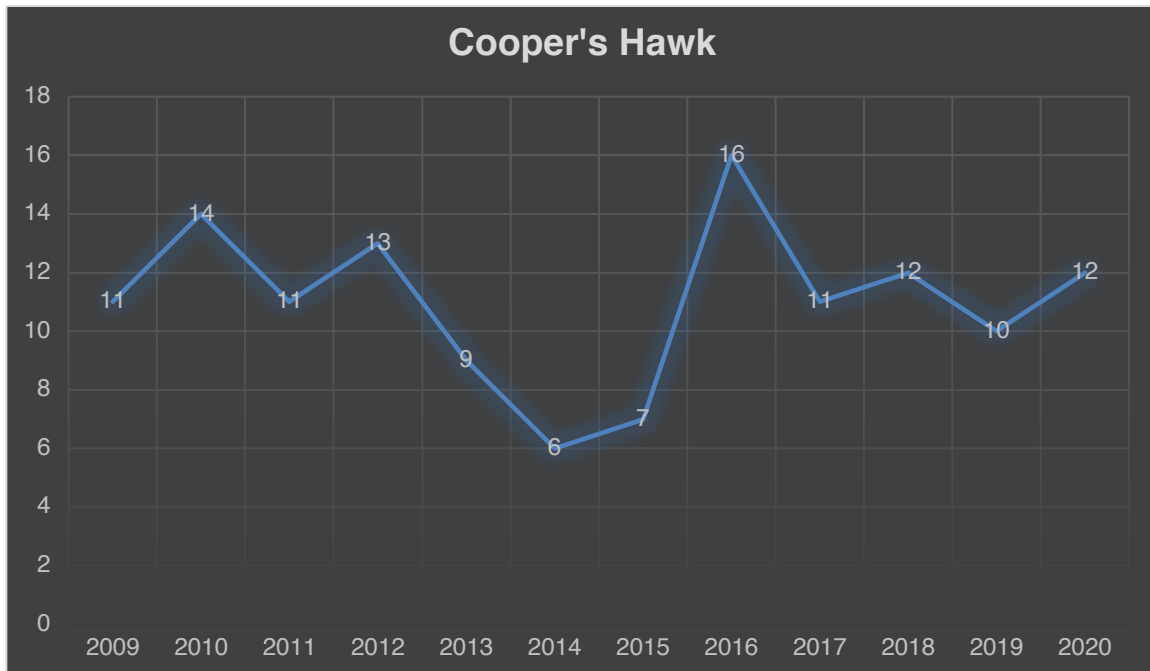
Single Day High: 3 (October 5)

Peak: October

Season Total: 12

Eleven-year average: 11

Counts have been fairly stable.



Northern Goshawk

Earliest Observation: September 14

Latest Observation: November 4

Single Day High Count: 3 (October 30)

