
COASTAL VIRGINIA WILDLIFE OBSERVATORY

ANNUAL REPORT FOR 2020



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

Cover Image: Thanks again to Megan Massa for refreshing our American Kestrel logo. Marian Watts, who designed our original kestrel logo, gave her permission to update her design. Many thanks to both Marian and Megan for keeping our kestrel logo looking great! Megan Massa was recognized as the American Birding Association's Bird of the Year artist in 2018. She is a graduate of the College of William and Mary, where she studied biology and environmental science. She has created artwork for the Smithsonian Museum of Natural History and the Center for Conservation Biology, in addition to the ABA.

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*Red-shouldered Hawk.
Photo by Steve Thornhill.*

TABLE OF CONTENTS

CVWO Partners	4
President's Message	5
RAPTOR RESEARCH	6
Kiptopeke Hawkwatch	7
Kiptopeke Hawkwatch Report Summary	8
Hawkwatch Intern/Educator Report	14
College Creek Hawkwatch Report	17
SONGBIRD RESEARCH	20
Why Study Prothonotary Warblers?	20
Prothonotary Warblers Nest Monitoring Report	22
The Big Sit	25
Northern Saw-whet Owl Report	25
BUTTERFLY PROJECTS	26
Why It's Important	26
Monarch Butterfly Migration Program	27
Delmarva Tip Butterfly Count	35
Creole Pearly-eye Butterfly Study	39
Three New Butterfly Species for Williamsburg Area	40
Williamsburg Area Butterfly Count	44
WATERBIRD PROJECT	46
Why It's Important	46
Waterbirds Team Report	47
Wood Ducks in Newport News	51
ANNUAL KIPTOPEKE CHALLENGE	52
IN MEMORIAM	
Remembering Ned Brinkley	56
A Tribute to John Dillard	57
EDUCATIONAL OUTREACH	58
How CVWO Served During the Pandemic	58
CVWO Awards Three Grants to Graduate Students	60
CVWO Receives VSO's Jackson M. Abbott Award	61
How You Can Support CVWO	62



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

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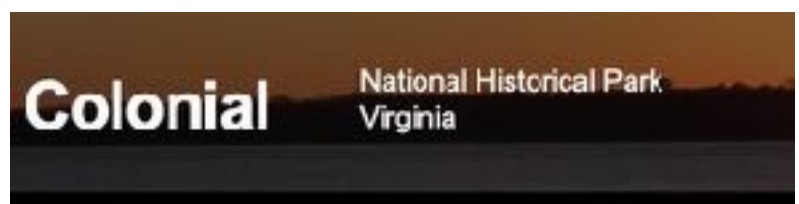
WILLIAMSBURG
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City of Chesapeake Parks, Recreation and Tourism, Northwest River Park
James City County Department of Parks and Recreation
VA Department of Conservation and Recreation, Kiptopeke State Park
Monarch Joint Venture
Hampton Roads Bird Club
Hawk Migration Association of North America
U.S. Army Corps of Engineers, Craney Island Dredged Materials Management Area
U.S. Fish and Wildlife Service, Eastern Shore of Virginia National Wildlife Refuge
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PRESIDENT'S MESSAGE



Dear CVWO Supporter,

Whew...the pandemic affected everything this year, but our programs mostly continued as usual, thanks to the efforts of many. Our usual housing at the Eastern Shore of VA National Wildlife Refuge was not available for our fall staff, due to COVID-19 restrictions, but Kiptopeke State Park arranged for all three staff to stay in the Park's house in the campground. Our dedicated staff practiced safe habits during their work and their living situation, with no health

problems noted, thankfully. The new Kiptopeke Visitor Center added exhibits, but was unable to open to the public.

Our volunteers, throughout the year practiced safe habits as they conducted many butterfly and bird surveys. We were again able to participate in four counts sponsored by the North American Butterfly Association, as you'll see in this report. We also added a very surprising three new butterfly species to our Williamsburg area database. Our weekly waterbird surveys at Craney Island were halted, due to the pandemic, for several months and we could not monitor Prothonotary Warbler nest boxes at Northwest River Park in Chesapeake or Chickahominy Riverfront Park. College Creek Hawkwatch set a new record and the weather cooperated nicely to produce plants for pollinators in our butterfly gardens.

The loss of Ned Brinkley and John Dillard was difficult. Their tributes appear in this report on pages 56 and 57.

Our supporters and donations were quite amazing, considering the hardships that our dedicated supporters were dealing with. Please welcome new Board Member Martina Coker of Northampton County!

Here's to an easier 2021! Virtual hugs all!

Brian Taber, CVWO President

CVWO'S ADVISORY BOARD

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RAPTOR RESEARCH



Bald Eagle, left, and American Kestrel, right. Both photos 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. 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 databases like Hawkcount.org.

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*.

"The study, 'State of the world's raptors: distributions, threats, and conservation recommendations' was recently released in the journal *Biological Conservation*." The researchers looked at the status of all 557 raptor species, as defined by BirdLife International's assessments of these species for the International Union for the Conservation of Nature's (IUCN) Red List, and discovered something staggering - 18% of raptors are threatened with extinction and 52% of raptors have declining global populations."

"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!

KIPTOPEKE HAWKWATCH

What We Do There

The Kiptopeke fall hawkwatch was established by volunteers in 1977, and has recorded nearly 900,000 hawks and vultures of 19 species. Since 1995, CVWO has hired experienced hawkwatchers each year to conduct the hawkwatch, from September 1 to November 30, assisted by a corps of dedicated volunteers. Visitors are always welcome at Kiptopeke State Park to help us find birds and to learn about the amazing hawk migration. The hawkwatch operates daily, weather permitting, through November.

Hawkwatches are an excellent way to monitor population trends and promote conservation. A majority of hawk species in North America are showing declining numbers. Kiptopeke is the one of the best places in the world to see migrating Merlins and Peregrine Falcons, with daily records of 462 and 364, respectively. The annual College Creek Spring Hawkwatch, on the shore of the James River near Williamsburg, was established in 1997 and records an average of nearly 2,000 hawks and vultures each year. To see hawkwatch data, click this link: www.Hawkcount.org

Our hawkwatcher and the platform volunteers also keep track of the other notable species flying over the platform! And they pay attention to our hummingbird feeders and seed feeders, too.

Read about the Hawkwatch in our newsroom [<https://vawildliferesearch.org/news-room>] and our blog [<https://vawildliferesearch.org/cvwo-blog>]

Watch the Hawkwatch films on CVWO's YouTube Channel. Search for "Hawkwatch at Kiptopeke."

2020 KIPTOPEKE HAWKWATCH

REPORT SUMMARY



Karl Bardon photo, left, by Shirley Devan. Red-tailed Hawk (abieticola), right, by Steve Thornhill

By Karl Bardon

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. The fall of 2020 was the 44th consecutive year of the hawkwatch and the 26th consecutive year that Coastal Virginia Wildlife Observatory (CVWO) has staffed a full-time hawkcounter to monitor the fall migration of raptors at Kiptopeke State Park. From the 31st of August to the 30th of November, a total of 15,723 migrant raptors of 16 species were counted over 749.75 observation hours at the Kiptopeke hawk platform. All data collected were entered into the Hawkcount online database (which is maintained by the Hawk Migration Association of North America (HMANA)), and the Dunkadoo database.

The 2020 season total of 15,723 individual raptors was below the ten-year average (Table 1). Using ten-year averages as a basis, it was a below average year for most of the common species except for Bald Eagles, Red-shouldered Hawks, and Red-tailed Hawks. While most of these species were only slightly below average, the count for both Merlins and Cooper's Hawks were well below average (nearly 50% below average). It was, however, a good season for diversity of raptors, with 16 species seen. A single Rough-legged Hawk was the first seen in four years, a single Swainson's Hawk was also noteworthy since this species is not seen every year, and the counts of both 10 Mississippi Kites and 3 Swallow-tailed Kites were new season high counts for these two rare species. For the fifth year in a row, no Northern Goshawks were seen.

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September numbers were near average with a monthly total of 6360, and a peak day of 986 raptors on the 15th when 355 Ospreys and 427 American Kestrels were counted, the two most common raptors that day. American Kestrels were also the most common raptor throughout the month, with over 2,000 seen. October numbers were below average with a monthly total of 7991, and a peak day of 1060 raptors on the 1st. Sharp-shinned Hawks were the most common raptor this month with 2882 seen. November numbers were near average with 1365 raptors seen, and a peak day of 187 raptors on the 5th. The most common raptor this month was Red-tailed Hawk with 448 seen. Although September seemed to be off to a good start with some strong flights of Ospreys and several good cold fronts followed by NE winds, the first two weeks of October were very disappointing with a prolonged stretch of clear blue skies, unfavorable wind, and a lack of cold fronts. This weather occurred during what is normally the peak period of the season, and as a result the long-awaited peak flight of falcons never really occurred this year.

At A Glance...

- September 15 was the peak day for September with 986 raptors – 355 Ospreys and 427 American Kestrels. Over 2,000 kestrels were seen in September.
- October 1 was the peak day for October – 1060 raptors. Sharp-shinned Hawks were the most common raptor with 2882 observed over the month.
- November's peak day was the 5th with 187 raptors. Red-tailed Hawks were the most common with 448 seen over the month.

Species Accounts: Osprey

The season total of 2334 Ospreys is 19% below average, but the peak of 355 on September 15th was an excellent flight. The majority of Osprey migration occurs in September, with 1634 seen, compared to 683 in October, and only 16 in November.



Sharp-shinned Hawk. Photo by Steve Thornhill

Bald Eagle

The season total of 427 Bald Eagles is above average, but considerably less than the record count of 717 last year. The peak day was 27 Bald Eagles on November 24th. Monthly totals were 111 in September, 156 in October, and 160 in November.

Northern Harrier

The season total of 513 harriers is 8% below the ten year average, but 34% below the historical average since 1995. The peak was 51 on October 27th. Monthly totals were 126 in September, 306 in October, and 81 in November

Sharp-shinned Hawk

The season total of 4742 Sharpies is 18% below the ten-year average, and 48% below the historical average since 1995. The peak was 334 on September 28th. The monthly totals were 1500 in September, 2882 in September and 360 in November.

Continued on next page...

Cooper's Hawk

The season total of 1157 Cooper's is 52% below average, or nearly half that of both the ten-year average and the historical average since 1995. In fact, this is the lowest season total since full time counting began in 1995, but the reasons for this are unknown. Hopefully this count is only a fluke in the data and next year's count will rebound to more typical numbers. The peak day for Cooper's was 82 on October 9th. Monthly totals were 169 in September, 888 in October, and 100 in November.

Red-shouldered Hawk

The count of 136 Red-shoulders is 31% above the ten-year average, which is interesting since other late season buteos such as Red-tails continue to decline in numbers due to short-stopping further north. The peak was 31 on October 31st. The monthly totals were 2 in September, 51 in October, and 83 in November.



Bald Eagle. Photo by Steve Thornhill

Broad-winged Hawk

The count of 806 Broad-wings is slightly below average. The peak was 203 on October 1st. The monthly totals were 349 in September, 413 in October, and 44 in November. As with vultures, Broad-wings appear to be more reluctant to cross than many other species, and as a result many of them are seen going back north at Kiptopeke.

Swainson's Hawk

A single intermediate morph juvenile was seen on September 20th. This species is a fairly rare migrant at Kiptopeke with sightings roughly every other year.

Red-tailed Hawk

The season total of 657 Red-tails is 16% above the ten-year average, but 24% below the historical average since 1995. The peak was 108 on November 24th. The monthly totals were 20 in September, 189 in October and 448 in November.

Golden Eagle

Only two Golden Eagles were seen, one on November 5th and one on November 23rd. Both were juveniles.

Mississippi Kite

The season total of 10 Mississippi Kites is a new record. Two individuals were seen on August 31st, 5 were seen on September 1st, and 3 more were seen on September 3rd. This species is continuing to expand its range into Virginia and future counts will probably continue to increase.

Swallow-tailed Kite

Two Swallow-tailed Kites were seen on August 31st, and single bird was seen on September 1st. The only previous sightings at this hawkwatch were single birds in 2017, 2012, and 2007.

American Kestrel

The season total of 3464 kestrels is 8% below the ten-year average. The peak was 427 on September 15th. The monthly totals were 2035 in September, 1398 in October, and 29 in November.

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Merlin

The season total of 885 Merlins is 45% below the ten-year average. In fact, this season total is the lowest since 2002, and the second lowest since full time counting began in 1995. The peak was 89 on October 1st. The monthly totals were 307 in September, 551 in October, and 27 in November.

Peregrine Falcon

The season count of 565 Peregrines is below average. The peak was 76 on October 6th. The monthly totals were 95 in September, 456 in October, and 14 in November.

Non-raptor Highlights

Kiptopeke State Park is also known for the incredible diversity and numbers of migrating non-raptor species that can be seen from the platform. This season we attempted to count all the migrant non-raptors that we could, and the result was a total of 449,520 individuals. Although this may seem like a daunting task at first, it is much easier to count everything when using the Dunkadoo app, and I encourage future counters to do the same. The ten most common non-raptors were 123,583 Red-winged Blackbirds, 92,481 American Robins, 80,593 Blue Jays, 25,566 Tree Swallows, 24,588 Common Grackles, 14,165 American Goldfinches, 12,011 Yellow-rumped Warblers, 11,056 Pine Siskins, 5,490 Double-crested Cormorants, and 4,928 European Starlings. It turned out to be a great year to count all the non-raptors, since there were some fun invasions of birds. Perhaps the most noteworthy was the astounding number of Blue Jays moving south in record numbers. It was also an “on year” for Red-breasted Nuthatches, which have southward irruptions every other year. A few migrant White-breasted Nuthatches were also seen, and Brown-headed Nuthatches were seen every day at the feeder, which apparently has not happened previously. One of the most noteworthy events in the East this fall was the “super flight” of northern finches. At Kiptopeke, we counted record numbers of Pine Siskins in October, which were replaced by record numbers of American Goldfinches in November. There were also small numbers of Red Crossbills and Evening Grosbeaks in November.

Additional highlights of the season included:

- 124 Snow Geese on October 27th.
- 154 Tundra Swans on November 27th
- 657 Northern Pintails on October 28th
- 125 Ring-necked Ducks on November 12th.
- 712 Surf Scoters on October 26th.
- 64 Common loons on November 2nd
- 238 Northern Gannets on November 27th
- 1184 Double-crested Cormorants on October 26th
- 50 American White Pelicans on October 12th
- 60 White Ibis on November 3rd
- 1 Virginia Rail stuck in the bathroom on October 8th
- 4 Sandhill Cranes on November 2nd
- 1 American Golden-Plover on October 26th
- 14 Wilson’s Snipe on October 24th
- 1075 Laughing Gulls on November 9th
- 1 Black-chinned Hummingbird on October 7th
- 228 Red-bellied Woodpeckers on October 2nd



***Virginia Rail stuck in bathroom at Kiptopeke State Park October 8.
Photo by Steve Thornhill***

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Blue Jay by Steve Thornhill. Karl Bardon counted a remarkable 12,744 Blue Jays migrating over the platform October 1.

