



Detroit River Hawk Watch 2020 Season Summary

Submitted by:

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Sharp-shinned hawk. © 2020 Andrew Sturgess

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Abstract

The Detroit River Hawk Watch's (DRHW) 2020 count was the 38th consecutive season of monitoring diurnal raptor and turkey vulture migration at the mouth of the Detroit River and the 23rd year of consistent coverage at Lake Erie Metropark (LEMP). Due to the COVID-19 pandemic, special precautions were made to ensure the safety of the counter and volunteer staff. There were 568 hours of data collection over 83 days between 01 September and 30 November. This season, 101,200 total turkey vultures and raptors of 16 species were counted, which included 4 unknown raptors. This total was 19% below the Long-Term Average (LTA) (125,479) and 28% below the Ten-Year Average (TYA) between 2011-2019 (139,654). We compared this season's totals to the respective LTA for each species since 1998. Turkey vultures (42%), red-shouldered hawk (28%), merlin (41%) and peregrine falcon (118%) were the only species counted above the LTA. Osprey (-73%), bald eagle (-56%), northern harrier (-7%), sharp-shinned hawk (-16%), Cooper's hawk (-75%), northern goshawk (-88%), broad-winged hawk (-72%), Swainson's hawk (-100%), red-tailed hawk (-6%), rough-legged hawk (-22%), golden eagle (-42%), and American kestrel (-27%) were significantly lower than their respective LTA (where values >15% are considered "significant" for the count). In addition, two northern goshawk and zero Swainson's hawk were counted this year.

Methods

An hourly count of migrating diurnal raptors and turkey vultures was conducted each day between 01 September and 30 November 2020, with a total of 568 hours of coverage at LEMP boat launch (N 42.0792, W 83.1937). Observation protocol was conducted according to [The Detroit River Hawk Watch Monitoring Protocol](#)¹, except in the case of hourly weather recording where hourly measurements were recorded directly from the [Grosse Ile Weather Station at Weather Underground](#). Reason for this deviation was that local measurements from the LEMP count site had no bearing on whether raptors migrated past the site.

Counters attempted to estimate birds exiting kettles in a stream-like fashion during periods of large migration volume. Hourly results were reported at the end of the day to [Hawk Count](#), where results are then used to build a raptor population index (RPI) to assess species population trends.

Results referenced below are reported as a percent deviation in relation to LEMP's LTA since 1998, when consistent coverage began at LEMP. If the deviation between this year's total count of a given species was within $\pm 15\%$ of the LTA, we considered that species to have been counted in "approximately average" numbers. If the deviation was greater than 15% from the LTA, we considered that deviation to be statistically significant.

The global COVID-19 pandemic forced the United States Fish & Wildlife Service (USFWS) and DRHW volunteer staff to maintain proper safety protocols² to ensure the safety of the primary counter and volunteer staff. The count site was fenced off from the public, and counter and spotters were required to maintain social distance to avoid possible infection or transmission of the virus.

Monthly Reports

The DRHW welcomed back Kevin Georg as its primary counter for 2020. This was Kevin's fourth year with the DRHW, in addition to his 30+ years of experience performing raptor surveys.

Figures 1-3 show daily temperature, wind, and pressure records³⁻⁵ for the DRHW from 01 September to 30 November. Generally, the days with the best flight counts occurred when winds shifted from the south to more northerly directions and with barometric pressure on the rise. This was especially true for the broad-winged hawk flight during September, when season-high counts were associated with northerly winds.

September



Broad-winged hawk image courtesy A. Sturgess

For most hawk watchers in the area, the month of September can be distilled down to the movement of one essential bird: the broad-winged hawk. In September, the broad-winged hawk embarks towards its wintering grounds located in South America. Although they can be seen in smaller numbers early in the month, at southeastern Michigan's latitude they often pass through in large congregations around mid-September. This year the stage was set on the 17th, when a large high-pressure system arrived with a rising barometer and NE winds leading the way. These conditions bring out hawks and hawk watchers alike. However, this year the winds were too robust for our site, and the birds were pushed out over Lake Erie. Due to this, the spotters and counter advised visitors to go to the Pointe Mouillee Headquarters' lakeshore, a mere two miles

south as the crow flies. That day, eight miles away in Ontario, Holiday Beach Migration Observatory recorded 16,494 broad-winged hawks, while DRHW had a paltry 478. Although DRHW is located in a major flyway, it is a wide flyway at that, and spotters cannot observe the entire expanse. In 2019, the count site hit the sweet spot of wind direction and strength and ended with almost 64K broad-winged hawks for the month. Our Canadian friends had the force (winds) with them this September, as Holiday Beach recorded 45,173 broad-winged hawks and DRHW finished with 16,294. Figure 4 shows the daily totals for broad-winged hawks at the two sites in mid-September (the month's largest influx of broad-winged hawks observed) and illustrates the difference a few miles can mean for seeing birds, especially with strong winds.

This year there was a massive exodus of blue jays out of Canada that started in September. Holiday Beach tallied over one million blue jays this season. Although not officially counted, they were quite a spectacle on certain days as they filled the fall sky with multiple flocks consisting of thousands of birds, all passing at once. We tend to think of migration in terms of raptors, but the skies are busy, night and day, at this time of year with other birds making their way to wintering grounds.

September is a month that is also known for the passage of sharp-shinned hawks and American kestrels. Similarly, these birds were counted in significantly higher numbers across the border. It can be hard to tell whether the winds account for these discrepancies or if other factors are at play. Since all of these birds are migrating from Canada to the United States along the same general path, it is important to take the counts of both sites under consideration when estimating populations.

Table 1 summarizes the total raptor survey from the LEMP boat launch site for the month of September. A total of 20,788 turkey vultures and raptors consisting of 12 species were counted during the period 1 September to 30 September (compared to 67,528 and 11 species in 2019 and 51,229 and 14 species in 2018). Species surveyed included turkey vulture, osprey, bald eagle, northern harrier, sharp-shinned hawk, Cooper's hawk, red-shouldered hawk, broad-winged hawk, red-tailed hawk, American kestrel, merlin, and peregrine falcon. No Swainson's hawk were seen this month. One unidentified buteo (UB) was included in the monthly tally. The 16,294 broad-winged hawks counted during September was a significant decrease from the 63,912 birds tallied during September 2019. By contrast, the 1,788 turkey vultures counted during September 2020 was 3X greater than the 504 birds tallied in 2019 during this time, and the 28 peregrine falcons counted this September were almost double that of last year's September tally (15). The 1,956 sharp-shinned hawks counted this September were comparable to the 2,101 counted in September 2019, while bald eagle numbers (25) were half of 2019 September totals (54). The American kestrel numbers counted this September (387) continue to show a decline compared to the 585 counted in September 2019 and the 702 in September 2018.

Daily photo highlights, non-raptor observations, and commentary from Andrew Sturgess were submitted to the [Detroit River Hawk Watch Facebook](#) page during the month of September. His photos and commentary were compiled into a full document and archived. The September 2020 Facebook summary can be viewed [here](#). All of the images from Facebook Group contributors can be viewed [here](#).

October



Turkey vulture image courtesy A. Sturgess

October is moving month for the turkey vultures. Although they are seen in September and into November, the majority of the birds pass through in the tenth month of the year on their way to warmer climes. Aided by a couple of days with over 10,000 birds counted (with one of those days at nearly 15,000), a total of 69,727 birds were counted for the month. This is a species that has become increasingly difficult to count as they usually travel northeast of the count site and tree growth in that direction has become a visual issue. They are an inspiring bird as they are consummate flyers with large, angled wings. They seem to relish flying in high, gusty winds tipping and turning while still

maintaining control and balance. Despite a face only a mother could love, the turkey vulture is a beautiful bird.

