# COASTAL VIRGINIA WILDLIFE OBSERVATORY

# ANNUAL REPORT FOR 2021

***Protecting Wildlife through Field Research, Education and Habitat Conservation for Over 25 Years***

*Cover collage prepared by Jim Easton.*

*Photo credits:*
*Upper left: American Avocets by Bill Williams*
*Upper right: Monarch butterfly by Jim Easton*
*Center: American Kestrel by Steve Thornhill*
*Lower left: Prothonotary Warbler by Jim Easton*
*Lower right: Osprey by Jim Easton*

*The Hawkwatch Platform at Kiptopeke State Park. Photo by Collins Reagan.*

*Northern Harrier by Steve Thornhill*

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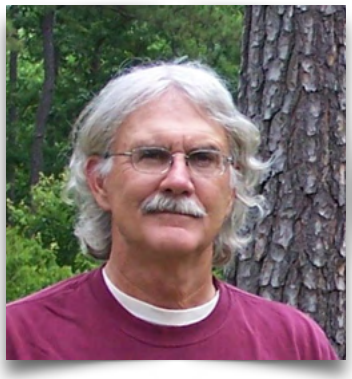
# PRESIDENT'S MESSAGE



Dear CVWO Supporter,

For many years, the Observatory has awarded grants to graduate students studying birds at the College of William and Mary and we recently added a grant for an Old Dominion University graduate student. These grants are named in honor of Observatory supporters Bill Akers, Ruth Beck and Bob Ake. We like to be able to give back in this way as we have been very lucky over the years to have received so much from our great supporters and donors. We like to encourage these young people, too, even if just in a small way.

Last year we also provided a grant to Kiptopeke State Park for amphitheater benches at the new Visitor Center. We also provided a grant to the Edward Brinkley Preserve in Northampton County for a bench for visitors and another grant for wildlife signage there. We are now exploring other ideas we are calling "conservation grants." These will continue to give opportunities to others in a way that benefits wildlife study and honors the donations we receive. We would like to be able to help youths and organizations like the Virginia Society of Ornithology, which has helped us so much in the past. The Board will be considering how best to develop this program. If you have ideas, let us know.

Another exciting new initiative is the hiring of a part-time Communications Specialist. We've seen growth in our eNewsletter interest and social media posts, perhaps due partly to COVID restrictions, as we find new ways to engage and share.

And…see our article on 1 million hawks at Kiptopeke Hawkwatch!

Thanks to everyone who helps fulfill the mission of wildlife conservation!

Brian Taber, CVWO President

Email: taberzz@aol.com

# RAPTOR RESEARCH

*Peregrine Falcon. Photo By Steve Thornhill*

Why It's Important

Since 1995, CVWO has conducted raptor research during fall migration at Kiptopeke State Park located on Virginia's Eastern Shore and since 1997 at College Creek near Williamsburg during spring migration.

Over this time, raptor populations have declined due to habitat loss and pesticides, as well as other factors.

CVWO's research contributes to international data bases, scientific insight, and preservation of these magnificent birds of prey. CVWO biologists record information that is shared internationally with science data bases like Hawkcount.org, eBird.org and Hawk Migration Association of North America (HMANA).

***"A multi-authored scientific paper on the state of the world's birds of prey and owls was published in September 2018 in Biological Conservation. According to the research, 18% percent of raptors are threatened with extinction and 52% of raptors have declining global populations."***
***- BIOLOGICAL CONSERVATION, September 2018***

***Drone footage of the Kiptopeke State Park's Hawkwatch platform, by Collins Reagan. Visit CVWO's website and YouTube channels to watch film about our Hawk and Monarch Projects at Kiptopeke!***

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# ONE MILLION HAWKS IN 2022!

The Kiptopeke Hawkwatch was begun in 1977 by volunteers. In 1995 CVWO began hiring full-time paid hawkwatchers, which increased the coverage to a full 3-month season. The total now stands 16,790 short of 1 million raptors recorded there. Since the recent average has been over 18,000 per season, we expect to reach the new milestone this fall.

Stay tuned to our eNewsletters and social media posts for details about our contest to predict the species and the date of this event…with prizes!

Read about Hawkwatch in our newsroom here and our blog here.

Watch the Hawkwatch films on CVWO's YouTube channel here.

***Will the one millionth bird be a Merlin, left, or American Kestrel, right? Or another species? Photos by Steve Thornhill***

# 2021 KIPTOPEKE HAWKWATCH REPORT SUMMARY

***Steve Dougill, left, by Shirley Devan. American Kestrel, right, by Steve Thornhill***

By Steve Dougill

Located at the southern tip of the Delmarva Peninsula, Kiptopeke State Park offers a spectacular opportunity to witness the southbound fall migration of hundreds of migratory bird species, particularly raptors. 2021 was the 45th consecutive year of the hawkwatch and the 27th consecutive year that Coastal Virginia Wildlife Observatory (CVWO) has staffed a full-time hawkwatcher to monitor the fall migration of raptors at Kiptopeke State Park. From the 31st of August to the 29 th of November, a total of 19,350 migrant raptors of 15 species were counted over 756 observation hours at the Kiptopeke hawk platform. All data collected were entered into the Hawk-count online database (which is maintained by the Hawk Migration Association of North America (HMANA)) via the Dunkadoo application. Reports were submitted to HMANA and daily reports of all species submitted to eBird.

Counts in three years drastically affect the distribution and resulting averages. Those of 1995, 1996 and 1997 are two to three times higher than any other year on record and while the validity is not questioned, these were exceptional years (with a little better than average counts at other sites such as Cape May). They stand out as an anomaly at Kiptopeke and long term averages and trends using this data should be viewed with caution. This year was challenging with a single staff member counting and also providing education to the public. During the peak of migration from mid-September to mid-October there were many visitors around to help. However, at other times it was impossible to consistently cover the entire view and it is likely that fast moving falcons, and to a lesser extent accipiters, were missed. More importantly though, each year the viewing area is reduced due to tree and other vegetation growth; this loss of view shed has a greater impact each year on the counts.

It is very apparent that Kiptopeke hawkwatch is a favorite among birders visiting the East Coast who are looking for a friendly atmosphere, a connection with the counter and consistent days with raptor flights while situated in a rural, beautiful State Park. During September and October when the peak raptor migration is occurring, there are very few days with low raptor numbers. Unlike other sites where a north-west wind is necessary for optimum flights, Kiptopeke is unique; here, as long as there is some wind, birds will fly. Accordingly, during this time period Kiptopeke will have higher bird totals on twice as many days compared to Cape May, NJ, three times as many days as Cape Henlopen, DE, and almost always more birds than the hawkwatch site on the coast in South Carolina. Kiptopeke also offers a fantastic opportunity for consistent counts. Because the site is not located at the tip of a peninsula, it does not suffer from repeat counts.

During the three months we hosted 1,771 visitors. It was truly a pleasure interacting with each and every one. In addition, I spoke with a local Master Naturalist class, worked with the Eastern Shore Tourism board on a video describing the hawkwatch and Kiptopeke State Park, provided regular blogs for website visitors and contributed a blog to the Chesapeake Foundation.

In Figure 1 below, it was clear that migration was well underway by September 1. Ospreys are on the move and potentially Mississippi Kites and Swallow-tailed Kites would be detected in greater numbers if the count was to start in mid-August. In addition, there are many visitors in Kiptopeke State Park at that time affording a great opportunity for education.

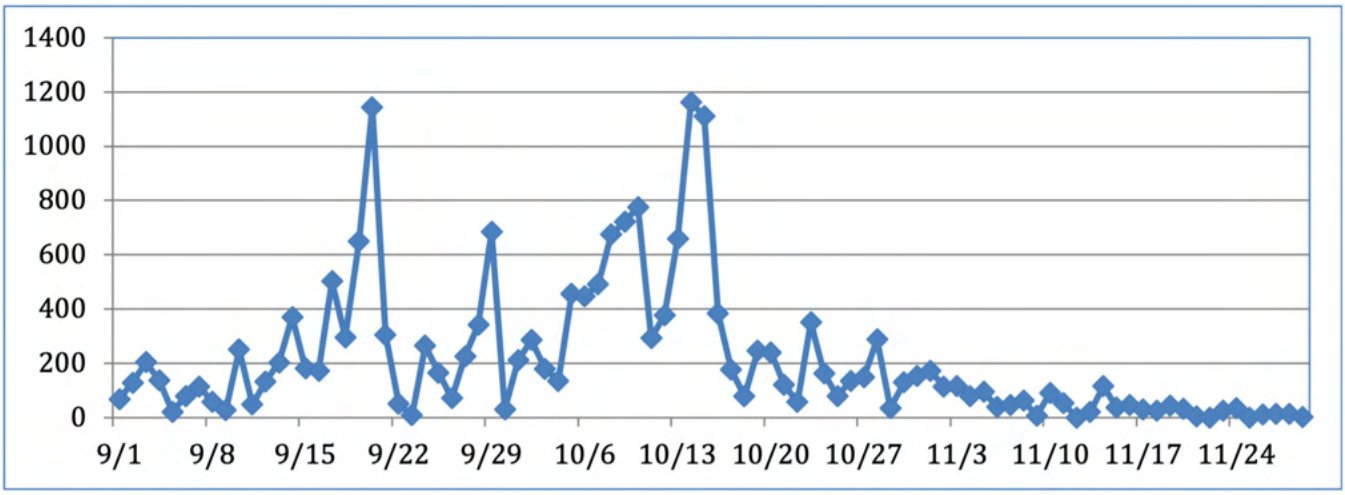


Figure 1. Graph shows total raptor count per day for the 2021 season

The species account summaries on the next pages were based on data from the current year back to 1995. Before that, coverage for the entire season was not complete and therefore not comparable for the count period. Means and standard deviations were calculated for all birds during the two time periods. The standard deviation is important to view when considering the mean as it is a measure of the variation associated with the dataset. In addition, vulture numbers were removed from the analysis as they have not been counted in recent years. Vulture migration was observed from mid-October onwards with as many as 700 individuals counted several times on a single day. It would certainly seem appropriate to return to counting these birds during a limited time period of the season.

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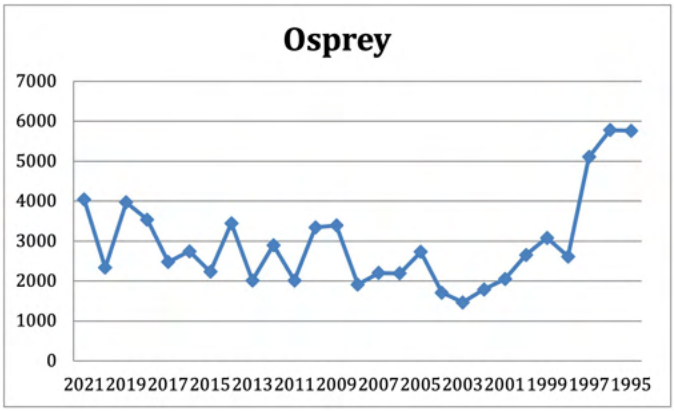
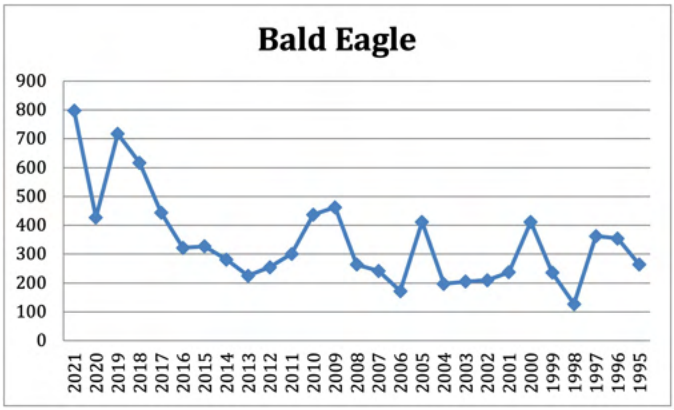



2021: 4039 • 10-Year Average: 2969 ± 734
Historic Average: 2944 ± 1160

This was a very good year for Ospreys and reflects the gradual increase of this species over time. During large flights, typically Ospreys obtain great heights (upwards of 3000 ft) and can be extremely difficult to see when there are no clouds. Birds passing low to the west that follow the bay line are virtually impossible to detect now due to vegetation growth.

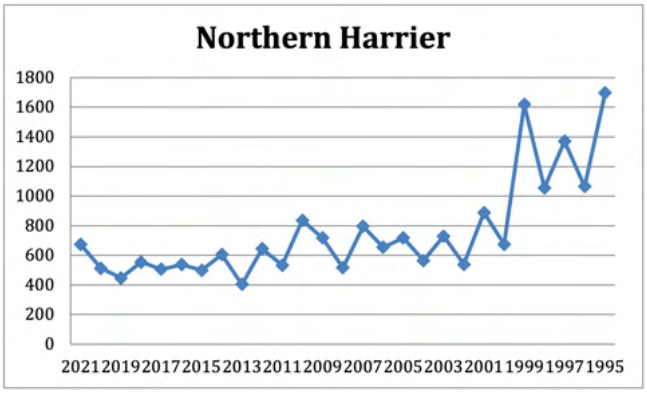
The highest count occurred on 09/20/21 with 366 individuals counted. Other days of over 150 birds were 09/03; 09/10; 09/14; 19/19; and 10/01. Numbers dropped off dramatically after the end of October.