- 517 Northern Flickers on October 2nd
- 12,744 Blue Jays on October 1st
- 675 Purple Martins on August 31st
- 3820 Tree Swallows on October 1st
- 77 Red-breasted Nuthatches on October 8th
- 23,337 American Robins on October 28th
- 5652 Yellow-rumped Warblers on October 17th
- 1 Clay-colored Sparrow on October 25th
- 2244 Bobolinks on September 11th
- 14,762 Red-winged Blackbirds on November 28th
- 8016 Common Grackles on November 26th
- 362 Baltimore Orioles on September 22nd
- 1 White-winged Crossbill on November 27th
- 2081 Pine Siskins on October 27th
- 3508 American Goldfinches on November 8th

Recommendations

When I first arrived at Kiptopeke in August, I was rather shocked at how limited the view was due to trees in all directions. As all the old timers have told me, the view used to be much more open,

especially to the East, but also the view of the bay to the West, and no doubt this has had an effect on the overall numbers of birds counted here. To maintain consistency in the data, I definitely recommend some sort of tree removal both to the East and to the West. It is impossible for the hawk counter to see birds that have blown to the east side of the peninsula due to any strong westerly component to the wind, so an alternative solution may be to explore setting up a two-site protocol, with the current hawk platform used during any easterly component to the wind, and another site on the opposite side of the peninsula used during any westerly component to the wind. Wind directly from the north or south would have to be assessed more carefully.

Acknowledgements

Thank you to Coastal Virginia Wildlife Observatory and Brian Taber for giving me the incredible opportunity to work as the hawkcounter at Kiptopeke. Thank you also to the Kiptopeke State Park staff for giving us wonderful lodging at the Dutton House within the park. Every hawk count has its core group of volunteers who make the watch a special place, and Kiptopeke is no exception. I would like to thank the following people for their help spotting birds and their good company at the hawk watch this fall: Bob Ake, Matt Anthony, Harry Armistead, Joe Beatty, Nancy Barnhart, Mike Braun, Ned Brinkley, Rudy Cashwell, Lynn Davidson, Dave Fischer, Chris Foster, Paul Shanahan, Brian Taber, Steve Thornhill, Mike Tove, Wayne Valentine, Michael Veit, and Hal Wierenga. Finally, I'd like to thank my coworker, Bridgett Brunea, who's role as the hawkwatch intern and educator was invaluable to me, especially for her excellence in greeting all the visitors, but also for her dedication in helping me to scan the skies.



Bridgett Brunea and Karl Bardon on the Kiptopeke Platform. Photo by Steve Thornhill

Table 1. 2020 totals, ten-year averages, 1995+ averages, and historic averages* of the eleven most common raptor species at Kiptopeke

Species	2020 Season	Ten-year (2011 - 2020) average	1995+ average**	Historic (1977- 2020) Average**
Osprey	2334	2766	2901	1997
Bald Eagle	427	391	327	205
Northern Harrier	513	524	757	573
Sharp-shinned Hawk	4742	5515	8811	8111
Cooper's Hawk	1157	2034	2135	1395
Red-shouldered Hawk	136	96	104	67
Broad-winged Hawk	806	853	1160	893
Red-tailed Hawk	657	534	848	582
American Kestrel	3464	3679	5336	4176
Merlin	885	1574	1602	1060
Peregrine Falcon	565	798	832	560
Total	15723	18752	28059	21905

*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.

HAWKWATCH

INTERN/EDUCATOR REPORT



*Photo of Bridgett Brunea, left. Photo by Shirley Devan.
Bridgett Brunea and Karl Bardon, right, on platform. Photo by Brian Taber*

By Bridgett Brunea

While 2020 may have been an unusual year for us *Homo sapiens*, this didn't stop the birds from migrating! I was thrilled to witness a small corner of this global migration as CVWO's 2020 Hawkwatch Intern and Environmental Educator. In my role as the Intern, I learned a great deal about migrating birds and how to identify and count them; as the Educator, I had a great time learning how to appropriately convey environmental issues to a broad range of individuals and groups.

Due to the presence of COVID-19 and many folks choosing to limit their travels, the CVWO team was not sure what to expect in terms of visitor numbers. As it turned out, we actually had quite a healthy showing. In September, our numbers were 360, and in October they came in at 521. Thanks to the kindness of the CVWO board members, I was able to stay an additional two weeks - through November 15th - during which time we had an additional 105 visitors. The total number of visitors for my time at the hawkwatch came in at 986. I was grateful that our guests - both long-time and new - were respectful

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of the safety requirements that CVWO and Kiptopeke State Park had initiated around COVID-19, ensuring that every one of our 986 visitors stayed safe!

One of my favorite aspects of my role as Educator was discussing birds and bird migration with those whose knowledge of the subject was either just beginning or was virtually non-existent. Initially, I didn't expect these folks - many of whom were simply staying at Kiptopeke State Park's campground and had wandered over to the hawkwatch platform - to be interested in what we were doing. However, I came to find that they were often eager to learn about the wonderful winged creatures flying above them. It seems that a major cultural shift is necessary in order to facilitate the protection of the vulnerable species that CVWO studies. Influencing people's hearts and minds to care about birds, habitat, and ecology through the means of individualized conversation is one significant way in which we can achieve this. I was honored to play a small part in this through my role at the hawkwatch.

What I chose to focus on in my education was as varied as the visitors we received. For some folks, I simply gave the elevator-speech version: who CVWO is, what hawkwatches are, why monitoring birds this way matters, and the biggest threats to migrating bird populations. For some people, this information was adequate, but for many, we would dig far more deeply into these concepts. I would often spend half an hour or more speaking with various individuals and groups. People would sometimes ask excellent questions that I didn't know the answer to, prompting me to go home and do some reading that night, which in turn increased my knowledge for the following day when I might receive that question again! Peoples' curiosity became the natural guide for what I chose to focus on.

Educating children was one of my favorite parts. Often even more eager to learn than the adults, they would stand in rapt attention as I used the CVWO hawk models to illustrate fascinating tidbits about each raptor species we were studying. I found these visuals to be incredibly helpful in keeping the attention of our smallest visitors!

“Due to the presence of COVID-19 and many folks choosing to limit their travels, the CVWO team was not sure what to expect in terms of visitor numbers. As it turned out, we actually had quite a healthy showing. The total number of visitors for my time at the hawkwatch came in at 986.”

Toward the middle of the season, I began to tailor my education to include some of the broader indicators of ecological and habitat health that are necessary for migrating bird populations to thrive. I chose to bring this in because I wanted people to understand the broader context of ecological health (i.e., everything is connected) as well as to feel a sense of something tangible they could do to support these struggling species. I feel strongly that telling people there's a problem isn't enough; it's necessary to provide some potential solutions as well. Scaling this down to an individually-sized action - for example, creating a backyard that is bird-friendly, not using pesticides for lawn care, growing native plant species, etc. - gave people something tangible they could do. For those who were interested in

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taking things further, I would suggest sending letters to their state representatives in support of things like the Migratory Bird Act, as well as signing up for action updates with the Audubon Society, the Sierra Club, and local environmental groups. While I didn't go this in-depth with most visitors, it was extremely rewarding to have something to point folks toward who were interested in this deeper level of engagement.

This year, I did a lot of "advertising" for the CVWO blog and Facebook page. I was delighted to see that our numbers for blog viewership went up by quite a bit this year - perhaps due in part to more folks staying home and therefore using the blog as a more frequent resource. Some posts received well over 300 views! In addition to writing the blog posts, I also assisted Shirley Devan with posting occasional updates to our Facebook page. Whenever I posted our blog updates to the Facebook page, I noticed a significant increase in readership for the blog posts as compared to those I hadn't put on Facebook - a good indicator that continuing to use this social media tool may be a powerful means of spreading CVWO's mission!

While in most years CVWO has extensive merchandise available on the platform for public purchase, this year - due to COVID-19 precautions - this was scaled back considerably. Even so, we had many visitors who bought hats, books, and binocular straps, with hats being the most frequently-sold item. In addition to selling items, I also put out a donation jar every day, and over the course of the season, we collected hundreds of dollars in donations which were separate from selling any merchandise. I found that it was generally the folks with whom I had the most in-depth educational sessions who donated the most funds. My impression from this was that people really do care about bird and wildlife conservation, that they want to help, and that having a personal connection with a conservation organization makes all the difference in their sense of being able to contribute. After all 2020 has thrown our collective way, it was hugely encouraging to see how generous people can be!

Beyond the education piece, I was hugely fortunate to have an experienced hawkwatcher like Karl Bardon teaching me how to scan the skies for raptors. This was something I hadn't done before but was extremely excited to learn about! Thanks to Karl's guidance, within a few weeks I felt comfortable identifying a large number of raptors that flew past the platform. As the migration busied, I started helping him count raptors as well as other birds, which he began to teach me as the season picked up. It felt wonderful to be able to assist with the counting, and even to provide relief hawkwatching on a few different occasions. I also helped with pointing out raptors to platform visitors. Learning how to hawkwatch was definitely one of the highlights for me - not just of the season, but of the year!

I want to thank all of the incredibly knowledgeable volunteers, local birders, and visitors who taught me a great deal about hawkwatch, migration, and general bird knowledge throughout this season. I also wish to thank Karl Bardon for being an amazing teacher, Brian Taber for his knowledgeable and enthusiastic work as CVWO's president, Nancy Barnhart for her frequent and encouraging visits to the platform, and all of the other CVWO board members and supporters for sharing their knowledge, enthusiasm, and kindness. It truly was an honor working with all of you this season.

COLLEGE CREEK

HAWKWATCH REPORT



Nancy Barnhart at College Creek Hawkwatch on April 11, 2020, after the National Park Service closed the parkway because of the pandemic quarantine. Nancy rode her bike to the hawk watch carrying her scope, camera, binoculars, snack and water. Photo by Shirley Devan.

By Brian Taber

Boosted by the best month ever, March at 1618 and Nancy Barnhart's biking 36 times to the site during the road closure due to the pandemic, which began March 31st, College Creek set it's record high at 2426.

This was the 24th 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 February 29th through May 31st. The hawkwatch completed 64 days (14th highest) and 172.25 hours (2nd highest). The species total was 12; the average is 14.

As in the past two years, we had decided to do fewer days in 2020, 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.

The total is also misleading. The Turkey Vulture total was the all-time high and Black Vultures were second, but most other species were down. The Sharp-shinned Hawk total was ahead of only one other season, where

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the coverage hours were less than half of 2020 and it was three below last's year very low total. Kiptopeke's fall hawkwatch totals for Sharp-shinneds have recently been quite low as well.

The protocol remained the same as in the previous 23 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 239 on March 29th, a new daily high; 228 on March 12th, the 3rd best; 174 on March 27th and 169 on March 14th; these 4 days totaled 810 of the season total of 2426 or about one-third.

Species accounts:

- Black Vultures, at 155 were 2nd highest all-time
- Turkey Vultures at 1913 were highest all-time and 79% of the total, the highest % ever
- Ospreys at 109 were the lowest since decent coverage began in 2003; last year was also very low at 126; 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 at 162 were the all-time best
- Northern Harriers at 11 were the all-time low
- Sharp-shinned Hawks at 23 were 2nd-lowest all-time
- Cooper's Hawks at 22 were 3rd best all-time and have never before been near the Sharp-shinned total
- Red-shouldered Hawks at 6 were right on their average
- Broad-winged Hawks, rare at this site, were at 2 and came across together
- Red-tailed Hawks at 15 were the lowest ever, with 4 on 1 day and 3 on another; however, they migrate early in the season and we have decreased February coverage; there was only 1 in April
- American Kestrels at 7 tied last year for the lowest-ever; still a species of concern across the east in spring and fall
- Merlins, rare at this site, were at 1
- Mississippi Kites and Swallow-tailed Kites were recorded frequently in eastern Virginia this year, but none were found at the Hawkwatch.

Monthly totals: February was 9 on one day; March was 1618 on 28 days; April was 481 on 16 days and May was 318 on 20 days.

Birds per hour by month: Feb was 5; March was 23; April was 11 and May was 6.

Birds per hour for the season was 14, tied for 5th best.

The 1,000th bird of the season, a milestone we track, was seen on March 24th. It was the third-earliest date for that.

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 64 days of coverage:

Black Vulture 30 days
Turkey Vulture 62 “

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Osprey	35	days
Bald Eagle	43	"
Northern Harrier	9	"
Sharp-shinned Hawk	10	"
Cooper's Hawk	13	"
Red-shouldered Hawk	4	"
Broad-winged Hawk	1	"
Red-tailed Hawk	9	"
American Kestrel	5	"
Merlin	1	"

The non-raptor highlights included a flyover flock of 22 Anhingas, American White Pelicans almost daily, either right over the Hawkwatch or over Hog Island, 7 Lesser Black-backed Gulls on one date, 4 Black-bellied Plovers and a Black Tern.

The 2020 daily totals were entered into the database at Hawkcount.org, which also sends the data to eBird.

There were visitors on many days from a number of states and countries. We handed out brochures and answered their questions. Posts were again made regularly to the VA List Serve and on the General Blog at the website of CVWO and on its Facebook page. Many thanks to dedicated regular volunteers Bill Williams and Nancy Barnhart for coverage.



Nancy Barnhart shares hawk migration data with a visitor before the pandemic. Photo by Shirley Devan.

2020 Totals with previous 10-year average, peak flight and date, and date range of occurrence

Species	2020 Total	Ten-year average	Peak Flight & Date	Date Range of Occurrence
Black Vulture	155	86	22 on March 12	Feb 29 to May 19
Turkey Vulture	1913	1301	216 on March 29	Feb 29 to May 31
Osprey	109	199	10 on March 27 and 29	March 4 to May 14
Mississippi Kite	0			
Swallow-tailed Kite	0			
Bald Eagle	162	102	11 on April 28	March 1 to May 19
Northern Harrier	11	31	2 on March 29 and April 29	March 18 to May 7
Sharp-shinned Hawk	23	47	5 on April 26	March 24 to April 28
Cooper's Hawk	22	13	3 on April 6	March 12 to May 10
Red-should Hawk	6	6	2 on March 29 and 30	March 14 – 30
Broad-winged Hawk	2	7	2 on March 30	March 30
Red-tailed Hawk	15	34	4 on March 12	Feb 29 to May 13
American Kestrel	7	20	2 on March 29 and April 9	March 13 to May 10
Merlin	1	5	1 on March 30	March 30
Unidentified	0			
Total	2426	1856	239 on March 29	Feb 29 to May 31

SONGBIRD RESEARCH



Prothonotary Warbler collage by Jim Easton

Why Are We Studying Prothonotary Warblers?

Prothonotary Warblers are a “Watch List” species, per Partners in Flight

"Prothonotary Warblers likely face their gravest threats from the deforestation and degradation of wintering and breeding habitats. The mangrove habitats in northern South America where the greatest numbers of Prothonotary Warblers overwinter, are being deforested at an alarming rate. In the Southeastern U.S., conversion of bottomland hardwood forests to other uses, coupled with changes in forest structure, likely affect the amount of suitable breeding habitat. Conservation efforts are currently underway through linked research efforts to better understand the annual cycle of this unique species and where this species may be facing the severest limiting factors. Partners in Flight reports that 34% of the population has been lost over the years 1970 - 2014."