The latter half of the month is the hawk watchers' favorite part of the season. This when the non-native buteos and eagles begin to migrate through the area, and chances of seeing a rare bird are increased. It is always fun for the observers to watch for those unique flight patterns, much different from what they are used to seeing. It is at this time eagles must now be examined more closely in effort to capture the first golden eagle of the season. This year that occurred on the sixteenth of the month. Unfortunately, the spotters and counter did not see one for the last half of the month. This resulted in a season total of 55, which was slightly disappointing from the approximate 100 birds previously observed in 2017. Our colleagues at Holiday Beach, ON fared even worse with only 36 golden eagles counted this season.

Another October buteo that considers the area more hospitable during the colder months is the rough-legged hawk. This bird breeds in the arctic but moves to the United States to spend the winter. They are a spectacular bird to see with striking light and dark morphs and prominent carpal ("wrist") patches on their variable plumages. They are similar to the northern harrier in flight, as they hold their wings in a slight upward position, also referred to as a dihedral. In addition, they have a partially white tail, which can resemble a harrier's white rump patch. Since they both fly in a similar manner on their long, thin wings, it is important to pay attention to the nitty gritty details. The first rough-legged sighting was on 17 October and ended with a total of 28 for the season. The numbers for DRHW are generally low for this species compared to Duluth, Minnesota's Hawk Ridge, which set a record of 583 (!!) on 23 October. Although there are not 2,000 counted in a typical season, it is all the more rare and special when a rough-legged does decide to fly past our count site.

Table 2 summarizes raptor totals for the period 01 October to 31 October 2020. A total of 77,205 raptors were recorded, with 69,727 consisting of turkey vultures. These numbers are almost 50% higher than the same period last year when 51,204 raptors included 47,580 turkey vultures. Sharp-shinned hawk (2,965 vs 1,777 in 2019), northern harrier (253 vs 89 in 2019), red-shouldered hawk (609 vs 198 in 2019), red-tailed hawk (2,493 vs 740 in 2019), golden eagle (18 vs 4 in 2019), rough-legged hawk (8 vs 1 in 2019), American kestrel (252 vs 128 in 2019), merlin (34 vs 15 in 2019), and peregrine falcon (66 vs 31 in 2019) showed impressive gains over the same time last year. Cooper's hawk (60 in 2020 vs 74 in 2019) was the only raptor to show a decline from 2019. Overall, October 2020 was a nice rebound month for DRHW, with rain only washing out two days of the month (4th and 15th).

Daily photo highlights, non-raptor observations, and commentary from Andrew Sturgess were submitted to the [Detroit River Hawk Watch Facebook](#) page during the month of October. His photos and commentary were compiled into a full document and archived. The October 2020 Facebook summary can be viewed [here](#). All of the images from Facebook contributors can be viewed [here](#).

November



Red-shouldered hawk image courtesy A. Sturgess

November is the month often devoted to counting buteos in the form of red-tailed and red-shouldered hawks. In November, turkey vultures begin to taper off, coming in the hundreds rather than thousands, while sharp-shinned hawks continue to move, but in tens rather than the hundreds observed in September. Of course, the hawk watcher's eye is always looking for the odd bird: the long wings of a rough-legged hawk, the dark presence of a golden eagle, or an even rarer northern goshawk.

How does a hawk counter tell what type of bird is flying in the distance or when a rarer species of raptor has arrived? Although this seems difficult to do when you are new to the subject, it comes down to a form of division -

putting the bird in the most likely subfamily and narrowing the possibilities to fewer choices. The majority of birds seen are buteos, turkey vultures, accipiters, falcons, or eagles. So, the first question to ask is..."what general type of bird am I looking at?" Since plumage details are not always obvious, it helps to think about the way the bird flies, what is the wing shape designed for, and how does the bird hunt and survive.

There may be other factors that make identification more difficult, such as high winds affecting flight styles or low light making the details hard to see. However, it is the general shape of the bird followed by flight pattern recognition that begins the identification process of raptors. If you can see a plumage detail that is unique to that species to confirm an initial choice, then your job is done!

Table 3 summarizes raptor totals for the period 01 November to 30 November 2020. A total of 3,207 raptors were recorded with turkey vultures (1,070) and red-tailed hawks (1,623) yielding 84% of the monthly total. Due to rain, raptors were not counted on the 1st, 15th, 22nd, 25th, and 30th of the month. In addition, 37 out of the 55 season total of golden eagles were recorded in the month of November.

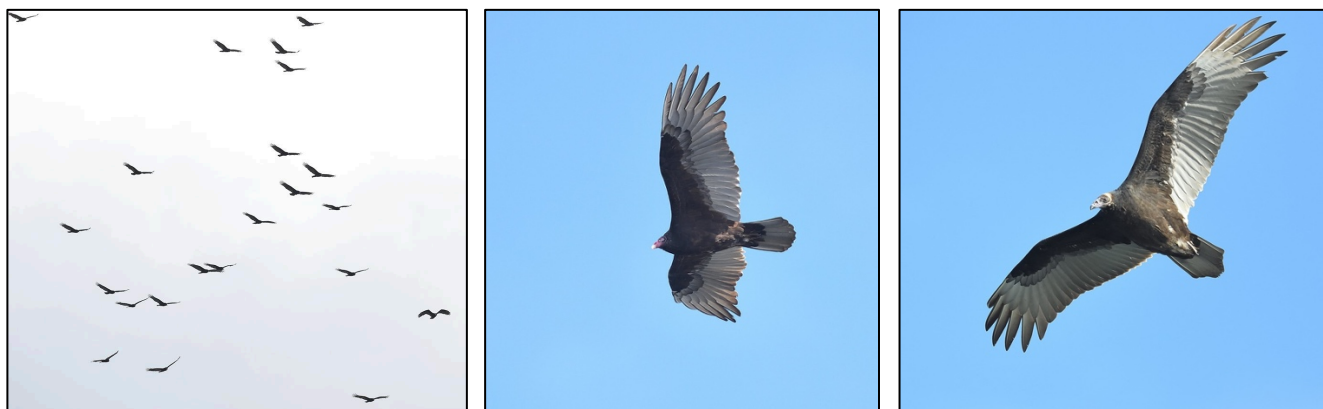
Daily photo highlights, non-raptor observations, and commentary from Andrew Sturgess were submitted to the [Detroit River Hawk Watch Facebook](#) page during the month of November. His photos and commentary were compiled into a full document and archived on the website at [detroitriverhawkwatch.org](#). The November 2020 Facebook highlights can be accessed [here](#) and contributor photos are archived [here](#).

Species Accounts

Table 4 summarizes the 2020 species totals for the DRHW between the period 01 September to 30 November. Totals for previous years, as well as the LTA and TYA between 2011–2020, are also given. 2020 deviations from the LTA and TYA are also shown in light blue (+ deviation) and light red (- deviation). Values greater than $\pm 15\%$ are considered significant and are shown in dark blue (+) and dark red (-).

TURKEY VULTURE

From 02 September to 23 November 2020, 72,585 turkey vultures migrated past the count site, roughly 38% above 2019 totals. This year's tally was 42% above the LTA (51,056), and 23% above the TYA (58,803). High counts (10,906 and 14,647) occurred on 11 October and 20 October, respectively.



Turkey vulture images courtesy of A. Sturgess

OSPREY

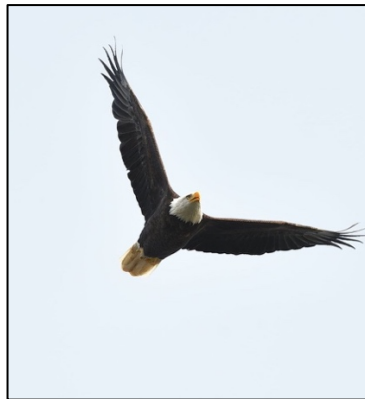
Only 31 ospreys migrated past the count site during the period 01 September to 13 October 2020, which was 24% lower than 2019 (41), and 18% lower than 2018 (38). The 2020 total was 73% below the LTA (113), and 42% below the TYA (53). No more than four birds were seen during any single day during the season.



