

Wisconsin Purple Martin (*Progne subis*) Statistics—2021

By Dick Nikolai

Each month many new items come to light about birds across the world in our electronic age. One of those entities for collecting data came about in the early part of the century call **eBird** from the Cornell Laboratory of Ornithology. This electronic base is updated often and was used for the Wisconsin Breeding Bird Atlas II of which the Wisconsin Purple Martin Association participated. Recently a composite report (2006 to 2020) was made for Purple Martins (*Progne subis*) showing trends on a map across all seasons and across several continents. People doing “citizen science” have reported seeing birds like Purple Martins on **eBird**, have contributed to unique data showing distribution along with abundance. Observations from this Neotropical migrant has shown our region of the Great Lakes the absence of reports in northeastern Minnesota, northern Wisconsin, in southwestern Wisconsin, Upper Michigan peninsula and north half of Lower Michigan (**See Figure 1**).

Combining this with Wisconsin scout reports in both 2020 and in 2021 sent to the PMCA represent a broad spectrum of area that shares similar values of colony sites reported during the Wisconsin Breeding Bird Atlas II from 2015-2019 where approximately 150+ colonies were reported. These colony scout reports show the greatest concentrations of Purple Martins in the southeast quarter of Wisconsin with some concentrations in the west central portion of the state (**See Figure 2**). Using this data assists new landlords to know where they have the greatest chance of attracting Purple Martins and encountering landlord mentors to assist them. Note colony sites are static. They come and go due to weather, colony landlord and sometimes their adopted caretaker. They demand a lot of time and energy in order to maintain them along with consistency from their caretakers to provide assistance. This report is to give all an idea of how well we are doing in Wisconsin looking backwards along with a guide on Purple Martin abundance from our efforts. It is the sum of all our efforts that creates a positive or negative perspective of keeping Purple Martins a viable species breeding within Wisconsin. For those of you who gave me your reports or information I applaud you for doing it for it does take time and energy. Hopefully it gives you a chance to reflect on the time you spent watching and caring for your colony. Without those efforts my suspicion is Purple Martins would be even scarcer than they are currently. Now to make sense out of your effort along with mine.

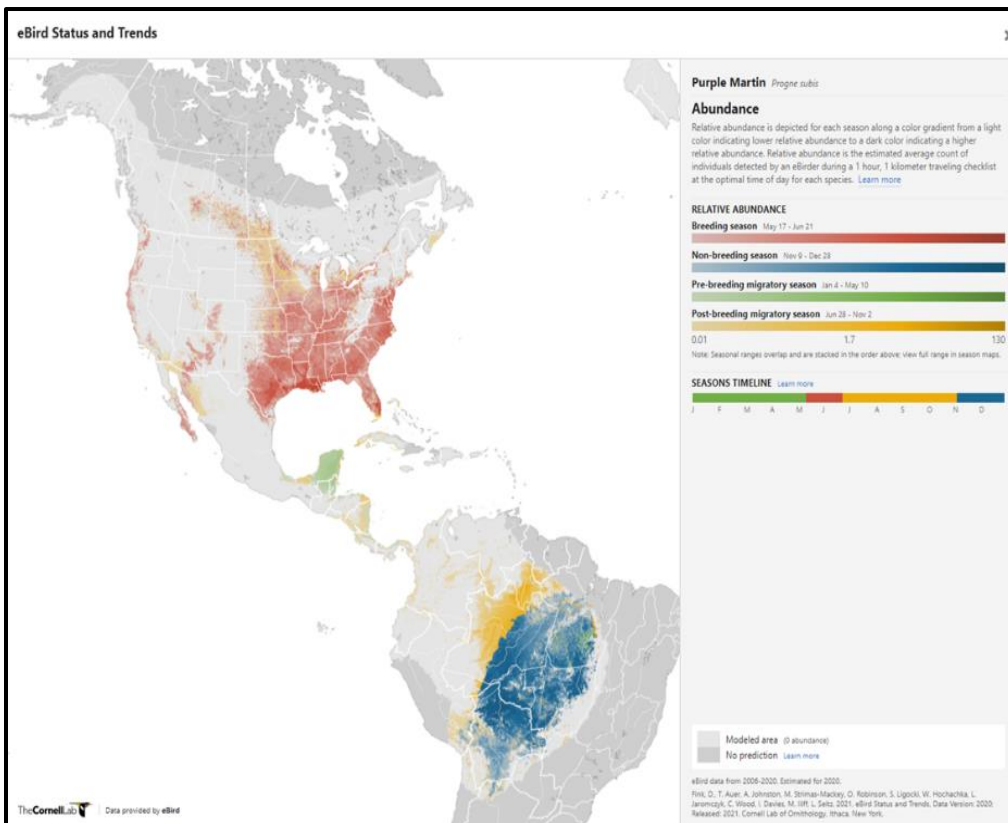


Figure 1: Map reporting eBird details of abundance from the The Cornell Laboratory of Ornithology showing range of Purple Martins in both North and South America from 2006-2020. This gives the approximate timelines of where Purple Martins exist on both continents along with their densities by showing the darkness of coloration. Note the absence of reports in northeastern Minnesota, northern Wisconsin, in southwestern Wisconsin, Upper Michigan peninsula and north half of Lower Michigan. <https://ebird.org/>

What a season we have been through during 2021. The ups and downs were many as well as the surprises we experienced in this nesting season. Areas of Wisconsin experienced drought, monsoon rains, warm weather in February and March, only to recede to have periods of cool temperatures in April, May June and July. In between we experienced temperatures in the 90's with temperatures falling to the 50's within 24 hours while purple martin young were in the pink stage of life. Toss in sprinkles along with cloudy weather to create an absence of insects and we see accounts of starvation and losses mounting.

Spring Scout Reporting for Purple Martins to the Purple Martin Conservation Association (PMCA) was up for the 2021 breeding season with 95 sites being reported compared to the 2020 breeding season of 86 sites. The first scout in 2021 in Wisconsin appeared on March 23 in Fort Atkinson in Jefferson County with the final report coming on May 13 in Winnebago County. In 2020 the first scouts came on April 2 near Cumberland in Polk County, Montello in Marquette County and Kingston in Green Lake County with the last scout on May 24 in Vernon County.