Source: <https://partnersinflight.org/species/prothonotary-warbler/>

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Local, volunteer-based nest-box monitoring programs for the species are becoming more common in regional and county parks to repopulate areas where populations have dwindled or disappeared.

The Songbird Research is primarily monitoring Prothonotary Warbler boxes in several locations in Virginia's Coastal Plain — Chesapeake, James City County, Newport News, King and Queen County, and Middlesex County. The Observatory contributes to the study of Prothonotary Warblers, as part of the Virginia Prothonotary Network, monitoring nest boxes in spring and summer by canoe at various sites.



CVWO volunteer Jim Easton checks a nest box at Powhatan Creek in James City County. Photo by Shirley Devan



Carolina Chickadees nest in the Prothonotary Warbler nest boxes March through May. Photo by Jim Easton.



Prothonotary Warbler with a leg band returning to nest at Powhatan Creek for another year. Photo by Jim Easton.

PROTHONOTARY WARBLER

NEST MONITORING REPORTS



Photos by Jim Easton



2020 will go down in history as the Asterisk Year! Not a very satisfying year for volunteers; however, we know that Prothonotary Warblers will do what they need to do whether we're paying attention or not. I hope this is the only year that has an asterisk because of the corona virus.

The virus prevented monitoring Prothonotary Warbler boxes at Northwest River Park in Chesapeake and at Chickahominy Riverfront Park in James City County. Boxes at Northwest River have been monitored since 2009. Also, at Chickahominy Riverfront Park, construction/redesign of the river and creek shoreline necessitated that we remove four PROW nest boxes in the construction zone at the end of 2019. Eight boxes remained in place outside the construction zone, but the corona virus prevented us from monitoring these boxes.

Here are reports from the nest box trails volunteers were able to monitor in 2020.

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Prothonotary Warblers on the Dragon Run

by Gary Driscole

Despite the COVID-19 epidemic, for spring and summer 2020, I continued to monitor the 20 Prothonotary Warbler boxes in three locations along the Dragon Run in King & Queen County and Middlesex County.

I started monitoring March 23 and stopped July 30, and I am sad to report that this year was the worst year since I started monitoring in 2009. I had less than half of my average count. It seemed that there were fewer insects in the spring. Nests were abandoned or there were unfertilized eggs. Bumble bees used one box for their nest.

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

Big Island – There were 18 Prothonotary Warbler fledglings in 5 boxes. There were 12 Carolina Chickadee fledglings.

Mascot Bridge – There were 10 Prothonotary Warbler fledglings in 10 boxes and 9 Carolina Chickadee fledglings in 2 boxes.

Herrin Property – There were 4 Prothonotary Warbler fledglings in one box.

The total fledglings were 32 Prothonotary Warblers and 21 Carolina Chickadees.

Prothonotary Warblers in Newport News

by Dave Youker

The Prothonotary Warbler nesting in 2020 was a carbon copy of 2019. The production at Harwoods Mill reservoir was again on par with recent years and resulted in 28 fledged birds.

And just like 2019, there was no nesting activity at Lee Hall reservoir. Wasps were found in every box during every visit to Lee Hall. These were almost exclusively paper wasps with an occasional mud wasp nest. Conversely, there were only 3 incidences of paper wasps in 3 separate boxes at Harwoods Mill early in the nesting season.

The breeding cycle began in April with the construction of nests and was complete by the end of July.

Here are the numbers for 2020.

Harwoods Mill: 6 of 6 boxes occupied. 3 of 6 produced prothonotaries with 2 boxes producing 2 clutches. Two boxes had nest failures. One box hatched 5 young, but the young died for unknown reasons. The other nest had 5 prothonotary eggs, but they were subsequently raided by an unknown culprit. There were 2 nesting of Carolina Chickadees. Totals for Harwoods Mill reservoir were: 28 prothonotaries and 11 chickadees.

Lee Hall: 0 of 5 boxes occupied.

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

Volunteers Brian Taber and Jim Easton joined me in safely monitoring the seven boxes at Powhatan Creek Trail for the sixth year. These boxes are monitored on foot and social distancing and mask-wearing were easily accommodated.

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At Powhatan Creek Trail, we were able to identify a returning female Prothonotary Warbler from photos of her leg bands. Volunteer Jim Easton is a skilled photographer with a long lens on his camera and he visits the area almost daily. From several of his photos of a female at box #3 May 21 and 22, I was able to confirm that she was originally banded June 24, 2018 at the same box — box #3. Her band # was 2820-03562 (underlined numbers observed in photos). Because of the limited # of bands used at that location, I was able to zero in on her exact band number.

All seven boxes at Powhatan Creek Trail had some level of Prothonotary Warbler nesting activity ranging from 2" moss to two clutches.

Two adult females recaptured in 2020 were originally banded in 2019.

Five Prothonotary Warbler nestlings were banded (in boxes 5 and 7) and one new female and one new male were banded.

Boxes 2, 4, and 7 produced 12 Carolina Chickadee fledglings.

Prothonotary Warblers at Ford's Colony in James City County

By Shirley Devan

This is a nature trail maintained by the homeowners' association and volunteers in this large gated residential community.

In Spring 2019, WINGS, the Ford's Colony bird club, and club volunteers installed a Prothonotary Warbler Nest Box Trail with 5 boxes along the creek on the nature trail. There was no confirmed PROW nesting in 2019 even though PROW were observed and heard.

Success came in the second year of monitoring in 2020 with the first nesting in box #3. On July 1, 2020, I banded three Prothonotary Warbler nestlings. We were unsuccessful in capturing any adults.

Many thanks to George Martin, Rexanne Bruno, and Sharon Plocher for their help with this project.



Gary Driscole monitors a Prothonotary Warbler nest box on the Dragon Run. Photo by Adrienne Frank

THE BIG SIT

By Brian Taber

The Observatory participated for the 22nd consecutive year in the one-day fall birding event from a small location called the Big Sit. It's sponsored by the New Haven Bird Club and there are participants in most states. It provides a snapshot of continental bird movement during migration and also promotes awareness of birds and conservation.

Led by our Hawkwatcher Karl Bardon and Hawkwatch Intern/Educator Bridgett Brunea, birds were tallied for seven hours on October 10th. There had not been a recent cold front to bring large numbers of birds, and this was a few weeks before the "Superflight" of northern finches, so the total of 40 species was low compared to our other years, which average more than 60. Highlights included Peregrine Falcons, Brown-headed Nuthatches, Red-breasted Nuthatches and 143 Pine Siskins crowded on our feeders.

NORTHERN SAW-WHET OWL PROJECT

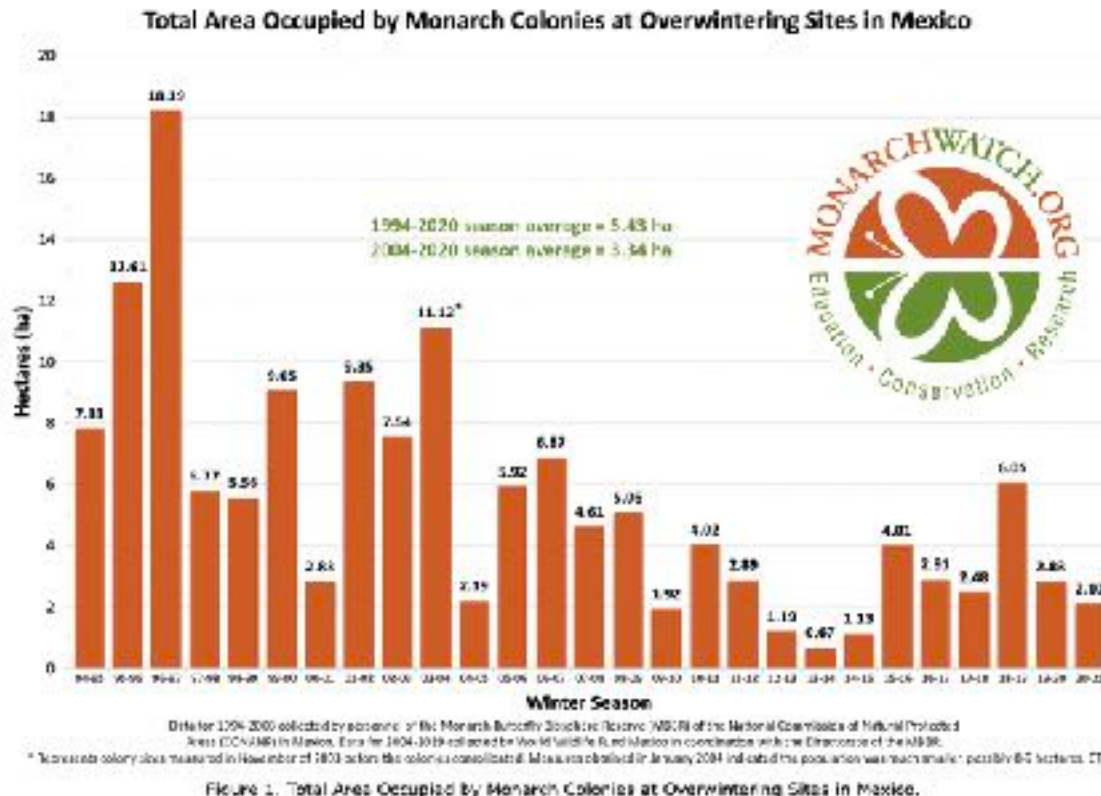
By Bob Reilly

In fall 2020 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 Julie Kacmarcik and Kim Cook, is in the Powhatan Wildlife Management Area. A second is operated by me on my property in Powhatan about 10 miles east of Julie and Kim'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.

While 2020 was an improvement over 2019, it was well under what was widely expected to be a big year. The breeding numbers in Canada were very good, but the owls did not move south in the numbers anticipated. This may have been a reflection of the comparatively mild weather conditions last fall that prevailed from central Pennsylvania south. The following comparison of combined numbers for our three stations for fall 2012 - fall 2020 is illustrative of the substantial year-to-year variation.

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

BUTTERFLY PROJECTS



Why It's Important

CVWO volunteers help manage butterfly gardens at Kiptopeke State Park, the Eastern Shore of Virginia National Wildlife Refuge, the Williamsburg Botanical Garden, and Jamestown Marina. The observatory sponsors the annual July Delmarva Tip Butterfly Count and co-sponsors the August Williamsburg Area Butterfly Count. Both of these counts are sanctioned by the North American Butterfly Association (NABA) and count compilers submit totals to NABA.

In 1998 CVWO established a Monarch Butterfly Migration Program and conducts fall surveys and tags Monarchs migrating down the Eastern Shore of Virginia. Monarch numbers are declining at an alarming rate, due to a variety of factors. In recent years several Monarchs tagged by CVWO have later been found at their winter roost sites near Mexico City.

Watch CVWO's [Monarch films here](#).

QUICK STATS

March 19, 2021, Chip Taylor, Monarch Watch Director on the MonarchWatch Blog Post reported that "On 25 February 2021, World Wildlife Fund Mexico in collaboration with CONANP and the Monarch Butterfly Biosphere Reserve (MBBR) announced that **the total forest area occupied by overwintering monarch colonies was 2.1 hectares**, a 26% decrease from the previous season." This is just barely above a third of the 2018-2019 winter season (6.05 ha).



Ashley Hansen. Photo provided by Ashley Hansen

MONARCH BUTTERFLY MIGRATION PROGRAM

By Ashley Hansen

The 23rd season of the Coastal Virginia Wildlife Observatory (CVWO) Monarch Migration project ran from September 15th to November 15th, 2020. As a part of this program, roost surveys were conducted at Wise Point in the Eastern Shore of Virginia National Wildlife Refuge (ESVNWR). Point count surveys were conducted at ESVNWR and Kiptopeke State Park (KSP) for roughly 30-minute intervals between 10 A.M. and 3 P.M., daily. These surveys were conducted daily, except for days with heavy rain, windy, storms or low temperatures. These conditions stopped and/or shifted the migration which made observation or capture difficult. The tagging of Monarchs was conducted within various locations around the peninsula, including: ESVNWR, KSP, Pickett's Harbor Natural Area Preserve and Magothy Bay State Natural Area Preserve.

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Tagging

This season, 228 Monarchs were tagged, continuing the downward trend that has been observed the last few years. 500 tags were obtained for this season, fewer than last year because of a lower predicted monarch forecast for this season. The tag numbers given were ACCS300 through ACCS799, 3 of the tags were unable to be used due to a loss of adhesiveness from falling off inside of the envelope (ACCS312, 375 and 479). The majority of the migration occurred between 10/8/2020 through 11/6/2020, with many lows and spikes occurring between (Figure 2). Of the tagged monarchs, 190 (84%) were tagged within sections of KSP, 23 (10%) were tagged in ESVNWR, 12 (5%) were tagged at Magothy Bay, and 3 individuals (1%) were tagged within Pickett's Harbor Natural Area and Preserve (Figure 1).

Nectar Sources

The primary nectar sources for Monarchs this season included Blue Mistflower (*Conoclinium coelestinum*) and different varieties of Goldenrod (*Solidago spp.*), with minor nectar sources including Common Lantana (*Lantana camara*), Groundsel Tree (*Baccharis halimifolia*), Autumn Clematis (*Clematis terniflora*), Gray-headed Coneflower (*Ratibida pinnata*), and Mexican Sunflower (*Tithonia rotundifolia*). Occasionally the Monarchs would land within the dead or dying foliage, as well as within the Loblolly Pine (*Pinus taeda*), however, both were more difficult to capture the butterflies on/within due to the height they would land or because the butterflies were more observant in open spaces. Goldenrod was the primary nectar source for the majority of the first half of the season, with the Blue Mistflower, and the other less common sources, becoming the more utilized source after the Goldenrod stopped flowering. Goldenrod and Blue Mistflower were the two primary nectar sources that Monarchs were captured on at 46% and 44%, respectively (Figure 3). Goldenrod was prevalent within all the sites that were surveyed. Blue Mistflower was only found within KSP, and the largest number captured on this flower being within the Sunday Field. All other nectar sources listed were found within one location for each flower.

Sex Ratio

Of the 228 Monarchs tagged, 158 (69%) of the individuals were male and 70 (31%) individuals were female (Figure 4). This ratio of male to female aligns with what has been seen in previous years, though it does more closely align with the findings from 3 years prior at 65% male and 35% female. This ratio is to be expected and agrees with the literature in finding more males within the Monarch population than females as a whole. As well as the suggestion that female Monarchs are declining at a much faster rate, making up only 43% of the overall population as of 2009 (Davis, A.K., Rendon-Salinas, E. 2009)

Wing Length

All 228 Monarchs captured had their wings measured this season, a much higher number than previous years. While the priority was to capture and tag as many Monarchs as possible, the constraints related to relative daily abundance or visitor engagement were not as strong as there were lower numbers of both Monarchs and guests overall. The addition of a foldable butterfly habitat was also a great help in capturing and tagging larger quantities of Monarch butterflies at a time. The wing was measured from the very tip to where the wing connects to the abdomen. In previous years, these measurements were completed using the aid of a small plastic ruler or the ruler found in the back of field notebooks, but this year, digital calipers were used instead. The average wing length was 45.7 mm (6.2 mm smaller than last year), with 45.5 mm (6.5 mm) appearing most often. The smallest Monarch observed was 32.0 mm (8 mm smaller) and the largest was 52.83 mm (6.17 mm smaller). With the exception of the smallest Monarch observed, all of the Monarchs observed were smaller than those

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observed in previous years. The standard deviation for this year being 3.66 mm (last year was 2.64), which could be attributed to the lower number recorded with wing measurements this year in comparison to last.