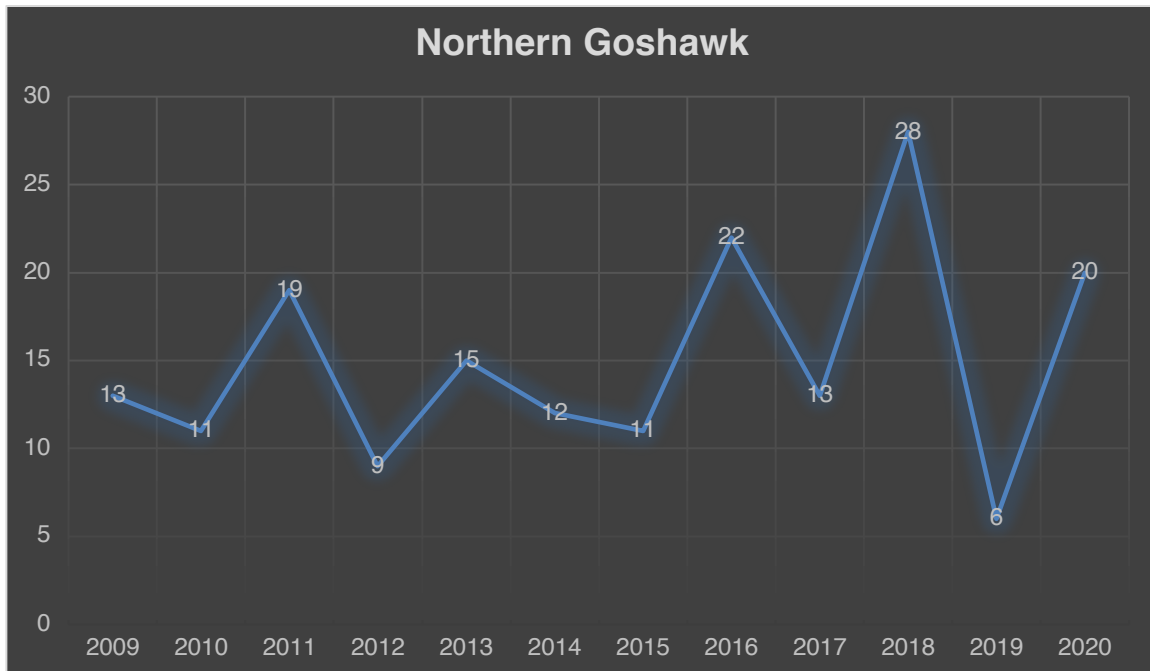
Peak: October

Season Total: 20

Eleven-year average: 14

Significant fluctuations in our annual counts are evident, but the long-term numbers appear stable. This species is a partial migrant (some birds winter in NB, while others leave).

Northern Goshawks are more dependent on old forests than many other raptors.



Red-shouldered Hawk

Earliest Observation: September 5

Latest Observation: September 20

Single Day High Count: 2 (September 20)

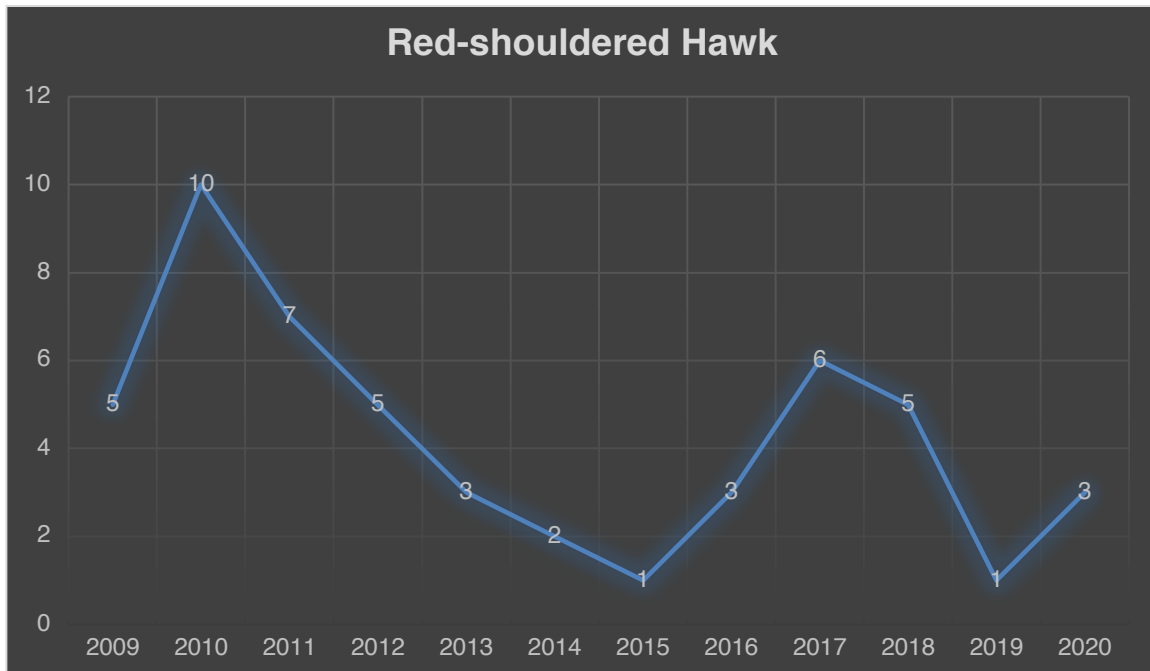
Peak: September

Season Total: 3

Eleven-year average: 4

We usually see this species during late season. Having observed 3 in the month of September, it seemed at the time that they might have had a good year. Unfortunately, those early birds were the only individuals seen. It is worth noting here that the sample size of this species makes them difficult to monitor.

The Red-shouldered Hawk in NB is at its northeastern limit. With a warming climate, we might expect to see increasing numbers of this buteo. Our data has yet to indicate such a change.



Broad-winged Hawk

Earliest Observation: August 26

Latest Observation: October 5

Single Day High Count: 2572 (September 15)