2021: 797 • 10-Year Average: 441 ± 202
Historic Average: 345 ± 162

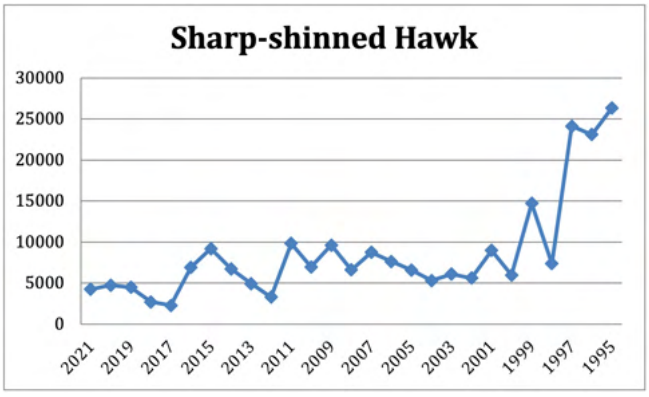
As with Ospreys, this was clearly an excellent year for Bald Eagles and reflects the increase of this species over time. The highest count was 11/14 with 49 birds recorded, a new record high and the season total was a new record high.

Bald Eagles are the most difficult raptor species to count for the hawkwatcher, as it can be difficult to differentiate between the local individuals and the true migrants. As a result, only individuals that took strong southerly flight paths were counted. If a distinctively plumaged individual that had gone south was seen flying north later in the day, a Bald Eagle was subtracted from the data sheet. However, it is also worth noting that during the hawk counter's presence working at Kiptopeke State Park throughout the summer months, few Bald Eagles were seen incidentally flying over the area. Still, there is a strong possibility that late-season birds were wintering in and around the park, so it is necessary to use caution when counting individuals of this species.




2021: 673 • 10-Year Average: 538 ± 84
Historic Average: 754 ± 338

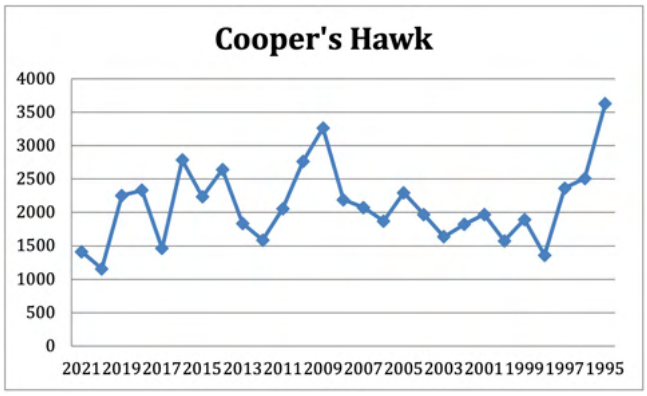
Northern Harrier showed a strong year. It seems from the variation around the mean that the 10-year average is relatively stable. Peak count occurred 10/15/21 with 53 individuals




2021: 4260 • 10-Year Average: 4958 ± 3121
Historic Average: 8643 ± 6284

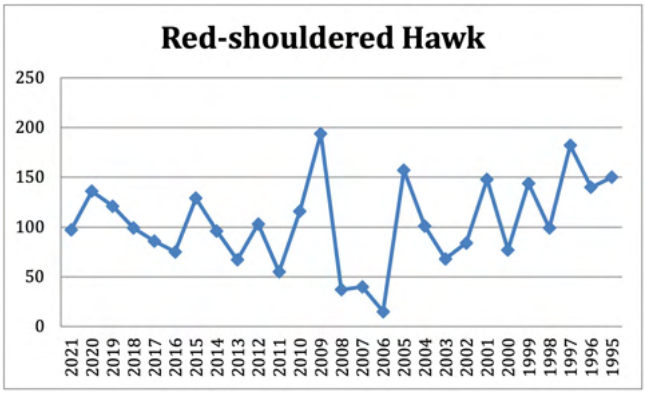
"Sharpie" numbers seem to vary widely from year to year and impact the total bird count

due more to weather conditions and changing frontal patterns rather than changes in population as other sites, such as Cape May, experience huge concentrations when we have far less when NW winds become more common. However, it does seem that the long term count trend is heading down. We had no consistent days with this bird until 09/20 which is rather late. Peak flight occurred 10/14 with 540 birds with strong flights the day before and the day afterwards too.



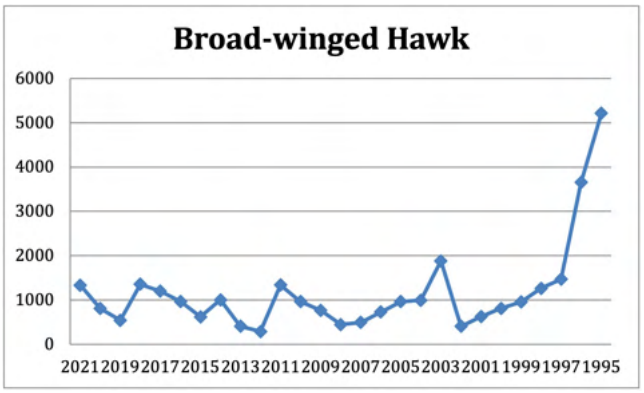

2021: 1412 • 10-Year Average: 1970 ± 557
Historic Average: 2108 ± 577

Like "Sharpies," "Coop" numbers vary greatly from year to year. Their use of urban and disturbed habitats to nest in may help their overall population although it appears to show distinct peaks and troughs typical of predator-prey cycles. They appeared earlier than Sharpies; they were the only accipiter present for the first half of September. Peak count occurred on 10/14 with 107 birds.



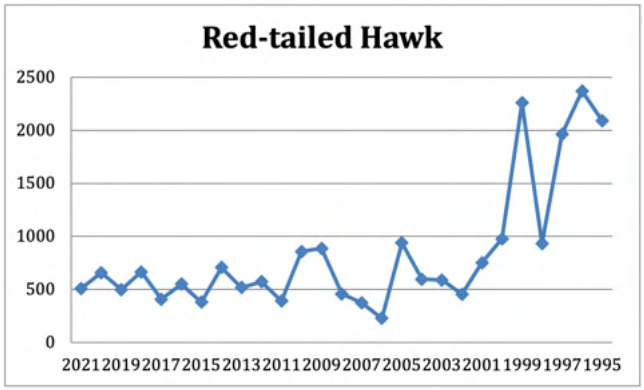

2021: 97 • 10-Year Average: 101 ± 22
Historic Average: 104 ± 44

Like red-tails, red-shouldered counts were a little below average. Temperatures were extremely mild in November for much of the period probably causing the migration to either be delayed or short stopping some individuals further north. No birds were found in September. Peak flight was recorded on 10/15/21 with 10 birds.




2021: 1336 • 10-Year Average: 851 ± 361
Historic Average: 1167 ± 1037

This season certainly reflected a high count for recent years. It is a very difficult bird to count as birds tend to drift to the end of the peninsula and turn back when observing the water. As the day goes on more birds accumulate as birds drift back and forth. They also typically fly very high and small flocks can easily get lost when there are no clouds in an otherwise blue sky. Peak counts were recorded on 9/19/21 with 226 birds, and high numbers the day before and afterwards. It is interesting to note that many birds at the beginning of the season were adults, shifting to predominantly hatch year birds by mid to late season.




2021: 508 • 10-Year Average: 546 ± 108
Historic Average: 836 ± 601

Like Red-shouldered Hawks, red-tail counts were a little below average. Counts picked up in the later part of October and November with a peak day on 11/05/21 with 38 individuals.

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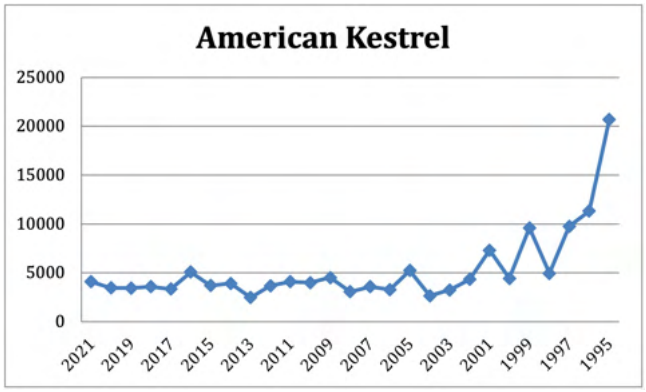
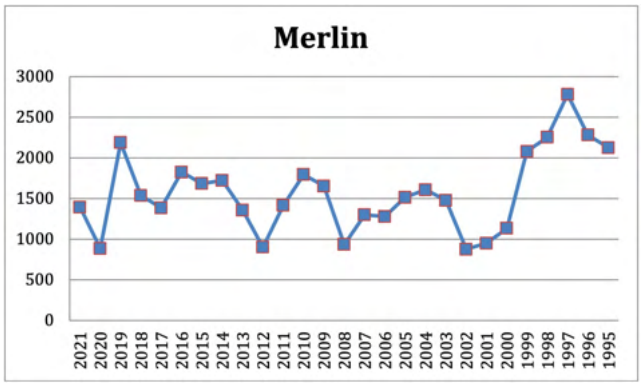


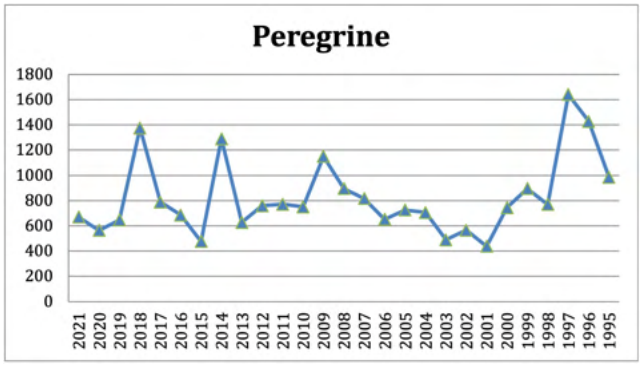

2021: 4098 • 10-Year Average: 3680 ± 655
Historic Average: 3291 ± 3796

This was a strong year for Kestrels. The two peaks were 357 individuals on 10/14/21 and 422 on 9/20/21. This is another species that seems to be greatly affected by weather patterns.




2021: 1935 • 10-Year Average: 1488 ± 400
Historic Average: 1568 ± 489

Merlin numbers were a little low this year. Peak occurred early on 9/17/21 with 161 individuals. Numbers dropped dramatically after mid-October.




2021: 670 • 10-Year Average: 788 ± 301
Historic Average: 826 ± 304

This is another species that shows peaks and troughs in its population curve over the long-term. Peak occurred in early to mid-October with 94 individuals recorded on 10/6/21. By November bird numbers had dwindled.

## Non-raptor Highlights

September 1 – 4920 Eastern Kingbirds flying south in loose flocks. On same day 988 Bobolinks.
September 2 – 2 Dickcissels
September 3 – 11 Cattle Egrets
September 5 – 1 Rufous/Allen's Hummingbird
September 6 – 2 American Avocets – a new species for the hawkwatch platform
September 8 – 1 immature Magnificent Frigatebird
September 9 – American Bittern
September 12, 19 & 24 – Grasshopper Sparrow
September 14 – Eurasian Collared Dove
September 16 – Blue-winged Warbler
September 24 – 200 Gray Catbirds
September 30 – 1200 Northern Flickers
October 6 – 12,000 Tree Swallows
October 9 – 10,000 Yellow-rumped Warblers
October 21 – 1 adult male Ruby-throated hummingbird – quite late
November 2 – 8 White Pelicans
November 6 – 1 Dickcissel
November 15 – White-crowned Sparrow
November 17 – 27,000 Robins
November 18 – 1 Ruby-throated/Black-chinned Hummingbird
November 23 to 27 – 1 Purple Martin or almost as likely a Southern Martin
November 24 – 1 Lincoln's Sparrow
November 28 – 14 White Pelicans

| Table 1. 2021 totals and ten-year averages, 1995+ averages of the eleven most common raptor species at Kiptopeke | | | |
|---|---|---|---|
| **Species** | **2021 Season** | **Ten-year (2012-2021) Average** | **1995-2021 Average**** |
| Osprey | 4039 | 2969 ± 734 | 2944 ± 1160 |
| Bald Eagle | 797 | 441 ± 202 | 345 ± 162 |
| Northern Harrier | 673 | 538 ± 84 | 754 ± 338 |
| Sharp-shinned Hawk | 4260 | 4958 ± 3121 | 8643 ± 6284 |
| Cooper's Hawk | 1412 | 1970 ± 557 | 2108 ± 577 |
| Red-shouldered Hawk | 97 | 101 ± 22 | 104 ± 44 |
| Broad-winged Hawk | 1336 | 851 ± 361 | 1167 ± 1037 |
| Red-tailed Hawk | 508 | 546 ± 108 | 836 ± 601 |
| American Kestrel | 4098 | 3680 ± 655 | 3291 ± 3796 |
| Merlin | 1395 | 1488 ± 400 | 1568 ± 489 |
| Peregrine Falcon | 670 | 788 ± 301 | 826 ± 304 |
| | | | |
| **Total** | 19350 | 18395 ± 3193 | 24646 ± 13168 |

*Count coverage hours were inconsistent prior to 1995.

** Turkey Vultures and Black Vultures were subtracted from historic counts when calculating total averages for purposes of consistency, since these species are no longer counted.

***Some funding was again provided by a grant from the Mary Pulley Wildlife Preservation Fund of the Mathews Community Foundation.

