COASTAL VIRGINIA WILDLIFE OBSERVATORY

ANNUAL REPORT FOR 2019

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

Cover Image: CVWO is very proud of our 25th Anniversary Celebration logo designed by Megan Massa, who was recognized as the American Birding Association's Bird of the Year artist in 2018. Massa 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.

Many thanks to CVWO Board members Lisa Reagan and Shirley Devan for design and layout of our 2019 Annual Report. We appreciate all the contributions of reports and photos and the untiring efforts of our volunteers and biologists in 2019.

Red-tailed Hawk and American Crow by Steve Thornhill.

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

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VA Department of Conservation and Recreation, Kiptopeke State Park

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U.S. Fish and Wildlife Service, Eastern Shore of Virginia National Wildlife Refuge

U.S. Park Service, Colonial National Historical Park

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PRESIDENT'S MESSAGE

A CVWO OVERVIEW

Dear CVWO Supporter,

What a great 25th Anniversary year! Our Board, listed on the left, is our most active and productive ever. Our advisors and volunteers are amazing. Two seasonal staff agreed to return to continue our work and theirs.

As you'll see in these pages, our butterfly work increased, our bird work was varied and substantial. We were able to help sponsor the Butterfly Festival at Williamsburg Botanical Garden as a new partnership. We distributed 2,000 new coastal Virginia butterfly brochures to schools, State Parks and city Parks. We joined Monarch Joint Venture and the North American Butterfly Monitoring Network. We're providing advice to Kiptopeke State Park about their new Visitor Center displays. We agreed to increase the number of our graduate school grants.

Dave Youker's coordination of our Kiptopeke Challenge team birding competition and main fund-raiser resulted in an excellent total. Lisa Reagan's website updates resulted in ever-greater information-sharing, as did Shirley Devan's regular e-newsletters. We produced a book of birding and conservation essays as an Anniversary fund-raiser. We held two celebration events, one highlighting birds and the other butterflies…whew!

Thanks, as always, to our terrific supporters. We look ahead proudly to the next 25 years!

Brian Taber, CVWO President

CVWO'S ADVISORY BOARD

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RAPTOR RESEARCH

Sharp-shinned Hawk, left, and Cooper's Hawk, right. Both photos by Steve Thornhill

Why It's Important

CVWO has been involved with raptor research since 1995 at the Kiptopeke Hawkwatch on Virginia's Eastern Shore where we hire paid hawkwatchers from September 1 to November 30 each year. CVWO has also conducted the College Creek Hawkwatch near Williamsburg since 1997, where volunteers count migrating raptors from March 1 to May 31. CVWO is also a partner in a study of Northern Saw-whet Owl migration in the Richmond area. Previously, CVWO conducted hawk banding at Kiptopeke, though no program is currently being done.

Over this time, raptor populations have declined due to habitat loss and pesticides, as well as other factors. CVWO's research contributes to international data bases, scientific insight, and preservation of these magnificent birds of prey. CVWO biologists record information that is shared internationally with science data bases like Hawkcount.org.

A multi-authored scientific paper on the state of the world's birds of prey and owls was published in September 2018. "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."

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. CVWO hires 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.

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. To see daily hawkwatch data, click this link: www.Hawkcount.org

Hawkwatchers and the platform volunteers also keep track of other notable species flying over the platform. How many saw the Roseate Spoonbill flyover last fall? And volunteers also pay attention to the nearby hummingbird feeders and seed feeders.

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

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

KIPTOPEKE HAWKWATCH

2019 REPORT SUMMARY

Bald Eagle, left, and Coopers Hawk, right. Photos by Steve Thornhill

Anna Stunkel using Dunkadoo technology to record raptor counts at the Kiptopeke Hawkwatch Platform. Photo by Collins Reagan

By Anna Stunkel

Overview

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. 2019 was the 43rd consecutive year of the hawkwatch and the 25th 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 25th of August to the 30th of November, a total of 19,299 migrant raptors of 14 species were counted over 795.25 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), the Dunkadoo database, and were automatically submitted into eBird.