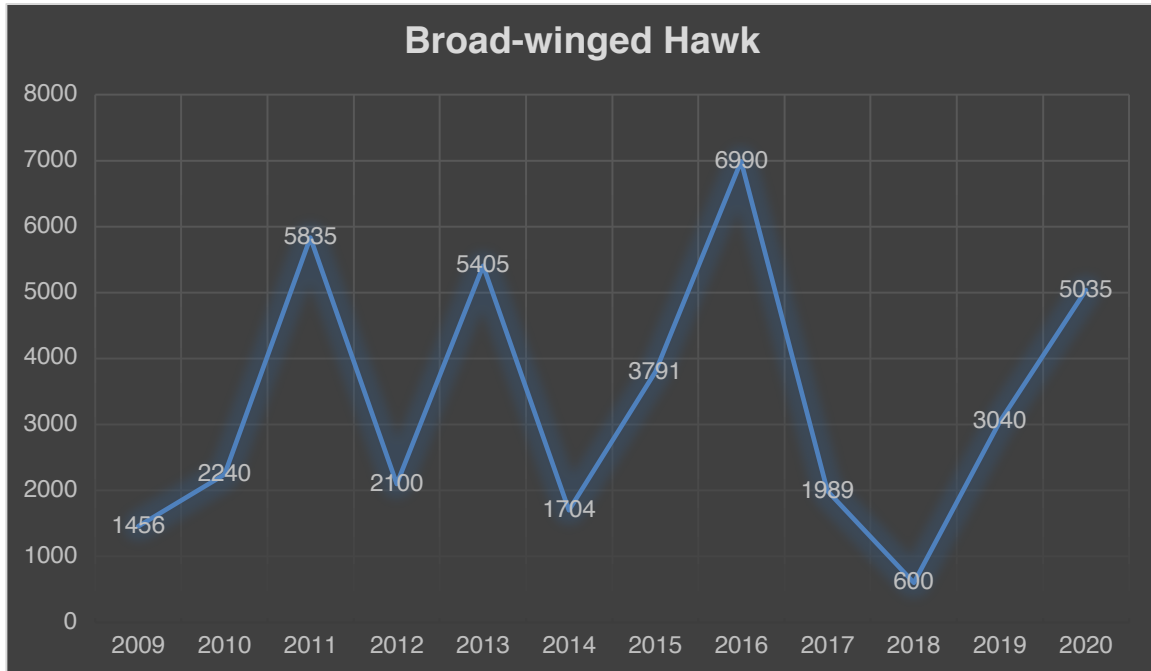
Peak: Mid-September

Season Total: 5035

Ten-year average: 3196

Our data is showing a downward trend for this forest bird. Counts from New England hawk watches indicate a similar trend.

Habitat loss likely represents the greatest threat to this species. Declining populations of amphibians, insects and birds could be responsible for additional stresses.



Red-tailed Hawk

Earliest Observation: August 30

Latest Observation: November 14

Single Day High Count: 48 (October 30)

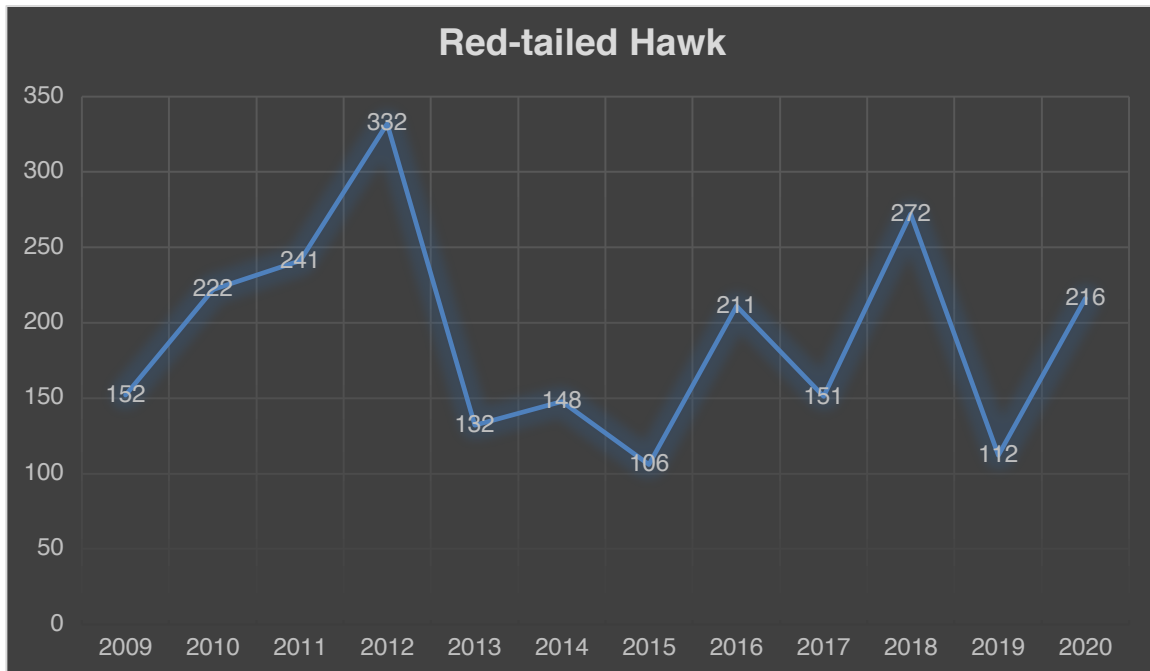
Peak: Late October/early November

Season Total: 216

Ten-year average 189

Our 2020 counts rebounded from last year's near record low.