*Acknowledgments*

Thank you to Coastal Virginia Wildlife Observatory and Brian Taber for giving me the incredible opportunity this season as the hawkwatcher at Kiptopeke. A special thank you to Nancy Barnhart, Brian Taber, Tracy Tate, Matt Antony and Bob Ake for covering the hawkwatch during my days off. Also, a special thank you to Allison Sheldon for assisting with the count and spotting such great birds. There are far too many fabulous visitors to thank individually, but Kiptopeke does foster a great family and I appreciate all of your help and support.

# THE BIG SIT 2021

By Nancy Barnhart

CVWO participated for the 23rd year in a fun, "slightly-competitive" birding event called the Big Sit. The October 10 event was sponsored by the New Haven Bird Club which initiated the "competition" in 1992. The goal of the one-day event is to find as many species of birds as possible from a 17-foot diameter circle (or rectangle as the case may be). In 2021 there were teams from the US, Australia, Guatemala, and Sweden. Data from the day is entered into eBird to provide a snapshot of global migration.

The CVWO team of hawkwatcher Steve Dougill, and volunteers Steve Thornhill, Tracy Tate, and Nancy Barnhart tallied birds for 11 hours from the Kiptopeke Hawk Platform. Over the course of the day many visitors stopped by and joined in the fun, calling out high-flying hawks and nearby songbirds. The event provides a great opportunity to focus on birds and conservation.

The team counted a total of 55 species including 5320 Tree Swallows, 1400 Yellow-rumped Warblers and 221 Sharp-shinned Hawks.


***Hawkwatcher Steve Dougill "coaches" Team CVWO during the Big Sit. Photo by Nancy Barnhart***

The total of all birds counted by Team CVWO was a remarkable 8385 individuals. There were some very tough teams out there and CVWO was happy to be tied for 22nd out of 92 teams.

# SAW-WHET OWL REPORT 2021

By Bob Reilly

In fall 2021 we operated three banding stations as part of Project Owlnet, a consortium of North American stations focusing on the migration and wintering ecology of the Northern Saw-whet Owl. One of these, run by Kim Cook and Julie Kacmarcik, is in the Powhatan Wildlife Management Area. A second is operated by me on my property in Powhatan about 10 miles east of Kim and Julie's site. The third site, run by Rita Shultz and Mick Knight, is in Goochland County, about 25 miles due north of the Powhatan Wildlife Management Area site.

2021 was an off year for saw-whets, especially this far south. Stations in Pennsylvania and farther north did better. The breeding numbers in Canada were good, but the owls did not move this far south in significant numbers. The table below of combined numbers for our three stations for the last 10 years again illustrates the substantial year-to-year variation for this species on the Piedmont of Virginia, as well as the absence of a reliable cyclical pattern at this latitude.

| Year | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|---|---|---|---|
| Newly banded owls | 370 | 58 | 35 | 36 | 91 | 6 | 100 | 19 | 43 | 16 |
| Recaptures of owls banded at other stations | 29 | 4 | 1 | 9 | 11 | 1 | 3 | 2 | 7 | 1 |
| Returns of owls banded in previous years | 9 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| **TOTAL OWLS CAPTURED** | **408** | **63** | **36** | **45** | **102** | **8** | **103** | **21** | **50** | **18** |

# COLLEGE CREEK

# HAWKWATCH REPORT 2021

***Hawkwatchers Brian Taber (left) and Nancy Barnhart (right) track raptors crossing the James River from the Colonial Parkway. Photo by Shirley Devan***

By Brian Taber

The second-best month ever, in March and the second-best April combined for a record season total, surpassing last year's record mark by 278.

An unusual Red-tailed Hawk with two white inner primaries on the right wing was seen on April 17. Eleven days saw flights of 100+ birds, the most in a season.

This was the 25th consecutive season of the College Creek Hawkwatch, located on the James River, 3 miles southeast of Williamsburg, conducted by Coastal Virginia Wildlife Observatory. It's the only late winter and spring hawkwatch annually run in Virginia. It was conducted from March 1 to May 31.

In recent years, we had decided to do fewer days per season, as continuous scanning over our wide area is tiring and difficult and our early season and late season totals are also rather low. So, picking the better flight days was the strategy, to assess the season's migration, even though that would surely result in higher bird-per-hour numbers than in previous seasons. However, in 2021, we had excellent weather and very dedicated coverage by volunteers, which resulted in tying the highest day coverage at 85 and the highest hour coverage at 215.5.

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The total is also misleading. The Turkey Vulture total was the all-time high as was the Black Vulture total, but most other species were down. The Sharp-shinned Hawk total was just 2 above last year, making it 3rd lowest all-time. Kiptopeke's fall hawkwatch totals for Sharp-shinneds have recently been quite low as well. It will be interesting to see how other spring hawkwatches have fared with this species recently.

The protocol remained the same as in the previous 24 seasons: a daily watch was conducted, weather permitting, between about 9 a.m. and 1 p.m., Eastern Standard Time. This has been shown to be the time period when hawks and vultures typically cross the river, apparently taking advantage of the air warming in the morning. Attempts to see birds crossing earlier and later in the day have not been met with success. Also, these mostly morning counts regularly tend to show these flights both beginning and ending, usually with a bell-shaped curve. All hawks and vultures crossing the river headed north were tallied.

The biggest days were 155 on Apr 6; 145 on March 2; 136 on March 3 and 134 on March 21; and there were another 7 days over 100, for the most 100+ bird days in a season.

**Species Accounts**

- Black Vultures, at 182 were highest all-time
- Turkey Vultures at 2168 were highest all-time and 80 % of the total, the highest % ever
- Ospreys at 81 were the lowest since decent coverage began in 2003; last year was also very low at 109; theres is no good explanation for low total; birds were constantly seen fishing and circling and nesting, as usual, but northbound movement was clearly lacking on our coverage days.
- Bald Eagles (immatures) at 111 were down from last year's the all-time best of 162
- Northern Harriers at 35 rebounded from last year's all-time low of 11
- Sharp-shinned Hawks at 25 were 3rd-lowest all-time
- Cooper's Hawks at 24 were 3rd best all-time and like last year were surprisingly near the Sharp-shinned total
- Red-shouldered Hawks are scarce, but at 9 were above the average of 6
- Broad-winged Hawks, rare at this site, were at 8 with 4 on the same day
- Red-tailed Hawks at 42 rebounded from last year's lowest ever total of 15
- American Kestrels last year at 7 tied for the lowest-ever and this season's 11 was not much better; still a species of concern across the east in spring and fall
- Merlins, rare at this site, were at 2
- Several Mississippi Kites and Swallow-tailed Kites were recorded in eastern Virginia this year, but just 1 Mississippi was found at the Hawkwatch.

**Monthly totals**

March was 1615 on 29 days; April was 823 on 28 days and May was 266 on 28 days.

Birds per hour by month: March was 22; April was 11 and May was 4.

Birds per hour for the season was 13, just about on the 10-year average.

The 1,000th bird of the season, a milestone we track, was seen on March 21; it was the second-earliest date for that. We were also the fastest to 2,000 birds, on April 8.

Adult Bald Eagles were regularly seen overhead and over Kingsmill and Hog Island, presumably breeding birds, which again caused us to be very conservative. No adults were recorded as migrating.

Another interesting way of looking at the data is to see on how many days a particular species was recorded. The numbers below show those days, out of a total of 85 days of coverage:

- Black Vulture 37 days
- Turkey Vulture 73 days
- Osprey 32 days
- Bald Eagle 47 days
- Northern Harrier 22 days
- Sharp-shinned 15 days
- Cooper's Hawk 19 days
- Red-shouldered Hawk 8 days
- Broad-winged Hawk 5 days
- Red-tailed Hawk 22 days
- American Kestrel 10 days
- Merlin 2 days

Non-raptor highlights included:

- 47 American White Pelicans on Mar 4 and others were seen either right over the Hawkwatch or over Hog Island for much of the season;
- a late Hooded Merganser on May 20;
- an "eastern" Willet on May 3;
- Black-bellied Plovers on May 16 and 20;
- 2 Black Terns on May 10;
- a Rough-winged Swallow on a new local early date of March 8;
- a Purple Finch on March 9, unusual here;
- a Wilson's Warbler on May 12.

Blue Jays made a record showing last fall at Kiptopeke and perhaps due to that movement, huge numbers were seen this spring at Ft. Smallwood Hawkwatch near Baltimore, while none were seen crossing the river here.

The 2021 daily totals were entered into the database at Hawkcount.org, which also sends the data to eBird.

Visitors stopped by on many days from a number of states and countries.

Many thanks to regular volunteers Bill Williams and Nancy Barnhart.

**2021 Season Totals with previous 10-year average in parentheses**

| Species | 2021 Total (10 yr avg) | 2021 Peak Flight & Date | Date Range of Occurrence |
|---|---|---|---|
| Black Vulture | 182 (97) | 27 on Apr 6 | Mar 3 to May 20 |
| Turkey Vulture | 2168 (1400) | 140 on Mar 2 | Mar 1 to May 31 |
| Osprey | 81 (183) | 9 on Mar 28 | Mar 1 to May 14 |
| Mississippi Kite | 1 (1) | 1 on May 20 | May 20 |
| Swallow-tailed Kite | 0 (0) | | |
| Bald Eagle | 111 (103) | 12 on May 14 | Mar 2 to May 28 |
| Northern Harrier | 35 (29) | 3 on 5 dates | Mar 11 to May 24 |
| Sharp-shinned Hawk | 25 (45) | 3 on 3 dates | Mar 9 to May 1 |
| Cooper's Hawk | 24 (13) | 2 on 5 dates | Mar 3 to May 20 |
| Red-shouldered Hawk | 9 (6) | 2 on Mar 9 | Mar 2 to May 19 |
| Broad-winged Hawk | 8 (7) | 4 on May 19 | Apr 7 to May 19 |
| Red-tailed Hawk | 42 (31) | 5 on Apr 6 | Mar 3 to May 31 |
| American Kestrel | 11 (18) | 2 on Apr 13 | Mar 2 to Apr 20 |
| Merlin | 2 (5) | 1 Mar 22; 1 May 12 | Mar 22 to May 12 |
| Unidentified | 5 | | |
| **Total** | **2704 (1944)** | **155 on Apr 6** | **Mar 1 to May 31** |

# SONGBIRD RESEARCH

***Top photos, left to right: Prothonotary Warbler by Jim Easton and Purple Martin Colony by Cheryl Jacobson. Bottom photos, left to right: Chimney Swift by Steve Thornhill and Prothonotary Warbler by Dave Youker.***

## Why We Study Songbirds

"Birds are important because they keep systems in balance: they pollinate plants, disperse seeds, scavenge carcasses, and recycle nutrients back into the earth. But they also feed our spirits, marking for us the passage of the seasons, moving us to create art and poetry, inspiring us to flight and reminding us that we are not only on, but of, this earth."

—***Melanie Driscoll***, *Director of bird conservation for the Gulf of Mexico and the Mississippi Flyway*

The loss of any species is a great loss to all of us. We should know how our behaviors impact all species and know what bird species especially need our help.

Since 1970, more than one in four birds in the U.S. and Canada have disappeared, which translates to a loss of 2.9 billion breeding adult birds, according to research published September 2019 by the journal Science,

These bird losses are a strong signal that our human-altered landscapes are losing their ability to support birdlife. These large species losses signal an urgent need to avert continued biodiversity loss and potential collapse of the continental avifauna.

[from the 2019 *Science* article].

# PURPLE MARTIN AND CHIMNEY SWIFT REPORTS

***Shan Gill and Bill Vanzetta install a Purple Martin pole at Ford's Colony. Photo by Cheryl Jacobson***

By Cheryl Jacobson

In 2021 CVWO joined the Williamsburg Bird Club in their efforts to lessen the decline of the Purple Martin population. Purple Martins in the East depend on us to provide nest sites and their population is seriously declining nationwide.

To ensure the success of a colony, gourds must be cleaned and free of disease which also prevents other species from entering the gourds. This requires a pole system that can be easily lowered so the gourds are accessible. Many of the older systems did not include this feature. Ford's Colony had an older system and a struggling Purple Martin population with just a few remaining pairs. CVWO funds replaced the pole and an old metal house in disrepair. During 2021 fall migration, dozens of Purple Martins were seen exploring this site, so it is expected that the upgrade of the system will be productive and successful.

***Ford's Colony crew works to install the Chimney Swift Tower. Photo by Cheryl Jacobson***

By Cheryl Jacobson and George Martin

Historically, Chimney Swifts nested and roosted in standing dead tree trunks, but with the decreased availability of old-growth habitat, they adapted to the urban environments and used chimneys as nesting and roosting habitat.

Unfortunately, as historic buildings are removed and chimneys are capped, the Swifts' urban habitat has declined. They have suffered a 65% population decrease since the 1960's, and are classified as Vulnerable by the International Union for Conservation of Nature. This is just one step from Endangered.

https://www.potomacaudubon.org/conservation/conservation-initiatives/chimneyswifts/

CVWO recently joined with Williamsburg Bird Club and Wings (Ford's Colony Bird Club) to support the construction of a Chimney Swift Tower in Ford's Colony in James City County

At this time, using donations from various sources, including those donated by CVWO, Ford's Colony Woodworker's Club has completed carpentry on the Tower and it was installed on site at Ford's Colony in January 2022.

# PROTHONOTARY WARBLER NEST MONITORING REPORTS

**Prothonotary Warblers on the Dragon Run**
by Gary Driscole

***New Prothonotary Warbler nestlings. Photo by Shirley Devan***

For spring and summer 2021, I continued to monitor the 20 Prothonotary Warbler boxes in three locations along the Dragon Run, primarily in King & Queen County. I started monitoring on March 30 and ended on July 27, 2021.