Osprey images courtesy of A. Sturgess

BALD EAGLE

From 01 September to 29 November 2020, 73 bald eagles migrated past the count site, which was 32% lower than 2019 (107), but only 10% lower than 2018 (81) totals. The 2020 tally was 56% lower than the LTA (166), and 64% lower than the TYA (202). The season's high occurred on 17 October, when 8 bald eagles passed by the count site. Local pairs of bald eagles were seen daily at the count site, but were discounted unless passing overhead at high altitudes.



Bald eagle images courtesy of A. Sturgess

NORTHERN HARRIER

From 5 September to 28 November 2020, a total of 421 northern harriers passed by the count site, with a high count of 33 birds occurring on 05 October. More than 20 birds were counted on five different dates during the season. The season total was 22% above 2019 (344), but only 2% above 2018 (413). The 2020 tally was 7% below the LTA (451), but 14% above the TYA (369).



Northern harrier images courtesy of A. Sturgess

SHARP-SHINNED HAWK

From 01 September to 29 November 2020, 5,050 sharp-shinned hawks flew over the count site, which was 21% above 2019 (4,167), but 5% below 2018 (5,324). The season count was 16% below the LTA (5,985), but 11% above the TYA (4,543). For this season, the highest count of sharp-shinned hawks occurred on 8 October (554).



Sharp-shinned hawk images courtesy of A. Sturgess

NORTHERN GOSHAWK

Two northern goshawks were counted this year, which was the same total as in 2017. Steadily declining numbers place this year's count 88% below the LTA (17), and 73% below the TYA (8). These birds were observed on 31 October and 20 November.

COOPER'S HAWK

From 11 September to 28 November 2020, 105 Cooper's hawks migrated past the count site, which was 18% below 2019 (128) and 13 % below 2018 (120) totals. This year's total was 75% below the LTA (427) and 66% below the TYA (306). The highest count of the season for Cooper's hawks occurred on 09 October (7).



Cooper's hawk images courtesy of A. Sturgess

RED-SHOULDERED HAWK

Red-shouldered hawks continue to increase at DRHW with 825 birds tallied between 16 September and 29 November 2020. This total was 6% higher than 2019 (779), and 45% higher than 2018 (568). The strong flight this year was 28% above the LTA (644), and 37% above the TYA (601). A high count of 145 birds occurred on 26 October.



Red-shouldered hawk images courtesy of A. Sturgess

SWAINSON'S HAWK

This year no Swainson's hawk were counted. The LTA (4) and TYA (2) were not met. One bird was counted by Holiday Beach, ON in mid-September, but failed to pass over LEMP.

BROAD-WINGED HAWKS

2020 would be a disappointing year for broad-winged hawks, with only 16,971 birds tallied between 04 September and 27 October 2020. Strong north winds during 17-19 September pushed birds south of the LEMP count site (Figure 4). This prevented DRHW from matching the Holiday Beach, ON season total of 45,368. As such, the season total was 74% lower than 2019 (64,440), 72% lower than the LTA (60,955), and 76% below the TYA (70,031). The big flight this year occurred on 19 September when 6,578 birds were counted (compared to the 16,494 seen by Holiday Beach on 17 September).



Broad-winged hawk images courtesy of A. Sturgess

RED-TAILED HAWK

From 01 September to 29 November 2020, 4,241 red-tailed hawks passed by the count site, which was 15% lower than 2019 (4,983), but 39% higher than 2018 (3,041) totals. This year's tally was 6% below the LTA (4,505), but 13% above the TYA (3,767). High counts of 385 and 384 birds occurred on 26 October and 30 October, respectively.



Red-tailed hawk images courtesy of A. Sturgess

ROUGH-LEGGED HAWK

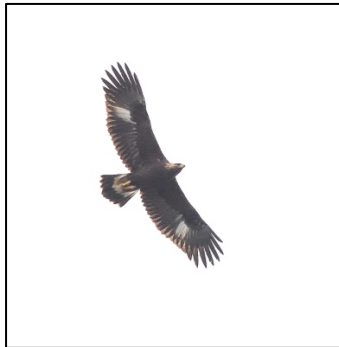
From 17 October to 28 November 2020, 27 rough-legged hawks migrated past the count site, which was twice the total for 2019 (14). This year's tally was 22% below the LTA (35), and 8% above the TYA (25). A season high of 5 birds were counted on 24 November. Incidentally, Hawk Ridge, MN had a record-breaking count on 23 October, which included 583 rough-legged hawks (not to mention 30 golden eagles, 14 northern goshawks, and 481 red-tailed hawks also counted on that day).



Rough-legged hawk images courtesy of A. Sturgess

GOLDEN EAGLE

From 16 October to 19 November 2020, 55 golden eagles migrated past the count site. This represents an 11% decrease from 2019 (62), but a 12% increase from 2018 (49). This year's count was 42% below the LTA (96), and 36% below the TYA (86). A season high of 9 golden eagles were counted on 04 November.



Golden eagle images courtesy of A. Sturgess

AMERICAN KESTREL

From 01 September to 9 November 2020, 641 American kestrels passed by the count site. This year's count was 11% below 2019 (718), but 42% below 2018 (1,104) totals. This year's count was also 27% below the LTA (884), and only 6% below the TYA (681). A season high of American kestrels occurred on October 3rd (69).



American kestrel images courtesy of A. Sturgess

MERLIN

From 13 September to 28 November 2020, 67 merlin were recorded, representing an 81% increase from 2019 (37), and 20% increase over 2018 (56) yearly totals. This year's tally was 41% above the LTA (48), and 44% above the TYA (47). This season's high count of merlin was recorded on 27 September and 17 October (5).



Merlin images courtesy of A. Sturgess

PEREGRINE FALCON

From 08 September to 16 November 2020, 102 peregrine falcons had been recorded flying over the count site, which is almost double the total of 2019 (53). This year's count was also 38% above 2018 (74) totals. This year's tally was 118% above the LTA (47), and 100% above the TYA (51). This season's high of peregrine falcons observed flying over the count site occurred on 01 October (13).



Peregrine falcon images courtesy of A. Sturgess

UNKNOWN RAPTOR

Four unknown raptors were tallied between 05 September and 25 October 2020. Considering a LTA of 47, only four unidentifiable raptors is an improvement and a testament to the skill of the counter and spotters.

TOTAL

DRHW had 101,200 diurnal raptors and turkey vultures migrate through the LEMP boat launch between 01 September and 29 November 2020, which was 19% below the LTA (125,479) and 28% below the TYA (139,654). The 21% decrease from 2019 may be attributed to September winds that pushed broad-winged hawk migration to the south, but there also was a contrasting increase in buteos (red-shouldered and red-tailed hawks), falcons (merlin and peregrine), and turkey vulture numbers observed in October.

Figure 5 shows total numbers for 2020 plotted against previous totals since 1998. Totals for 2020 appeared to signify an overall number of birds observed leveling, but weather played a big role in numbers of raptors missed by the count site that could have continued the upward trend.

Migratory and Non-Raptor Highlights

Traditionally this section is reserved for seasonal narratives of non-raptors, which includes waterfowl, grebes, loons, shorebirds, migratory songbirds, and passerines. With special thanks to Andrew Sturgess, daily narratives and special observations were reported to both [HawkCount](#) and the [Detroit River Hawk Watch Facebook Page](#). Photo highlights were compiled for [September](#), [October](#), and [November](#) 2020. Their contributions, as well as those from other visitors, have been archived as documents that can be accessed through the Detroit River Hawk Watch website (detroitriverhawkwatch.org). Readers are encouraged to click on the links and enjoy the quality photographs and stories. Some of the highlights include:



A Virginia rail with chick was found nearby on 03 September. Images courtesy of M. Hainen



Over 1 million blue jays were counted by Holiday Beach Hawk Watch. Most of those birds provided spectacular flights here! Images courtesy of A. Sturgess



Some of the local action included perch dinners, bald eagle courtship, migrating shorebirds, northern flickers, sunning northern watersnakes, ducks, frogs, hummingbirds, foraging terns and gulls, and even a tiny vole.