Red-tailed Hawks are thought to be "short stopping", which tends to result in fewer individuals being counted at fall hawk watches (some of the birds might not move until data collection has ceased). This species is also considered to be very adaptive, allowing them to do well in a quickly changing world. Their changing behavior make the species more difficult to monitor.



Swainson's Hawk

Earliest Observation: None

Latest Observation: None

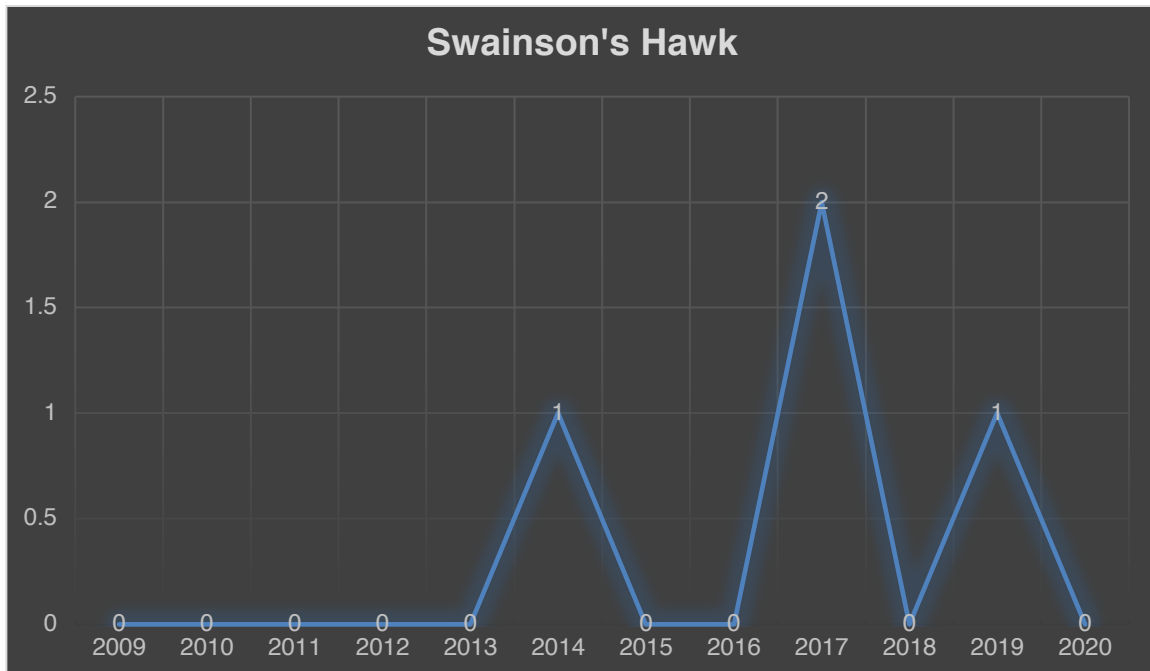
Single Day High Count: 0

Peak: None

Season Total: 0

Ten-year average: <1 (records in 2014, 2017 and 2019)

Swainson's Hawk are rare in Eastern North America. We have been quite lucky, documenting several individuals since 2009. Even so, cannot expect to see them with any regularity.



Rough-legged Hawk

Earliest Record: October 30

Latest Record: November 4

Single Day High Count: 1

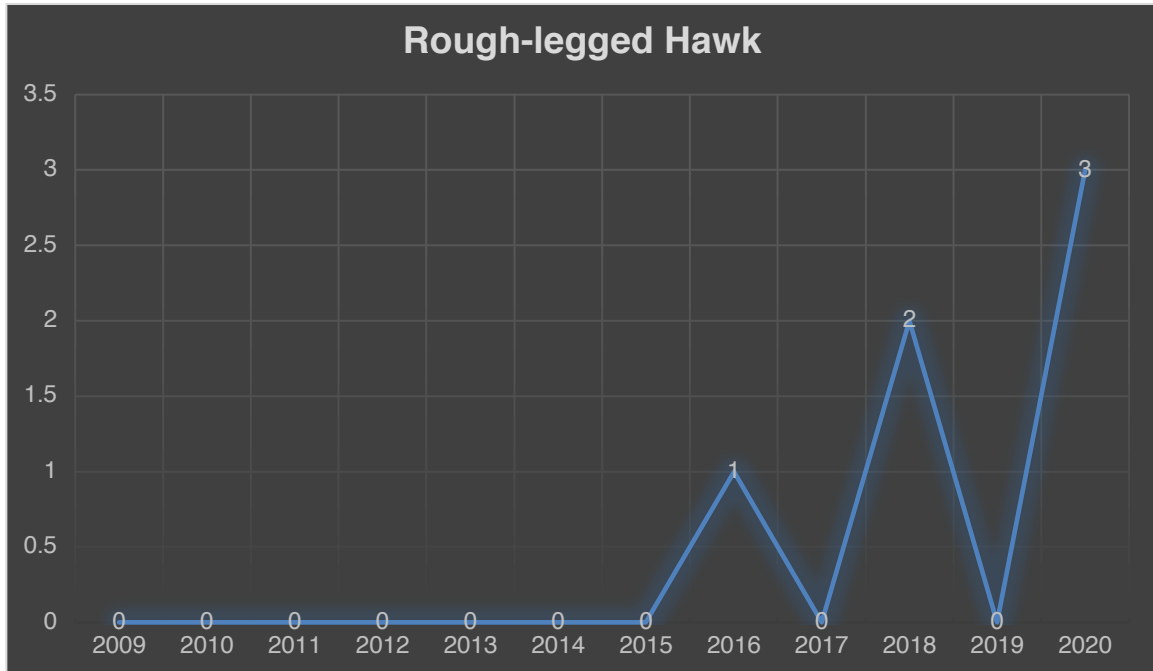
Peak: Late season, which is expected.