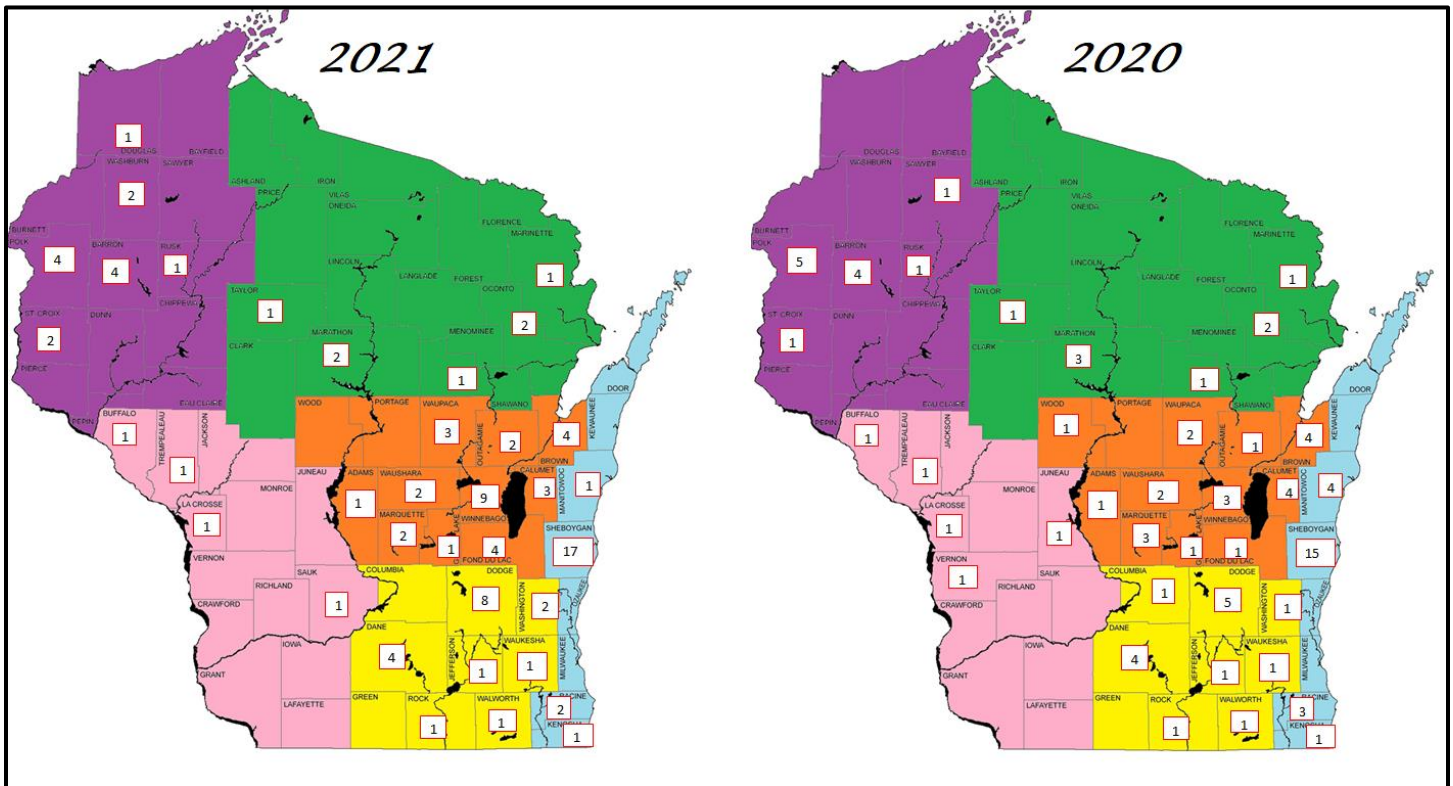


Figure 2: In 2020, 86 sites were reported for Wisconsin within 38 counties & in 2021, 95 sites were reported within 36 counties as of 12-31-2021. These reports were made by Wisconsin Landlords reporting Purple Martin Scouts arriving at their colonies through the Purple Martin Conservation Association's website at: <https://www.purplemartin.org/research/8/scout-arrival-study/>.

Colors represent regions that currently reflect Dick Nikolai views for Purple Martins due to environmental conditions and habitat as follows:

- Green**—Northeastern Forest, **Purple or Lilac**—Northwestern Barrens & Forest,
- Pink**—Southwest Driftless & non-glaciated Zone, **Orange**—Central Agricultural, Wetland & Forest Zone,
- Yellow**—Southern Prairie & Savanna Zone and **Light Blue**—Lake Michigan Zone.

Northwestern Barrens & Forest (NW)—In 2021, six out of 14 counties reported 14 sites for the PMCA. In 2020, five counties reported 12 sites.

Northeastern Forest (NE)—In 2021, five counties out of 16 reported seven sites for the PMCA. In 2020, five counties reported 8 sites.

Southwest Driftless & Non-glaciated Zone (SW)—In 2021, four counties out of 13 reported four sites for the PMCA. In 2020, five counties reported for five sites.

Central Agricultural, Wetland & Forest Zone (C)—In 2021, ten counties out of 12 reported 31 sites for the PMCA. In 2020, 11 counties reported for 23 sites.

Lake Michigan Zone (LM)—In 2021, four counties out of eight reported 21 sites for the PMCA. In 2020, four counties reported for 23 sites.

Southern Prairie & Savanna Zone (S)—In 2021, seven counties out of nine report 18 sites for the PMCA. In 2020, eight counties reported for 19 sites (**See Figure 2**).

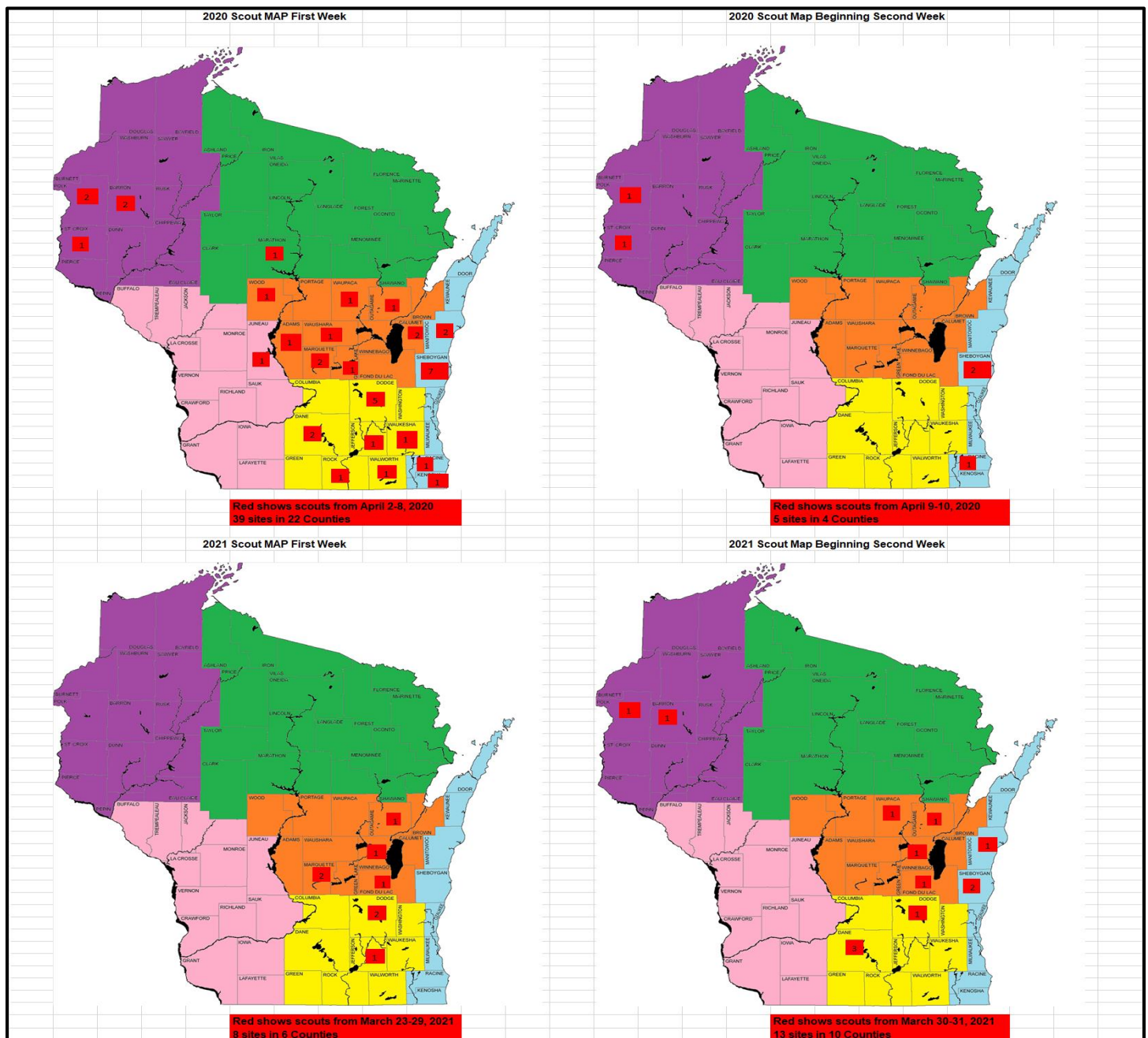


Figure 3: Comparison of years 2020 & 2021 of Wisconsin Landlords reporting Purple Martins arriving at their colonies through the PMCA’s website for the first week of flight reporting and then the next two days for each year.