Images courtesy of A. Sturgess.

Outreach

The DRHW is actively engaged in bringing outreach to the community in an attempt to increase interest not only in the hawk watch, but to raptor conservation, as well. Due to the COVID-19 pandemic, outreach programs such as the annual Hawk Festival and educational seminars were cancelled in 2020. A few programs were presented using remote (ZOOM) programs. Highlights from 2020:



Josh Haas broadcasted live from DRHW on 15 October as part of a Lunch & Learn program sponsored by the Hawk Migration Association of North American (HMANA).

Detroit River Hawk Watch is grateful to webmaster Andrew Kling at Roofball Productions for continuing to update/manage the Detroit River Hawk Watch website at detroitriverhawkwatch.org.



Since 01 December 2019, the Detroit River Hawk Watch Facebook Group has added 413 new members, now totaling to 1,513 members as of 05 December 2020. Thank you all for following and supporting us!

Acknowledgements

With the onslaught of the COVID-19 pandemic, the fate of the 2020 hawk watch season at DRHW was uncertain. Thanks to the efforts of Jessica Fletcher and the USFWS, the count was able to move forward in a safe manner for both the volunteer staff and the public. The success of the DRHW itself would not be possible without the dedication of our volunteers, who logged hundreds of hours counting hawks in all-weather situations. Many thanks go out to Kevin Georg, our primary counter, and to the DRHW crew: Andrew Sturgess, Rosemary Brady, Don Sherwood, Patrick Mulawa, Sam Heilman, Alex Gilford, Michala Burke, and Mike McEvoy. We would also like to thank Michala Burke for handling the daily data sheet reviews, quality checks for data submitted into HawkCount, and her help in preparing this report. The DRHW sorely missed the contributions of Rayburn Howland, who has dedicated countless years to the volunteer and educational efforts of the count but was unable to attend this year. We hope to see you back at the count next year, Rayburn!

DRHW is grateful to those visitors (some regular) who came out on many occasions to assist with sightings and provide a break during particularly slow days. Special acknowledgement is made to Andrew Sturgess and Mark Hainen, both of whom provided wonderful photos and stories for the [Detroit River Hawk Watch Facebook Page](#). Unfortunately, Mark was with us for only a few weeks as other responsibilities took him back to his home in Florida. Daily narratives, insights, and predictions provided by Andrew were posted to Facebook and received many compliments from followers of the DRHW. Of course, the success of the count would not be possible without financial and site support from the U.S. Fish and Wildlife Service at Detroit River International Wildlife Refuge, The International Wildlife Refuge Alliance, Hawk Migration Association of North America, and the Huron-Clinton Metropolitan Authority at Lake Erie Metropark. Volunteers are always welcome and are invited to come out to the LEMP boat launch to join in our efforts. Keep looking up!



Images courtesy of Detroit River Hawk Watch

References:

1. Detroit River Hawk Watch. 2011. The Detroit River Hawk Watch Monitoring Protocol: A Review and Implementation for Scientific Integrity. U.S. Fish and Wildlife Service. Grosse Ile, Michigan.
2. Fletcher, J., Detroit River Hawk Watch 2020 FWS Volunteer Safety Training (DRHW_Covid19_SafetyTraning_2020.08.28.pptx)
3. <https://www.timeanddate.com/weather/@4994850/historic?month=09&year=2020>
4. <https://www.timeanddate.com/weather/@4994850/historic?month=10&year=2020>
5. <https://www.timeanddate.com/weather/@4994850/historic?month=11&year=2020>
6. <https://www.timeanddate.com/weather/@5884472/historic?month=9&year=2020>

Table 1. Raptor totals for the Detroit River Hawk Watch during September 2020.
(Table courtesy of hawkcount.org)

Month Summary:Sep, 2020																										
		Black Vulture	Turkey Vulture	Osprey	Bald Eagle	Northern Harrier	Sharp-shinned Hawk	Cooper's Hawk	Northern Goshawk	Red-shouldered Hawk	Broad-winged Hawk	Swainson's Hawk	Red-tailed Hawk	Rough-legged Hawk	Golden Eagle	American Kestrel	Merlin	Peregrine Falcon	Unknown Accipiter	Unknown Buteo	Unknown Falcon	Unknown Eagle	Unknown Raptor			
Date	Obs Hrs	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	SW	RT	RL	GE	AK	ML	PG	UA	UB	UF	UE	UR	TOTAL		
2020-09-01	7			1	1		1						1			1								5		
2020-09-02	7		8	1												1								10		
2020-09-03	7				2		1									5								8		
2020-09-04	7		1	1	1		1				2					2								7		
2020-09-05	7				3	4							6			3			1					17		
2020-09-06	5.5			1	3	4	1				1		3			5								18		
2020-09-07	7		5	1			1				2					3								12		
2020-09-08	3		1	1	1						1		2			3		1						10		
2020-09-09	7		4	1		2					3		5			9								24		
2020-09-10	8					2	12				27		2			16								59		
2020-09-11	9		37		1	6	22	1			871		22			20		1						981		
2020-09-12	8		26	2	2	11	83				737		8			31								900		
2020-09-13	8		29	2		5	120				1562		7			44	2	1						1772		
2020-09-14	7		9		1	7	29				803		6			10	1							866		
2020-09-15	7		9			21	256				540					25	1							852		
Date	Obs Hrs	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	SW	RT	RL	GE	AK	ML	PG	UA	UB	UF	UE	UR	TOTAL		
2020-09-16	7		10	1		2	100			1	3		1			6	3							127		
2020-09-17	7		29			3	42				478		15			21	1	1						590		
2020-09-18	7		140		1	7	44				4643		7			16		3						4861		
2020-09-19	8.5		491		2	29	282	2		1	6578		19			36								7440		
2020-09-20	7		210		1	3	41	1			13		6			5		1						281		
2020-09-21	7		101	1			109	2			8		3			3								227		
2020-09-22	7		46	1		1	52				2					2								104		
2020-09-23	7		85	1	2	2	105						1			12		1						209		
2020-09-24	7		21	1	1	3	126						2			7		1						162		
2020-09-25	7		22	4	2	7	104	1			1		1			11		1						154		
2020-09-26	7		24	1			174									29	4	1						233		
2020-09-27	7		77	1		4	28	1					4			10	5	6						136		
2020-09-28	5					1	31				2					1								35		
2020-09-29	7		306	2		4	159	2			17		3			17	1	5						516		
2020-09-30	7		97			3	32						1			33	1	5						172		
Total: Sep 2020	209 hours	0	1788	22	25	131	1956	10	0	2	16294	0	125	0	0	387	19	28	0	1	0	0	0	20788		
Total: Sep 2019	204 hours	0	504	34	54	175	2101	11	0	0	63912	0	117	0	0	585	18	15	0	2	0	0	0	67528		

Table 2. Raptor totals for the Detroit River Hawk Watch during October 2020.
(Table courtesy of hawkcount.org)