The 2019 season total of 19,299 individual raptors was slightly below the ten-year average (Table 1). Using ten-year averages as a basis, it was an above average year for Ospreys, Bald Eagles, Cooper's Hawks, Red-shouldered Hawks, and Merlins, while it was a below average year for Northern Harriers, Sharp-shinned Hawks, Broad-winged Hawks, Red-tailed Hawks, American Kestrels, and Peregrine Falcons.

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This year, the peak of the season was quite drawn out, with strong flights occurring from mid-September to mid-October. Only one day totaled over 1,000 raptors this season, but there were four additional days in which over 800 birds were seen. Several cold fronts occurred during the peak, and wind direction was often from the east and northeast. This wind direction is generally ideal, but after prolonged periods it can tend to push birds too far inland, which may have happened a bit this season. Despite the lack of spectacularly busy days, peak flights were steady and this resulted in strong totals for several species.

The busiest day was September 29th, with 1,073 raptors. These included 275 Ospreys, 16 Bald Eagles, 22 Northern Harriers, 130 Sharp-shinned Hawks, 97 Cooper's Hawks, two Red-shouldered Hawks, 28 Broad-winged Hawks, eight Red-tailed Hawks, 202 American Kestrels, 167 Merlins, and 125 Peregrine Falcons. Strong movement began early this season, especially in the case of Ospreys (with 255 seen on September 8th). Movement gradually slowed down as October progressed. November was very slow, which has tended to be the case in recent years. It was unusual to have a lack of Northern Goshawks at Kiptopeke this season, for the fourth year in a row; there is a ten-year average of about three goshawks. On October 24th, the peak species count for the season occurred (12 species), including one Golden Eagle.

At A Glance…

- ***3,961 Ospreys is 38 percent above the ten-year average and 99 percent above the historical average.***
- ***710 Bald Eagles is 81 percent above the ten-year average and 255 percent above the historical average.***
- ***Below average year for Northern Harriers, Sharp-shinned Hawks, Broad-winged Hawks, Red-tailed Hawks, American Kestrels, and Peregrine Falcons.***
- ***On October 24th, the peak species count for the season occurred (12 species), including one Golden Eagle.***
- ***A total of 158 bird species were recorded from the Hawkwatch platform this fall.***

Species Accounts:

Osprey

3,961 Ospreys is 38 percent above the ten-year average and 99 percent above the historical average. This is the busiest Osprey count on record at Kiptopeke since 1997, and the fourth highest count total at this site. While Ospreys can be found on the Eastern Shore during the winter months, the vast majority of the population includes early season migrants that have mostly completed their migration south of the Eastern Shore by mid-October. This was again the case this year as Osprey movement peaked in September, with 79% of Ospreys seen during this month and a high count of 347 on September 13th. Three other flights of over 200 birds each also occurred in September. After the first week of October, Osprey movement slowed considerably.

Bald Eagle

710 Bald Eagles is 81 percent above the ten-year average and 255 percent above the historical average. This is a new record fall count here at Kiptopeke, breaking last year's previous record of 617 birds. Days with strong Bald Eagle migration tended to be scattered at different times throughout the season into November. The busiest flight occurred on November 1st, when 39 birds were counted (a new single-day record at this site). October 28th was also very busy, with a count of 30 birds. Other strong flights throughout the season led to a high total this fall. Bald Eagle recovery is an amazing conservation success story, and it is wonderful to see this increase at Kiptopeke.

Bald Eagles are the most difficult raptor species to count for the hawkcounter, as it can be difficult to differentiate between the local individuals and the true migrants. As a result, only individuals that took strong southerly flight paths

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were counted. If a distinctively plumaged individual that had gone south was seen flying north later in the day, a Bald Eagle was subtracted from the data sheet. However, it is also worth noting that during the hawk counter's presence working at Kiptopeke State Park throughout the summer months, few Bald Eagles were seen incidentally flying over the area. Still, there is a strong possibility that late-season birds were wintering in and around the park, so it is necessary to use caution when counting individuals of this species.