The intriguing item is how early Purple Martins arrived within northwestern Wisconsin on March 30 and 31 in 2021 and April 2, 5 and 7 in 2020. In **(Figure 3)**, we see the first nine days of when martins arrived in two sets of maps in a side-by-side comparison for each of 2020 and 2021. What this does for the martins is create a failure of the environment to have adequate invertebrate resources for the birds that do arrive. Warm temperatures plain and simple do not last for the whole month of April in the far north or even most of Wisconsin.

Many landlords within a week of receiving their scouts ended up in situations of colder weather causing them to feed their martins to tide them over until warmer situations occurred. If they did not feed them, those Purple Martins probably starved or had complications of Hypothermia which caused their death. In our colonies near High Cliff State Park (HCSP), our Purple Martins arrived on April 8th with weather turning for the worse a week later. For the next month plus we managed feeding sessions of 22 days that covered us into May past into the time period when second year martins normally arrive. This caused some flash backs to 2014 and 2017 where we lost many adults and young far into the breeding season.

Last year a study came out indicating that artificial lighting over ten days at night exceeding the impacts of a full moon causing purple martins to migrate at least eight days earlier. Was this a foretold item for us to be aware of how our season was to become or our need to be proactive throughout Wisconsin? Those early migrants in the north, were they impacted by artificial light or was it just the warmer weather. If all of us remember February 2021, the southern portion of the United States from Texas to the Carolinas experienced troublesome snowstorms. Those storms had many landlords experience martins in critical life and death situations. One of the martins we banded in the Sherwood area died as a result of bad weather near Hammond, Louisiana in 2021. Remember these birds are continental travelers going all the way to Alberta, Canada. Some of those that stopped in March and early April could have easily been someone else's martins going northward! From our records on early Purple Martin scouts captured at HCSP most have bands but some years there are ones without any bands in April. These are the birds that are on their way north or to some other local colony or one of those we missed while banding during the nesting season. Once banded, these possible recaptures in the nesting season are never seen indicating the scenarios mentioned above.

In **(Figure 4)**, are all the places within Wisconsin's 34.7 million acres that individuals sent in reports for their 2021 Purple Martin breeding season. This encompasses 16 out of 72 counties in Wisconsin, with 34 sites mostly clustered. Many thanks go out to these individuals again for taking their time to create a summary of their efforts. Why my encouragement for doing data reports is that it gives a sense of satisfaction of looking back at all the time and effort each one has done. It gives us a glimpse of how well we did together with Purple Martins as our invited guest in Wisconsin.

In 2020, there were 19 sites reported across 11 counties comprising of one report for the **NW**, no reports for the **SW**, three reports for the **NE**, four reports for the **LM**, nine report for the **C** and two for the **S** Zones. In contrast for 2021 **(Figure 4)**, we still had a single report for the **NW**, five reports for the **NE**, six reports for **LM**, 14 reports for the **C** and eight reports for the **S** Zones. Overall increase of reporting was up 78.9% from the previous nesting season. In comparing reporting for scouts for 2021 **(Figure 2)**, the highest number was 31 sites for the **C**, followed by the **LM** with 21 sites, the **S** with 18 sites, followed by the **NW** with 14 sites, followed by the **NE** with seven sites and the **SW** with four sites reporting. Concentrations of reports are reflective of where Purple Martins have occurred, the word being passed on either by education or through mentors reaching out to me, and my persistence of contacts with known landlords.

These are my (Dick Nikolai's) official notes from my data files for the 2021 Purple Martin season reflecting on what was happening: *"2021 Winter (Oct 2020 to Feb 2021) has been warmer than normal throughout the period with little snowfall. It was a windy stretch with it ending in a calm series of a week at the end. Martins entered the US slightly early with many birds being up to Arkansas by Feb. First half of Feb 2021 has been colder than normal with an abundance of snow. On Feb 15, cold and snow has hit the Gulf States with wind chills at zero or below with single digit temps. The remaining portion of the month was bitter cold. March started cold but moderated throughout the entire month ending up with above normal temperatures for over 20 days with many above 60. April continued the mild weather through the 11th. Martins came on the 8th with*

two martins present. Temperatures were in the upper 70's early in the month and have slowly gone down through the month. On April 14th light snow, started to feed martins on the evening of April 13 when 16 were present. April 14 some snow is on the ground with temps near 32F. The last two weeks of April had below normal temperatures and at least six days martins needed to be fed. On the first of May it went from near freezing to temperatures near 80 degrees. Martins started to build nests but went back to cold weather. Not all ASY's are present and SY martins have not been seen because of the cold weather. Lake flies came out for a few days from May 1-3. Going back from May 11 we have had 18 out of the past 23 days being below normal with snowflakes and many days of cloudy weather. May continues to be cooler than normal through May29. Lake flies really emerged around May 19 for a week. Several days of frost in the region and even snowflakes falling one morning. Many times, martins being fed. Then weather changed where it has been warmer than normal (Many days in the 90's) and very little precipitation through June 12. From June 13 to 18 some rain has fallen with temps up and down with mostly down but on the 18th hot. Beginning June 19, 4 inches of rain fell and cool weather set in for about five days. More rain has fallen along with martins dying for quite a few young were in the pink "stage". Fed eggs for three days with weather moderating with more insects flying around June 30 to July 6 with three days being in the 90's. Tue June 29 another inch of rain fell during a storm of 1/2 hour. July 6 was hot in the 90's and in late afternoon the air cooled down to the 60's and upper 50's. Rainy on July7 with temps in the 50's to early 60's. Normal temps have occurred from July 8-14. Some deaths of young are still occurring along with missing adults. Strong showers occurring late July 14 to early morn July 15 with unknown results. Many monarchs are being caught at the park office by Purple Martins (10-15) and at the wooden gourds or gourd rack (20+) during July 6-13. Tail end of the season there was some renesting or late nesting due to loss of one of the pairs, original pair decided to lay another set of eggs or pair delayed nesting. The up and down weather continued through July and August where precipitation and thunderstorms were a factor. Several nests at the end had their nests wet and cold with loss of nestlings or loss of one of the parents. Two storms were back-to-back on August 10 & 11. Another storm at the end of July knocked down a T-14 with five young within five+ days of fledging. This was a renest or delayed nesting. New housing placed in emergency conditions and young salvaged with fledging. Lots of midges were present but few martins were present at the end."

My request to landlords was also to send in weather or local situations so we have other people making comments. Memories are sometimes difficult to have great recall so that is why I wrote comments as the season went onward. See **(Figure 5)**, for the amount of rainfall from the National Weather Service at LaCrosse for the period from June 1 to August 31, 2021 highlighted in colors throughout Wisconsin.

Here are a few comments from people who sent in their data. These are bits and pieces of their comments that I thought were important. I interjected a few comments for my thoughts and reasons why something may have occurred on the Gail Bolden and Susan Alden notes.