Month Summary:Oct, 2020																								
		Black Vulture	Turkey Vulture	Osprey	Bald Eagle	Northern Harrier	Sharp-shinned Hawk	Cooper's Hawk	Northern Goshawk	Red-shouldered Hawk	Broad-winged Hawk	Swainson's Hawk	Red-tailed Hawk	Rough-legged Hawk	Golden Eagle	American Kestrel	Merlin	Peregrine Falcon	Unknown Accipiter	Unknown Buteo	Unknown Falcon	Unknown Eagle	Unknown Raptor	
Date	Obs Hrs	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	SW	RT	RL	GE	AK	ML	PG	UA	UB	UF	UE	UR	TOTAL
2020-10-01	4.5		132		2	5	113	2			12		2			7	2	13						290
2020-10-02	7		2152	1		5	178	2		1	97		14			11	1	4			1			2467
2020-10-03	7.5		3166	2	7	29	264	4		2	217		21			69	4	1						3786
2020-10-04	0																							0
2020-10-05	7		2719		1	33	304	2		3	243		16			38		7						3366
2020-10-06	7		1922	1		9	143	1			10		2			3	2	4						2097
2020-10-07	7		3075			5	209	1			6		6			32	2	3						3339
2020-10-08	8.5		4443	1	1	25	554	3		1	63		15			50	1	8						5165
2020-10-09	7		813		2	20	242	7		4	6		10			17	1	2						1124
2020-10-10	7		1149			6	158						7			6		4						1330
2020-10-11	8.5		10906	1	2	6	26	6		5	15		65			3	1	3		1				11040
2020-10-12	7		2321	2	4	9	35	4		5	5		91			1		3						2480
2020-10-13	7		3102	1	1	6	54			3			30			3		2						3202
2020-10-14	6		60			5	41	1					1				1							109
2020-10-15	0																							0
Date	Obs Hrs	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	SW	RT	RL	GE	AK	ML	PG	UA	UB	UF	UE	UR	TOTAL
2020-10-16	8		5154			10	151	2		9	1		113		2	6	3	2						5453
2020-10-17	7.5		3522		8	19	153	6		60			249	1	2	2	5	2						4029
2020-10-18	4		731				1						6											738
2020-10-19	2.5						2			4														6
2020-10-20	8.5		14647		1	3	17	6		39			195		1	1		1						14911
2020-10-21	7.5		877		1	10	166	3		10			38		3	1	4	1						1114
2020-10-22	4					2	4			4														10
2020-10-23	6		9			1	38						7			1								56
2020-10-24	8		1384			8	12	2		24	1		58		1	1	3	3						1497
2020-10-25	9		4054			15	16			77			243	4	4							1		4414
2020-10-26	7.5		755			6	7	1		145			385				1	2						1302
2020-10-27	6.5		172			1	9			34	1		61		1									279
2020-10-28	7		1035			6	24	2		57			284		1									1409
2020-10-29	5		333			1	6	1		30			97				2							470
2020-10-30	7		836			5	18	3		85			384	2	3			1						1337
2020-10-31	7		258			3	20	1	1	7			93	1			1							385
Total: Oct 2020	196 hours	0	69727	9	30	253	2965	60	1	609	677	0	2493	8	18	252	34	66	0	1	1	1	0	77205
Total: Oct 2019	195.25 hours	0	47580	7	30	89	1777	74	1	198	528	0	740	1	4	128	15	31	0	1	0	0	0	51204

Table 3. Raptor totals for the Detroit River Hawk Watch during November 2020.
(Table courtesy of hawkcount.org)

Month Summary:Nov, 2020

		Black Vulture	Turkey Vulture	Osprey	Bald Eagle	Northern Harrier	Sharp-shinned Hawk	Cooper's Hawk	Northern Goshawk	Red-shouldered Hawk	Broad-winged Hawk	Swainson's Hawk	Red-tailed Hawk	Rough-legged Hawk	Golden Eagle	American Kestrel	Merlin	Peregrine Falcon	Unknown Accipiter	Unknown Buteo	Unknown Falcon	Unknown Eagle	Unknown Raptor		
Date	Obs Hrs	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	SW	RT	RL	GE	AK	ML	PG	UA	UB	UF	UE	UR	TOTAL	
2020-11-01	1																							0	
2020-11-02	7		51		1	6	9	2		30			51	1	1									152	
2020-11-03	7		369		1	8	9	2		30			40		4		2							465	
2020-11-04	7		96				11	1		1			42		9		1							161	
2020-11-05	6		34			2	2	1		1			7		3		1							51	
2020-11-06	7		72			4	10	2		4			76			1								169	
2020-11-07	7		47			2	17	3		5			110		4		1	2						191	
2020-11-08	6.5				1	1	3			9			31	2	1									48	
2020-11-09	6.5		2		1	2	12	3		4			48			1	1							74	
2020-11-10	7		12			1	9	4		1			79	1	4									111	
2020-11-11	7.5		161		2	2	11			22			305	1	1			2						507	
2020-11-12	7.5		114		3	1	10	4		21			249	3	5			1						411	
2020-11-13	7		5			1	7	3					114		2		1	2						135	
2020-11-14	6		57			2	4	3		24			169	2	1		1							263	
2020-11-15	0																							0	
Date	Obs Hrs	BV	TV	OS	BE	NH	SS	CH	NG	RS	BW	SW	RT	RL	GE	AK	ML	PG	UA	UB	UF	UE	UR	TOTAL	
2020-11-16	7		17		1		2	1		5			17					1						44	
2020-11-17	7		4		2		1	3		18			60	1			1							90	
2020-11-18	6.5		8		1	1	1			6			49	2	1									69	
2020-11-19	6						2						13		1									16	
2020-11-20	6		10						1				1											12	
2020-11-21	7		10		3		1			21			42				1							78	
2020-11-22	0																							0	
2020-11-23	7		1			3	2	2		5			50											63	
2020-11-24	5				1		1			3			37	5										47	
2020-11-25	0																							0	
2020-11-26	3						1						1											2	
2020-11-27	5.5												2				2							4	
2020-11-28	7					1	3	1		2			21	1			2							31	
2020-11-29	6				1		1			2			9											13	
2020-11-30	0																							0	
Total: Nov 2020	163 hours	0	1070	0	18	37	129	35	1	214	0	0	1623	19	37	2	14	8	0	0	0	0	0	0	3207
Total: Nov 2019	176 hours	0	4354	0	23	80	289	43	2	581	0	0	4126	13	58	5	4	7	0	0	0	0	0	0	9585
Total: Fall 2020	568 hours	0	72585	31	73	421	5050	105	2	825	16971	0	4241	27	55	641	67	102	0	2	1	1	0	101200	
Total: Fall 2019	575.25 hours	0	52438	41	107	344	4167	128	3	779	64440	0	4983	14	62	718	37	53	0	3	0	0	0	128317	

Table 4. Detroit Rivers Hawk Watch species totals between 1998 - 2020. Bottom of the table shows 2020 Mean Standard Deviation from the long-term Average (LTA). Numbers in red indicate those species totals for 2019 that were recorded less than the LTA. Values greater than 15% are considered "significant".																			
Year	Hours	TV*	OS	BE	NH	SS	CH	NG	RS	BW	SW	RT	RL	GE	AK	ML	PG	UNK	Total
1998	451	19743	135	111	807	4968	378	17	517	63689	5	3782	17	33	1046	95	52	86	95481
1999	481	17559	58	69	556	6534	299	23	556	45711	8	3504	76	208	664	30	49	47	75951
2000	510	29421	133	83	138	7132	408	49	875	57585	5	5754	55	188	790	34	24	37	102711
2001	526	28237	213	115	757	14715	693	46	858	19386	3	8153	55	120	1026	50	48	45	74520
2002	562	42644	238	185	696	7307	572	22	962	91499	3	6565	63	79	2277	64	52	15	153243
2003	545	54975	234	147	1005	10643	709	28	533	84085	12	5789	31	60	2128	72	82	0	160533
2004	479	36893	201	118	214	5027	461	49	869	27381	0	6155	101	79	470	38	20	0	78076
2005	456	29699	218	116	291	5623	432	18	299	56229	8	2619	30	45	1018	55	37	0	96737
2006	476	51722	196	162	616	7013	628	7	1019	50718	8	6025	27	124	1314	40	38	0	119657
2007	599	62882	195	211	818	9909	724	6	1026	69574	2	9406	29	124	1275	41	67	8	156297
2008	465	35173	140	141	149	3593	294	10	185	36216	0	2507	18	89	404	19	23	0	78961
2009	519	54989	46	118	169	3259	335	24	615	20016	4	2474	13	117	441	39	35	14	82708
2010	565	122325	63	220	465	6504	834	21	488	79572	5	3207	29	76	675	52	40	18	214594
2011	592	52745	85	235	278	5331	763	26	487	195858	5	4100	19	167	664	21	21	169	260974
2012	619	43285	70	222	248	3590	468	18	450	40923	4	2986	14	51	531	38	30	182	99110
2013	643	69723	71	350	234	3230	460	3	532	49629	5	3473	43	69	681	53	46	112	128714
2014	628	69768	56	354	423	4627	472	9	804	184860	4	4616	34	129	563	46	51	115	266931
2015	648	73601	81	219	632	5540	250	5	763	72461	1	4830	23	100	816	48	37	102	159509
2016	636	38528	23	142	377	4456	169	4	448	17529	0	2917	19	77	551	41	28	89	65398
2017	637	53393	34	238	323	4116	120	2	354	10392	2	2483	35	96	538	59	67	11	72263
2018	542	61967	38	81	413	5324	120	3	568	47246	3	3041	22	49	1104	56	74	14	120123
2019	575	52438	41	107	344	4167	128	3	779	64440	0	4983	14	62	718	37	53	3	128317
2020	568	72585	31	73	421	5050	105	2	825	16971	0	4241	27	55	641	67	102	4	101200
LTA Average	553	51056	113	166	451	5985	427	17	644	60955	4	4505	35	96	884	48	47	47	125479
s	65	22702	75	80	243	2692	225	15	236	46807	3	1876	22	46	490	17	21	56	57252
Min	451	17559	23	69	138	3230	105	2	185	10392	0	2474	13	33	404	19	20	0	65398
Max	648	122325	238	354	1005	14715	834	49	1026	195858	12	9406	101	208	2277	95	102	182	266931
10-Yr Average	609	58803	53	202	369	4543	306	8	601	70031	2	3767	25	86	681	47	51	80	139654
2020 Mean % Dev.from LTA	3	42	-73	-56	-7	-16	-75	-88	28	-72	-100	-6	-22	-42	-27	41	118		-19
2020 Mean % Dev.from 10-Yr Average	-7	23	-42	-64	14	11	-66	-73	37	-76	-100	13	8	-36	-6	44	100		-28