The busiest day was September 29th, with 1,073 raptors. These included 275 Ospreys, 16 Bald Eagles, 22 Northern Harriers, 130 Sharp-shinned Hawks, 97 Cooper's Hawks, two Red-shouldered Hawks, 28 Broad-winged Hawks, eight Red-tailed Hawks, 202 American Kestrels, 167 Merlins, and 125 Peregrine Falcons. Strong movement began early this season, especially in the case of Ospreys (with 255 seen on September 8th).

Northern Harrier

445 Northern Harriers is 20 percent below the ten-year average and 23 percent below the historical average. Harriers were seen throughout the season in sporadic numbers, peaking from early September to mid-October. This season, a record high count was tied on two days, with 22 birds observed on both September 8th and September 29th. Some harriers were seen flying low over the trees while others were high specks in the sky. They also flew at many heights in between, and often braved rainy and windy weather conditions. Harriers were often seen early in the morning and later in the day, and they sometimes flew in pairs.

Note that the hawk counter was present in the area during the summer and noticed incidental harrier migration on the Eastern Shore beginning in mid-August. Considering this species' spread-out migration timing, it is possible that a number of birds were missed before the official count began.

Sharp-shinned Hawk

4,451 Sharp-shinned Hawks is 22 percent below the ten-year average and 46 percent below the historical average. This species was mainly detected from mid-September through mid-October. Flights of this species were relatively slow, as has been the case during the past few years. Movement peaked during the second week of October, with decent and steady flights in late September. Few birds were recorded during November. The peak count occurred on October 13th, with 519 birds seen. This is a low peak count, considering that counts of over 1,000 birds in a single day have occurred in recent times. However, this year's total was considerably higher than the previous two seasons.

Cooper's Hawk

2,253 Cooper's Hawks is three percent above the ten-year average and 61 percent above the historical average. Cooper's Hawk movement peaked during the first half of October. The high count of 205 birds occurred on October 10th. Overall, the totals for this accipiter species have been far more stable than those of Sharp-shinned Hawks at Kiptopeke in recent years.

Red-shouldered Hawk by Steve Thornhill

Red-shouldered Hawk

121 Red-shouldered Hawks is 28 percent above the ten-year average and 83 percent above the historical average. Red-shouldered Hawks were detected sporadically from late September through late October, before movement picked up in early November. Counts were in the single digits on most days. A high count of 12 individuals was recorded on November 9th.

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Broad-winged Hawk

542 Broad-winged Hawks is 38 percent below the ten-year average and 39 percent below the historical average. The first two broad-wings were detected on August 31st, and the last individual of the season was seen on November 5th. There were not particularly large kettles or impressive flights of broad-wings this year. The highest count occurred
on September 19th, when 71 birds were seen.

74 percent of broad-wings were seen in September, with only two birds recorded in November.

Swainson's Hawk

A rare migrant along the Eastern Shore, a Swainson's Hawk is always an exciting bird at the hawkwatch. This fall, one Swainson's Hawk was detected from the hawkwatch platform on November 2nd. This bird was an intermediate or dark morph of unknown age, seen during the late afternoon passing by in the distance on the east side.

Red-tailed Hawk

498 Red-tailed Hawks is 10 percent below the ten-year average and 14 percent below the historical average. Due to the several local red-tails present from the beginning of the season, only individuals seen taking a strong southerly flight line were counted during the earlier portions of the season. Red-tail movement peaked on November 9th with a total of 44 individuals, and 32 birds were seen on November 8th. 263 of the season's red-tails passed in November.

Golden Eagle

Five Golden Eagles is just below the ten-year average of seven individuals. As is normally the case with Golden Eagles seen on the Eastern Shore, every individual this fall was an immature bird, with the exception of one distant bird of unknown age. The first two Golden Eagles appeared on October 23rd, followed by sightings of a single bird each on these days: October 24th, November 4th, and November 7th.