Nancy & Pete Hutchinson from Pound comments: "15 Non breeding martins for the season. Memorial weekend cold. Fed mealworms and crickets. End of June it was cold and rainy with no insects. April was mostly cold with the martins being fed. Early May was more cool weather until May 10. Used wood glue to coat the ceilings of cavities to deter wasps. It is slick.

Gail Bolden comments from Fond du Lac: "On September 14, 2021, 18 Purple Martins came in and resided at a neighbor's colony site for about six days and nights." (Dick Nikolai's comments for these martins staying: "Sept 14, 15 & 16 were rainy, cool and rotten for weather here in Appleton. Assumed the same in the Fond du Lac area. On the 17th was some rain with the 18th being pleasant and cool. These martins likely migrated to the area from a great distance (late hatches possibly too) and stayed to recoup their expenditure of body fat before heading out on their migration given the dates. Often the large lakes like Lake Winnebago, including the Great Lakes are key routes martins follow both in the fall and spring.")

Jim Amrhein from McFarland: " This was a bit difficult to ascertain as there were several nest start-ups, failures, and apparent restarts and cavity swapping. This year I noted a very high number of unhatched eggs - 42. Usually, I only see a half dozen. Not sure what was going on as we didn't have any long stretches of

unusual weather. Memorial Day weekend was unusually cold, but not prolonged. Whatever happened appeared to happen in June, which is when I noticed the re-nesting occurring. Some mite problems.”

Susan Alden from Lena: “Although I’ve had Martin houses for about 15 years, I never had a house that had a winch pole until this year.” (*Welcome to the easier accommodations of maintaining a martin colony.*)

Barry Wallace from Cumberland comments: “All in all it was a pretty good season here. My first martin arrived March 31, earliest ever here. A female showed up a week later. I fed those two along with seven other birds that straggled in daily for about three weeks. I was forced to feed off and on during nesting season this year. We had a cool windy stretch in July that resulted in quite a few failed nests. I was feeding dozens of eggs a day from the two platform feeders I have up and I think it prevented a large die off of nestlings. Most of my failed nests were second year pairs. I don’t think they know the feeding routine like the older birds do.”

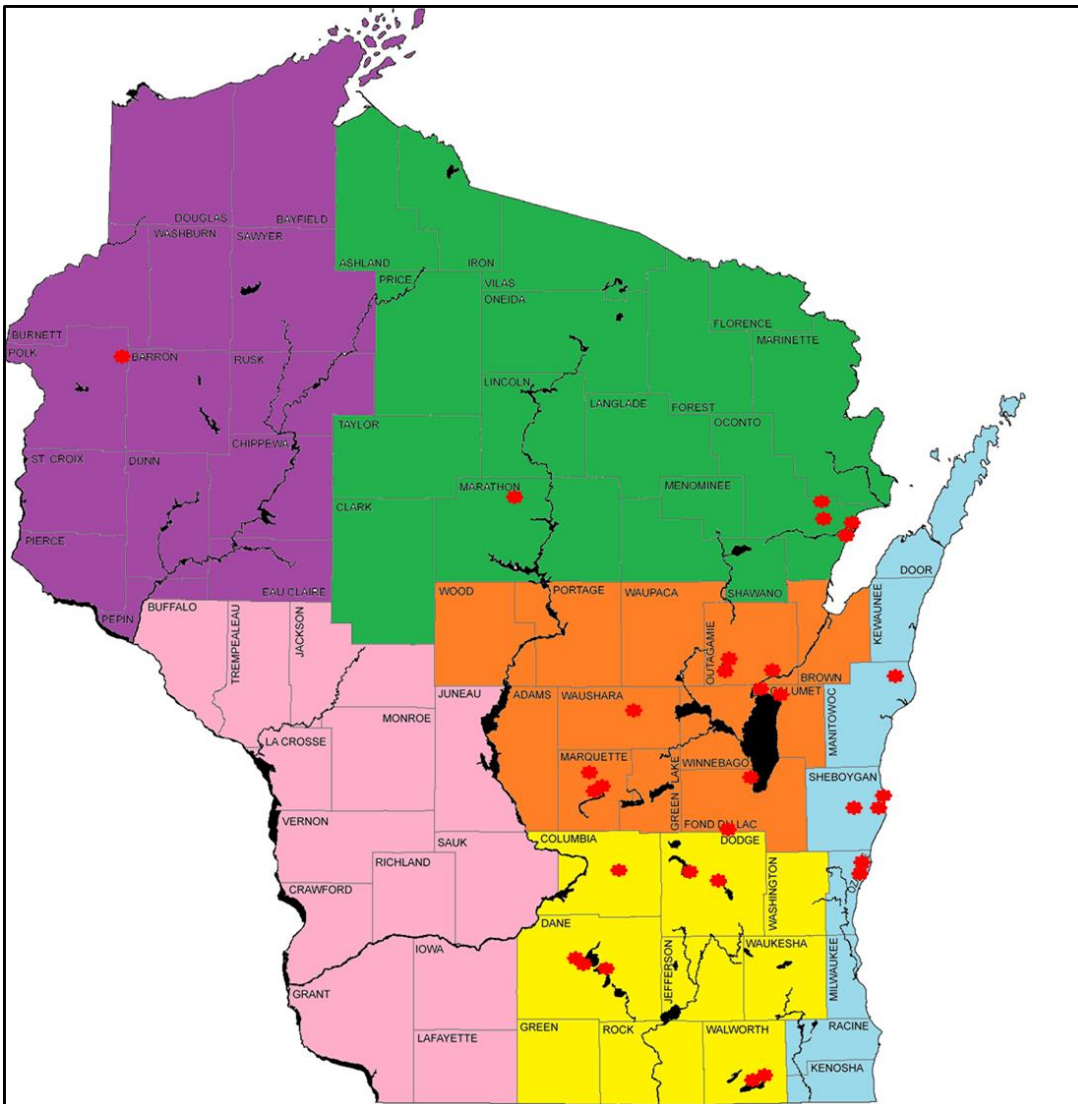


Figure 4: Map of Wisconsin showing reported Purple Martin housing and colonies in 2021 with data. Red dots show municipal locations of the individuals sending reports, of which the one in Calumet County represents four locations at or near HCSP near Sherwood. Total colony reports for 2021 were more than 2020 and entailed 34 separate areas in 16 counties.

Given the prior landlord comments, hopefully this may have triggered your memory of your particular area. Understand the effects of the heat, windy conditions exceeding 20 mph, cloudy days, rainy stints of weather and cooler weather right after those warm spells that possibly affected your colony and the food they eat. Remember the age of those young. Were they in the pink stage (under 13 days of age) or in the demanding stage (18 to 24 days)? Were there greater numbers of eggs being added (unhatched)? Note that the greatest amount of precipitation occurred in the center part of the state extending from Eau Claire to Oconto down to Sheboygan to La Crosse (See **Figure 6**). A dotted line is drawn through the central portion of Wisconsin to note the area with the greatest impact of heavy rainfall from six to ten inches more for the summer period. For us in Appleton, the average is slightly over 31 inches for the entire year with summer 2021 being six to eight inches greater than the average for the summer period shown by the dark green on the map.