Season Total: 3**

Ten-year average: <1

A record high count.

Rough-legged Hawk sightings are increasingly uncommon at most Northeastern Hawk Watches. The declining numbers are likely do to greater numbers of Rough-legged Hawks wintering north of the US or short stopping. Such changes in behaviour are likely do to a changing climate.



Golden Eagle

Earliest Observation: October 12

Latest Observation: October 12

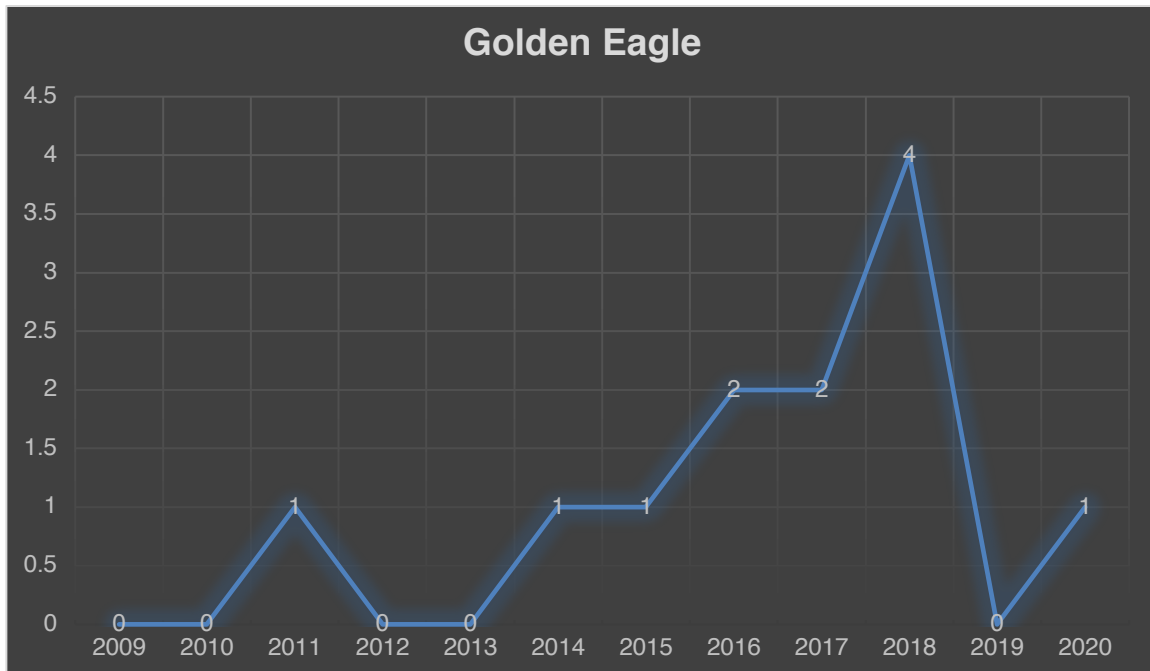
Single Day High Count: 1

Peak: This species is known for being a late season mover throughout Eastern North America.

Season total: 1

Ten-year average: 1

Golden Eagles passing Greenlaw Mountain are thought to be part of the Gaspe population.