Mississippi Kite

Before the 2019 season, only 11 individual Mississippi Kites had been detected from the hawkwatch platform during fall migration over the previous 42 years. Almost all of these birds were seen recently, with one sighting in 2018, three sightings in 2016, and five sightings in 2015. The other two birds were each seen in 2001 and 1998. Three individuals were spotted this season. There has been an expansion of this species' breeding range throughout Virginia, so it will be interesting to see whether Mississippi Kites continue to regularly pass by in small numbers. This year, a single Mississippi Kite was seen on each of the following dates: September 3rd, September 8th, and September 13th. Over the summer, the hawk counter also observed a Mississippi Kite in the park on June 17th and July 4th.

American Kestrel

3,434 American Kestrels is eight percent below the ten-year average and 18 percent below the historical average. The beginning of kestrel movement began mainly in mid-September and continued until mid-October, before petering out to just a trickle of individuals during November. There was not a strongly defined peak this season, but kestrel flights were busiest in mid- to late September. The peak flight occurred on September 17th, with 303 kestrels. 256 birds were observed on September 18th.

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Merlin

2,189 Merlins is 38 percent above the ten-year average and 106 percent above the historical average. There was a peak flight of 289 Merlins on September 17th, with most of these birds zipping very low and close past the platform. Another big flight occurred the following day, with 203 Merlins seen on September 18th. Birds continued moving in decent but not huge numbers throughout early October. There was only a trickle of Merlin flight during November. Merlins are known for their incredible speed and agility. On many of the big Merlin days, activity was quite busy during the last few hours of daylight, with Merlins zooming by so quickly that they appeared and disappeared on the west side within a few seconds or less.

Merlin and American Kestrel by Steve Thornhill.

Peregrine Falcon

646 Peregrine Falcons is 21 percent below the ten-year average and 17 percent above the historical average. There was a peak count of 125 birds on September 29th, which is when movement began to get busy. Another strong flight of 72 birds occurred on October 1st. After the first half of October, Peregrine activity dropped off sharply.

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. A total of 158 bird species were recorded from the hawkwatch platform this fall. Rarities included: 1 Painted Bunting on October 14th, 7 American White Pelicans on November 6th, and one Black-chinned Hummingbird each on November 6th and November 10th. There was a strong flight of Northern Flickers on September 25th, with 1,011 southbound birds recorded. Few Blue Jays were seen, with a peak flight of 173 on October 19th. Only one Dickcissel was observed from the platform on October 14th. In strong contrast to last year, there was a complete lack of Red-breasted Nuthatches. It was a decent season for American Goldfinch movement during late November, but a poor year for Pine Siskin and Purple Finch movement. Only six Purple Finches were recorded.

Additional highlights of the 2019 season included:

- 43 White Ibises on September 1 and 38 White Ibises on October 5
- 1 American Bittern on September 26 and October 5
- 5 Northern Pintails on September 30
- 100 Great Blue Herons on October 4
- 10 Marbled Godwits on October 8
- 29 Great Egrets and 7 Snowy Egrets in one flock together on October 10
- 1 Black-crowned Night-Heron on October 14
- 830 scoter sp. on October 21
- 95 Eastern Meadowlarks on October 25
- 79 Tundra Swans on November 3 and 136 Tundra Swans on November 30
- 76 Snow Geese on November 17 and 75 Snow Geese on November 25
- 1 Snow Bunting on November 23
- 764 southbound Turkey Vultures on November 29
- 35 American Wigeons on November 30

Acknowledgements

Thank you to Coastal Virginia Wildlife Observatory and Brian Taber for giving me the incredible opportunity to work for a fourth season as the hawkcounter at Kiptopeke. Thank you to Nancy Barnhart and Brian Taber for helping me to set up at the beginning of the season, and to Carol Goodman for all of her assistance this year with the Dunkadoo app. Also, thank you to Forrest Gladden, Josh Mazzatenta, Jessica Edney, Stan Osmolenski, and all other Kiptopeke State Park staff for taking excellent care of the park, encouraging people to visit the platform, and erecting a new permanent hawkwatch sign. Thank you to Eastern Shore of Virginia National Wildlife Refuge for welcoming me and providing housing throughout the season. Thank you to the Mary Pulley Wildlife Preservation Fund of the Mathews Community Foundation for providing some funding for the hawkwatch this year.