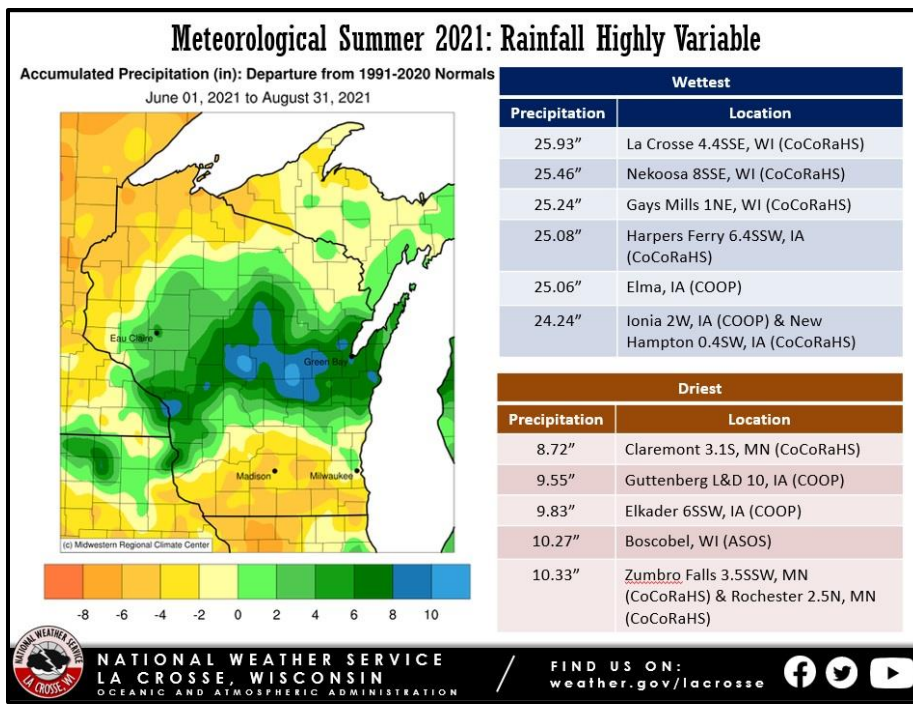


Figure 5: Map shows Wisconsin rainfall during the months of June, July and August in 2021. Rainfall amounts can be highly variable throughout the state shown by the colors. In southwest Wisconsin, La Crosse had 25.93 inches of rain while Boscobel had 10.27 inches of rain. Nekoosa in central Wisconsin had 25.46 inches.

When viewing (Figure 5 & 6), keep in mind the impacts of high winds, cloudy skies, cool days, hot heat index days, steamy weather along with combinations of these, especially high winds. How many of you needed fans or the air conditioner on? This creates impacts upon insects, food resources and flight for the adult's expending energy for the young by trying to keep them cool or warm besides themselves. That is why there were problems for eggs hatching when eggs were cooled rapidly or exposure to a high heat index problems depending on where in the housing the nest occurred or the type of housing whether made of wood, metal, plastic, natural gourds, and their size of any of the cavities or exposure to sun and wind. Raising Purple Martin young were the same for the type of environmental conditions with housing, except clutch or brood size impacts were not mentioned along with food resources. For the adults, exposure elements were the same as described above plus exhaustion and depletion of any reserves they may have left from migration, defending their cavity territories, predation impacts, laying eggs, hunting opportunities and invertebrates.

Purple Martins have feathers for insulation. They pant when hot or cool themselves in lakes, ponds and streams. When cold they brood their young or eggs and stay in their cavities where it is much warmer than those times out in the weather and wind. Most of the area within the dotted line had fewer eggs hatch, fewer young survived to fledging and fewer young produced to flight from eggs. The periphery areas additionally had similar impacts. On the opposite end where it was drier, you may have had limitations of forage food resources and heat exhaustion of the adults. Look at (Table 1) showing the red highlighted data on young fledged per nest which is under 3.50. Many sites in the area were affected by the high amount of rainfall pointed out in (Figure 5). The exception was in Polk County with 3.40 young fledged.

Note the comments relayed by Barry Wallace of his problems earlier. Both Barry and our colony at High Cliff State Park (HCSP) have over a hundred pairs. Large colonies have their own dynamics which attract predators, especially avian during diurnal and nocturnal times. Having greater numbers of young in the cavities and more adults mean more voices sounding loud and louder over a longer time period that makes it easier for raptors to find. We fledged at our colonies near HCSP 2.22 young, in temperature changes from highs in the 90's to lows in the 50's in 24 hours on several occasions with many adverse parameters mentioned. We were fortunate to have losses only of a third of our young. The weather certainly impacted the hatching from eggs from HCSP, where 70.58% of them hatched. From those that hatched 63.49% fledged and from eggs 44.81% fledged. Compare that with those three sites in Marquette County where hatching ranged from 87% to 90% with close to average conditions yielding between 4.17 and 4.86 fledglings per nest.

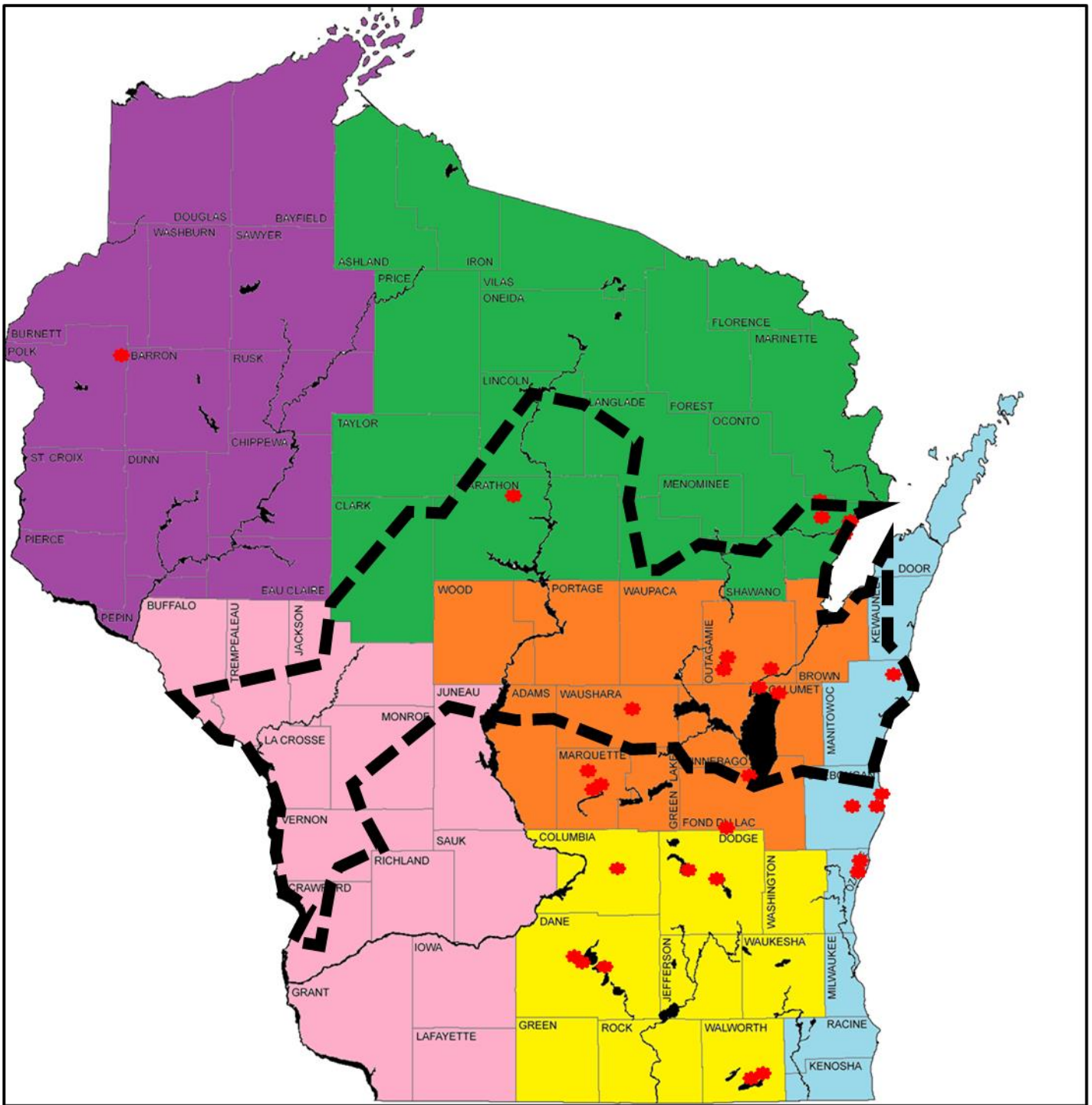


Figure 6: Heavy rainfall during the months of June, July and August are shown within a dotted line in the middle of Wisconsin along with reported colony sites. This area was recreated from **Figure 5** showing the darker green and blue areas from 6-10 inches more than average rainfall during the summer months.