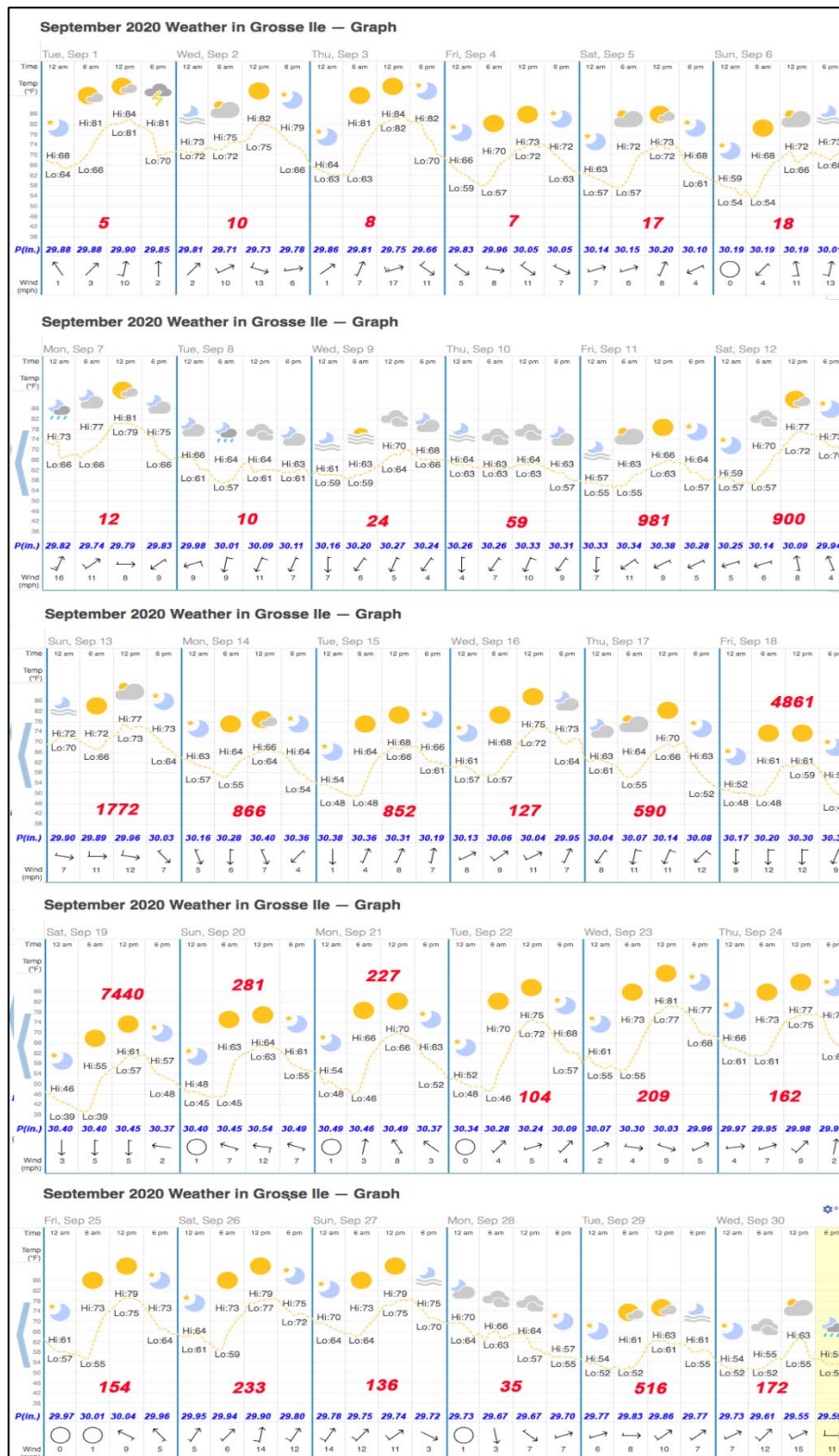


Figure 1. Daily raptor totals (red) at the Detroit River Hawk Watch during the period 01 September to 30 September 2020 overlaid with daily temperatures (°F), wind (mph), and barometric pressure (in.).⁴