I'd like to thank the volunteers for their extra sets of eyes and good company on the platform this fall: Bob Ake, Bob Anderson, Harry Armistead, Joe Beatty, Ned Brinkley, Rudy Cashwell, Lynn Davidson, Betsy Foster, Chris Foster, Katie Garst (former hawkwatch intern and educator), Michael Ferrara (Monarch biologist), Wes Hetrick, Rose Leong, Bob Rineer, Paul Shanahan, Brian Taber, Steve Thornhill, Mike Tove, Thuy Tran, and Hal Wierenga. Thank you to my good friend Don Metzger for greeting me first thing every morning during his two visits with great company, coffee, and snacks. Thank you to Bob Anderson, Harry Armistead, Rudy Cashwell, Chris Foster, and Brian Taber for covering some time off for me this year. Thank you to Kathy Fountaine and Roxy the corgi for their numerous visits to the platform and good cheer. Thank you to all who donated birdseed for our feeders and snacks to the hawkwatch staff.

Finally, I'd like to thank my coworker, Megan Murante, for the many hours she spent helping me spot birds, teaching visitors, and sharing her enthusiasm as the hawkwatch intern and educator.

Table 1. 2019 totals, ten-year averages, 1995+ averages, and historic averages* of the eleven most common raptor species at Kiptopeke

Species	2019 Season	Ten-year (2010-2019) Average	1995+ Average**	Historic (1977-2019)** Average
Osprey	3961	2867	2924	1990
Bald Eagle	710	392	323	200
Northern Harrier	445	557	767	574
Sharp-shinned Hawk	4451	5736	8973	8189
Cooper's Hawk	2253	2195	2174	1401
Red-shouldered Hawk	121	95	103	66
Broad-winged Hawk	542	869	1175	896
Red-tailed Hawk	498	554	856	582
American Kestrel	3434	3732	5411	4195
Merlin	2189	1581	1602	1064
Peregrine Falcon	646	817	843	550
Total	19299	19461	25212	19787

KIPTOPEKE HAWKWATCH

2019 INTERN/EDUCATOR REPORT

American Bittern by Megan Murante

CVWO Intern/Educator, Megan Murante at the Hawkwatch Platform at Kiptopeke State Park

By Megan Murante

I thoroughly enjoyed being the CVWO Hawkwatch intern at Kiptopeke State Park for the 2019 season. As an intern, I was able to learn the basics of raptor identification from CVWO's lead Hawkwatcher Anna Stunkel. Anna taught me her main strategies for spotting and identifying raptors. Constant scanning was crucial, and I quickly learned the importance of alternating between "bare eye" and binocular scanning. We didn't want to miss the distant or high raptors, but also the ones flying low and fast. Anna taught me that it is best to narrow down the possibilities of what it is by putting it in a category: falcon, accipiter, buteo, eagle, osprey, or harrier. From there, she elaborated on the different clues to look for to piece together an ID for each species.

Once I felt comfortable distinguishing raptors from other birds, I was able to assist Anna more by pointing out raptors

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that she might not have seen. The high numbers of raptors that fly over Kiptopeke State Park made it a great place to practice identifying raptors at varying distances. When I wasn't greeting visitors, I was able to assist Anna, and she would often quiz me on raptors that I would spot. After interning at Kiptopeke, I feel I am much more capable of identifying raptors and very fortunate to have been able to work alongside such wonderful people.

Educator

The other part of my position was being the educator at the platform, and in that role I talked to over a thousand people over the course of two months. According to my records, the Hawkwatch platform had about 1,143 visitors while I was there. In September I counted 520 visitors, and in October there were 623. It is really wonderful how many visitors we had to the platform this season! At the end of the report are spreadsheets that list how many visitors came to the platform each day, and how many attended the weekly Early Bird Nature Walks.