When we compare all the reported colonies in Wisconsin (**Table 1**), our hatching rate was 81.37%, with 86.61% fledging from those that hatched and 70.47% fledging from eggs. The Wisconsin average fledging was 3.44 young per cavity from the average of 5.00 eggs per nests of 4846 eggs for 969 pairs laying eggs. Hatching rate for the state was 3.97 per cavity with a little over one egg lost per cavity. Statewide we still fledged 3415 young from 34 sites from 16 counties, which is an increase of almost 79% more reported sites over 2020. Production from the zones (**See Table 2**) ranged from a high in the Lake Michigan Zone of 3.78 young fledged per cavity to a low of 3.20 young fledged per cavity in the Northeast Forest. Eggs laid per nest

ranged from a high of 5.18 eggs per cavity in the Southern Prairie & Savanna Zone to a low of 4.35 eggs per cavity in the Northeast Forest Zone. The Central Agricultural, Wetland & Forest Zone had the most sites of 13.

Each year is never the same, but with our effort for managing colonies, hopefully we will attain at the minimum 4.00 young per cavity. This maintains our current population estimate of 30,000 Purple Martins across Wisconsin according to Partners in Flight.

Statewide Wisconsin Reports for 2021																
Place of housing	County	1st martin	Pairs	Nests	Nests with eggs	eggs laid	Eggs/ nest	Hatched	Hatched/ nest	% Hatch	Fledged	Fledged/ nest	% Fledged	Fledged from eggs	Last fledgling	
Sherwood	Calumet	4/8/2021	118	118	105	520	4.95	367	3.11	70.58%	233	2.22	63.49%	44.81%	8/11/2021	
Hortonville	Outagamie	3/30/2021	52	52	52	273	5.25	247	4.75	90.48%	204	3.92	82.59%	74.73%	8/14/2021	
Menasha	Winnebago	4/20/2021	18	18	18	96	5.33	74	4.11	77.08%	69	3.83	93.24%	71.88%	7/24/2021	
Montello	Marquette	3/28/2021	53	53	53	289	5.45	262	4.94	90.66%	251	4.74	95.80%	86.85%	8/9/2021	
Harrisville	Marquette	3/28/2021	14	14	14	78	5.57	69	4.93	88.46%	68	4.86	98.55%	87.18%	7/18/2021	
Montello	Marquette	3/29/2021	24	24	24	116	4.83	101	4.21	87.07%	100	4.17	99.01%	86.21%	8/4/2021	
Appleton	Outagamie	4/22/2021	7	7	7	34	4.86	25	3.57	73.53%	23	3.29	92.00%	67.65%	7/30/2021	
Hortonville	Outagamie	5/13/2021	4	2	2	9	4.50	6	3.00	66.67%	6	3.00	100.00%	66.67%	8/20/2021	
Fond du Lac	Fond du Lac	3/30/2021	19	19	19	93	4.89	59	3.11	63.44%	52	2.74	88.14%	55.91%	8/17/2021	
Wild Rose	Wauzara	4/28/2021	23	23	23	134	5.83	111	4.83	82.84%	82	3.57	73.87%	61.19%	Unknown	
Oconto	Oconto	5/9/2021	24	24	15	67	4.47	43	1.79	64.18%	39	1.63	90.70%	58.21%	8/8/2021	
Oconto	Oconto	5/16/2021	22	22	22	118	5.36	86	3.91	72.88%	66	3.00	76.74%	55.93%	8/22/2021	
Lena	Oconto	4/27/2021	12	12	12	56	4.67	53	4.42	94.64%	52	4.33	98.11%	92.86%	8/8/2021	
Pound	Oconto	4/1/2021	46	46	46	228	4.96	204	4.43	89.47%	184	4.00	90.20%	80.70%	8/21/2021	
Edgar	Marathon	4/8/2021	27	27	27	101	3.74	82	3.04	81.19%	78	2.89	95.12%	77.23%	Unknown	
Beaver Dam	Dodge	3/30/2021	38	38	38	197	5.18	146	3.84	74.11%	110	2.89	75.34%	55.84%	8/4/2021	
Waupun	Dodge & Fond du Lac line	Unknown	43	43	42	231	5.50	155	3.69	67.10%	121	2.88	78.06%	52.38%	Unknown	
(8)Juneau	Dodge	4/25/2021	7	7	7	27	3.86	24	3.43	88.89%	21	3.00	87.50%	77.78%	8/7/2021	
McFarland	Dane	4/11/2021	26	26	26	148	5.69	106	4.08	71.62%	106	4.08	100.00%	71.62%	7/23/2021	
Middleton	Dane	4/12/2021	36	36	36	174	4.83	153	4.25	87.93%	151	4.19	98.69%	86.78%	8/2/2021	
(2)Rio	Columbia	5/20/2021	1	1	1	4	4.00	4	4.00	100.00%	4	4.00	100.00%	100.00%	8/31/2021	
(3)Lake Geneva	Walworth	Unknown	59	59	59	310	5.25	241	4.08	77.74%	219	3.71	90.87%	70.65%	Unknown	
(4)Lake Geneva	Walworth	Unknown	11	11	11	57	5.18	43	3.91	75.44%	40	3.64	93.02%	70.18%	Unknown	
Middleton	Dane	4/7/2021	11	11	11	54	4.91	46	4.18	85.19%	42	3.82	91.30%	77.78%	7/27/2021	
(1)Cumberland	Polk	3/30/2021	115	115	115	513	4.46	474	4.12	92.40%	391	3.40	82.49%	76.22%	8/15/2021	
(7)Plymouth	Sheboygan	5/2/2021	5	5	3	18	6.00	12	2.40	66.67%	11	2.20	91.67%	61.11%	7/28/2021	
(5)Sheboygan	Sheboygan	No martins		0		0	0.00	0			0				No Martins	
(6)Mishicot	Manitowoc	3/30/2021	143	143	143	727	5.08	600	4.20	82.53%	550	3.85	91.67%	75.65%	Unknown	
Port Washington	Ozaukee	Unknown	12	12	12	58	4.83	52	4.33	89.66%	48	4.00	92.31%	82.76%	Unknown	
Port Washington	Ozaukee	Unknown	12	12	12	63	5.25	54	4.50	85.71%	54	4.50	100.00%	85.71%	Unknown	
Sheboygan Falls	Sheboygan	5/11/2021	14	14	14	53	3.79	44	3.14	83.02%	40	2.86	90.91%	75.47%	7/29/2021	
(1)Estimates due to monitoring last on July 4. Had some young mortality due to cool & windy stretch in July. (2)Had a pair in 2020 which did not return in 2021. New pair in 2021. (3)Estimate for all except Hatch & % fledged from eggs. (4)Estimate for all except Hatch. (5)No Martins came in 2021 & martins were present in 2020 (6)Estimated production for 2021 (7)First time martin landlord. (8)First time martin landlord. (Total of 34 sites in 16 Counties)			1st Martin 3-28-2021	996	994	969	4846	5.00	3943	3.97	81.37%	3415	3.44	86.61%	70.47%	Last Fledge 8/31/2021
(1)Estimates due to monitoring last on July 4. Had some young mortality due to cool & windy stretch in July. (2)Had a pair in 2020 which did not return in 2021. New pair in 2021. (3)Estimate for all except Hatch & % fledged from eggs. (4)Estimate for all except Hatch. (5)No Martins came in 2021 & martins were present in 2020 (6)Estimated production for 2021 (7)First time martin landlord. (8)First time martin landlord and removal of Sherwood colonies. (Total of 30 sites)			1st Martin 3-28-2021	878	876	864	4326	5.01	3576	4.08	82.66%	3182	3.63	88.98%	73.56%	Last Fledge 8/31/2021