Mass, Wing Condition and Damage

Tagged Monarchs were massed, wing condition assessed and checked for any damage. Monarchs were massed on a scale of 1-3, based on the segments of their abdomen's shape or "fullness". A score of 1 represented a concave (thin) abdomen, equal to about one quarter of a gram. A score of 2 showed a parallel (tubed) abdomen and is equivalent to half a gram. A score of 3 showed convex (full) abdomen and weights of 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 3 indicates that the Monarchs were very well fed, while a 1 indicates otherwise. Of the Monarchs tagged, 81 individuals or 36% of these individuals had a size 3 abdomen, which is lower than the 47.8% found last year. There were 91 Monarchs that had a size 2 abdomen, or 40% of the captured Monarchs, which is an increase from 36.4%. The remaining 56 individuals or 25% had a score 1 abdomen, higher than last year's percentage of 15.8.

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 in such poor condition that there is the possibility the individual has transparent wings. 156 (69.4%) Monarchs were in excellent condition or ranked a 2 on our scale. 50 (21.9%) out of the 228 were within the satisfactory category, and 18 (7.89%) individuals were ranked as a 4. Both the pristine and the poorest condition for scales on the wings had two individuals within their respective category, or 0.88% of the population observed being either a 1 or 5.

Lastly, 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. 167 (73.2%) of the Monarchs captured had no wing damage, 6 (2.63%) individuals were rated as a 1, 20 (8.8%) were rated as a 2, 16 (7.02%) individuals were rated as a 3, and 19 (8.33%) individuals had severe damage to their wings. This damage included entire winglets missing or a wing being "shredded". Something also taken into consideration for wing damage was the "curling" or "crumpling" of wings. 9 individuals were found throughout various points in the season with wings matching this description, and had a harder time flying because of this issue. There was also one individual observed with a deformity within her wings, causing one upper winglet to be significantly smaller than the rest.

In general, the majority of the Monarchs this season were in excellent condition (2) and had an overall mass rating of a 2, indicating that they were in relatively good condition for the migration. However, these individuals were not feeding as much with the intense rain and wind that was blowing through the Eastern Shore. Many previously captured Monarchs were seen around the Eastern Shore for multiple days at a time, one even stayed in the area for almost two weeks. This indicates that this is an excellent spot to rest, rebuild food storage and hide from the storms as they blew through the Virginia Coast.

Point Counts

A total of 321 Monarchs were observed from all of the sites combined, which is an increase from 137 individuals observed last year. However, part of this increase is because point counts were performed in more areas this season in an attempt to find better locations to observe the migration. Also, as each observation period was shortened in favor of tagging and capturing the Monarchs. The largest number observed in one day was 36 during point counts within KSP. During the beginning of the season, Bridgett Brunea (this season's Hawkwatch Intern and Environmental Educator) kept track of monarchs that went

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over the Hawkwatch Platform, and consistently saw between 5-25 individuals in flight over the platform. However, priority was given to counting the raptors and engaging with guests.

Roost Surveys

Roost surveys were conducted along the trail leading to the Chesapeake Bay Bridge Overlook within ESNWR on days after large flights were observed and during poor weather conditions. Roost surveys are conducted at sunrise and/or sunset. These sites were checked once every one to two weeks, however, were checked more frequently during the conditions specified above. This year, Monarchs were only observed roosting twice – though both times in the same tree along that route, with 15 individuals observed during the first, and 2 individuals found on the second. These events occurred on October 26th and November 2nd, respectively. Neither day had large numbers of monarchs in flight, however, they were associated with lower temperatures, rain and high winds. These groups of Monarchs potentially waited out the storms before taking off or feeding once more.

Recaptures

This season, there were no Monarchs recaptured that had been tagged by other organizations, individuals or locations farther north. However, there were individuals that were tagged earlier in the week, or, in the cases of ACCS332 and ACCS367, 5 days to a week prior to recapture. ACCS332 was one of two individuals that was reared and given to KSP staff for release on October 9th and was recaptured in ESNWR on October 16th. ACCS367 was an individual who had been tagged on October 15th and was in excellent condition overall, with the exception of slight crumpling along the edges of the wings, and was recaptured at the Hawkwatch platform, where he was originally tagged.

This upcoming spring, if not sooner, Monarch Watch will provide a comprehensive list of recaptured and/or rediscovered Monarchs. CVWO will use this information to determine the origin of recaptured Monarchs and learn if any Monarchs tagged at CVWO sites were found within the overwintering sites.

Education

With the COVID-19 pandemic, educational opportunities were limited and social distancing was required in all social situations. Performing demonstrations became a bit of a challenge. Despite these obstacles, I was able to connect with a variety of guests and give multiple informal presentations while out in the trails in KSP, the Visitors Center at ESNWR, the Hawkwatch Platform and along the beach between the Fishing Pier and Wood Warbler Boardwalk. On top of these informal presentations, I also gave short, formal ones on two separate occasions to Virginia Master Naturalists at the Hawkwatch Platform and Nature Garden at Taylors Pond within KSP, as well as to a small group of elementary school students who visited the park as a part of a field trip.

Conclusion and Recommendations for the Future

The 2020 Monarch Migration-Tagging season was successful, though with much lower numbers than what has been observed in years past. This is likely due to the significantly strong winds and frequent storms that hit the bay this season, resulting in the Monarchs being pushed farther, faster, as well as across the bay and to locations along Virginia Beach. This can be supported through the consistently low number of observations; captures as well as looking at the data collected from biologists and volunteers across the bay. One day, in particular, observations reaching into the thousands. Stronger winds would keep Monarchs higher in the sky making them difficult to capture and tag; these storms required Monarchs to either keep flying across the bay or find shelter within the pines. The Monarch Meadow/Pollinator Field created by KSP in 2016 near the Hawkwatch Platform did provide a good source of nectar for flying Monarchs in its

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abundance of Goldenrod and prevalence of Mistflower. However, both the Sunday Field and floral resources within Taylors Pond were more utilized by these Monarchs, which can be observed while reviewing the data for the Monarchs tagged, as well as the general butterfly surveys that I conducted within various sites along the Eastern Shore. I strongly recommend cultivating the Sunday Field, as well as ensuring that proper maintenance is done within. This location is critical to migrating butterflies as the plants in that field flower later than most other nectar-producing plants around the Eastern Shore. The Goldenrod, Blue Mistflower and even species such as Gray-Headed Coneflower continued to flower until mid-November. Additionally, the trees around the Sunday Field provide a windbreak, allowing Monarchs to have a calm and safe place to feed not found elsewhere within the park. In the future, I would also highly recommend the Monarch Meadow be reassessed and more late-season flowering resources be planted at the site if possible. Much of this field was Dog Fennel, in which the Monarchs had no interest.

The ESVNWR had expansive fields of Goldenrod that were utilized by Monarchs, although they were relatively difficult to access for tagging for a variety of reasons including an abundance of particularly thorny multiflora rose. These plants take over vital pollinator habitat and make any attempt at accessing the fields beyond them a challenge, damaging equipment and preventing biologists and guests both from utilizing those spaces without some injury. The Refuge Office, Butterfly Trail and Visitors Center were all excellent locations with a variety of nectar sources beyond Goldenrod that were regularly utilized by Monarchs. The Refuge Office, in particular, was an amazing site with three separate gardens that had not been surveyed in the past, which I highly recommend continuing to observe the future. My recommendations for ESVNWR in the future would be increased maintenance, weeding and care for the Visitor Center Garden and Butterfly Trail, specifically. In removing the briars, and planting more goldenrod or other flowering plants, there will be an increase in overall pollinator visitation to that trail. I understand that with COVID-19, the volunteers who typically maintain the gardens surrounding and behind the Visitor's Center were unable to perform that task this year. Hopefully, that changes prior to the upcoming season, and variety can be added back into those spaces instead of being mainly Goldenrod. While the Monarchs did feed on these flowers, if there was a different resource available, they took full advantage of it (these sites had Common Lantana, Milkweed and Clematis mixed in). Alongside being beneficial for the Monarchs, this would have an added benefit for visitors to the Refuge to experience a variety of different native plants to add to their own gardens as well as being a great teaching tool when presentations and educational programs start again. Blue Mistflower would be a great addition for the Monarchs, as well as additional Milkweed and Common Lantana.

Goldenrod was one of the two most prominent nectar sources for Monarchs, which was not a surprise as both Goldenrod and Blue Mistflower were the most prevalent nectar sources around. Goldenrod, specifically, being incredibly prevalent at MBSNAP and Pickett's Harbor. However, whenever a different nectar source presented itself, that became the most popular source for as long as the blooms lasted. Within MBSNAP, it was a bit of a challenge to tackle the entire field. If a Monarch was spotted, it was relatively easy to push through the goldenrod to capture. However, spotting them was part of the problem. With only one very small trail running near the sign and farmers market, it was very difficult to find them away from that space. I would highly recommend, if possible, putting more trails running throughout the field through MBSNAP. This would provide another trail for guests and biologists alike to do additional nature surveys, hike and potentially be utilized for educational programs within the future. Pickett's Harbor was a spectacular space to do butterfly surveys and capture Monarchs with it being open and a relatively rarely used road. However, in the future, I would highly recommend a message be sent out prior to the start of the field season to the residents along Pickett's Harbor, as well as a formal meeting be conducted so that there are no incidents that occur between the current biologist and landowners when they observe us with butterfly nets and a clipboard.

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For future biologists at CVWO, I recommend visiting all the sites that have been mentioned in this report and those previous at the start of the season and making your own call based on what you observe. I found that Taylor's Pond, Sunday Field, ESVNWR, Pickett's Harbor and the Beaches were all excellent places to observe and capture Monarchs within the early season for their abundance of Goldenrod, with the Monarch Meadow becoming a more popular spot about midway through the season, and the Sunday Field being the only spot to sustain Monarchs for the entire duration. Although Goldenrod was not the only, or preferred nectar source this season, it is a staple in a Monarch's diet. I recommend closely monitoring the flowers around the Hawkwatch Platform and exploring all the sections you can within ESVNWR (this means hiking up your boots and plowing through the brush to get to the flowers, and potentially speaking with the Rangers to help you find the best locations around the Refuge). A fantastic recommendation from previous years' biologists would be to purchase a pair of digital calipers to increase the data's accuracy over a standard ruler, which was what I did this season. Obtain weatherproof pocket notebooks, which are easy to handle in the field and can come in a variety of sizes – my recommendation would be larger in order to have more space for notes, however, the smallest ones fit within pockets quite nicely. I would also recommend keeping two sets of your notes, just in case something happens to the first, and that you regularly keep up with writing in them. A clipboard is also a handy addition to your field supplies so that you do not have to struggle to find a hard surface to write on while in the field. Also I brought along a few extra nets, a small, collapsible butterfly habitat in order to capture and tag a greater number of monarchs in the field. I found these resources helpful, especially in connecting with the public and when situations went awry. However, these are just suggestions.

From my experience, I strongly suggest recording as much information as possible for each Monarch caught including the butterfly's specific location, the plant on which it was captured and the weather for the day. It is important to monitor Cape May on hawkwatch.org and their Monarch blog to predict Monarch influxes on the Eastern Shore. It would also be very beneficial to make connections with local visitors, Master Naturalists and the Butterfly Society of Virginia to assist with pointing out Monarch locations or to recruit volunteers for the busier days, once the situation with COVID-19 has calmed down. Making connections with these groups and taggers farther north could promote opportunities to receive leftover tags and to expose people to our Monarch program. This could even lead to some support for future Monarch projects and donations to CVWO.

Acknowledgments

I wish to give thanks to the amazing people I worked with this season, as well as CVWO for giving me the opportunity to be a part of such a fantastic experience and project. To Bridgett Brunea, thank you so much for every excited messages ranging from news of monarchs landing in the meadow behind the platform to a new insect to identify, as well as the opportunities to write and help out with the CVWO blog. To the Rangers in both KSP and ESVNWR, thank you so much for showing me around, pushing me outside of my comfort zone and keeping me company on my walks through the trails. Nancy Barnhart and Brian Taber, thank you both for giving me the opportunity to be a part of the park's and monarch project's legacy. To next year's Monarch Biologist, I wish you the best of luck and hope you connect with these insects, places and people as much as I did over these past few months. Thank you all!

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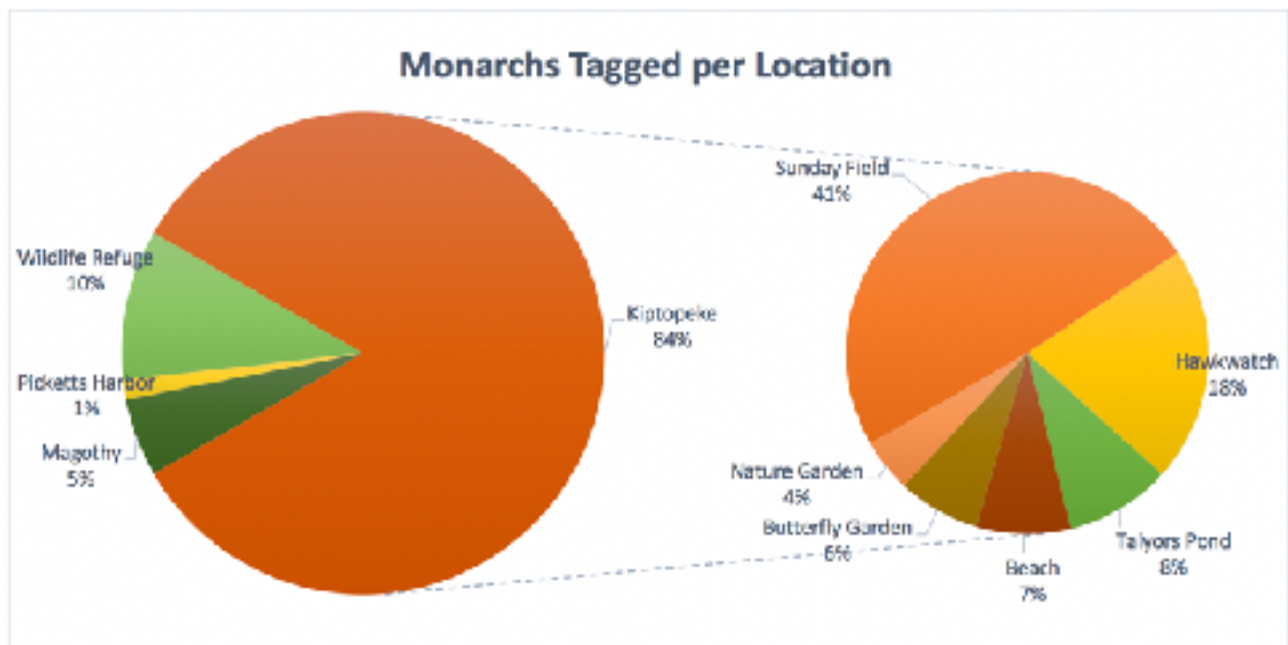


Figure 1: Percentage of Monarchs tagged per location this season.