The results this year were much higher than in 2020. I had 53 fledglings compared to 32 in 2020. However, this remains well below the high count of 76 in 2017.

There were eggs that disappeared and unfertilized eggs. Two boxes disappeared during the middle of the season, and I replaced them with new boxes.

Here is a brief summary of the boxes on the Dragon Run:

**Big Island:** There was activity in 7 of 11 boxes. There were 34 Prothonotary Warbler and 7 Carolina Chickadee fledglings at this location. There were no other chickadee nests at other locations, a low count for chickadees. One Prothonotary Warbler built a nest on top of a chickadee nest.

**Mascot Bridge:** Three boxes out of 7 had 12 Prothonotary Warbler fledglings.

**Herrin Property:** Two boxes out of 2 produced 7 Prothonotary Warbler fledglings.

The total fledglings were 53 Prothonotary Warblers and 7 Carolina Chickadees.

**Prothonotary Warblers in Newport News**
by Dave Youker

Final tally for 2021 at two locations in Newport News was 21 Prothonotary Warblers from Harwoods Mill reservoir and none from Lee Hall reservoir. Also 17 Carolina Chickadees were spread across the two reservoirs.

And just like 2019 and 2020, there was no warbler nesting activity at Lee Hall reservoir.

Thanks to Newport News Parks and Recreation for their continued support of this project.

## Prothonotary Warblers in James City County at Powhatan Creek Trail

By Shirley Devan

***Carolina Chickadee nestlings. Photo by Jim Easton***

On foot we monitored the seven boxes stationed in the Powhatan Creek swamp. Four boxes hosted Carolina Chickadees early in the season, but only one box was successful in fledging five young. Other CACH nests were victims of predators, infertility, or abandonment.

Six boxes showed evidence of Prothonotary Warbler nest activity. However, only two nestlings were banded from these six boxes.

Box 2 had a PROW nest with 3 eggs that were washed away when the box flooded in mid-June. We recaptured the female June 11. She had originally been banded May 30, 2020 at box 7

Box 3 had two PROW nests. The first nest with 3 eggs in late April was a victim of a predator. A predator baffle was installed after this event. The second nest with 4 eggs June 22 eventually fledged 2 nestlings, which were banded July 8. Interestingly, the female with the 4 eggs, captured June 27, was the same female with the 3 eggs in box 2 which washed away in the flood.

## Prothonotary Warblers in James City County at Chickahominy Riverfront Park

By Shirley Devan

Volunteers monitored 10 boxes in 2021 after not monitoring any boxes in 2020 for two reasons. COVID prevented volunteers from riding together in a canoe to check the boxes. Also, in 2020, the Park's river and creek shorelines were undergoing radical improvements to reduce erosion and install living shorelines. At the Park's request, we removed 7 boxes at the end of the 2019 season in the construction areas.

***New shoreline on Gordon Creek at Chickahominy Riverfront Park. Photo by Shirley Devan***

In spring of 2021, we re-installed five boxes on Gordon Creek making every effort to place the boxes where they had been previously if the substrate was agreeable.

Three boxes hosted Carolina Chickadees early in the season. Four boxes fledged a total of 16 PROW nestlings, seven of which were banded. We estimate that an additional 9 fledged without banding from the other two boxes. We captured and banded one new PROW female on four eggs. We did not recapture any females in 2021.

We are grateful for the assistance from the staff at Chickahominy Riverfront Park – particularly Ben Knecht – for allowing our team to use a canoe at no charge on a weekday, helping us remove the canoe from its storage rack, and positioning it for launch.

*Continued on next page...*

**Prothonotary Warblers at Northwest River in Chesapeake**

By Shirley Devan

***Nest burials in Prothonotary Warbler box at Northwest River Park. Photo by Shirley Devan***

Many adjectives can describe the 2021 Prothonotary Warbler (PROW) nesting season at Northwest River Park in Chesapeake, VA: discouraging, disheartening, strangest, saddest, frustrating, confusing, mysterious, unprecedented, among others.

One thing we know for certain: the 2021 story of the 84 PROW boxes at Northwest River will be remembered for the high number of "nest burials" and "nest abandonments" and lowest number of nestlings.

Why? We don't know for sure. What we do know and observed:

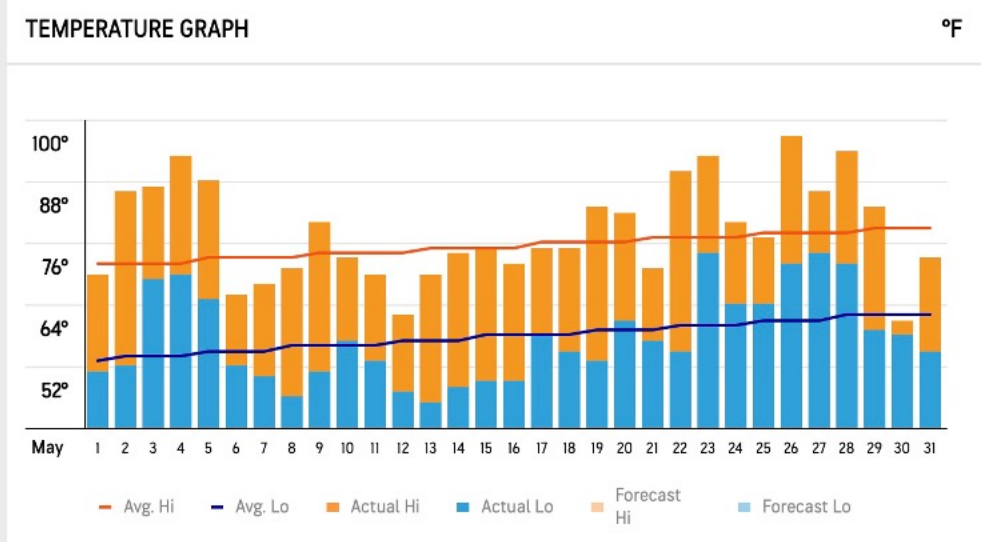
•PROW females laid 570 eggs in 2021 – almost as many as in 2019 (579 eggs). But only 166 eggs hatched – less than 30%. Usual percentages are above 65%

•Of these 166 eggs, 88 nestlings were banded. Eighty-eight banded nestlings is the lowest total number of banded nestlings since boxes were installed at Northwest River in 2009. Of the 88 nestlings banded, 68 were banded in the first clutch – all by May 25. Only 20 nestlings were banded July 1 – 20 – in late second clutches. The number of nestlings who "fledged without banding" is estimated at 65.

- Forty-three of the 84 boxes showed evidence of "nest burials" – 190 eggs (estimated) and 54 nests buried. A "nest burial" occurs when adults take over an existing nest that has eggs or nestlings and build another nest on top of the existing nest.
- Forty-four of the 84 boxes showed evidence of "abandoned nests" – 164 eggs (estimated) and 45 nests abandoned. We counted an "abandoned nest" as one in which the female does not incubate the eggs after she lays them.
- Twenty-two of the 84 boxes (more than 25%) showed evidence of BOTH nest burials and abandoned nests.
- Fifteen females were "recaptured" in 2021. This is less than a 1/3 of the number recaptured in 2019. Recapturing females when they are incubating second clutches reveals nest box fidelity over the season. When we were unable to capture females incubating second clutches, we were unable to gather information about which females may have buried earlier nests.
- Most nest burials were observed during the second half of May/early June when females lay their first clutches of eggs, and when nestlings are usually hatching and then fledging ~10 days later. Fifty-four nest burials in 43 boxes buried 190 eggs.
- Most nest abandonments were observed during what is usually the second clutch period – June and early July. Instead of incubating eggs in second clutches, females abandoned 164 eggs in 45 nests in 44 boxes, more than 50% of the boxes.
- Abandoned second clutches resulted in a very low number of nestlings hatched and banded in the second clutches. Only 20 nestlings were banded July 1 – 20.

**Possible Causes of Nest Burials and Nest Abandonments**

September 16, I talked at length with Dr. Bob Reilly, my supervisor and Master Bander for our Coastal Plain Prothonotary Warbler boxes. After reviewing the 2021 nesting results – low number of nestlings, high number of nest burials and abandonments, low capture and recapture rate for females – and the extreme low temperatures in May, Bob believes the extent (length and severity) of the cold event in the second and third weeks of May occurred at THE critical time for the development of the first clutches. Bob believes that the colder than normal temperatures stressed the females such that they focused first on keeping themselves alive and fed and essentially abandoned their first clutches. He believes that the possible lack of food resulting from the cold temperatures was only a secondary contributor to the abandonment of the first clutches by the stressed females.




***Source***: https://www.accuweather.com/en/us/chesapeake/23324/may-weather/331244?year=2021

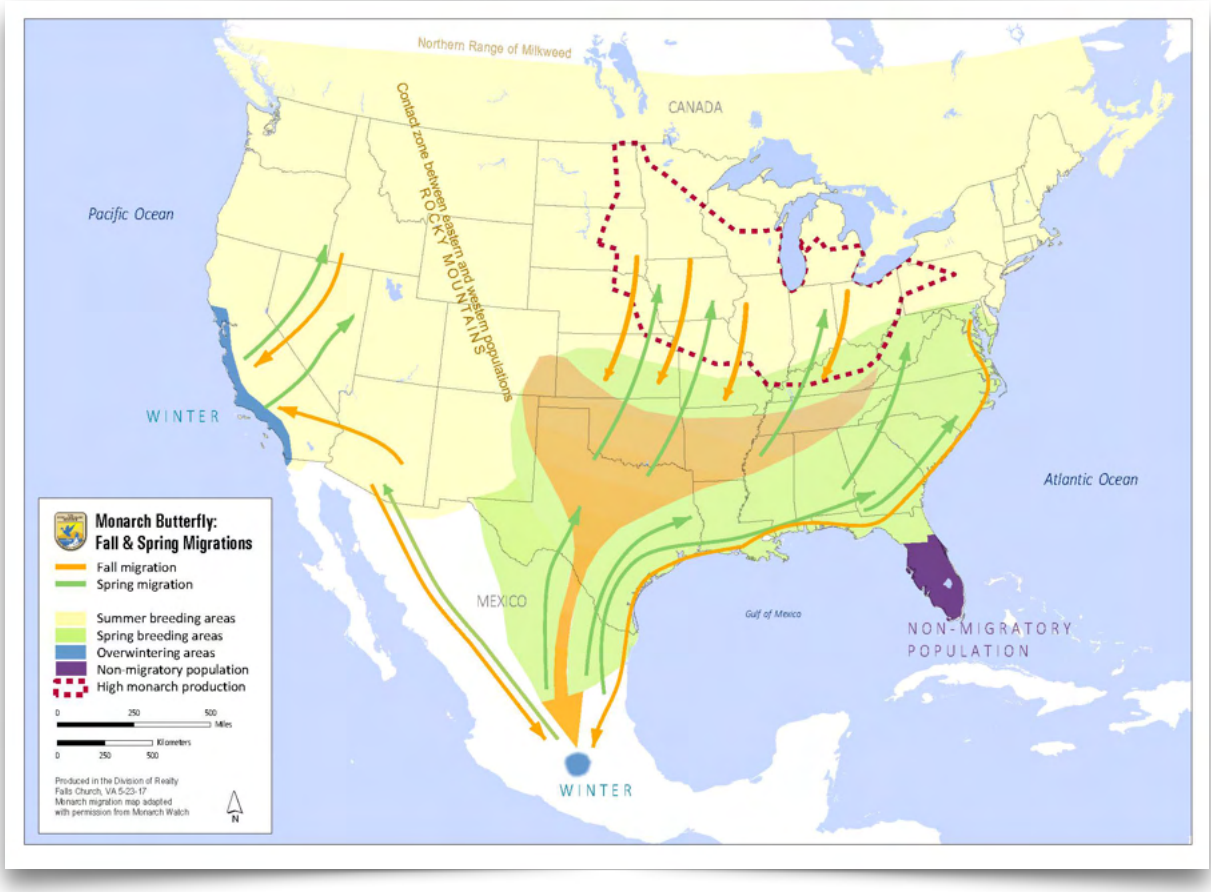
Once the females recovered, their first nests were no longer viable. So, they built a second nest on top of their first nest (they buried their own first nest!) and laid another clutch of eggs. We know what strong site and box fidelity the females have. So, they returned to "their" box to lay another clutch. With the second clutches and the high number of abandoned nests, Bob believes that the females just did not have enough energy to incubate and raise a second clutch. Thus, they saved themselves and abandoned their second clutch of eggs.

Considering the number of nest burials, some with two in one box, and then subsequent abandonment of second clutches, it is likely that some females laid the equivalent of three clutches of eggs or close to 10 or 11 eggs each during the 2021 season. If we had been able to capture more females on second clutches, we would have a better idea of the number of females trying to bring off at least one successful clutch.

Bob believes the 2022 season will return to "normal" with high success rates of first and second clutches.

Many thanks to the numerous volunteers who committed many hours in the field to document the Prothonotary Warblers at all the sites. We are grateful to the staff at Northwest River Park, and Lauren Ewell, our primary contact at the park, who was a friendly face each visit. Many thanks to the staff for storing our canoe over the winter and transporting our canoe several times from the maintenance area to the launch site.