Table 1: Includes all six regions of Wisconsin for Purple Martins. For the state as a whole 3.44 young were fledged per cavity from 969 pairs that laid 4846 eggs. Martins arrived on March 28, 2021 with the last known fledging taking place around August 31. Over 70% of the young fledged from eggs considering the impacts of the weather.

Regional (Northeast Forest) Wisconsin Reports for 2021															
Place of housing	County	1st martin	Pairs	Nests	Nests with eggs	eggs laid	Eggs/ nest	Hatched	Hatched/ nest	% Hatch	Fledge	Fledged/ nest	% Fledged	Fledged from eggs	Last Fledgling
Oconto	Oconto	5/9/2021	24	24	15	67	4.47	43	1.79	64.18%	39	1.63	90.70%	58.21%	8/8/2021
Oconto	Oconto	5/16/2021	22	22	22	118	5.36	86	3.91	72.88%	66	3.00	76.74%	55.93%	8/22/2021
Pound	Oconto	4/1/2021	46	46	46	228	4.96	204	4.43	89.47%	184	4.00	90.20%	80.70%	8/21/2021
Edgar	Marathon	4/8/2021	27	27	27	101	3.74	82	3.04	81.19%	78	2.89	95.12%	77.23%	Unknown
Lena	Oconto	4/27/2021	12	12	12	56	4.67	53	4.42	94.64%	52	4.33	98.11%	92.86%	8/8/2021
Total of 5 sites all active.		1st Martin 4-19-2020	131	131	122	570	4.35	468	3.57	82.11%	419	3.20	89.53%	73.51%	Last Fledge 8/14/2020
Regional (Northwestern Barrens & Forest) Wisconsin Reports for 2021															
Place of housing	County	1st martin	Pairs	Nests	Nests with eggs	eggs laid	Eggs/ nest	Hatched	Hatched/ nest	% Hatch	Fledge	Fledged/ nest	% Fledged	Fledged from eggs	Last Fledgling
Cumberland	Polk	3/30/2021	115	115	115	513	4.46	474	4.12	92.40%	391	3.40	82.49%	76.22%	8/15/2021
(1) Estimates due to monitoring last on July 4. Had some young mortality due to cool & windy stretch in July. Total of 1 site submitted & active.		1st Martin 4-2-2020	115	115	115	513	4.46	474	4.12	92.40%	391	3.40	82.49%	76.22%	Last Fledge 8/12/2020
Regional (Southwest Driftless Zone) Wisconsin Reports for 2021															
Place of housing	County	1st martin	Pairs	Nests	Nests with eggs	eggs laid	Eggs/ nest	Hatched	Hatched/ nest	% Hatch	Fledge	Fledged/ nest	% Fledged	Fledged from eggs	Last Fledgling
Total of 0 sites submitted		1st Martin	0	0	0	0	#DIV/0!	0	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	#DIV/0!	Last Fledge
Regional (Central Agricultural, Wetland & Forest Zone) Wisconsin Reports for 2021															
Place of housing	County	1st martin	Pairs	Nests	Nests with eggs	eggs laid	Eggs/ nest	Hatched	Hatched/ nest	% Hatch	Fledge	Fledged/ nest	% Fledged	Fledged from eggs	Last Fledgling
Sherwood	Calumet	4/8/2021	118	118	105	520	4.95	367	3.50	70.58%	233	2.22	63.49%	44.81%	8/11/2021
Hortonville	Outagamie	3/30/2021	52	52	52	273	5.25	247	4.75	90.48%	204	3.92	82.59%	74.73%	8/14/2021
Appleton	Outagamie	4/22/2021	7	7	7	34	4.86	25	3.57	73.53%	23	3.29	92.00%	67.65%	7/30/2021
Menasha	Winnebago	4/20/2021	18	18	18	96	5.33	74	4.11	77.08%	69	3.83	93.24%	71.88%	7/24/2021
Montello	Marquette	3/28/2021	53	53	53	289	5.45	262	4.94	90.66%	251	4.74	95.80%	86.85%	8/9/2021
Hortonville	Outagamie	5/13/2021	4	2	2	9	4.50	6	3.00	66.67%	6	3.00	100.00%	66.67%	8/20/2021
Fond du Lac	Fond du Lac	3/30/2021	19	19	19	93	4.89	59	3.11	63.44%	52	2.74	88.14%	55.91%	8/17/2021
Harrisville	Marquette	3/28/2021	14	14	14	78	5.57	69	4.93	88.46%	68	4.86	98.55%	87.18%	7/18/2021
Montello	Marquette	3/29/2021	24	24	24	116	4.83	101	4.21	87.07%	100	4.17	99.01%	86.21%	8/4/2021
Wild Rose	Waushara	4/28/2021	23	23	23	134	5.83	111	4.83	82.84%	82	3.57	73.87%	61.19%	Unknown
Total of all 13 sites submitted & all active.		1st Martin 3/28/2021	332	330	317	1642	4.98	1321	4.00	80.45%	1088	3.30	82.36%	66.26%	Last Fledge 8/20/2021
Regional (Southern Prairie & Savanna Zone) Wisconsin Reports for 2021															
Place of housing	County	1st martin	Pairs	Nests	Nests with eggs	eggs laid	Eggs/ nest	Hatched	Hatched/ nest	% Hatch	Fledge	Fledged/ nest	% Fledged	Fledged from eggs	Last Fledgling
Middleton	Dane	4/7/2021	11	11	11	54	4.91	46	4.18	85.19%	42	3.82	91.30%	77.78%	7/27/2021
Beaver Dam	Dodge	3/30/2021	38	38	38	197	5.18	146	3.84	74.11%	110	2.89	75.34%	55.84%	8/4/2021
Waupun	Dodge & Fond du Lac line	Unknown	43	43	42	231	5.50	155	3.69	67.10%	121	2.88	78.06%	52.38%	Unknown
McFarland	Dane	4/11/2021	26	26	26	148	5.69	106	4.08	71.62%	106	4.08	100.00%	71.62%	7/23/2021
Middleton	Dane	4/12/2021	36	36	36	174	4.83	153	4.25	87.93%	151	4.19	98.69%	86.78%	8/2/2021
(2) Rio	Columbia	5/20/2021	1	1	1	4	4.00	4	4.00	100.00%	4	4.00	100.00%	100.00%	8/31/2021
(3) Lake Geneva	Walworth	Unknown	59	59	59	310	5.25	241	4.08	77.74%	219	3.71	90.87%	70.65%	Unknown
(4) Lake Geneva	Walworth	Unknown	11	11	11	57	5.18	43	3.91	75.44%	40	3.64	93.02%	70.18%	Unknown
(8) Juneau	Dodge	4/25/2021	7	7	7	27	3.86	24	3.43	88.89%	21	3.00	87.50%	77.78%	8/7/2021
(2) Had a pair in 2020, which did not return in 2021. New pair in 2021. (3) Estimates for all except Hatch & % fledged from eggs. (4) Estimate for all except Hatch. (8) First time martin landlord. Total of 9 sites submitted & all active.		1st Martin 3/30/2021	232	232	231	1202	5.18	918	3.96	76.37%	814	3.51	88.67%	67.72%	Last Fledge 8/31/2021
Regional (Lake Michigan Zone) Wisconsin Reports for 2021															
Place of housing	County	1st martin	Pairs	Nests	Nests with eggs	eggs laid	Eggs/ nest	Hatched	Hatched/ nest	% Hatch	Fledge	Fledged/ nest	% Fledged	Fledged from eggs	Last Fledgling
Sheboygan Falls	Sheboygan	5/11/2021	14	14	14	53	3.79	44	3.14	83.02%	40	2.86	90.91%	75.47%	7/29/2021
Port Washington	Ozaukee	Unknown	12	12	12	58	4.83	52	4.33	89.66%	48	4.00	92.31%	82.76%	Unknown
Port Washington	Ozaukee	Unknown	12	12	12	63	5.25	54	4.50	85.71%	54	4.50	100.00%	85.71%	Unknown
(7) Plymouth	Sheboygan	5/2/2021	5	5	3	18	3.60	12	2.40	66.67%	11	2.20	91.67%	61.11%	7/28/2021
(5) Sheboygan	Sheboygan	No Martins	0	0	0	0	0	0	0	0	0	0	0	0	No Martins
(6) Mishicot	Manitowoc	3/30/2021	143	143	143	727	5.08	600	4.20	82.53%	550	3.85	91.67%	75.65%	Unknown
(5) No martins stayed in 2021 & martins were present in 2020. (6) Estimated production for 2021. (7) First time martin landlord. Total of 6 sites submitted with 5 active.		1st Martin 3-30-2021	186	186	184	919	4.94	762	4.10	82.92%	703	3.78	92.26%	76.50%	Last Fledge 7/29/2021