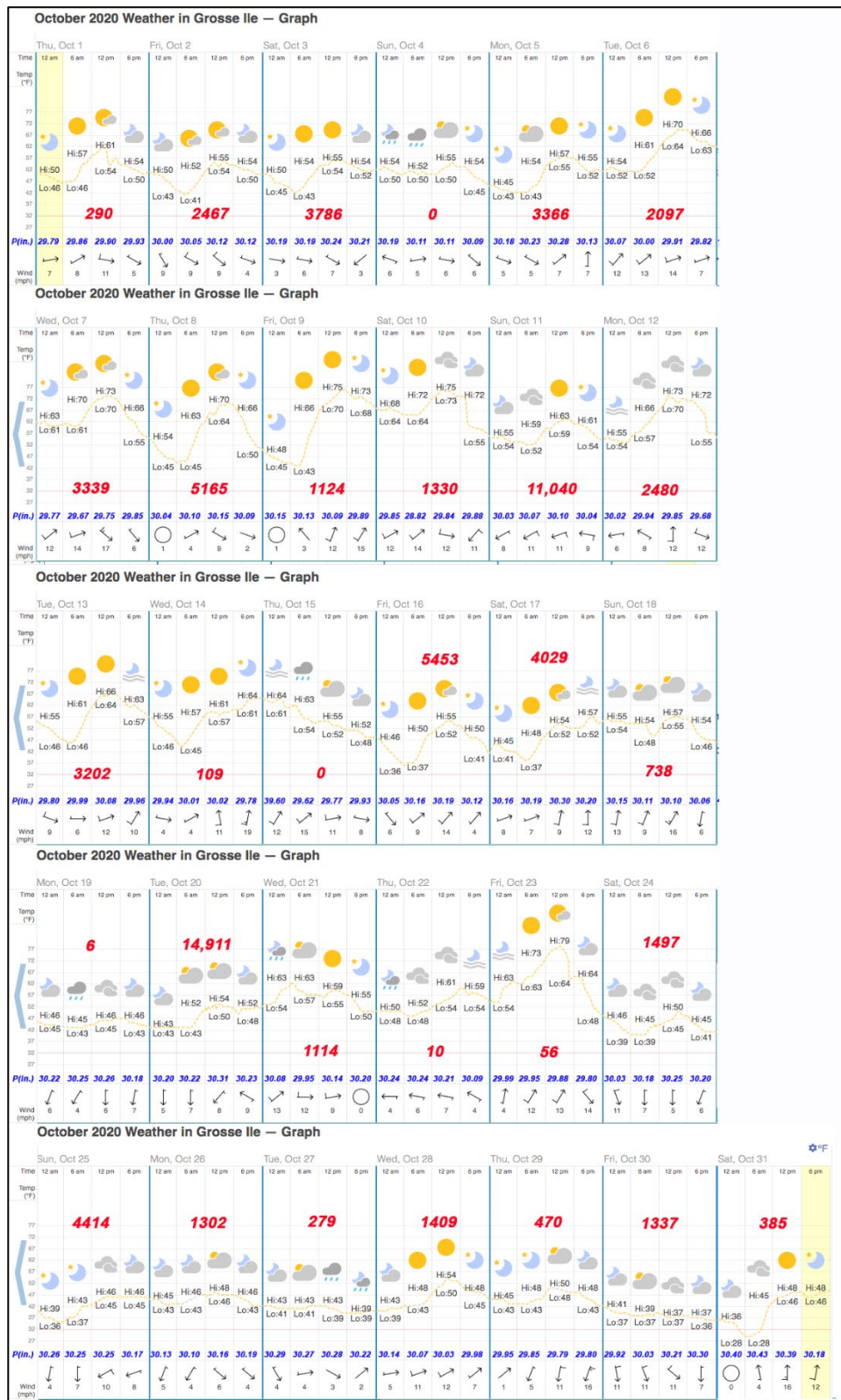


Figure 2. Daily raptor totals (red) at the Detroit River Hawk Watch during the period 01 October to 31 October 2020 overlaid with daily temperatures (°F), wind (mph), and barometric pressure (in.).⁵

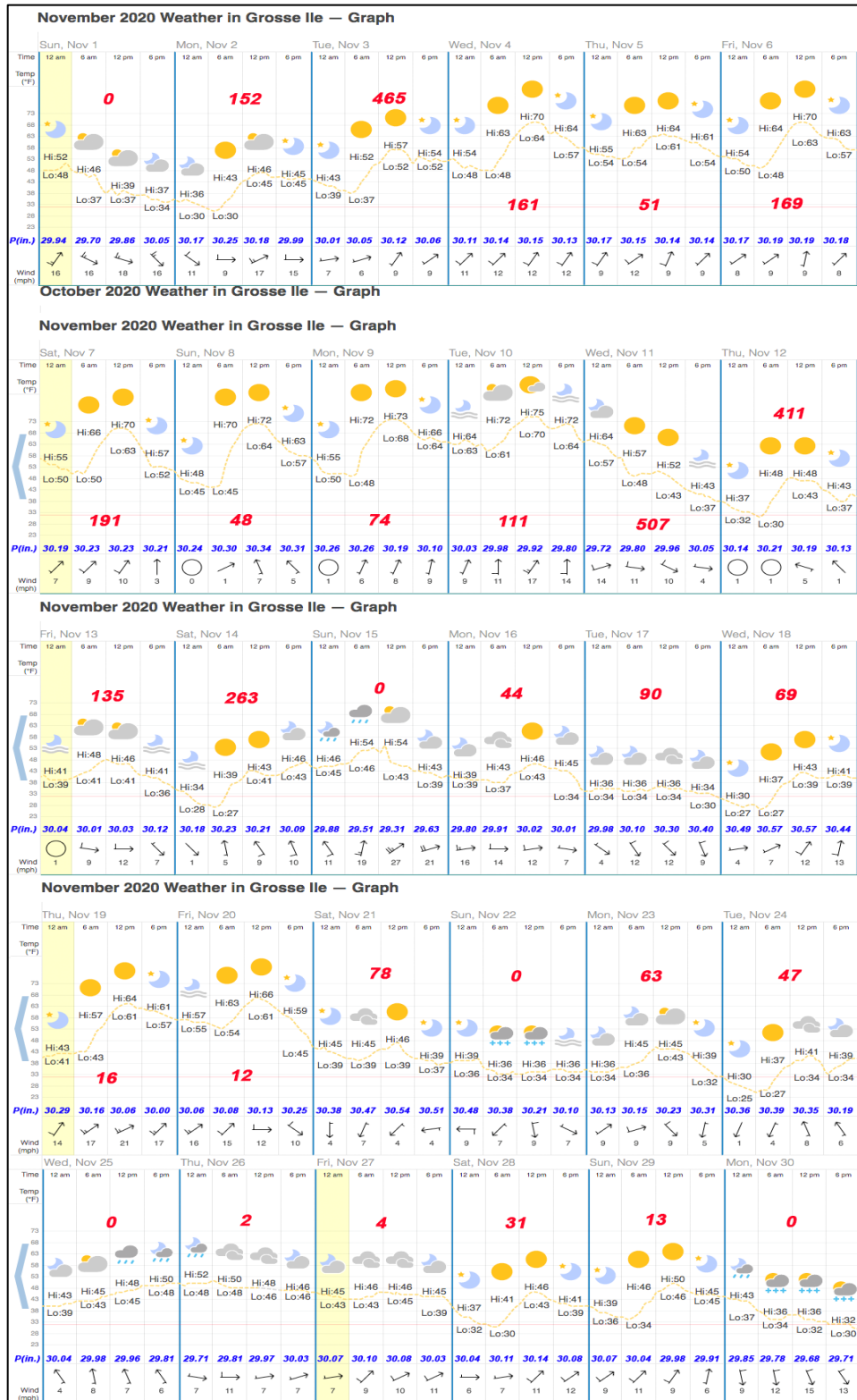


Figure 3. Daily raptor totals (red) at the Detroit River Hawk Watch during the period 01 November to 30 November 2020 overlaid with daily temperatures (°F), wind (mph), and barometric pressure (in.).⁶