# BUTTERFLY PROJECTS




***Monarch Butterfly Fall & Spring Migration. Source: monarchjointventure.org***

Why It's Important

Butterflies are important pollinators and necessary for their role in the food chain. They are indicators of environmental health. To assist in the effort to conserve and restore habitat, CVWO volunteers help manage butterfly gardens at Kiptopeke State Park, the Eastern Shore of Virginia National Wildlife Refuge, the Williamsburg Botanical Garden, and the Jamestown Marina. The Observatory sponsors the annual July Delmarva Tip Butterfly Count and co-sponsors the August Williamsburg Area Butterfly Count, both sanctioned by the North American Butterfly Association (NABA). Data from these counts are compiled and submitted to NABA. Observatory volunteers also conduct butterfly surveys year round and data are sent to eButterfly.

In 1998 CVWO established a Monarch Butterfly Migration Program as a response to the need to study this declining species. Due to several factors, Monarch butterfly populations, particularly Eastern populations, have severely declined. Without concerted conservation efforts and study, this species is at risk of becoming “quasi extinct.”* To study this species, CVWO hires a Monarch biologist to tag Monarchs and conduct surveys and point counts on the Eastern Shore of Virginia. Data are submitted to MonarchWatch at the University of Kansas. As reported by MonarchWatch, in recent years, several Monarchs tagged by CVWO biologists have been found on their wintering grounds near Mexico City.

*source: MonarchJointVenture

Watch CVWO’s Monarch films here.

# MONARCH BUTTERFLY MIGRATION PROGRAM

***Tagged Monarch (Tag Number AEHG-634) nectaring on Blue Mistflower. Photo by Allison Sheldon***

By Allison Sheldon

The 24th season of the Coastal Virginia Wildlife Observatory's Monarch Migration project ran from September 22nd to November 22nd. The Monarch project took place at four area locations on the Eastern Shore of Virginia: Kiptopeke State Park (KSP), Eastern Shore of Virginia National Wildlife Refuge (ESVNWR), Picketts Harbor Natural Area Preserve, and Magothy Bay Natural Area Preserve. For this project Monarch butterflies were tagged, roost surveys were conducted, and point counts occurred. Tagging of Monarchs was conducted at all four area locations; roost surveys were only conducted at ESVNWR due to known past roosting occurring here; and point counts were conducted at KSP and ESVNWR. Tagging of Monarchs occurred daily, while point counts occurred twice a week, and roost surveys only occurred when large flights of monarchs occurred. Rain, low temperatures, and high winds halted these events as the butterflies are known to stop or shift migration, making capture and observation of Monarchs difficult.

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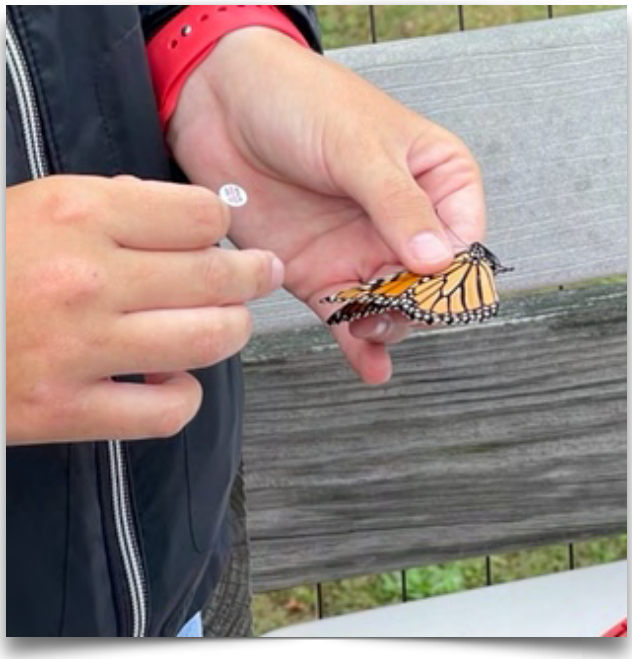
## Tagging

During the 2021 season, 416 monarchs were tagged on the Eastern Shore of Virginia. Comparing the 2021 season to the 2020 season, 228 Monarchs were tagged in 2020, showing an increase over the past year. It is important to note here that an increase in number from one year does not mean the population is growing, but several factors could affect this such as better weather for the 2021 season enabling Monarchs to stop and nectar on the Eastern Shore more in 2021 then in 2020. Compared to 2019 in which 761 Monarchs were tagged, 2021 shows a decrease in the Monarch population movement on the Eastern Shore.

The majority of the migration for 2021 occurred from September 29th- October 23rd. At the four area locations the presence of Monarchs varied. Tagging only occurred at KSP and ESVNWR. Monarchs were sought at all locations, but none were netted at Magothy Bay Natural Area Preserve or Picketts Harbor Natural Area Preserve. This does not mean that Monarchs were not present at these locations, but that at times of high Monarch activity the Monarch Biologist stayed at one location to maximize tagging instead of traveling to another location. Majority of Monarchs were tagged in KSP (99%), with a few (1%) being tagged at ESVWNR. In KSP multiple locations were utilized in finding Monarchs: the Hawkwatch, Taylor Pond Pollinator Garden, Sunday Fields, and the Beach. Of these locations the Sunday Fields was the best to find and tag Monarchs



***Allison Sheldon prepares a tag for a Monarch butterfly. Photo by Martina Coker***

***The tiny tag does not impede the Monarch's flight. Photo by Martina Coker***

## Nectar Sources

There were five main nectar sources this season for Monarch migration: Narrowleaf Sunflower (*Helianthus angustifolius*), Mexican Sunflower (*Tithonia rotundifolia*), Blue Mistflower (*Conoclinium coelestinum*), Spotted Horsemint (*Monarda punctata*), and a variety of Goldenrod species (*Solidago spp.*). Monarchs were also observed on old or drying foliage but could not nectar on these plants. Blue Mistflower (37%) had the highest number, followed by Narrowleaf Sunflowers (32%), Goldenrod spp. (17%), Spotted Horsemint (13%), non-Flowering species (1%), and Mexican Sunflower (<1%). All species except for Mexican Sunflower, could be found in the Sunday Fields in KSP. Flowering species at each location varied in amount and area occupied.

## Sex Ratio

Of the 416 Monarchs tagged, 70% (292) were male while 30% (124) were female. This sex ratio has been consistent with past years. This year's findings compare closely with those of 2020; 69% males and 31% females, and can be compared to the four prior years where males were more abundant at 65% to 35% females. This is consistent with literature reporting a more male-dominant population in the past decade with 43% of overwintering Monarchs reported as females. This also suggests that females may be declining at a faster rate compared to males (Davis and Rendon-Salinas, 2010).

Source: A.K. Davis and E. Redon-Salinas. 2010. Are female monarch butterflies declining in eastern North America? Evidence of a 30-year change in sex ratios at Mexican overwintering sites. Biology Letters.6 (1):45–47http://doi.org/10.1098/rsbl.2009.0632

### Wing Length

All Monarchs tagged in the 2021 season had their wings measured to assess size and for comparison to size in previous years. Monarchs were measured using digital calipers. Measurement was from the tip of the forewing down to where the wing connects to the abdomen. The average wing length for 2021 was 51.3 mm (45.7mm in 2020, 5.6 mm less than 2021), with a standard deviation of 2.56 mm (3.66 mm in 2020, 1.1 greater than 2021). The largest Monarch tagged had a wing length of 57.2 mm (52.83 mm in 2020) and the smallest Monarch tagged had a wing length of 40.5 (32.0 mm in 2020). Of all the Monarchs tagged, the wing length that occurred the most was 52.6 mm (45.5mm in 2020). This year's numbers compare more closely with 2019's data rather than 2020 as in 2019 the average wing length was 51.9 mm (0.6 mm larger than 2021) with a standard deviation of 2.32 in 2019 (0.24 less than this year). The smallest and largest wing length in 2019 were also more comparable with the largest wing length being 59 mm (1.8 mm greater) and the smallest being 40 mm (0.5 mm less).

## Mass, Wing Condition and Damage

Tagged Monarchs were massed and then their wings were assessed for their overall condition and damage. Monarchs were massed on a scale from 1-3, based off the segments of their abdomen. A score of 1 represented a concave abdomen, equal to about one quarter of a gram. A score of 2 showed a parallel abdomen and is equivalent to half a gram and a score of 3 showed a convex abdomen and weighs approximately three quarters of a gram. This system is designed to tell how well fed a Monarch is, rather than its overall size. A ranking of a 1 would indicate a thin or not well-fed monarch and a 3 indicates that the Monarch was very well fed. Of the 416 monarchs, 20.7% had a mass of 3, a decrease compared to 2020 as 36% had a mass of 3. Majority of monarchs had a mass of 2, 71.3% or 296 individuals, this is an increase from the 40% in 2020. The remaining Monarchs, 8.2% or 34 Monarchs were massed as a 1, a decrease from the 25% in 2020.

Wings were rated on a scale of 1-5 with 1 being pristine and newly hatched, 2 being in excellent condition with only a few scales missing, 3 being satisfactory and missing a few patches of scales, 4 being poor and missing many scales, and 5 being very poor also missing many scales, with possibly transparent wings. Of the 416 tagged Monarchs, 120 or 28.9% were rated as a 1, 220 or 53% were rated a 2, 60 or 14.5% were rated as a 3, 15 or 3.6% were rated as a 4, and 0.24% or 1 individual was rated as a 5. Majority of Monarchs tagged this season were rated as being in excellent condition which compares to last years 69% being rated as a two. However this year, more Monarchs were ranked as a 1 compared to last years, whereas only 2 individuals or 0.88% were rated as a 1.

Wing damage was assessed on a scale of 0-4, with 0 indicating no rips or punctures on any winglets and 4 indicating rips, punctures and/or the wing missing on all four winglets. 72.2% or 300 Monarchs had no rips or punctures on any of their winglets. Monarchs with one wing damaged consisted of 76 Monarchs or 18.3%, 29 or 6.9% had damage to two of their wings, 10 or 2.4% had damage to three of their wings, and 1 or 0.24% had damage to all four of their wings.

*Continued on next page...*

Majority of Monarchs tagged this season had a mass of 2 with excellent wing condition, with no damage to any of the four wings. This indicates that the majority of Monarchs tagged were in relatively good condition for their migration to Mexico.

**Point Counts**

Point counts were conducted at KSP at the Hawkwatch and at ESVNWR behind the Visitors Center and at the end of the Butterfly Trail (where flowering species were present along trail). Point counts were conducted for 30 minutes, two days (Sunday/Monday and Wednesday/Thursday) a week between the hours of 10am and 4pm, dependent on rain, temperature, and wind. A total of 28 Monarchs were counted at KSP on the Hawkwatch. Twenty-three were counted behind the Visitors Center at ESVNWR, and 44 were counted along the Butterfly Trail at ESVNWR. A total of 95 were observed across all locations; this is a decrease from the 321 observed in 2020. This decrease could be due to the reduction of only two point counts a week compared to the daily observations that occurred last year. The daily point counts were switched to two days a week to give more time during the day and the week for tagging. The most Monarchs observed in one day was 24 individuals on October 3rd on the Butterfly Trail at ESVNWR.

**Roost Surveys**

Roost surveys were conducted at Wise Point in ESVNWR, on days with large flights. The observation of large flights at the Hawkwatch would indicate good conditions for a roost survey to be conducted. This year, Monarchs were only seen roosting at Wise Point on one occasion; 8 individuals were seen roosting in the same tree on October 21st. Seeing Monarchs roost on only one occasion is lower than the previous year as they were seen roosting twice and on these occasions the roost site was checked during low temperatures, rain, and high winds.

**Recaptures**

One Monarch was recaptured that had been tagged by another organization; the tag number was AEWP-216. This male Monarch was recaptured on Narrowleaf Sunflower on October 2nd in the Sunday Fields of KSP.

On three occasions, Monarchs I tagged were recaptured more than six days later. Tag number AEHG-511 was recaptured 12 days after its original tagging; tag number AEHG-592 was recaptured 6 days after its original tagging; and tag number AEHG-720 was recaptured 7 days after its original tagging. The majority of Monarchs do not stay in the same location for more than a few days after being tagged due to the need to progress in their journey to Mexico.

One Monarch (tag number AEHG-347) was recovered that had been preyed upon by a praying mantis. This occurred on September 30th. The Monarch was tagged earlier in the day and about an hour later found with its tagged wing by a praying mantis.

In the upcoming spring, Monarch Watch will create a comprehensive list of all Monarchs recaptured on their journey to Mexico and those discovered in Mexico overwintering. CVWO then uses this list to see if any Monarchs tagged in the previous season were reported in Mexico or along the way.

**Education**

During the 2021 season, I was able to give many informal lectures. Most consisted of talking to hikers out on the trails of KSP and ESVNWR. On multiple occasions I was able to show visitors the process of capturing and tagging Monarchs. I was able to give more of a formal talk to two groups of Master Naturalists who visited KSP. When Monarch migration was slow or non existent due to low temperatures, rain, and wind, I was able to talk with visitors on the Hawkwatch platform. This allowed me to reach more visitors as than just encountering them on the trails.

***Allison Sheldon, Monarch Biologist, shares Monarch life cycle information with visitors at the Kiptopeke Hawkwatch. Photo by Martina Coker.***

## Conclusion and Recommendations

The 2021 Monarch tagging season was successful with better weather conditions than in 2020, resulting in more tagged Monarchs. Compared to the 761 Monarchs tagged in 2019, Monarch migration on the Eastern Shore of Virginia is following the downward trend of the overall Monarch population. Public education can help to improve the situation. Through talking with visitors this year, multiple individuals mentioned having planted milkweed species in their garden to help the population. The planting of fall blooming native flowers is an important way to help Monarch Migration, especially on the Eastern Shore where Monarchs need habitat and nectar for energy on their way to Mexico. The Sunday Fields in KSP are a great example of the variety of fall blooming species as four species (Narrowleaf Sunflower, Blue Mistflower, Spotted Horsemint, and Goldenrod spp.) are found throughout the fields, which attracted Monarchs on their migratory path.