Table 2: Includes all data received from the six regions for Purple Martins in Wisconsin. Unfortunately, the Southwest Driftless Zone had no nesting reports. These data represent 34 sites from 16 counties, which is an increase of almost 79% more sites over 2020. Production ranged from a high in the Lake Michigan Zone of 3.78 young fledged to a low of 3.20 young fledged in the Northeast Forest. Eggs laid per nest ranged from a high of 5.18 eggs per cavity in the Southern Prairie & Savanna Zone to a low of 4.35 eggs per cavity in the Northeast Forest Zone. The Central Agricultural, Wetland & Forest Zone had the most sites of 13.

Purple Martins Banded 1960-2021									
USGS Bird Banding Lab	Wisconsin	Year	Birds Banded by Year	Birds Recovered By Year	Return Rate	Year	Birds Banded by Year	Birds Recovered By Year	
		1960	45	0		1995	212	0	
		1961	47	0		1996	306	1	
		1962	94	1		1997	450	0	
		1963	38	0		1998	401	0	
		1964	143	0		1999	469	0	
		1965	133	0		2000	445	1	
		1966	137	0		2001	458	2	
		1967	84	1		2002	229	0	
		1968	20	0		2003	266	0	
		1969	82	2		2004	163	0	
		1970	106	0		2005	263	1	
		1971	114	2		2006	360	0	
		1972	179	0		2007	444	1	
		1973	346	0		2008	353	3	
		1974	403	5		2009	289	2	
		1975	274	0		2010	540	0	
		1976	492	1		2011	460	1	
		1977	311	3		2012	519	1	
		1978	94	0		2013	509	1	
		1979	134	3		2014	714	1	
		1980	292	0		2015	636	1	
		1981	211	1		2016	1,310	0	
		1982	199	4		2017	1,838	2	
		1983	130	1		2018	2,150	5	
		1984	223	1		2019	1,917	8	
		1985	272	0		2020	1,393	8	
		1986	355	0		2021	1,452	3	
		1987	190	0		*2022		0	
		1988	154	1					
		1989	105	1					
		1990	94	0					
		1991	89	0					
		1992	127	2					
		1993	78	1					
		1994	136	1					
		1995	212	0					
	Wisconsin				Return rate by public	Wisconsin			Return rate by public
	Total 1960-1995		6,143	31	0.505%	Total 1996-present	18546	42	0.226%
					* After Jan 1	Total 1960-present	24,689	73	0.296%

Table 3: Summary of the Bird Banding Labs Reports from 1960 to January 10, 2022 for Wisconsin.

PM Statewide Banding	Year	New	Recaptures	Totals	WI Recoveries by the public
Dick Nikolai/Bob Ring	2016	1227	153	1380	0
Dick Nikolai/Bob Ring	2017	2109	141	2250	2
Dick Nikolai/Bob Ring	2018	2086	131	2217	5
Dick Nikolai/Bob Ring	2019	1814	134	1948	8
Dick Nikolai/Bob Ring	2020	1416	143	1559	8
Dick Nikolai/Bob Ring	2021	1316	90	1406	3
	2022		0		0
As of January 10, 2022	Total	9968	792	10760	26
	<i>Average per Yr</i>	1661	113	1793	3.71
Recapture Rate %					7.361%

Table 4: Summary of Banded & Recaptured Purple Martins by Dick Nikolai & Bob Ring from 2016 to January 10, 2022.

Finally take note of the recovery of Purple Martins through the general public or through observers such as yourself (**Table 3**) or by banders, which includes recaptures by myself or Bob Ring (**Table 4**). Recovery rate for us is 792/9968 which is **7.361%** comparing that to **0.296%** from the general public rate during the same time period. What amazed me was the recovery rate from 1960 to 1995 which was 31 recoveries in 36 years for a rate of 0.505% versus the rate from 1996 to the present which was 0.226%. The last few years we have had

more recoveries in Wisconsin due to our efforts on educating the public to report banded Purple Martins. Our appreciation for all of you reporting data for this summary. Banding recapture rates are almost 25 times greater than for the public. Be vigilant when a band is seen on live adults or an adult that has succumbed to the elements, by reporting the band to the Bird Banding Lab (See below). Use your binoculars, spotting scopes, your camera or phone with camera as useful tools.

REPORT BIRD BANDS: <https://www.usgs.gov/labs/bird-banding-laboratory>

Please note that reports for 2022 can be submitted any time after the nesting season until December 31 at prairiechicken@att.net. Let us see if we can fill in the gaps for areas on our map like in the Southwest Driftless Zone or in the many counties that were absent. For those of you that did, continue on sending them. Thanks!

Items needed: 1) Time of arrival, 2) Last young fledged, 3) Eggs laid, 4) Young hatched, 5) Young fledged, 6) Your location if not reported before, and 7) Martins were there in 2021 but gone in 2022.

Let's make this 2022 Purple Martin season rewarding for all by filling in the many gaps throughout Wisconsin, being mentors for our neighbors, family, friends or people in need of education and sharing time with our feathered families to make their time in Wisconsin successful. Have a successful season! Enjoy those friendly conferences on the antennas and the great antics they share with us.