Visitors were classified as anyone who came to the platform and looked at educational materials and/or talked directly with Anna or me. The people who came to the platform varied in age and background quite a bit. Some had immense knowledge of birds, others had almost none. When I talked to these visitors, I would tell them about CVWO, why we were conducting a Hawkwatch, why the location is important, and how we identify raptors as they fly by. In addition to discussing the Hawkwatch with them, I would often mention some of the other research CVWO conducts, such as the monarch migration project.

I also pointed out the butterfly garden, and used the butterfly brochure to point out which butterflies we had been seeing frequently around that time, such as Monarchs and Buckeyes. Often when I talked to visitors, I would show them the poster with the pictures of the most common raptors that fly through Kiptopeke. I also encouraged many people to take some of our brochures or look up the blog if they wanted to learn more about CVWO and the Hawkwatch.

"The people who came to the platform varied in age and background quite a bit. Some had immense knowledge of birds, others had almost none. When I talked to these visitors, I would tell them about CVWO, why we were conducting a Hawkwatch, why the location is important, and how we identify raptors as they fly by. In addition to discussing the Hawkwatch with them, I would often mention some of the other research CVWO conducts, such as the monarch migration project."

We had several groups that visited Anna and me at the Hawkwatch platform, ranging from pre-k kids to serious birding clubs. Depending on the group, I would lead them on a nature walk or provide a talk, or both. The group walks were very similar to the weekly ones. I led them on a walk through my favorite trails and we would try to see as many different species as we could. In addition to walks, I provided a raptor ID workshop using the models. When the pre-k group visited, I discovered how fun it is for kids to try to match their arm-width to the model Red-Tailed Hawk's wingspan! I also enjoyed audience participation, in which I challenged some poor folks to tell me which model was the Sharp-shinned Hawk and which was the Cooper's Hawk. It was especially helpful when a bird I was talking about decided to fly over and provide a real life example.

One of my favorite parts of being the educator was leading the Early Bird Nature Walks. I held one every Saturday, and occasionally I would go on additional walks for groups that requested it. The number of people that attended the walks was always a surprise. The attendance varied quite a bit, from three to over twenty. For the walks, I would start by introducing myself and talk about the Hawkwatch.

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From there, I would discuss migration and how Kiptopeke is an important place on the coastal migration route. Often my remarks would be interrupted by an intriguing rustle or chip note, and we would try to find the source of the sound before resuming. The walks lasted from an hour to two hours, and there was one week where I held two walks back to back due to a group of Boy Scouts showing up and requesting one. Walking through the park gave me the opportunity to point out how important Kiptopeke is for migrating birds. We could walk by different types of habitats and see how the park provides for migrating birds to stock up on different food sources. In September, we witnessed many birds like Cedar Waxwings and Summer Tanagers devouring choke-cherries.

Later on in the season, the most abundant example were the Yellow-rumped Warblers were taking full advantage of the myrtle growing alongside the Raptor Trail. And all throughout my time there I saw different warblers like Common Yellowthroats and Palm Warblers picking insects off plants. I also was able to point out the pollinator plants that were important for migrating butterflies. On the trails and in the fields were blue mist flower and Goldenrod, two plants that are crucial food sources for Monarch butterflies.

As with anything wild, I never knew what we would see on the walks. It was always nice when we saw quite a few different species of birds and everyone in the group was able to see them. There was one walk when we saw a Cooper's Hawk right after we entered the trail, perched very low, and we were able to observe it for a minute before it took off. In addition to birds, we would see toads, snakes, spiders, squirrels, turtles, and cottontails. On the very first nature walk, my group found an Eastern Rat Snake curled up in a bush about five feet off the ground. On another walk, we saw a cottontail rabbit eating alongside a large flock of foraging sparrows. Each walk was unique, whether it was the people or the animals that we were able to see.