The Sunday Fields in KSP attract a variety of butterfly species and in the fall. This location in KSP is a wonderful spot to see different species of butterflies and should be utilized to educate more visitors. One recommendation I have for CVWO and KSP would be to utilize this space by adding benches and more informational signs about the species present in this part of the park. Currently there is one sign as you enter off the Brown trail informing visitors about what utilizes this area, but it would be great to have one specifically tailored to Monarchs which could explain their life cycle. Another sign that would be beneficial to have would be one that had common butterflies' species, which visitors could see in the Sunday Fields. I met multiple people hiking through while I was tagging Monarchs in this location and when a Monarch Biologist is not present, this is a great way to inform visitors. The addition of benches in this area of the park would allow for visitors to sit and view all the biodiversity present for a longer period instead of just walking past. Currently, there are no benches facing the fields, and I think that a bench or two would allow people to sit and watch all the species interact.

## Acknowledgments

I would like to thank all the CVWO staff for allowing me to come to the Eastern Shore of Virginia and tag Monarchs for two months. It allowed me to interact with guests and spread my love for Monarchs to the visitors of the park. A special thanks to Nancy Barnhart for showing me around all the different locations on the Eastern Shore and for assisting me along the way. Another special thanks to Steve Dougill for teaching me how to identify raptors on days with low to no Monarch migration.

# DELMARVA TIP BUTTERFLY COUNT

## ANNUAL JULY BUTTERFLY COUNT: 2021 SUMMARY

By Brian Taber

On July 25, 2021, the Observatory conducted its annual butterfly count at the tip of the Eastern Shore. The count, the Observatory's 23rd here, is part of the continent-wide surveys sponsored by the North American Butterfly Association (NABA). Participants were Bob Ake, Bryan Barmore, Nancy Barnhart, Sharon Burton, Martina Coker, Shirley Devan, Gary Driscole, Adrienne Frank, Barbara Griffin, Tori Gussman, Judy Hinch, Cheryl Jacobson, Jenny Kahn, Teta Kain, Alice and Seig Kopinitz, Les Lawrence, Ken Lorenzen, Laura Mae, Carol McGavock, Barbara O'Hare and Brian Taber.

Many thanks to Pamela Denmon and the staff of the Eastern Shore of Virginia National Wildlife Refuge for access to otherwise closed areas of the refuge complex.

Areas covered were again primarily the Eastern Shore of Virginia National Wildlife Refuge, Kiptopeke State Park, Cape Charles and Oyster. Fisherman Island was not covered this year. The weather cooperated, it was mostly sunny, light winds and temperatures in the mid-80s.

Our total of 45 species was second only to the previous high of 47. For the 9th year in a row, we found rare Giant Swallowtails and some surprises included 7 Juniper Hairstreaks, our second-ever Brazilian Skipper, and our first-ever White M Hairstreak. Many thanks to our volunteers and to NABA for their ongoing efforts in butterfly conservation.

***We can't do it without volunteers. Thank you all! Photo by Shirley Devan***

# CREOLE PEARLY-EYE (*ENODIA CREOLA*) BUTTERFLY STUDY

## MONITORING IN COLONIAL NATIONAL HISTORICAL PARK

***Northern Pearly-eye butterfly. Photo by Nancy Barnhart***

***A tattered Northern Pearly-eye butterfly. Photo by Nancy Barnhart***

By Nancy Barnhart

This project began with the 2016 and 2017 sightings of a Creole Pearly-eye butterfly in the Neck-o-Land area of Colonial National Historical Park, indicating the possibility of a breeding population in James City County. This would indicate a northern expansion of the typical southeastern US range for this species. This butterfly is considered uncommon-to-rare and the expansion of its breeding territory would be significant.

2021 was the fourth year of the project conducted under a permit with the National Park Service. In previous years the project team has successfully established the presence of two broods of Creole Pearly-eye caterpillars and established flight periods for both broods. This project has added valuable information to the body of knowledge about this species and the need to protect its habitat and host plant, Switch Cane.

For the past two years the goal has been to establish early and late dates for observation of this species. In both 2020 and 2021, cool, wet April weather was problematic. Lack of appropriate weather conditions limited survey opportunities in April and produced no sightings of Creole Pearly-eyes. Several other surveys were spread out through the summer and early fall. Northern Pearly-eyes (*Enodia anthedon*) were observed in these later surveys but no Creole Pearly-eyes were found.

We will continue in 2022, attempting to determine early and late dates. In addition we hope to find enough individuals to establish a better idea of abundance of this species. We hope to have more favorable weather conditions for butterfly activity and will be on the lookout for a rebound in 2022.

We would like to thank the National Park Service, Colonial National Historical Park, especially Dorothy Geyer, Natural Resource Specialist, for allowing us continued access to Park property and for extending our research permit.

# WILLIAMSBURG AREA BUTTERFLY COUNT

***Butterfly enthusiasts counting in Upper James City County. Photo by Mike Smith***

***210 Zabulon Skippers were a new high for this count, exceeding the previous high by 87 individuals. Photo by Shirley Devan***

By Adrienne Frank

The 8th Annual Williamsburg Area Butterfly Count – August 14, 2021 – was a great count despite a heat index of 106 degrees or higher. The thunderstorms held off until we finished.

This count has high numbers of participants each year and is used as an educational opportunity for CVWO and the Historic Rivers Chapter of the VA Master Naturalists. The day was very hot and humid; some participants left early and some people stayed out until 4:00 pm.

We had 48 participants in 7 groups and 4 home gardens. Group sizes varied from 9 to 1. People came from other locales in Virginia (farthest Elkton, the Northern Neck, Aylett, Surry, and the Middle Peninsula). The Middle Peninsula Master Naturalists had the largest group and covered the sector on the other side of the York River. For all groups, we recorded over 25 miles walked and lots more miles driven.

Our species total was 51 with 2,437 individuals. For comparison, our highest numbers were in 2019 (53 species with 3,037 individuals). For this count, we had 11 species with higher individual numbers than in all years past. Some had 2 or 3 more than in other years, while some had much more than previous years.

We saw only one individual of several species (American Snout, Appalachian Brown, Question Mark, Tawny Emperor, and Wild Indigo Duskywing).

We usually have a lot more Orange Sulphurs, but this time we only had 3. Red Admiral, missing from this count, has been seen on all counts since 2014. Eastern Tiger Swallowtail at 533 had the highest number of individuals for this count.

Eleven species had new high counts: Black Swallowtail (42), Cabbage White (38), Summer Azure (70), Monarch (133), Common Checkered-Skipper (13), Fiery Skipper (289), Southern Broken-Dash (13), Little Glassywing (83), Delaware Skipper (22), Zabulon Skipper (210), and Aaron's Skipper (5).

***Butterfly enthusiasts and counters in Colonial Williamsburg. Photo by Jim Easton***

***Barbara Creel and Alex Minarik counting butterflies at Warhill. Photo by Brian Taber***

# WATERBIRD PROJECT

***American Avocets. Photo by Bill Williams***

**Why It's Important**

The Observatory conducts its own surveys and also helps with those of other organizations to document the movements of waterbirds in coastal Virginia. From climate change to development to commercial fishing to pollution to habitat loss, coastal areas are under pressure.

A recent study in the journal SCIENCE warned that coral reefs are dying, fish stocks are collapsing, and seas are acidifying. There is a need to understand how these pressures affect waterbirds – Bald Eagles, Ospreys, ducks, geese, swans, loons, grebes, cormorants, pelicans, gulls, terns, herons, egrets, plovers and sandpipers – using Virginia's coastal resources, in order to help prevent problems and promote effective conservation.

***Snowy Egret. Photo by Bill Williams***

# WATERBIRDS TEAM REPORT

***Black-necked Stilt chick. Photo by Bill Williams***

By Bill Williams, Waterbirds Team Leader

The CVWO Waterbirds Team devoted the entirety of its 2021 field work to documenting the volume and diversity of bird species frequenting Craney Island Dredged Materials Management Area (CIDMMA) in Portsmouth, Virginia. The final survey of the year, completed 16 December, was the 40th for 2021, and by coincidence, the 500th overall CIDMMA survey – effort dating back to 2008. During those 14 years these surveys have tallied 1.9 million birds of 270 species. The data have been provided to the United States Army Corps of Engineers (USACE) to support compliance with its *Long-term Bird Management Plan for the Craney Island Dredged Material Management Area (CIDMMA).*

**Overview of 2021 Results**

The Team's 2021 survey work adhered to protocols outlined in previous CVWO annual reports. A total of 221,971 birds of 203 species was documented during 274.5 observation hours over 40 weekly surveys conducted 6 January-16 December, weather permitting. The average number of species per visit was 72. Noteworthy single-day high-counts for total number of birds were 11,917 on 19 August (77 species) and 12,856 on 2 December (79 species); the lowest single-day total was 1753 posted 1 July (77 species). Waterbirds, including 31 waterfowl species, 3 rail species, Common Gallinule, American Coot, 2 grebe and 2 loon species, Northern Gannet, Double-crested Cormorant, American White Pelican, Brown Pelican, 33 shorebird species, 6 gull and 8 tern species, Black Skimmer, and 11 heron-egret-ibis species comprised 51% of all species recorded. CIDMMA had Virginia's highest 2021 totals for 5 species: 3656 Northern Shovelers on 2 December; 154 Black-necked Stilts on 12 August; 8669 Semipalmated Sandpipers on 19 August; 10

*Continued on next page ...*

Wilson's Phalaropes on 16 September; and 21 Red-necked Phalaropes on 2 September. The Black-necked Stilt total was the highest total for that species ever recorded in Virginia.

The peak number of Black-necked Stilts observed during the breeding season was 118 on 1 July, ninety-five of them in view simultaneously. Among that total were 12 breeding pairs, the most confirmed during a single 2021 survey. One of those pairs was incubating; the other eleven were tending recently hatched chicks.

The Team identified three Least Tern colonies that contained a maximum of 210 adults on 27 May. Once those colony sites were identified access to the respective areas was restricted, then monitored throughout the breeding season by USACE staff. Unfortunately, the colonies experienced very low productivity. The causes for this were undetermined, likely a combination of predation, high-volume vehicular traffic and periods of excessive heat.

For a second consecutive year a Bald Eagle pair successfully raised a single offspring at a platform nest site off the facility's northwest corner. The fledgling remained with the adults through the fall season.

Also, for a second year, an American Oystercatcher pair produced a single chick on the southern-most Elizabeth River eastward expansion dikes. Tragically, the chick did not survive, likely the victim of Fish Crows which were frequently observed harassing the youngster.

In addition to this breeding pair, 3 American Oystercatchers merited further scrutiny as each was color-banded. The specifics for those observations were communicated to the American Oystercatcher Working Group (http://amoywg.org/). The Group's comprehensive database revealed an individual encountered 20 May had been color-tagged on Fisherman Island, National Wildlife Refuge, Northampton County, Virginia on 20 June 2018. Thereafter, it spent much of 2019 in Florida before relocating to North Carolina in 2020. Twenty-five days after the 20 May 2021 CIDMMA sighting this bird was spotted in North Carolina then resighted on Fisherman Virginia two days later, 16 June!

***Lee Schuster, Dave Youker, and Bill Williams conducting a waterbird survey. Photo by Brian Taber***

Color-banded AMOY number two, spotted 7 July, had been thusly marked on Sapelo Sound, McIntosh County, Georgia as an after-hatch-year bird 3 March 2020. It was subsequently spotted in Florida before making its way to Virginia.

The third bird, documented on CIDMMA 22 July, had been banded as a chick on Pea Island, Dare County, North Carolina 3 July 2019. Its post-fledging wanderings ranged from Florida to Virginia where it spent the 2019-2020 winter. Next it was spotted in North Carolina, then Virginia once again, then back to Florida where it lingered through late 2021.

At least one Mottled Duck was documented on the facility during three dates – 10, 17, and 24 June, respectively. Virginia's first confirmed occurrence of this species was chronicled by Waterbirds Team members on CIDMMA during June and July 2018. Full documentation for the 2021 observations has been submitted to the Virginia Avian Records Committee.

**AudioMoth Deployment for Possible Eastern Black Rail Detection**

The capacity to detect and monitor coastal Virginia wildlife was enhanced in February 2021 when the Waterbirds Team was granted permission to install three AudioMoth recording devices at specifically chosen sites along CIDMMA's northeast perimeter slope. The purpose for deploying these units was to assess the possible presence of Eastern Black Rail (*Laterallus jamaicensis jamaicensis*), a species accorded threatened status with a Section 4 (d) Rule under the 1973 Endangered Species Act. A vocalizing Eastern Black Rail had been documented at this CIDMMA location in June 2017. After that detection, a cursory assessment of the site's physiography suggested its gently sloping, heavily vegetated, wet seepage microhabitat had the potential of supporting this species during migration and/or during its late spring/early summer breeding season.

AudioMoth is an open source full-spectrum acoustic logger built around Silicon Labs EFM32 Gecko processor by the Open Acoustic Devices Team. Each credit-card sized (58×48×15mm) unit is powered by 3 AA batteries and consists of a printed circuit board, micro-controller and an analog micro-electro-mechanical systems (MEMS) microphone. The device has a recording radius of ~30m and is capable of detecting sounds ranging from audible to ultrasonic frequencies that are then recorded as uncompressed WAV files to a micro-SD card from 8,000 to 384,000 samples/second. An onboard real-time clock allows each unit to be preset to activate specific recording times for each unit.