American Kestrel

Earliest Observation: August 26

Latest Observation: October 18

Single Day High Count: 37 (October 3)

Peak: September – Early October

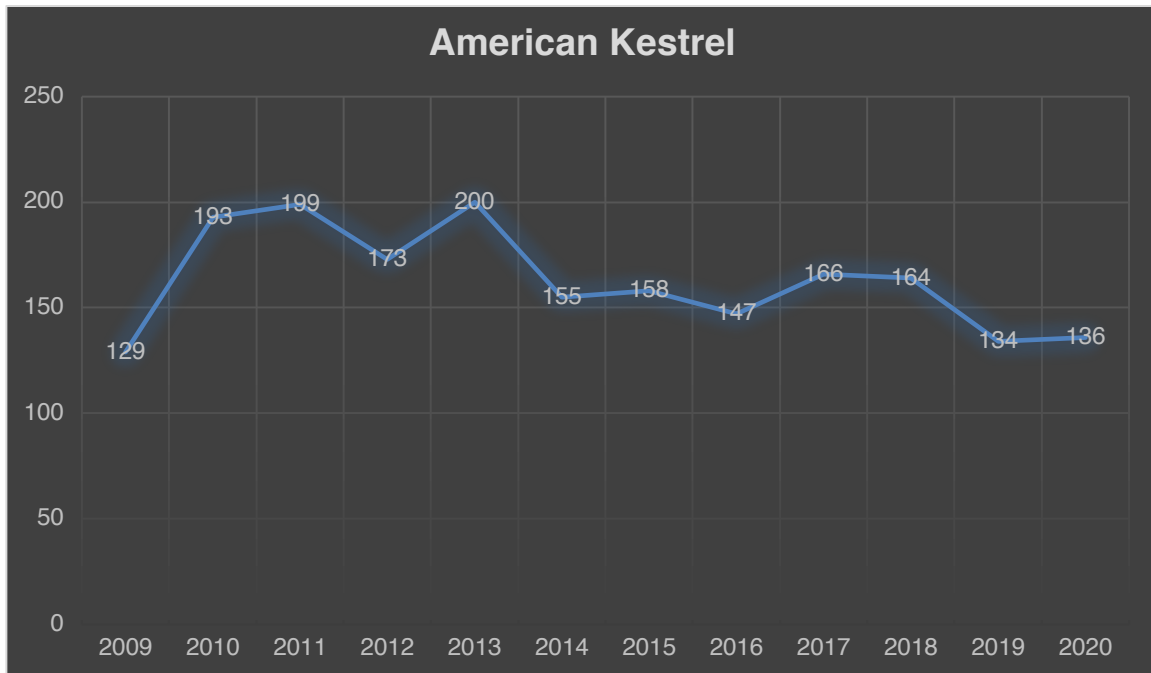
Season Total: 136

Ten-year average: 165

Once again, very few kestrels were recorded during September. This suggested a late movement. It was hoped that significant numbers would be recorded later than normal. Unfortunately, that did not occur resulting in our third lowest count, which was just slightly above the 2009 record low of 129.

Declines of American Kestrel are well documented. The causes of the decline are likely complex. However, many other aerial insectivores are in decline, which suggests a loss of their prey base. Loss of nest cavities could be contributing to the decline.

This species will occupy nest boxes. Information on construction and placement is available online.



Merlin

Earliest Observation: September 11

Latest Observation: October 25

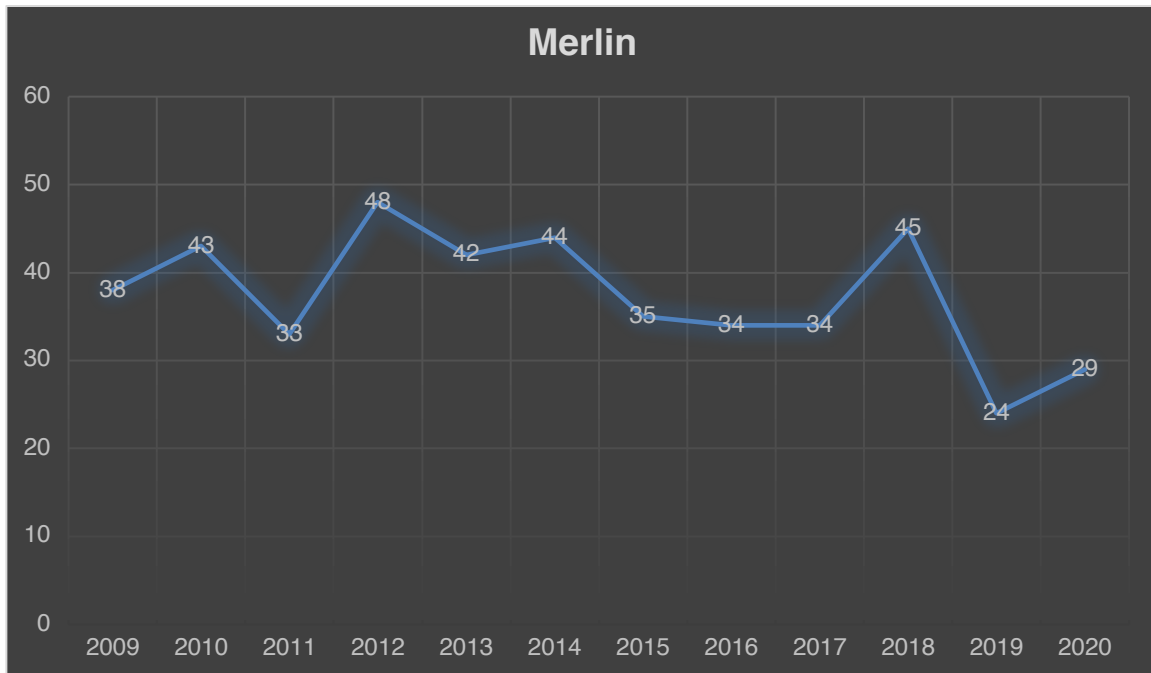
Single Day High Count: 5 (October 10)