KSP had the largest number of captures, with the Sunday field having the largest rate of capture within that select location. Sunday Field is a spectacular place to find Monarchs and is rarely utilized by visitors.

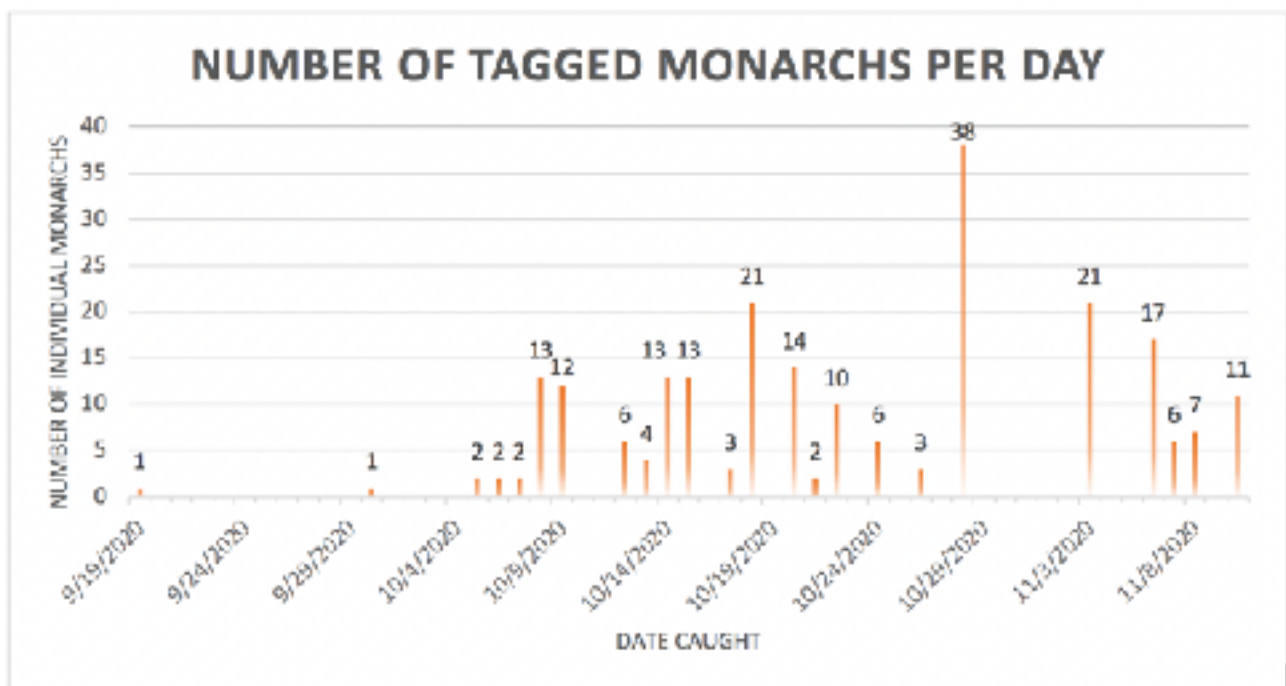
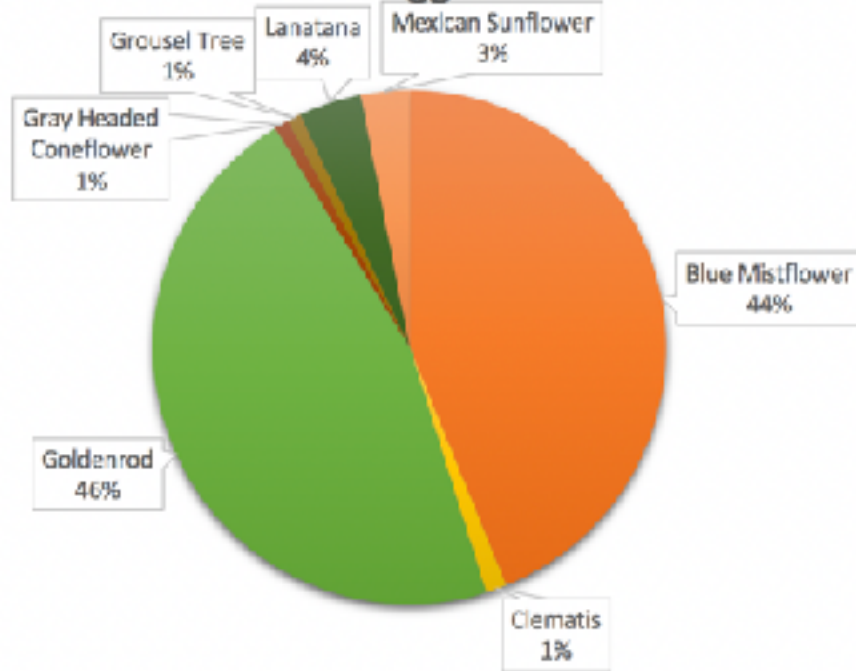


Figure 2: Number of Monarchs captured and tagged per day.

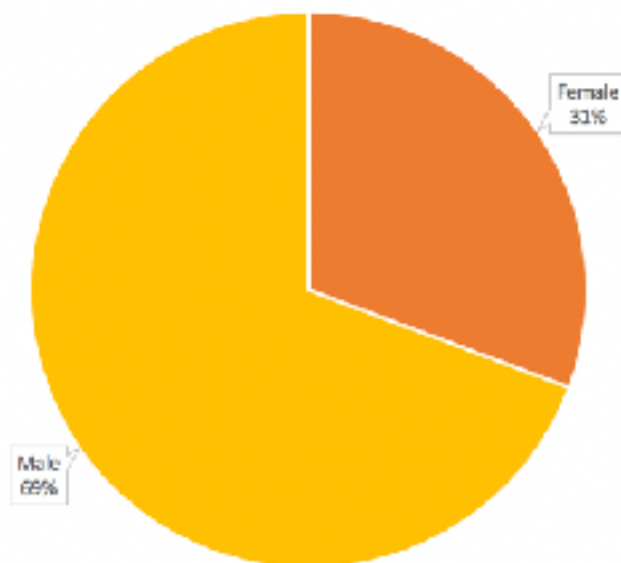
The season started off slow, but did eventually reach a point that Monarchs were being observed more frequently, which continued into the final week of the season.

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Monarchs Tagged Per Nectar Source



Percentages of Male vs Female Monarchs Tagged



DELMARVA TIP BUTTERFLY COUNT

22ND ANNUAL JULY BUTTERFLY COUNT: 2020 SUMMARY

By Lynn Davidson

The 22nd annual Delmarva Tip July Butterfly Count was held on July 26, 2020. Only ten butterflyers participated this year, which is half of average and the lowest since 2005. With the COVID-19 pandemic causing social upheaval this year, we are lucky that so many were willing to travel to the area for the Count. Participants practiced social distancing and other coronavirus avoidance guidelines to conduct the Count as safely as possible. The weather was good for butterflies but a bit hot for butterfly counters, with well-above average temperatures of 87 – 94 degrees, light winds, and clear skies.

Our intrepid butterfly enthusiasts logged a total of 24 hours on this hot day. The 33 species found is 24% below the five-year average. It is the lowest species total since 2014 when both the weather (exceptionally cloudy and cool), and the hours of effort (similar to this year's below-average hours) contributed to the lower numbers. However, the 475 butterflies counted is 77% below average and the second lowest total ever. Only the 160 individuals counted by one person in 2001, when the Count was effectively rained out, was lower.



Juniper Hairstreak. Photo by Lisa Nickel

Highlights of this year's Count were few: Giant Swallowtail was located for the eighth year in a row, with one individual counted; and the five Juniper Hairstreaks were the most tallied since the record high count of 16 in 2009.

There were no species for which the number of individuals was a new all-time low count and certainly none had record high counts. Six of the regularly occurring, expected species were not found on the Count. Five of these are usually found in very low numbers: Clouded Sulphur, Viceroy, Horace's Duskywing, Little Glassywing, and Sachem. The sixth species, Broad-winged Skipper, had its record high count last year with 22 individuals. Since no new species were discovered this year, the cumulative number of butterfly species found at least once over the 22 years of this Count remains at 60 species.

For those who are into numbers, here is a more in-depth look at the data. Although 60 species are on the cumulative species list, only 35 are found frequently enough to be considered "regularly occurring" (i.e., found at least eight of the last ten years). When compared to the latest five-year average for each of these regular species, the counts were above average for only one of them (Salt Marsh Skipper), roughly average (+/-10%) for two species (Hackberry Emperor and Least Skipper), and below average for 32 species, or 91% of the regular species. This is an unfortunate new record. This extreme number of species with below average counts has never been seen on this Count before! The previous "record" for this general pattern in the butterfly numbers was last seen in 2014 when 71% of the regular species had below

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average totals. As of 2020, one-third of the 35 regular species have had below average counts for at least three years in a row.

Including this year, eight of last 14 years resulted in the number of species with below average counts being greater than the number of species with above average counts, usually by more than double. In three of the years since 2008, these numbers were relatively equal, and only for the three years from 2015 to 2017 were the number of species with above average counts greater than the number of species with below average counts. The “trend” data for the last 11 years are provided in Table 1, and the last 14 years are shown in Figure 1.

Category	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Above avg	8	7	13	11	3	18	15	18	6	9	1
Below avg	20	19	14	14	24	7	8	12	23	16	32
Average*	6	8	6	9	7	9	11	4	6	10	2

*Average is defined as within ± 3 individuals for species with few individuals or within 10% for species with higher counts.

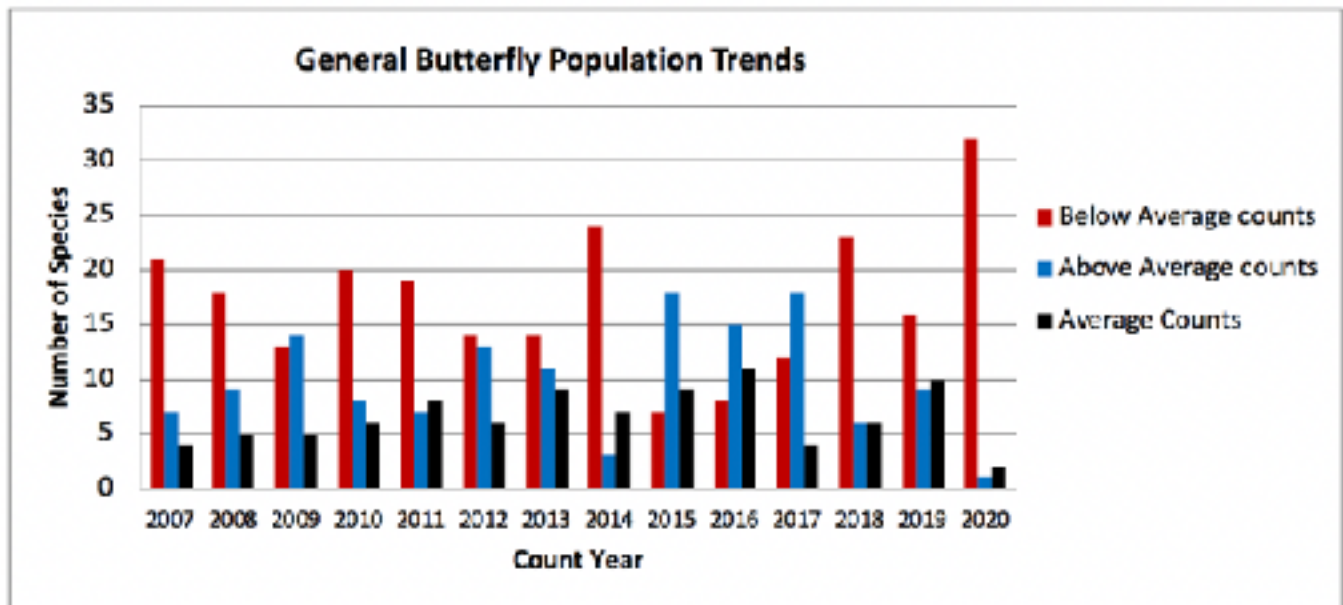


Figure 1. Annual number of species per Trend Category, relative to the prior five-year average for each species.

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For over 10 years, we have attempted to conduct the Count in a similar manner each year and cover the same habitat areas. However, many variables can affect annual variations in butterfly counts, such as short-term and long-term local and regional weather conditions, land-use practices, condition of nectar sources, condition of specific host plants, number of counters, area covered by counters, hours spent counting, and time of day spent counting. Because of these numerous influencing factors, it is difficult to know the importance or meaning of these trends.

One of these many factors, hours of effort, has been investigated by Dr. Sue Ricciardi, retired professor of mathematics. She performed t-test regression analyses comparing hours of counting with above average (Figure 2) and below average (Figure 3) counts. The figures show that over the years from 2007 to 2020, more hours of effort were associated with a greater number of species with above average counts and, also, fewer hours of effort were associated with a greater number of species with below average counts. Both analyses yielded significance at a 2% level, which is statistically significant.

Other interesting insights can be gleaned from looking at the species count data. For example, the three most common swallowtails on this count, Black, Eastern Tiger, and Spicebush, are all large, conspicuous species and easily countable. Despite these similarities as adults, caterpillars of the Black Swallowtail feast on members of the carrot family, such as parsley, dill, Queen Anne's lace, and common fennel. However, the other two are forest-oriented species. Their caterpillars feed on trees and shrubs, such as wild cherry and tuliptree for Eastern Tigers, and spicebush and sassafras for Spicebush Swallowtails. One might hypothesize that populations of the two forest-related species might face similar conditions and threats, and therefore their population cycles might appear similar. Their variation in counts of individuals, as shown in Figure 2, does appear to be somewhat similar to each other for many years, until the last few years. Interestingly, the variation in Black Swallowtail numbers is also somewhat similar to the variation in Eastern Tiger Swallowtail counts over the last eight years or more, as well.

The Delmarva Tip Count, as it is officially registered with the North American Butterfly Association (NABA), includes the same areas as the previously established Cape Charles Christmas Bird Count. Contained within a 15-mile diameter circle centered at Capeville, the territory includes the Eastern Shore of Virginia National

Figure 2. Hours of effort versus Above Average Counts (2007–2020).