The Team's successful AudioMoth deployment became a three-step endeavor. Step one was multilayered. It involved mastering AudioMoth programming commensurate with the development of a regular maintenance strategy and schedule. Vaughn Garland and Tessa Rhinehart, each having had extensive AudioMoth system experiences, eagerly agreed to assist with diminishing the learning curve for those technical elements. Both devoted time coaching Team members with the intricacies of how to set each unit's on/off schedule, which frequencies the units would record, and when and how to replace the data recording cards, and the preliminaries of how to screen recorded data.

A coincidental second step necessitated designing then installing readily visible, well-marked, above-ground "stations" that were also weatherproof for each device's battery supply and recording units. Dave Youker masterfully met the design challenge in more than enough time for the unit-stations to be placed at the designated CIDMMA sites in late May. Vaughn enthusiastically made a day trip from his home in Richmond to assist with that effort.

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The third component was "reading," in this case listening to, what the three AudioMoth units recorded, ever-hopeful a Black Rail's characteristic ki-ki-doo call would pierce through such routine ambient nocturnal sounds as blowing wind, rain drops, rustling weeds, or just plain calm. To screen the data meant allotting time to patiently listen to 4 hours/night every night for approximately 60 nights!

Needless to say, this critical phase of the AudioMoth deployment required a technological solution, one that could accurately and efficiently mine thousands of hours of digitally recorded sound files to search for specific frequencies. Steve Thornhill had the experience and expertise to solve that dilemma. Alas, Black Rail vocalizations were not among any of the recorded sounds. The sounds that were identified included Common Nighthawk, Killdeer, Least Terns, coyotes, and both green and squirrel tree frogs.

**Motus Station Activity**

The Waterbirds Team continued to monitor the Motus wildlife tracking system installed by team members on CIDMMA Spillway 6 in 2018. During this past summer Dave Youker worked with Mike True to improve the functionality of the station's antennae and to update the data recording software for the system's solar-powered, continuous operation components. The station logged a Red Bat on 28 August for it only data "hit" during 2021.

Additional CIDMMA Fauna

The Team kept an anecdotal record of non-avian species found during its bird survey work. That list for 2021 included:

Fish: Cow-nosed ray

Mammals: a possible nutria, muskrat, river otter, white-tailed deer, eastern gray squirrel, eastern cottontail rabbit, coyote, red fox, cotton/rice rat sp., feral cat, Atlantic bottlenose dolphin

Reptiles: snapping turtle, box turtle, diamond-backed terrapin, yellow-bellied slider, red-bellied turtle (cooter), black racer, rat snake, garter snake (dead-on-the-road),

Amphibians: American/southern toad, green tree frog, squirrel tree frog, narrow-mouthed toad, green frog, bull frog

**Acknowledgements**

The Waterbirds Team is sincerely grateful for the continued support of USACE staff Keith Lockwood, Rob Pruhs, Carlos Quinones, and Shannon Rheinheimer.

The contributions of time and expertise provided by Vaughn Garland, Tessa Rhinehart, Steve Thornhill and Mike True were critical to CVWO's endeavors to employ technological advancements for documenting and monitoring coastal wildlife systems.

Members of the 2021 CVWO Waterbirds Team were: Bob Ake, Andy Hawkins, Alex Minarik, Lee Schuster, Brian Taber, Bill Williams, and Dave Youker

# MOTTLED DUCK X AMERICAN BLACK DUCK HYBRID FEATURED IN ABA MAGAZINE

Congratulations to our own CVWO President, Brian Taber, on the publication of his description of probable hybrid of a Mottled Duck and American Black Duck in May 2019 in Portsmouth.

The bird was found by CVWO's Waterbird Research Team and "was thought to possibly represent the first known example of a Mottled Duck x American Black Duck hybrid."

The same team discovered Virginia's first Mottled Duck in 2018 at the same Portsmouth location.

The article appears in American Birding Association's "North American Birds," Volume 71, Number 2, published in winter 2020-2021.

A Probable **Mottled Duck** x **American Black Duck** Hybrid

**BRIAN TABER** • Williamsburg, Virginia • taberzz@aol.com

These two photos, of presumably the same duck, were taken on 2 and 9 May 2019 in Portsmouth, Virginia. The distinct black gape mark and unstreaked buffy cheek, supercilium, and throat are characteristic of Mottled Duck, while the overall very dark plumage is characteristic of American Black Duck. The bird was found by the Waterbird Research Team of Coastal Virginia Wildlife Observatory and was thought to possibly represent the first known example of a Mottled Duck × American Black Duck hybrid. The photos were shown to Dr. Phil Lavretsky of the University of Texas at El Paso. He studies the Mallard complex and agrees that the bird could represent that combination.

Mottled Duck is more closely related to American Black Duck than to Mallard, but Mottled and Black aren't known to be found together during the breeding season. The Virginia site, not open to the public, hosts Black throughout the year and is possibly unique in having Mottled and Black together; the team discovered Virginia's first Mottled Duck at the same site the previous year. Several birds that appeared to be possible Mottled × Mallard hybrids were also found, indicating that there may be dynamic interaction among the three species at this location, recalling the Mottled/Mexican/Mallard situation along the lower Rio Grande Valley. Mallard × Black hybrids are also encountered at the site, but the bird pictured here is the first to exhibit characteristics of both Mottled and Black.

*Photographs by © Brian Taber.*

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# BAYWATCH WATERBIRD MIGRATION STUDY 2013 - 2017

Summary prepared by Brian Taber

In October 2013, the non-profit Coastal Virginia Wildlife Observatory (CVWO) began a 5-year study to document waterbird migration at the lower Chesapeake Bay. Such data is useful in light of issues related to fishing, pollution, development, wind energy and climate change. The Study Coordinators were Brian Taber, President of CVWO and two CVWO Advisors, Bill Williams and Ned Brinkley.

CVWO hired biologists, with experience in waterbird identification, to conduct the study with the following protocols:

- count all species of waterbirds, using binoculars and scope
- count on a daily basis in the morning from 1 October to 30 November
- make additional notes on bird movements, including direction and behavior
- enter data into eBird
- prepare a season summary

The biologists were Steve Kolbe in 2013, who had just conducted the CVWO fall hawkwatch the previous year at Kiptopeke; Eric Beck in 2014; Katie Rittenhouse in 2015, who had just conducted the CVWO fall hawkwatch the previous year at Kiptopeke; Charlie Plimpton in 2016 and Ned Brinkley in 2017.

The site chosen for the Study was newly-acquired State property, about a mile north of Kiptopeke State Park, at Pickett's Harbor Natural Area Preserve, at the high cliff overlooking the Chesapeake Bay. The site provided an elevated and wide view of several square miles of Bay. Dot Field of the Virginia Natural Heritage Program secured the necessary permits. Kiptopeke State Park and Eastern Shore of Virginia National Wildlife Refuge both assisted with housing for the staff.

Protocols were tweaked as the Study progressed, including the challenge, in 2017, of noisy house construction at the site, which caused Brinkley to also survey from two locations in nearby Cape Charles. Other ideas about documenting distance, height of flight and directional movement proved difficult to assess, though noting behavior, such as resting, feeding and migrating were useful. Brown Pelicans and some other species were abundant on a daily basis and effort was made not to duplicate totals.

In the initial season in 2013, Steve Kolbe recorded 53,390 bird of 126 species, including some landbirds that were moving down the coastline. He pioneered the methods there of constant scanning and finding reference points far out in the water. A Black-legged Kittiwake was a big surprise, as were two Little Gulls and 11 Parasitic Jaegers. Kolbe noted that birds were moving at the end of November, so that December coverage would reveal even more. He noted that "the value of this count probably lies not in the sheer numbers of migrants, but rather in the way it describes how the Chesapeake Bay is used by birds that are both passing through and preparing to spend the winter."

In 2014 Eric Beck found 30,230 birds of 97 species. Highlights included Great Cormorant, Hudsonian Godwit, Black-headed Gull and Little Gull. Little Gulls are very rarely reported in Virginia, but were found on the first two Baywatch seasons. At the site, Beck also found two dead juvenile sea turtles, a Loggerhead and a Kemp's Ridley, which were collected by the Virginia Beach Aquarium Team.

In 2015 Katie Rittenhouse documented 58,700 birds. Highlights included two Cave Swallows and 15 Parasitic Jaegers and 1,069 Laughing Gulls, in a 30-minute period. Rittenhouse lost some days of coverage due to bad weather, as the site has no shelter. Rittenhouse found a stranded Green Sea Turtle, which was reported to the

Beach Aquarium and she recorded a Humpbacked Whale on 28 November. She recommended that due to the slow early season that the count might be shifted to later October and through December. She also recommended having another helper to see and record birds, as some days were very busy, causing birds to be missed.

In 2016, Charlie Plimpton found 43,216 birds of 53 species. He mentioned, as did the other observers, that the bulk of the bird movement on most days was before 9 a.m. and birds often moved on stormy weather. He witnessed a spectacular flight of 1,057 Red-throated Loons on 28 November. Shorebirds, because of their small size and often distant flights, are difficult to document, though Plimpton found Killdeer, Black-bellied Plovers, Willets, Sanderlings, American Oystercatchers, Spotted Sandpipers, Pectoral Sandpipers, Greater Yellowlegs and Ruddy Turnstones. He saw whales on two occasions, though too far away for identification. He also witnessed something that few people in Virginia ever have: an attack by a Northern Goshawk. It forced a juvenile Great Black-backed Gull down to the beach and Plimpton was able to photograph the graphic drama below.

In 2017 Ned Brinkley conducted the 5th year of the study that he helped to establish and coordinate. He made 128,653 detections of 59 species. The term detections is used to show that observers are not always able to know when duplication occurs, because of back-and-forth movements. He states that "it was often impossible to exclude duplication in the estimates…because of their frequent tendency to fly and forage widely over the Bay, in multiple directions, probably influenced by prey movements, tide cycles, weather conditions and the activities of ship traffic…" He states that "the total count of likely migrants was perhaps closer to 54,342 birds, close to the 5-year average for this project." He was able to document a remarkable movement of jaegers through the area. His total of 144 Parasitic Jaegers was unprecedented, as were 23 Pomarine Jaegers, a species not recorded annually anywhere in the Bay. One Long-tailed Jaeger was even more exceptional for its late date of 3 November. Area birders speculated that stalled frontal boundaries and low ceilings accounted for the unusual concentration. He was able to document an incredible 4,747 Redheads. New species for the Study included Brown Booby, Pacific Loon and Red Phalarope. Red-throated Loons numbered an astounding 5,765 on 29 November, with a season total of 16,208. He also observed a strong migration of Monarch butterflies along the coast in October and early November.

***Steve Kolbe in 2013 surveying the Chesapeake Bay for migrating waterbirds. Photo by Brian Taber***

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In addition to fall surveys, several surveys were conducted in winter and spring in 2014 and 2015. In 2014, daily surveys in winter and spring by a biologist would have been extremely interesting, as there was nearly complete freezing of the Great Lakes, forcing waterbirds southward. Such conditions would further show the importance of the ice free lower Chesapeake Bay to the survival of waterbirds. A lack of housing for staff, however, prevented hiring. Five surveys were conducted in 2014, three by Taber and two by David Matson, from 10 March to 5 May. Highlights included 3,240 Horned Grebes resting together, one of the largest totals ever seen in Virginia as well as a huge Northern Gannet flight of 10,260 on 13 April headed south out of the Bay. In addition, some species were recorded that were not found during the entire previous fall Baywatch season, including Harlequin Duck, Glossy Ibis, Snowy Egret, Lesser Black-backed Gull and Gull-billed Tern. The 2014 winter and spring total of 17,991 birds, with only five surveys compares to the 53,390 birds the previous fall, with two months of surveys, indicating the year-round importance of the Bay to waterbirds. Surveys in 2015 were conducted on 3 February and 17 April and added two new species to the Baywatch Study list, Razorbill and Dovekie.

The intent of the Study, besides ongoing analysis of data, which could take a long time, was to share this initial summary of the 5-year results with our colleagues: Dot Field of Virginia Natural Heritage Program at Virginia Department of Conservation and Recreation; Forrest Gladden at Kiptopeke State Park; Bob Leffel at Chincoteague National Wildlife Refuge; Stacey Lowe at Eastern Shore of Virginia National Wildlife Refuge; Ruth Boettcher at Virginia Department of Game and Inland Fisheries; Jill Bieri at The Nature Conservancy; and the American Bird Conservancy. We also shared the report with several CVWO partners.

We trust that such data will be useful to the conservation efforts of all these great colleagues and organizations. Additional studies throughout the year would surely reveal more surprising results. CVWO is available to provide additional information if requested.