Peak: October

Season Total: 29

Eleven-year average: 38

Another low count well under the eleven-year average. This species appears to be leaving later each year.



Peregrine Falcon

Earliest Observation: September 14

Latest Observation: October 22

Single Day High Count: 6 (October 3)

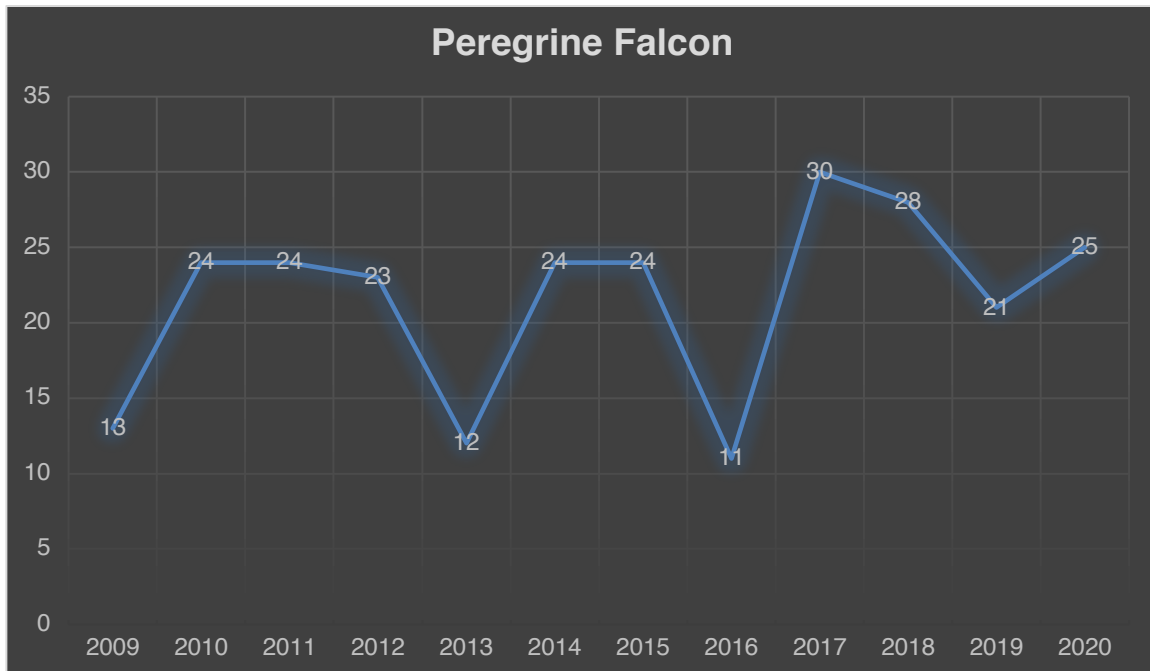
Peak: Early October

Season Total: 25

Eleven-year average: 21

Our counts of Peregrines have some ups and downs. However, the long-term numbers appear stable.

The species seems to be doing well in its recovery from pesticides and persecution.



Unidentified Accipiter
Season Total: 11

Unidentified Buteo
Season Total: 5

Unidentified Falcon
Season Total: 5

Unidentified Eagle
Season Total: 1

Unidentified Raptor
Season Total: 67

Migrating Raptor Combined Season Total: 6822

* Earliest and latest observations, as well as totals refer only to hawks counted as migrants.