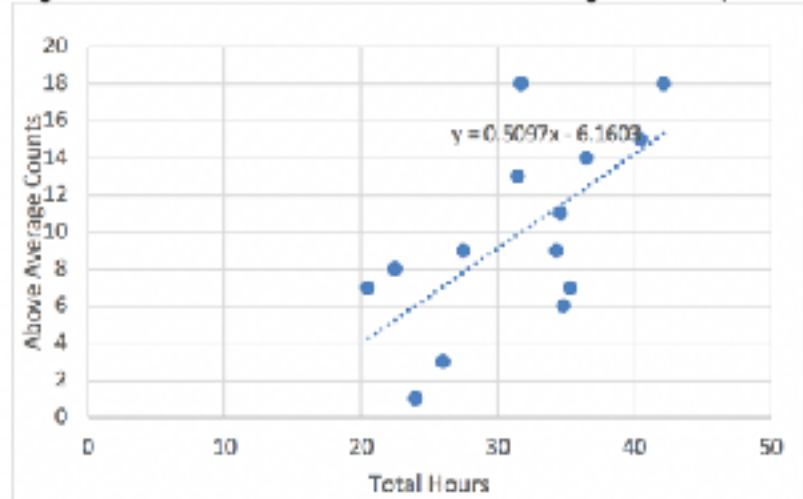
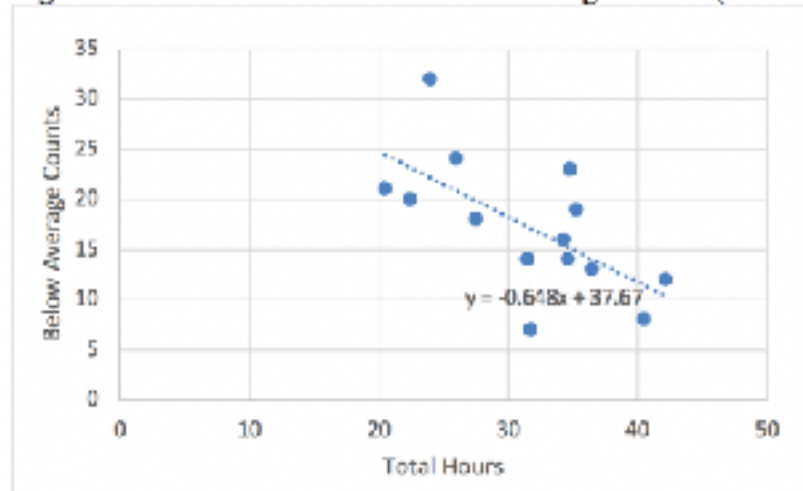


Figure 3. Hours of effort versus Below Average Counts (2007–2020).

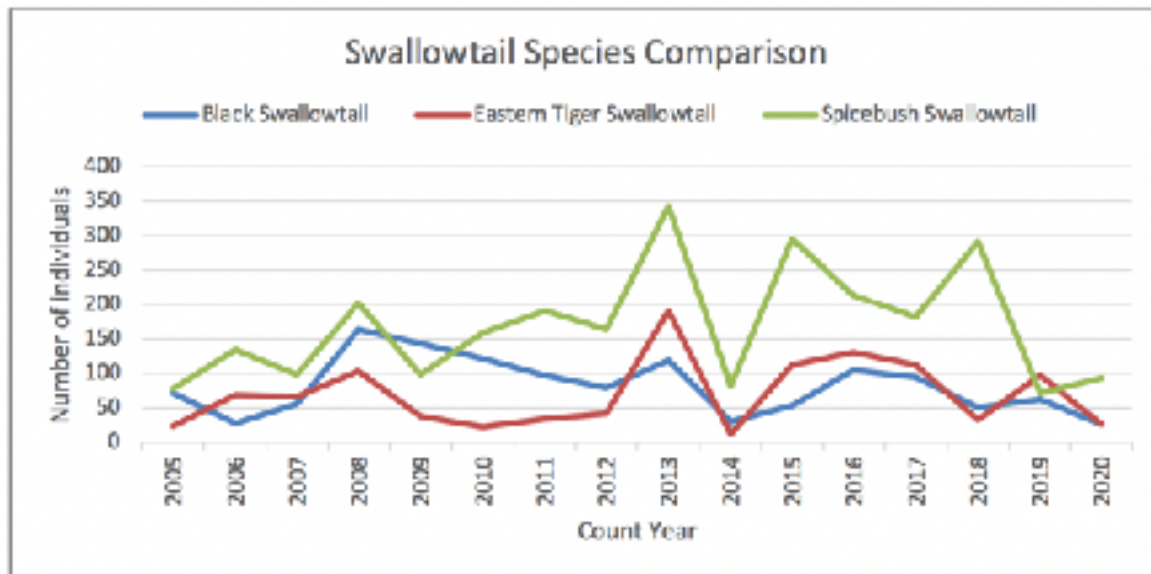


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Wildlife Refuge (ESVNWR), Fisherman Island NWR, and Kiptopeke State Park, and it continues northward to include Cape Charles and Oyster.

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. And special thanks to all who participated: Bob Ake, Nancy Barnhart, Ned Brinkley, Ginny Broome, Shirley Devan, Gary Driscoll, Adrienne Frank, Laura Mae, Lisa Nickel, and Brian Taber. This Count is usually held the fourth weekend in July. Please contact compiler Lynn Davidson (410-647-7439 or hal.lynn@comcast.net) to sign up.

Figure 4. Annual number of individuals for three Swallowtail species.



2020 Count Results: A Microsoft Excel spreadsheet summary of all yearly counts is available upon request to Lynn Davidson (hal.lynn@comcast.net).

Black Swallowtail: 26	Question Mark: 4	Fiery Skipper: 2
Giant Swallowtail: 1	American Lady: 6	Southern Broken-Dash: 0
Eastern Tiger Swallowtail: 27	Painted Lady: 0	Northern Broken-Dash: 0
Spicebush Swallowtail: 93	Red Admiral: 3	Little Glassywing: 0
Palamedes Swallowtail: 5	Common Buckeye: 55	Sachem: 0
Cabbage White: 55	Red-spotted Purple: 2	Zabulon Skipper: 1
Clouded Sulphur: 0	Viceroy: 0	Anron's Skipper: 0
Orange Sulphur: 10	Hackberry Emperor: 13	Broad-winged Skipper: 0
Cloudless Sulphur: 9	Tawny Emperor: 4	Dun Skipper: 0
Juniper Hairstreak: 5	Common Wood-Nymph: 7	Salt Marsh Skipper: 13
Gray Hairstreak: 5	Monarch: 7	Ocala Skipper: 0
Red-banded Hairstreak: 3	Silver-spotted Skipper: 54	dark swallowtail sp.: 2
Eastern Tailed-Blue: 10	Horace's Duskywing: 0	
Summer Azure: 3	Common Checkered-Skipper: 2	+ 8 Black Swallowtail caterpillars
American Snout: 32	Common Sootywing: 2	
Gulf Fritillary: 0	Swarthy Skipper: 1	
Variagated Fritillary: 6	Clouded Skipper: 0	
Pearl Crescent: 5	Least Skipper: 2	

NOTE: *Italicized name* is a new species for the Count, **bold names** are unusual species, and underlined numbers are new (or tied) all-time high counts for the species.

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

MONITORING IN COLONIAL NATIONAL HISTORICAL PARK

By Nancy Barnhart

COVID-19 and ensuing restrictions factored into our efforts in the ongoing Creole Pearly-eye Study in 2020. The team was smaller than in the past to accommodate social distancing. Because 2020 was considered a “follow-up” year after successful research in 2018 and 2019, the smaller team size was reasonable. The goals were to find early and late dates for the presence of these butterflies and to investigate other food sources. Additionally we wanted to determine the abundance of Pearly-eyes on Jamestown Island.

Wet weather conditions in the spring made scheduling surveys a challenge. The first survey was conducted on 4/9/2020 and produced no evidence of Pearly-eye butterflies. Four surveys were conducted in April and May with no sighting of Pearly-eyes and no evidence of feeding. A rare sighting of an Eastern Pine Elfin on Virginia Pine was made on 4/29/2020 at the Neck-o-Land location parking lot. The first Pearly-eyes, both Northern, were observed on

June 4. There was still no evidence of Creole Pearly-eyes, and no evidence of feeding on switch cane. On 6/10/2020 probable Northern Pearly-eye caterpillars were observed feeding on stilt grass.

By late June it was evident that wet weather was affecting butterfly populations in general. As of 6/30/2020, no evidence of Creole Pearly-eye caterpillars or adults had been observed. The first Creole Pearly-eye adult was observed on 8/12/2020 along with evidence of feeding on switch cane. On 9/03/2020 one Creole and 13 Northern Pearly-eyes were observed along with 19 other species of butterfly. Of note was the observation of a Lace-winged Roadside-Skipper on the old Rt. 31 at Neck-O-Land, a new species for the Williamsburg area.

A survey on Jamestown Island conducted on 9/4/2020 produced evidence of either Creole or Southern Pearly-eye feeding in three different stands of switch cane, indicating the presence of these butterflies. No adults were sighted.

The sighting of just two Creole Pearly-eye butterflies this year left us with questions to pursue in 2021. The lack of individuals leaves us without sufficient data to establish early/late dates and abundance. We will be on the lookout for a rebound in 2021.



Creole Pearly-eye Butterfly. Photo by Ken Lorenzen

THREE NEW BUTTERFLY SPECIES FOR THE GREATER WILLIAMSBURG AREA



Two-spotted Skipper on Pickerel Weed at Warhill. Photo by Shirley Devan

Two-spotted Skipper Observed in JCC, June 6 – 7, 2020

By Shirley Devan

I found an unfamiliar skipper nectaring on Pickerel Weed in a retention pond near Warhill High School in James City County June 6, 2020. I took numerous photos so that other local butterfly enthusiasts might identify it.

Brian Taber visited the area the following day, found the skipper again, took several photos, and identified it as a Two-spotted Skipper *Euphyes bimacla*. Several returned to the area to search numerous times, but they could not refind it.

The field observers noted the “striking white ray along hindwing trailing margin” as noted by Jeffrey Glassberg in “Butterflies through Binoculars: The East.”

This skipper is very rare in this part of Virginia, and this is the first local record. The normal range of this skipper is coastal Virginia, North Carolina, and South Carolina as well as to our north from about Nebraska to Maine and southern Canada.

Edwards' Hairstreak Observed in JCC June 2020



Edwards' Hairstreak. Photo by Shirley Devan

By Shirley Devan and Adrienne Frank

June 20, 2020, I first observed and photographed an Edwards Hairstreak, *Satyrium edwardsii*, at Little Creek Reservoir Park in James City County, an under-visited location for local butterfly enthusiasts.

Our local enthusiasts reviewed the photos, and they agreed it was an Edwards' Hairstreak. Allen Belden, a Richmonder and naturalist extraordinaire, responded, "This is an awesome find, Shirley, and great photos! As far as I know, there are very few recent records for this species in Virginia. I found a population in the Massanutten in 2015, and I've heard of one other find in the mountains — not sure where. That's it."

I also posted two photos to the Facebook page of "Butterflies of Eastern United States." Jeff Phippen, North Carolina butterfly expert who manages that page, agreed it was an Edwards' Hairstreak after

reviewing the photos and responded, "Great find, Shirley!"

Adrienne Frank, CVWO friend and local butterfly whisperer, searched iNaturalist for Edwards' Hairstreaks in the James City County area. She found one recorded exactly two years earlier – June 20, 2018 – near Colonial Williamsburg by Peggy Whitney, a biologist working for the National Park Service's Colonial Historical National Park.

Adrienne prepared this summary for the "Butterflies of the Greater Williamsburg Area: An Annotated Checklist":

Reported Sightings: June 20, 2018 (Margaret Whitney, Colonial Williamsburg, iNaturalist); June 20 – July 1, 2020 (Shirley Devan first observed at Little Creek Reservoir Park in James City County; subsequently observed almost every day by Adrienne Frank, Gary Driscoll, Ken Lorenzen, Brian Taber, Jan Lockwood, Nancy Barnhart, Teta Kain, and Carol Kauffman). Last day observed: July 1, 2020

Habitat: 2020 sighting at Little Creek Reservoir Park was in open sunny location with scrub vegetation. Butterfly observed nectaring on Sourwood blooms and perching on Bracken Fern and Northern Red Oak.

"Scrub oak thickets in rocky open habitats, including shale barrens and limestone outcrops. Also oak savannahs and sandhills." Cech, R. and G. Tudor. (2005). *Butterflies of the East Coast: An Observer's Guide*. Princeton University Press, Princeton and Oxford.

Caterpillar Hosts: Northern Red Oak (*Quercus rubra*) locally. Female observed laying eggs on stem of small Northern Red Oak June 21, 2020 (Nancy Barnhart photos)

Local butterfly enthusiasts visited Little Creek Reservoir Park almost daily through July 8, when no Edwards Hairstreaks were present. Butterfly was last observed July 1.

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Two reported their encounters with the Edwards' Hairstreaks:

Sunday, June 21, Nancy Barnhart photographed a female Edwards' Hairstreak laying eggs on the stem of a small Northern Red Oak. See photo below.

Monday, June 22, Ken Lorenzen, local entomologist, reported: "[after 12:45] I did not see any hairstreaks for about 30 minutes, then they seemed to appear like magic. I say "they" because I think I saw up to eight individuals; I managed to get photos of six and they all look like different individuals."

Wednesday, June 24, Ken Lorenzen described the butterflies' behaviors: "I observed two hairstreaks in close "combat" with each other, flying in circles around each other and around the area I was standing. Then they flew upwards to maybe 30 ft or more and I would lose sight of them. In a few seconds they would appear right in front of me and continue the "combat." After 10 seconds or so of close chasing near me, they would repeat flying high up circling each other where I would lose them and then they would appear in front of me again after a few more seconds. It seems they both wanted to use a small pine tree several feet from me for a perch because after about 5 straight minutes of chasing each other they decided they had had enough, and both landed on the same little pine tree."



*Edwards' Hairstreak laying eggs on stem of small Northern Red Oak tree.
Photo by Nancy Barnhart*

Lace-winged Roadside-Skipper Discovered at Colonial National Historical Park

By Nancy Barnhart

On September 3, 2020, in the course of conducting a survey for the Creole Pearly-eye Butterfly Study, the team discovered a tiny roadside-skipper, previously not seen in the Greater Williamsburg Area. This was our first Lace-winged Roadside-Skipper (*Amblyscirtes aesculapius*). It was found nectaring on a small crownbeard (*Verbesina occidentalis*), the only flowering plant in the vicinity, on property owned by the National Park Service. The striking cobweb pattern was eye-catching, and clearly something different. That and the checkered wing fringes led us to check our field guides and confirm this species. The team took many photos for documentation in the brief period it lingered. This was the only day the butterfly was observed despite extensive searching by other volunteers on subsequent days.



Lace-winged Roadside-Skipper.
Photo by Nancy Barnhart

Butterfly surveys have been conducted extensively in this area over the last three years as part of the Creole Pearly-eye Butterfly Study, yet this species has not been previously encountered. Common food sources for this roadside-skipper include elephants foot, sweet pepper bush, blackberry, white clover, selfheal, dogbane and Joe Pye Weed. Larvae feed on cane (*Arundinaria*) plants, and this area of Colonial National Historical Park has substantial stands of Giant and Switch cane. This species of roadside-skipper occurs from Eastern Oklahoma and SE Texas, east to SE Virginia, and south along the Atlantic coast to Northern FL. (Kaufman) They prefer moist woods and swamp wetlands, exactly the habitat in which it was encountered. Lace-winged Roadside-Skippers are on wing from March-September with two broods. They are considered “at risk” and placed in the “vulnerable” category of conservation status due to habitat loss. This is a common concern to many species that depend on wetlands.