***Northern Gannet. Photo by Judy Jones***

**QUICK STATS**

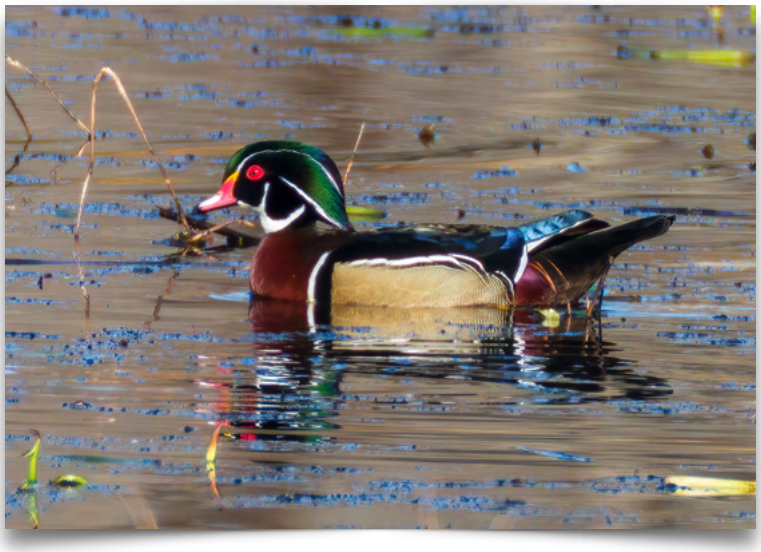
In Spring 2014 David Matson and Brian Taber documented 3,240 Horned Grebes resting together on the Chesapeake Bay, one of the largest totals ever seen in Virginia.

They also counted “a huge Northern Gannet flight of 10,260 on April 13 headed south out of the Bay.”

***Horned Grebe. Photo by Brian Taber.***

# WOOD DUCKS IN NEWPORT NEWS

***Eggs in Wood Duck box. Photo by Dave Youker***



***Male Wood Duck. Photo by Steve Thornhill***

By Dave Youker

The installation of large predator guards on Wood Duck boxes appears to have resolved the snake problem of recent years as production almost doubled.

Extremely low water levels at Harwoods Mill made checking the nest boxes very difficult, and some boxes could not be reached at times.

Only six of the seven boxes produced young this year, but three boxes had second clutches. Total Wood Duck egg production was 228 with 203 ducklings fledged.

Nesting again began in early March, but this year two boxes had activity into early July.

Thanks to Newport News Parks and Recreation for their continued support of this project

***Female Wood Duck with young. Photo by Dave Youker***

# ANNUAL KIPTOPEKE CHALLENGE

## A SINGLE-DAY BIRDING COMPETITION

***Northampton for Ned team in Kiptopeke Challenge raised over $5,400 in donations. Left to right: Marguerite Long, Brian Taber, Martina Coker, Paul Anderson. Photo provided by Brian Taber***

By Dave Youker

Another successful year for the Kiptopeke Challenge! Coastal Virginia Wildlife Observatory's single-day birding event was September 25, 2021, and ten teams spent the day combing eastern Virginia in search of different species. Sadly, we had no Youth team this year, but there were seven 24-hour teams, two 3-hour teams and a single Special Venue team.

The weather was ideal for this big day of birding, but many teams struggled to find those elusive warblers. The Children of the Phrag team took the honors for the 24-hour category with a respectable 138 species and are awarded the American Woodcock trophy. In the 3-hour category, the Bloxom Black Swans edged out newcomer Machicomoco Meadowlarks for the Bald Eagle trophy with a total of 53 species. Finally, the Eagle Eyes on the Kiptopeke Hawkwatch Platform took the Special Venue category with an impressive 74 species and received the Wild Turkey trophy.

As always, there is a good mix of veteran teams and newcomers. Returning veteran teams were Laughing Falcons, Gulls Gone Wild, Road Runners, Peninsula Parulidae, and Bloxom Black Swans. Newly formed teams for the event this year were Machicomoco Meadowlarks, Northampton for Ned, Children of the Phrag, Fishing Longlegs, and the Eagle Eyes.

The total number of species across all teams was 163, which is about our average over the 27 years of the Kiptopeke Challenge. There were 15 species that every team had on their list, but there were also 33 species that appeared on only one team's list. This latter number indicates how dedicated these teams were in searching all the various habitats throughout the coastal plain of Virginia.  There were no new

species to add to our overall KC list, but there were four species that were found for only the second time during all our years of this event: Roseate Spoonbill, Brown Creeper, Blue-winged Warbler, and Hermit Thrush.

The KC is CVWO's annual fundraiser to help us continue our mission to protect Virginia's wildlife through education, field research and habitat conservation. The team raising the most funds is awarded the Piping Plover trophy. This year the competition for this award was very tough with four teams raising over $1,000, and two teams topped the $5,000 mark. However, it was the Gulls Gone Wild that took the top honors again with over $5,800 in donations. The total raised by all teams was a record amount – just over $17,258! A big thank you goes out to all team members and team sponsors for making this event such a huge success and allowing CVWO to continue its important mission.

***The Machicomoco Meadowlarks team. Left to right: Edith Bradbury, Gee Brownley, Anne Wilber, Susan Crockett, Elizabeth Wilkins, Mark Sopko, and Jacques van Montfrans. Photo by Susan Walton***

***Gulls Gone Wild team won the Piping Plover trophy with over $5,800 in donations. Left to right: Shirley Devan, Joyce Lowry, Nancy Barnhart, Sue Mutell. Photo provided by Shirley Devan***

***Roseate Spoonbill. Photo by Dave Youker. This is only the second time in the 27 year history of the Challenge that this species has been recorded.***

# 2021 CVWO RESEARCH GRANTS

# AWARDED TO GRADUATE STUDENTS

Each year CVWO gives a number of research grants to graduate students at William and Mary and Old Dominion University who are conducting avian research. In 2021 we awarded three research grants.

The Old Dominion University Bob Ake Grant went to Grant Bowers who is studying "Nestedness and Modularity of Chesapeake Bay Island Avifauna."

The William and Mary Ruth Beck Grant went to Moira Meehan, Graduate Student studying with Dr. John Swaddle at William and Mary. Moira is studying a "Novel Approach to the Detection of Avian Window Collisions."

The Bill Akers Grant went to Michael Academia for his research on "Ospreys as an Indicator Species for Atlantic Menhaden." Michael is a Graduate Student working with Dr. Bryan Watts of the Center for Conservation Biology at William and Mary.

# EDUCATIONAL OUTREACH

# AND PUBLIC RELATIONS STRATEGY

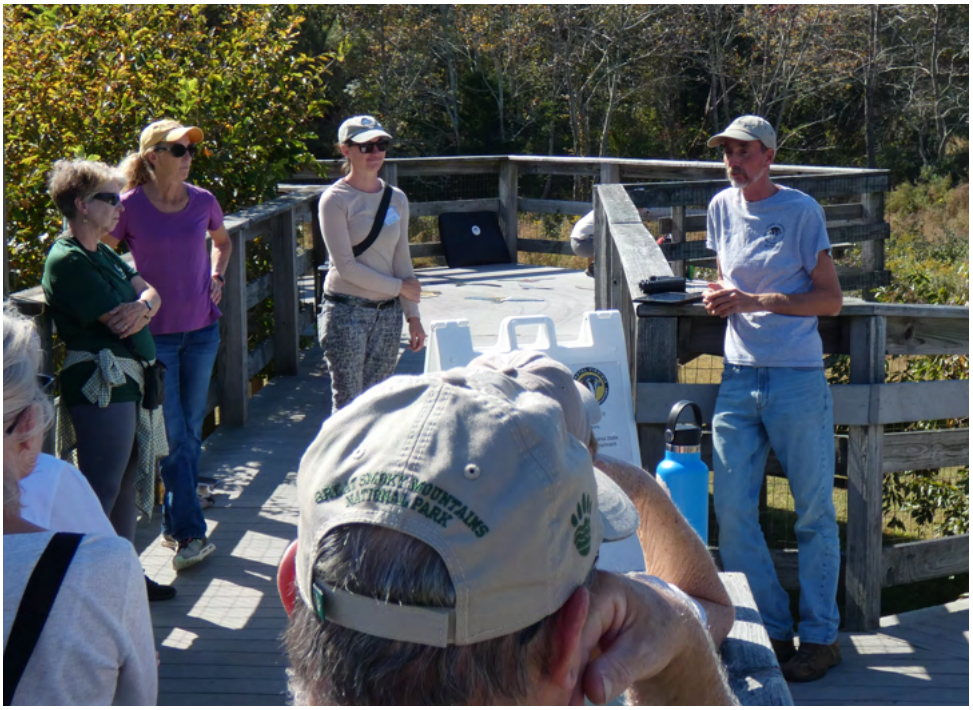
By Lisa Reagan, Public Relations

For over a quarter century, the Coastal Virginia Wildlife Observatory has had a long-standing commitment to wildlife preservation, extensive networking skills and project collaborations with local, state, and national partners, and to its ongoing strategic initiatives integrating public education and conservation impact. As the second year of the pandemic in 2021 sent the public in record-breaking numbers to local and state parks, CVWO was ready to answer their questions about raptor, butterfly, songbird, and waterbird research through our live interactions on the Hawkwatch platform at Kiptopeke State Park and at the spring College Creek Hawkwatch near Williamsburg, and by meeting the public where they were: on their phones through our digital platforms and growing newsletter subscriptions.

How critical is CVWO's ongoing conservation and field work? Extensive scientific studies show that the data collection, field observations, and commitment of citizen scientists are providing the needed and extensive data to make critical science-based policy decisions as humanity is facing the ongoing climate crisis, mass species extinction, and ever-increasing habitat loss. A feature in a 2018 issue of *Nature* magazine, entitled "How Citizen Science is Transforming Research," states, "The movement is surfing wider societal forces, including a thirst for data; the rise of connectedness and low-cost sensor technologies; and a push to improve the transparency and accessibility of science."

When we use our meta-cognition abilities as homo sapiens and view our planet's "Big Picture" right now, it is easy to see the immense value CVWO's work brings to "Protecting Wildlife through Field Research, Education and Habitat Conservation for 25 Years" as our mission states.

We hope you will join us however you can – in the field, on your devices, and through generous financial support – as we restore our connection to nature and stewardship to life.



***Hawkwatcher Steve Dougill (far right) describes the hawkwatch protocol to the members of the Eastern Shore Chapter of the VA Master Naturalists. Photo by Brian Taber***

As part of our education and outreach efforts, we strive to work closely with our partners to support their efforts too. In 2021 CVWO helped pay for amphitheater benches installed by the Friends of Kiptopeke State Park at the Park's visitor center.

At the Edward S. Brinkley Nature Preserve in Northampton County, CVWO installed a bench in memory of our great friend and advisor, Ned Brinkley, plus collaborated with the Eastern Shore Chapter of the VA Master Naturalists (and other partners) to create an interpretive sign for the Preserve.

You can keep up with CVWO's initiatives, collaborations, and field observations. Enjoy and SHARE our stories.

- **Newsletter**. Subscribe to our free monthly newsletter, which has doubled in followers in the past three years! You can subscribe here, or by visiting our homepage at www.vawildliferesearch.org.
- **Blog**. Check in on CVWO's Blog for the latest in field reports, unusual observations, and what our teams are working on. https://vawildliferesearch.org/cvwo-blog
- **Newsroom**. Follow CVWO's collaborations and nonprofit news in our newsroom here: https://vawildliferesearch.org/news-room
- **Social Media Platforms.** Enjoy our posts from partners, headlines on conservation, and fun field posts on our social media platforms here:
- **Facebook**: https://www.facebook.com/coastalvawildlife/
- **Twitter**: https://twitter.com/cvwobservatory
- **Instagram**: https://www.instagram.com/cvwobservatory/
- **CVWO Videos.** Watch our own videos on raptor and monarch migration on our YouTube Channel: https://www.youtube.com/channel/UCvURfXcPA1Rg_O-aloyTK_w

# SUPPORT CVWO

Your donation can make a big difference in 2022. Use the form below to join or renew your 2022 CVWO support and make a donation to one of our ongoing projects such as the Kiptopeke Hawkwatch, Monarch butterfly research, waterbird research, warbler nest box trails, or graduate student scholarships. No donation is too small and every gift is welcome.

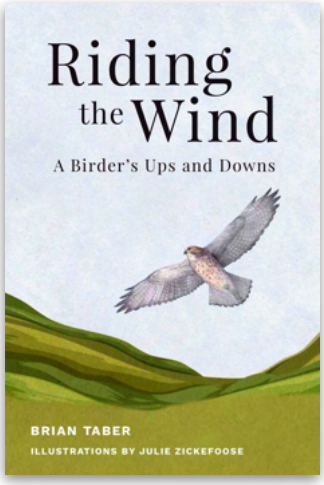
If you are a Life Member or have already donated in 2022 — many thanks! Perhaps you'd consider another donation to one of our projects or a scholarship!

We look forward to hearing from you!

**I want to support CVWO's 2022 research. Enclosed is my check for:_____**

Support Level:

$_____Warbler $25
$_____Sparrow $50
$_____Thrush $100
$_____Falcon $250
$_____Eagle $500 (Life Supporter)




I would like to make an additional donation for:

$ 25__Purchase Brian Taber's book, "Riding the Wind: A Birder's Ups and Downs"
$_____Kiptopeke Hawkwatch
$_____Monarch butterfly research
$_____Waterbird research
$_____Prothonotary Warbler Nest Box Trails
$_____Annual Scholarship to William and Mary or ODU Graduate Students

Friends who donate $25 or more or join/renew at the $25 level or higher will receive CVWO's Annual Research Report.

Name _____

Address_____City_____State_____Zip _____

Email (please print clearly) _____

May we include your email in our Constant Contact List: Yes_____No _____

If YES, do you want to receive CVWO's monthly eNewsletter? Yes__No____(We do not share email addresses.)

Return this form with your check, payable to CVWO, to: PO BOX 764, Lightfoot, VA 23090

Or you may donate securely and quickly online with PayPal. You don't need a PayPal account … just visit our website at https://vawildliferesearch.org/support-cvwo where you can donate with your credit or debit card.

Thank you! Your interest and generosity are more important than ever!