** A record high or low count.

Non-raptors

Migrants observed include Red-winged and Rusty Blackbird, Eastern Bluebird, Double-crested Cormorant, Red and White-winged Crossbills, American Crow,

American Black Duck, Purple Finch, Northern Flicker, American Goldfinch, Canada Goose, Snow Goose, Common Grackle, Evening Grosbeak, Pine Grosbeak, Rose-breasted Grosbeak, Great Blue Heron, Ruby-throated Hummingbird, Blue Jay, Dark-eyed Junco, Killdeer, Belted Kingfisher, Golden and Ruby-crowned Kinglet, Horned Lark, Common Loon, Common Nighthawk, Eastern Phoebe, American Pipit, Common Redpoll, American Redstart, American Robin, Pine Siskin, Barn, Cliff and Tree Swallows, Chimney Swift, Hermit and Swainson's Thrushes, Blue-headed Vireo, Black and White Warbler, Black-throated Green Warbler, Common Yellowthroat, Palm Warbler, Pine Warbler, Magnolia Warbler, Yellow Warbler, Yellow-rumped Warbler, Cedar Waxwing, Bohemian Waxwing, and Greater Yellowlegs.

The most numerous of these migrants were American Robin, Red-winged Blackbird, Common Grackle, Pine Siskin, Double-crested Cormorant, Canada Goose, and White-winged Crossbill. Evening and Pine Grosbeaks were observed almost daily during October and November. During periods of heavy movement, these species were observed repeatedly each morning with smaller numbers sighted during the afternoon. Sightings of other non-raptors were most common before Noon. Many of the migrants pass over the mountain. However, their main flightpath takes them across the base of the peninsula.

Birds of particular interest observed at the hawk watch, but not actively migrating include Townsend's Solitaire, Northern Shrike, and Black-backed Woodpecker.

Personal Notes

The end of the season is always bittersweet. Diminishing returns during the final week of observation make me ready to move on, while the knowledge that something interesting or exciting could happen at any moment keep me engaged and somewhat eager to continue. After all, bird migration can be breathtaking and certainly one of nature's greatest spectacles.

This year, I began to more fully appreciate the non-raptor migrants of mid to late season. During the month of October, a wide variety of migrants pass overhead or move along the base of the peninsula. It is not at all uncommon to have something pass directly overhead and go unidentified. These mystery birds could be common birds like some of the more abundant warblers or finches. They can also be uncommon species such as American Pipit. Every now and then something passes overhead leaving me thinking "what was that" in a rather excited way. Some of these passerines are almost certainly rarities. Most never stop but some do, this year's Townsend's Solitaire and last year's Worm-eating Warbler are excellent examples of those that have spent time on the mountain.

Wouldn't it be great to be able to ID these birds? I certainly think so. Maybe in the coming years we can work on our in-flight non-raptor identification skills. Learning flight calls will be extremely important. For years, I have waited for someone to produce material focusing on identifying songbirds in flight. Perhaps one will be

produced before the start of next season. Even if one is not, I intend to work on improving my skills and documenting more of these easy to overlook migrants.

Of course, raptor migration will continue to be the primary focus of this project. And for good reason. Eight billion people living on this small planet is taking its toll on the natural world. Birds of prey cannot be easily monitored through breeding bird counts. This is why we count raptors in migration. It really is the way to document changes to this group of birds.

As always, I encourage readers of my posts, as well as participants to provide feedback on the project. It is helpful for me to know what people like, do not like, and/or do not understand. I am happy to answer questions on migration, identification and other topics. Responses might be slow on occasion (mostly during data collection), but I will try to get back to anyone that writes.

I hope to see all of you on the mountain next year and thank you for your help!

Special thanks to all the volunteers including: Sharon McGladdery, Mike Bamford, Hank, Hugh and Carolyn Scarth, Bruce and Pam Henderson, Anna Tran, Heather Dyble, Rudy Neustaedter, Dan Burns, Vicki Cowan, Shawn Perry, Nancy Perry, Dave Putt, Ed Hurley, Susan O'Brian, Don and Ann MacPhail, Paul Manz, Jan and Ray Riddell, David Hey, Theresa and Steven McNight, Gwen Martin, Victor Hendricken, Melodie, Irene and Mitch Doucet, Ian Stead, Dave and (?) Johnson, Jane (?), Louise (?), Therisa (?), Kathleen (?) and anyone that I might have missed. Thank you all!

We also thank the landowners who have granted permission for volunteers and the Official Counter to cross their land to reach the summit. As well, we thank Mr. Tom Beckerton for allowing us to locate the watch on his property.

Additional thanks to committee members Hank and Carolyn Scarth, Jim Wilson, Joanne Savage, Chuck Perry, Don MacPhail and Lori McGovern.

Support for this year's counts came from the **New Brunswick Wildlife Trust Fund** (NBWTF), private donors and our volunteers. I would also like to recognize the Peskotomukati First Nation for their interest in raptor conservation and thank them for their in-kind support of the Greenlaw Mountain Hawk Watch.

The NBWTF gets its money from the sale of hunting, trapping and fishing licenses as well as conservation license plates. Please consider supporting projects like the Greenlaw Mountain Hawk Watch through the purchase of conservation plates. Thank you!

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