In 2021 the ongoing Creole Pearly-eye study will include an effort to locate more evidence of this tiny skipper. Surveys will begin in April 2021.

Kaufman, Kenn & Jim P. Brock, Field Guide to Butterflies of North American, 2003, Hillstar Editions L.C., p 344.

WILLIAMSBURG AREA

BUTTERFLY COUNT



Spicebush Swallowtail at Jolly Pond. Photo by Shirley Devan.

By Adrienne Frank

What a wonderful success for the 7th year of our Williamsburg Area count. Go team! There were 43 participants, and we surpassed the previous high of 40 participants from last year. We had several visitors from other nearby counties. We are creating interest, and other Master Naturalist chapters are modeling counts after ours.

We had **50** species and **1722** individuals identified. Our numbers were about average for the 7 years of counts. However, it seemed low if you compare it to last year's count of 53 species and 3037 individuals.

This year's count was different than in years past due to COVID-19. We divided our team into 16 small parties (average of <3 each). Typically, we have 5 teams of about 5 or 6 people. We also had new areas in the circle covered, with some results better than others.

The species with the highest number of individuals was the Common Buckeye (284 observed). Three species of Swallowtails had all-time highs. These were the most that we ever recorded for our circle: Zebra (52),

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Black (40), and Spicebush (101). There were two species missing that we have had every year: Question Mark and Common Sootywing. We had 50 observed out of 63 ever recorded on our counts.

Here is a highlight for the combined spots in the Centerville Corridor. Thanks to our 43 participants for joining in.

The **Centerville Corridor** was divided into multiple areas. Shirley Devan and her team covered a new area, Jolly Pond, and found 6 species. The Lavender Farm and Colonial Heritage yielded the only 2 Appalachian Browns and had the high count for Common Buckeye (142) for the entire count.

Freedom Park and the Warhill Tract, part of the Centerville Corridor, was led by Brian Taber. They had the only Tawny-edged Skipper and Dion Skipper, and the high count for Variegated Fritillaries. At Warhill, there is a lot of Passionvine, the host plant for the Variegated Fritillary.

These are the totals submitted to North American Butterfly Association.

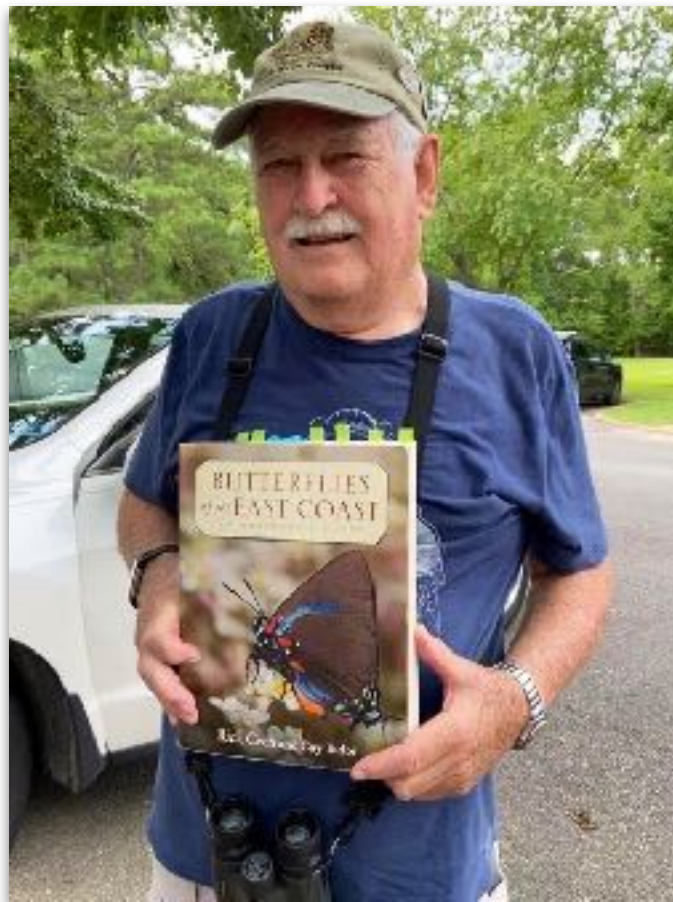
¹**Zebra Swallowtail 52**, ²**Black Swallowtail. 40**, Eastern Tiger Swallowtail 238, ³**Spicebush Swallowtail 101**, Cabbage White 7, Clouded Sulphur 1, Orange Sulphur 8, Cloudless Sulphur 62, Sleepy Orange 24, Gray Hairstreak 10, Red-banded Hairstreak 4, Eastern Tailed-Blue 66, Spring Azure 30, American Snout 3, Variegated Fritillary 32, Pearl Crescent 65, Eastern Comma 1, American Lady 28, Painted Lady 1, Red Admiral 4, Common Buckeye 284, Red-spotted Admiral 3, Hackberry Emperor 2, Northern Pearly-eye 1, Appalachian Brown 3, Gemmed Satyr 3, Carolina Satyr 5, Common Wood-Nymph 4, Monarch 84, Silver-spotted Skipper 200, Long-tailed Skipper 1, Southern Cloudywing 3, Horace's Duskywing 17, Swarthy Skipper 3, Clouded Skipper 2, Least Skipper 23, Fiery Skipper 146, Tawny-edged Skipper 1, Southern Broken-Dash 5, Northern Broken-Dash 2, Little Glassywing 48, Sachem 25, Delaware Skipper 9, Zabulon Skipper 43, Aaron's Skipper 1, Broad-winged Skipper 4, Dion Skipper 1, Dun Skipper 4, Salt Marsh Skipper 5, Ocola Skipper 13.

¹High # for species since count inception ²High # for species since count inception ³High # for species since count inception.

Total: 50 species, 1722 individuals.

Immatures: Black Swallowtail 10 caterpillars; Common Buckeye 1 caterpillar; Monarch 6 caterpillars.

Field Notes: Late freeze, drought, recent rains, hurricane Isaias. Spotty rain during count day.



*Les Lawrence with his field guide.
Photo by Ginny Broome.*

WATERBIRD PROJECT



Marbled Godwit. Photo by Steve Thornhill

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, 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.



Willet. Photo by Steve Thornhill

WATERBIRDS TEAM REPORT



Piping Plover. Photo by Steve Thornhill

By Bill Williams

The 2020 Waterbirds Team contributed data to several long-term bird monitoring projects. Among those were its continued documentation of birdlife on Craney Island Dredged Material Management Area (CIDMMA) in Portsmouth, Virginia, the Nansemond River Christmas Bird Count, the Virginia Department of Wildlife Resources' (VDWR) annual Least Tern and American Oystercatcher surveys, and the Virginia Breeding Bird Atlas 2 (VBBA2). The Team's activities were conducted under the auspices of the VDWR. The Norfolk District Office of the United States Army Corps of Engineers (USACE) granted access to CIDMMA.

Craney Island Bird Monitoring Surveys

A primary management action described in the Long-term Bird Management Plan for the CIDMMA (Draft-2012) states: "Regular monitoring is a vital component of conserving avian resources at the CIDMMA facility. Monitoring generates information needed to determine whether a facility operation may adversely affect a specific resource (e.g., nesting site) and provides a basis for further decision making."

To support that action, Waterbirds Team members have chronicled the diversity and abundance of bird species found on or immediately adjacent to CIDMMA weekly, weather permitting, since 2011. During 2020 the Team documented a total of 187 species during 156 observation hours over 23 surveys conducted 2 January through 17 December. The average number of species per survey was 79. Eighteen survey weeks were cancelled due to the facility's Coronavirus-19 Pandemic response closure. Another seven were lost due to inclement weather

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Surveys commenced near civil sunrise, concluding circa 1400 hrs. Monitoring work consisted of walking and/or driving all non-restricted roadways within the facility including the paved road leading to and from the Portsmouth Landfill. Throughout every survey, efforts were made to document the total number of individuals of every bird species detected by sight and/or sound. All data were entered into the Cornell Laboratory of Ornithology's eBird database.

The facility's waterbirds diversity included: 21 waterfowl species; 2 grebe species; 30 shorebird species; 15 gull/tern species; 2 loon species; Northern Gannet, a recently deceased Brown Booby, Double-crested Cormorant, Brown Pelican; and 6 wading bird species. Collectively, these accounted for 41% of the 2020 cumulative species total. The 2 January survey was coincidental with the National Audubon Society's annual Nansemond River Christmas Bird Count. Team members logged 9.5 hours at the facility that day recording count data for 71 species.

Virginia's highest reported single-day counts in 2020 were recorded at CIDMMA for the following species: 1642 Northern Shovelers on 8 Oct; 97 Black-necked Stilts on 20 August; 523 American Avocets on 24 September; 9 Wilson's Phalaropes on 27 August; and 12 Red-necked Phalaropes on both 27 August and 3 September. The Black-necked Stilt total included adults plus young produced at the facility during the summer season

A Bald Eagle pair fledged one young from a nest platform at the facility's northwest corner. Incubation, suspected during the 2 January survey, was confirmed 9 January when the team witnessed a nest exchange between the attending adults. The pair and the fledgling were present at or near the nest site into the fall season, at which point the adults began to actively add structural material to the existing nest into mid-December

During the 23 July survey an American Oystercatcher pair with one near-fledgling was observed in habitat preferred by this species for nesting that had developed on the southern-most Eastward Expansion dike into the Elizabeth River. The age of the chick, its behavior, and behavior of the near-by adults strongly suggested breeding at the site. These observations constituted the first known breeding confirmations at CIDMMA for both species.

USACE staff, Catherine Galway and Shannon Rheinheimer, conducted regular monitoring of CIDMMA Least Tern colonies and Black-necked Stilt breeding efforts during the pandemic shutdown. Their Least Tern data were



Black Skimmers. Photo by Steve Thornhill

Continued on next page...



White Ibis. Photo by Steve Thornhill

submitted to the VDWR for the agency’s annual Least Tern Monitoring Project. Additional breeding bird information gathered by the Waterbirds Team was logged into the VBBA2 eBird portal for that project’s fifth and final year. The VBBA2 was a state-wide collaborative effort managed by the VDWR and the Virginia Society of Ornithology.

Grandview Nature Preserve Least Tern and American Oystercatcher Survey

Grandview Nature Preserve in Hampton was visited 14 June 2020 to assess the status of nesting Least Terns and American Oystercatchers, part of assisting the VDWR’s annual surveys for both species. Not only was there no evidence of Least Tern breeding, zero Least Terns were noted during the entire 6-mile round-trip walk to and from colony sites formerly found on Factory Point at the northeast end of the Preserve. The single American Oystercatcher pair encountered that morning was reported as “loafing”; the pair exhibited no territorial behavior, nor any behaviors associated with breeding.

The CIDMMA Motus System

A system software update and an antennae adjustment were performed in September on the CIDMMA Motus station Andy Hawkins and Dave Youker installed on Spillway 6 in 2018. The system recorded its first officially credited “hit” with a Sora detected 7 December 2020. The bird had been tagged 26 August 2020 by the Maryland National Capital Parks and Planning Commission as part of a migration study on the Patuxent River Park-Jug Bay Natural Area in Maryland.

Additional fauna noted at CIDMMA

The Waterbirds Team routinely lists non-avian species detected during its CIDMMA field work. Noted there in 2020 were:

Mammals: Atlantic bottlenose dolphin, mink, muskrat, river otter, eastern gray squirrel, eastern cottontail rabbit, raccoon, cotton rat, meadow mouse, feral house cat

Reptiles: yellow-bellied slider, red-bellied slider, diamond-backed terrapin, eastern rat snake, dead-on-the-road-garter snake, rough green snake

2020 Survey Team Members: Bob Ake, Andy Hawkins, Gerald Head, Alex Minarik, Lee Schuster, Brian Taber, Bill Williams, Dave Youker

NOT JUST WATERBIRDS AT CRANEY ISLAND



Northern Harrier. Photo by Bill Williams



Juvenile Red-tailed Hawk. Photo by Bill Williams

WOOD DUCKS

IN NEWPORT NEWS



By Dave Youker

Male and Female Wood Ducks. Photo by Dave Youker

This past year was almost a carbon copy of 2019. Wood Duck productivity was pretty good, but snakes continued to plague some boxes. Rat snakes were again found in 3 of the 7 nest boxes scattered around Harwoods Mill Reservoir. Large, 36 inch predator guards were installed this winter in hopes of keeping the snakes at bay.

All boxes were initially occupied by Wood Ducks during 2019, and 3 boxes had second clutches. However two of the three were renests following snake occupancy, while the third was a renest after the initial set of eggs were abandoned. Each of the three nests where snakes were found was abandoned. Since this occurred early in the nesting season, follow on nesting occurred in 2 boxes.

As usual, nesting commenced in early March and was complete by the end of June. Total number of Wood Ducks fledged was 105. Following the Wood Duck nesting, there was no subsequent nesting by other avian species such as has occurred in previous years.



*Wood Duck box with new predator guard.
Photo by Dave Youker*

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



Whimbrels. Photo by Scott Stafford.

ANNUAL KIPTOPEKE CHALLENGE

A SINGLE-DAY BIRDING COMPETITION

By Dave Youker

We added an additional challenge this year to the Kiptopeke Challenge...COVID-19! CVWO decided to hold the annual event, but current COVID-19 restrictions had to be observed. To accommodate this, teams of one were allowed for the first time. A total of 10 teams competed this year on September 26, and they birded everywhere from the Eastern Shore to Virginia Beach to the middle and lower peninsulas.

Some new teams were formed this year due to the restrictions; some with familiar faces while others emerged with new participants. There were the perennial teams such as the Laughing Falcons, Gulls Gone Wild, and C'ville Cerulean, but also new contenders like Solitary Vireo, Peninsula Parulidae, Beltway Brobolinks, Dragon Ladies,

Ten Teams Find 170 Species

In addition to the COVID-19 restriction, this year the participants had to contend with rain...fairly consistent throughout the day and heavy at times.

The total species seen by all teams was 170 which is about 15 species more than the last two years. With teams spread around the coastal plain of VA, there were 33 different species that were only seen by a single team. The 7 species that every team encountered were: Bald Eagle, Red-bellied Woodpecker, Blue Jay, American Crow Carolina Chickadee, Carolina Wren and Northern Cardinal.

Continued on next page...

Philadelphia Vireos, Road Runners and Bantering Broad-wings.

Our category winners this year were Laughing Falcons for the 24-hour; Dragon Ladies for the 3-hour; Gulls Gone Wild for the Special Venue; and C'ville Cerulean for the Youth. The total species seen by all teams was 170 which is about 15 species more than the last two years. With teams spread around the coastal plain of VA, there were 33 different species that were only seen by a single team. The 7 species that every team encountered were: Bald Eagle, Red-bellied Woodpecker, Blue Jay, American Crow Carolina Chickadee, Carolina Wren and Northern Cardinal. After 26 years of conducting Kiptopeke Challenges, it's hard to come up with new species and none were recorded this year. But the big miss this Challenge was Cattle Egret which was the first time this species was missed in all previous events.