Broad-winged Hawk Totals in Mid- September 2020

Holiday Beach vs Detroit River

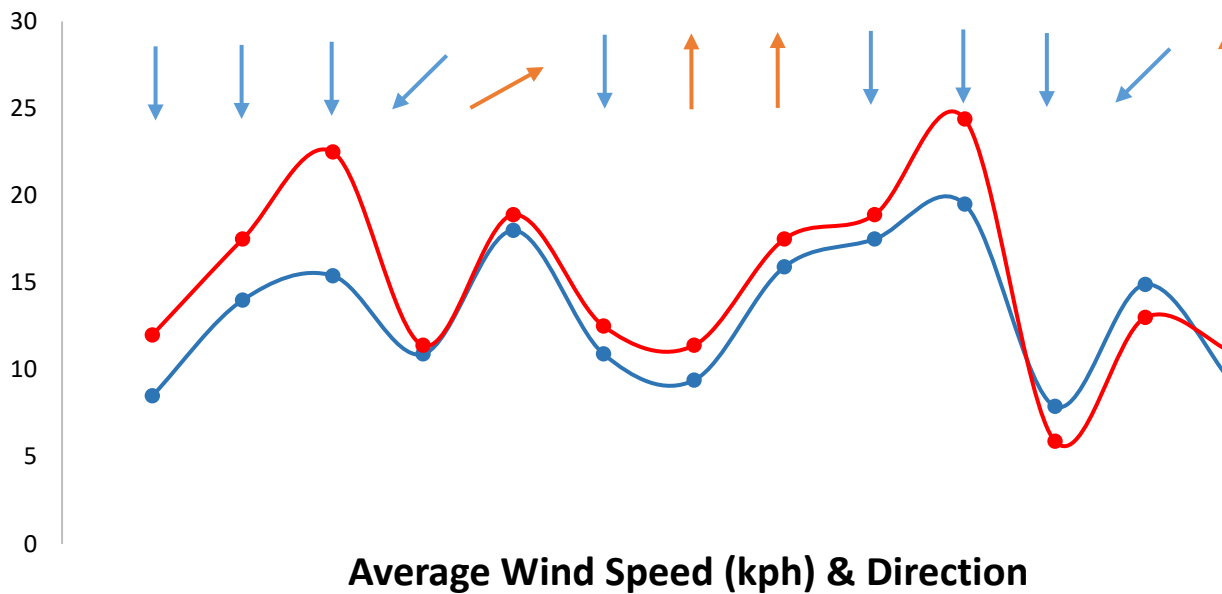
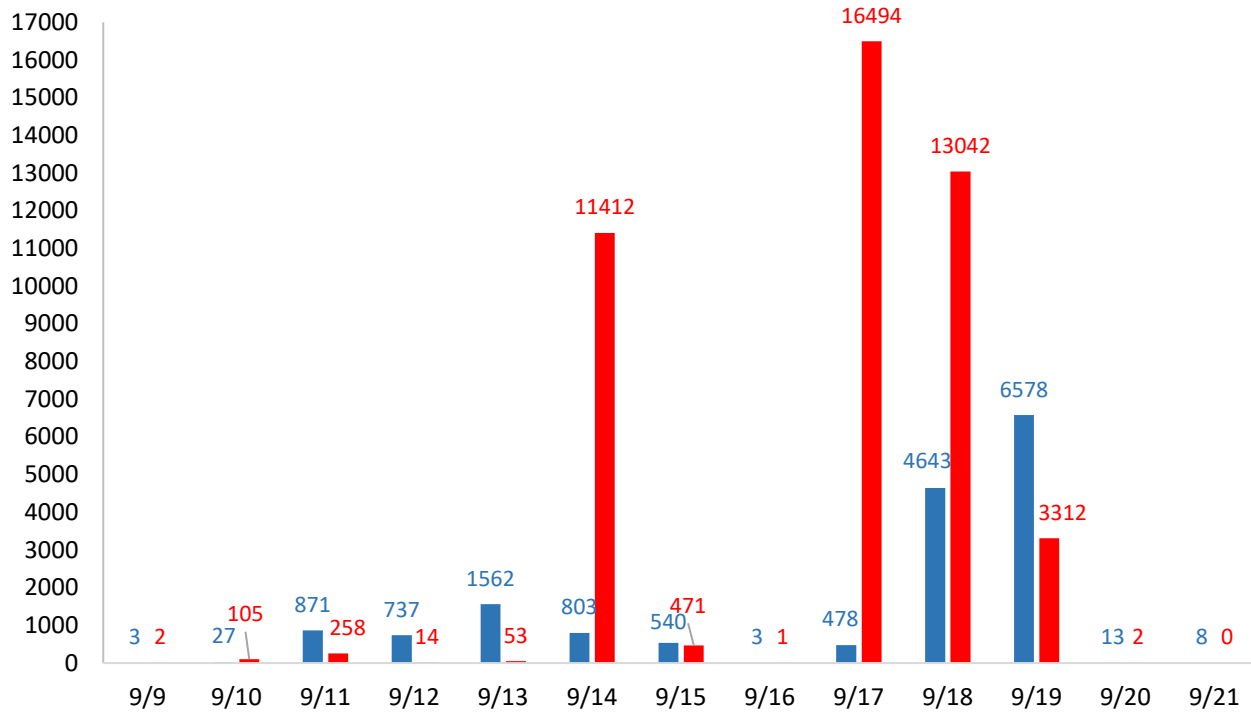


Figure 4. Daily broad-winged hawk totals at the Holiday Beach, ON (red) and Detroit River, US (blue) Hawk Watches during the period 09 September to 21 September 2020. Average wind speed (kph) and direction are shown for comparison at respective sites.^{3,6}

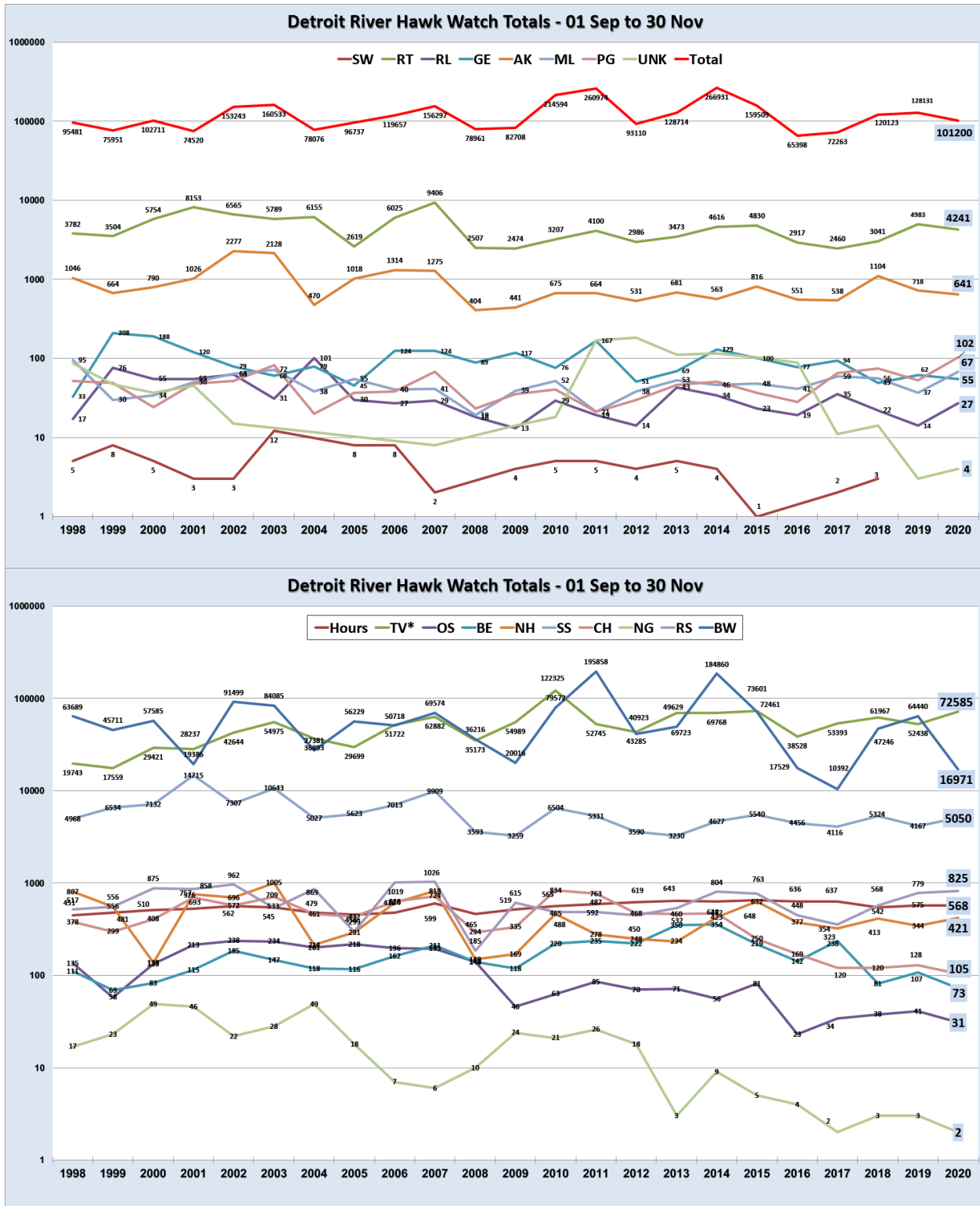


Figure 5. Detroit River Hawk Watch yearly totals counted at Lake Erie Metropark, Wayne Co., MI 1998 – 2020.