Beltway Brobolinks Scott and Josh Stafford.

Photo provided by Scott Stafford

In addition to the COVID-19 restriction, this year the participants had to contend with rain...fairly consistent throughout the day and heavy at times. Participating teams by category were as follows: Laughing Falcon team of Bob Ake, David Clark and Andrew Baldelli recorded 112 species. Dave Youker as the Peninsula Parulidae team posted 97 species. Philadelphia Vireos team of Harry and George Armistead recorded 92 species, while another duo team of Scott and Josh Stafford (the Beltway Brobolinks) tallied 91. A second vireo team, Solitary Vireo (Brian Taber), posted 73 species. And our final 24-hour team was the Road Runners of Harry and Rochelle Colestock with a final count of 72.

The Dragon Ladies team of Maryanna Fisher and Peggy Combs got bogged down in heavy rain on the middle peninsula, but managed 9 species for the 3-hour category. The Special Venue category pitted the veteran Gulls Gone Wild team of Shirley Devan, Nancy Barnhart, Jan Lockwood and Barbara Neis against this year's hawkwatching team (Bantering Broad-wings) of Karl Bardon and Bridgett Brunea. The Gulls took top honors with 62 species while the Broad-wings were right behind with 58. The final category of Youth was represented by Conor Farrell as the C'ville Cerulean who tallied 114 species.



Wild Turkey. Photo by Dave Youker

The KC is our 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. Several teams were in contention, but the Gulls Gone Wild took the honors with over \$4,100 in donations. The total raised by all teams was an impressive total of \$12,311! 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.

2020 KIPTOPEKE CHALLENGE TEAMS



“Gulls Gone Wild” with masks – Barbara Neis, front left, Shirley Devan, back left, Jan Lockwood, center. Selfie photo by Nancy Barnhart, far right



***Harry Colestock, Road Runner Team Member.
Photo by team member Rochelle Colestock***



***C’ville Cerulean Connor Ferrell.
Photo by Brian Taber***



***Solitary Vireo and CVWO’s president, Brian Taber.
Photo by Dave Youker***

IMAGES FROM THE 2020 KIPTOPEKE CHALLENGE



Bantering Broad-wings Team of Karl Bardon and Bridgett Brunea. Photo by Brian Taber



Red-shouldered Hawk. Photo Rochelle Colestock



Yellow-crowned Night Heron. Photo by Dave Youker



Ned Brinkley in a familiar pose. Photo by Roberta Kellam

REMEMBERING NED BRINKLEY

By Brian Taber

Ned was so many things to so many people. The Observatory is proud to have known him as a board member, advisor, colleague, supporter, and friend. The Observatory printed copies of the book he edited, *Shorebirds at Chincoteague*, a summary of the work of Claudia Wilds. There is an excellent, detailed tribute on the website for the Center for Conservation Biology and even more in his online obituary at the *Virginian-Pilot*.

I knew Ned for almost 40 years and read the news of his passing while sitting on the Kiptopeke Hawkwatch platform before dawn. It's a place we both loved.

In Ned's National Wildlife Federation *Field Guide to Birds of North America*, Ned says in the book's dedication... "my happiest times birding have been with mentors, friends and field trip participants – millions of small moments in which birds' appearances seemed to stop time itself and fuse us all together in wonder and astonishment."

Ned passed on Nov 22, 2020. Rest in Peace.

Post Script

At its mid-April 2021 meeting, the Northampton County Board of Supervisors on the Eastern Shore officially named the new natural area at the former landfill near Oyster for Ned Brinkley, a friend of birders on the Eastern Shore and all over Virginia. The Edward S. Brinkley Nature Preserve is the site of many visits and bird discoveries by Cape Charles resident Ned Brinkley over the years. Brinkley was a frequent visitor to the former landfill site.

A TRIBUTE TO JOHN DILLARD



Photos from Julie Kacmarcik



By Julie Kacmarcik, Richmond Audubon

John Dillard passed away peacefully on December 2, 2020. He was 94. John was a treasure.

He was a true gentleman, a husband, a father, a grandfather and a friend to all who knew him. Nature was John's passion. He was a long-time member of Richmond Audubon and the Virginia Society of Ornithology and was a founding Board member of the Coastal Virginia Wildlife Observatory. I was privileged to present John with the Avian Defender award in 2015. He gave his heart and soul to banding projects at Kiptopeke State Park and MAPS' banding at Westview, Powhatan and

Dutch Gap in Chester, VA.

We could always count on John to be at the gate at Dutch Gap ahead of schedule. He was eager to help open and close the station, scribe our data or extract birds from nets. His conversations never centered on the aches and pains of getting older; moreover, I believe he enjoyed the "hen party" of all of us gathered 'round the banding bench. He was always curious about how to use his computer more efficiently or setting up Excel spreadsheets. And boy did John love a good crab cake when we had our luncheon outings!!

The passing of John has left a big hole in the heart of the birding community; yet there are also smiles knowing that we had the privilege to know John and have him in our lives. John's humble and quiet manner left a lasting impact in the natural world.

EDUCATIONAL OUTREACH

AND PUBLIC RELATIONS STRATEGY



CVWO Hawkwatcher Nancy Barnhart leads socially distanced and masked learning at College Creek Hawkwatch. Photo by Lisa Nickel

How CVWO Served During the Pandemic

How did CVWO serve during the 2020 Global Pandemic? We were ready to meet the public where they were, quarantined in their homes, on virtual, educational platforms, social media, and through our monthly newsletter updates of ongoing Virginia wildlife research and conservation projects. And when the public decided to venture out of their homes in March 2020, kicking off a nationwide uptick in park visits, CVWO was ready with our public education programs – safe and socially-distanced – on the Hawkwatch platform at Kiptopeke, at College Creek hawk watch events (see photos), in our butterfly gardens at James City County Marina and Kiptopeke State Park.

The James City County Marina and Chickahominy Riverfront Park recorded year-on-year attendance increases of 18.3% for June 2020, according to the [James City County Annual Report](#).

According to a [Virginian Pilot article](#) in August 2020, nearly 112,000 more people visited Virginia state parks than during the same time in 2019. Westward in the commonwealth, the Shenandoah State Park saw a [record increase in visits](#).

Take a look at the stories in this section of our annual report to be inspired by how CVWO was ready to serve the public, and to continue to serve the wildlife of Virginia, during the historic Global Pandemic of 2020.

Safe, Socially Distanced Learning

We're continuing our educational efforts wherever we are – masked and socially distanced still.

In June, Adrienne Frank, representing CVWO and one of our partners Historic Rivers Chapter of the Virginia Master Naturalists, presented a ZOOM program for the Williamsburg Botanical Garden on “Planting for Pollinators.”



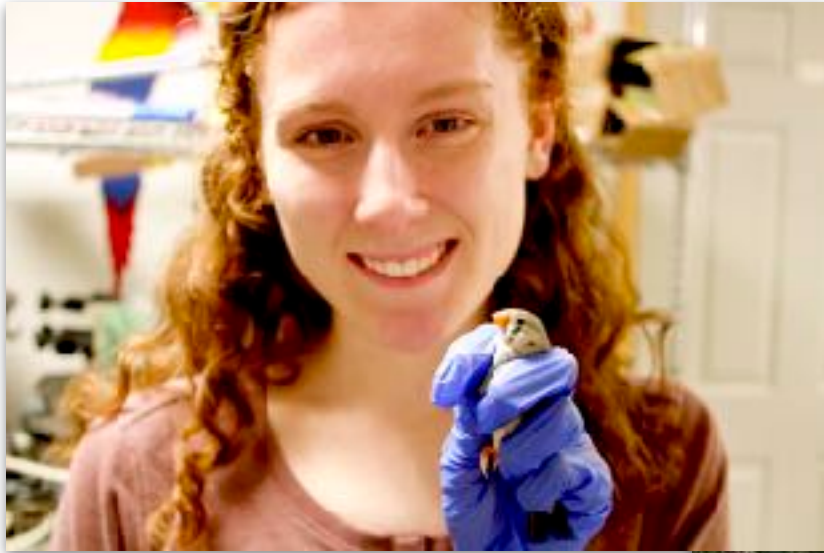
Educational Signage Now In Marina Butterfly Garden.



Final day of College Creek Hawkwatch on the James River, May 31, 2020. The Colonial Parkway was closed because of the pandemic, but visitors arrived by bikes and on foot to safely share the final day of the season. Photo by Ken Barnhart.

2020 CVWO RESEARCH GRANTS

AWARDED TO THREE GRADUATE STUDENTS



Above: Robin Thady with a research subject, a Zebra Finch. Right: Nick Flanders working out in the field. Photos provided by grant recipients.



Each year CVWO gives a number of research grants to graduate students at the College of William and Mary and Old Dominion University who are conducting avian research. In 2020 we awarded three research grants.

The Old Dominion University Bob Ake Grant went to Nick Flanders who is researching: “Using remote cameras to assess the diversity of avian frugivores that use oak mistletoe (*Phoradendron lecarpum*) in forested and urban habitats in southeastern Virginia.” Nick is a PhD student in the Ecological Sciences Department of Biological Sciences, Old Dominion University, Norfolk, Virginia, and studies under professor Dr. Eric Walters.

The William and Mary Ruth Beck Grant went to Casey McLaughlin who is studying “Using feather corticosterone to determine if wild birds are under mercury stress” at William and Mary. She is a biology graduate student studying under Professors Dan Cristol and Eric Bradley.

The Bill Akers Grant went to Robin Thady who is studying “Developing an acoustic warning signal to reduce bird collisions” at William and Mary. Robin is a biology graduate student studying under Dr. John Swaddle.

CVWO RECEIVES VIRGINIA SOCIETY OF ORNITHOLOGY'S JACKSON M. ABBOTT CONSERVATION AWARD



By Dan Bieker, President, Virginia Society of Ornithology, and Patti Reum, Chair, Conservation Committee

We are pleased to announce that the Coastal Virginia Wildlife Observatory (CVWO) is the 2020 recipient of the Virginia Society of Ornithology's Jackson M. Abbott Conservation Award. In 1973 the VSO established a conservation award, later renamed the Abbott Award, to be given to individuals or organizations that have demonstrated outstanding conservation work in the state of Virginia.

CVWO was nominated by the Williamsburg Bird Club, with letters of support from Harry Armistead, the Virginia Department of Conservation and Recreation, and Cheryl Jacobson.

In its 25 plus years of service, the CVWO staff and volunteers, working in partnership with biologists, researchers, organizations and citizen scientists, have studied, protected and conserved birds and other wildlife on the Coastal Plain of Virginia. To mention a few, these projects include songbird research on the Eastern Shore, raptor research at the two Hawkwatch sites, Prothonotary Warbler population studies, Saw-whet Owl banding, and several NABA-sanctioned Butterfly Counts.

We were unable to have the 2020 annual meeting of the VSO this spring because of the COVID-19 pandemic. At this event, we usually present our awards. At this time, we are unsure of the dates of 2021 VSO meetings and field trips, but we will present you with your Award certificate at our next publicly held event.

Thank you for your service and accomplishments.

SUPPORT CVWO BY SHARING OUR STORIES AND BUYING FUN STUFF!

CVWO's YouTube channel features film interviews with our monarch and hawk biologists at Kiptopeke State Park. In addition to the views the channel receives, the observatory shared its footage this past year with Monarch Joint Venture and the Virginia Tourism Bureau as a professional courtesy in support of their own public education projects.

CVWO's website features hundreds of glorious photographs of raptors, butterflies and shorebirds, all donated by photographers supportive of our work. The galleries on the website also feature fun photos of our annual Kiptopeke Challenge teams, stories of the competition, and gatherings, like our 25th anniversary celebration at the Williamsburg Botanical Park.

CVWO's blog, also found on the website, allows the visitor to follow the annual hawkwatch and monarch projects at Kiptopeke, with reports from the biologists and president, along with photography from the migratory season.

Technology, through Dunkadoo, also allows visitors to the website to follow along with daily, weekly and seasonal totals of raptors moving over the Eastern Shore's peninsula, and over the heads of our hawk biologists and educators.

Our monthly e-newsletter doubled in subscribers in the past two years. The newsletter features the ongoing and current work of CVWO, as well as providing readers with valuable information about wildlife research, upcoming events, and beautiful photography of coastal Virginia wildlife. The newsletters are archived in the website's newsroom here: <https://vawildliferesearch.org/news-room>

We are especially proud of our newsletter, and its editor, Shirley Devan, as the actual readership of the newsletter is three times that of the industrial standard. In layman's terms, we are blessed with an intensely supportive following!

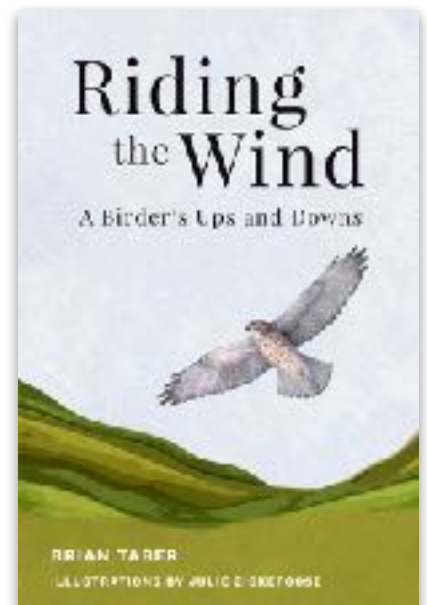
Creative collaborations resulting in beautiful artwork for our virtual realm and Café Press Store were accomplished this year with artists Megan Massa and Anna Stunkel.

Café Press. You can find the 25th anniversary image, our new American Kestrel logo, and artwork by CVWO artists on a variety of products in our Café Press store: <https://www.cafepress.com/cvwo>

Riding the Wind: A Birders Ups and Downs, by CVWO's president Brian Taber, celebrates birds, birding and conservation. The book features essays, some previously published in magazines. Twenty illustrations by award-winning artist Julie Zickefoose accompany the birding stories and the cover art is by CVWO Hawkwatcher, Anna Stunkel. The book is a fundraiser for CVWO.



A prothonotary warbler illustration by Anna Stunkel, our Kiptopeke Hawkwatcher for four years, is now featured on t-shirts, mugs, and a variety of fun items at our Café Press store.



SUPPORT CVWO

Your donation can make a big difference in 2021. Use the form below to join or renew your 2020 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've already donated in 2021 — 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 2021 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 to Purchase Brian Taber's new book, "Riding the Wind: A Birder's Ups and Downs"
\$ ____ Kiptopeke Hawkwatch
\$ ____ Monarch butterfly research
\$ ____ Waterbird research
\$ ____ Prothonotary Warbler Nest Box Trails
\$ ____ Annual Scholarships to William and Mary and 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) _____

Are you interested in receiving CVWO's colorful monthly eNewsletter by Constant Contact?

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!

Coastal Virginia Wildlife Observatory
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Lightfoot, VA 23090

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