Golden Eagle by Megan Murante

Scenes from 2019 season at Kiptopeke Hawkwatch

COLLEGE CREEK

HAWKWATCH REPORT

By Brian Taber

This was the 23rd consecutive season of the College Creek Hawkwatch, located on the James River, 3 miles southeast of Williamsburg, conducted by Coastal Virginia Wildlife Observatory. It's the only late winter and spring hawkwatch annually run in Virginia. It was conducted from March 6th through May 29th. The hawkwatch completed 65 days (13th highest) and 140 hours (11th highest). The total of 1519 birds was the 12th highest. The species total was 12; the previous 10-year average is 14.

As in 2018, I had decided to do fewer days in 2019, 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, even though that would surely result in higher bird-per-hour numbers than in previous seasons. But, unlike last year, our total was quite low. We covered 4 more days than last year, though for 4 fewer hours than last year. Last year's total was the 2nd highest ever.

But, last year's high total was misleading as most species were very low. Turkey Vultures were only 12 short of the all-time high, which boosted the total. In 2019, all species were unremarkable, including Turkey Vultures. The Sharp-shinned Hawk total in 2018 was ahead of only one other season, where the coverage hours were only half of 2018 and the 2019 Sharp-shinned total was one short of 2018. Further showing the disturbing trend, the Kiptopeke fall hawkwatch has shown very low Sharp-shinned Hawk numbers in recent years. The 2019 Red-tailed Hawks and American Kestrels were the lowest ever at College Creek.

The protocol remained the same as in the previous 22 seasons: a daily watch 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 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. New to the view this year were 10 huge transmission towers and lines crossing the river.

The biggest days in 2018 were 216, 207, 187, 181 and 118, while in 2019 the highest total was 203 on March 11th, followed by only 80 for the second-highest total on April 17th – a marked contrast to last year's flights. There were also remarkably slow spells, as in late April when only 11 birds were seen over a six-day period and in May when only 25 were seen in a six-day period.

Species accounts:

- Black Vultures, at 64 were 10th highest all-time
- Turkey Vulture total of 1129 was 8th highest and accounted for 74% of the total, a little higher than usual
- Ospreys at 126 were 18th best, only ahead of very low-coverage years
- Bald Eagles at 107 were 5th best
- Northern Harriers at 17 were only 3 above the lowest ever in 1998, when there was half the coverage of 2018
- Sharp-shinned Hawks at 26, were ahead of only one year and 10 came on one day!
- Cooper's Hawks at 12 was 12th best
- Red-shouldered Hawks at 2 were ahead of only two years
- Broad-winged Hawks at 7 were only 10th
- Red-tailed Hawks at 16 were the lowest ever; 8 appeared on one day, but there was no February coverage, when many come through the area
- American Kestrels at 7 were the lowest ever, a species of concern across the east
- Merlins at 3 were a little under average for this rarity in recent years

- There was no Mississippi Kite or Swallow-tailed Kite, as in the past two years

Monthly totals: March at 829 was the 4th best March; April at 490 was the 13th best April and May at 200 was the 10th best May.

Birds per hour by month: March was 17.5, April was 9.9 and May was 4.6. Birds per hour for the season was 10.9.

The 1,000th bird of the season, a milestone we track, was seen on April 11th, quite late.

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 65 days of coverage:

Black Vulture	19 days	Cooper's Hawk	7 days
Turkey Vulture	54 days	Red-shouldered Hawk	2 days
Osprey	34 days	Broad-winged Hawk	5 days
Bald Eagle	37 days	Red-tailed Hawk	8 days
Northern Harrier	14 days	American Kestrel	6 days
Sharp-shinned Hawk	11 days	Merlin	3 days

The non-raptor highlights included American White Pelicans on many dates, with a high count of 49; Red-necked Grebe fly-by; American Pipit flyover; Little Blue Heron fly-by; Eastern Meadowlark and Prothonotary Warbler. Least Terns were seen later into the season than previously, to May 29th.

The 2019 daily totals were entered into the database at Hawkcount.org, which also sends the data to eBird.

Fort Smallwood Hawkwatch, near Baltimore and due north of the College Creek site, again recorded 10,000 birds and also saw daily flights of more than 1,000 Blue Jays, indicating its much more impressive bird movement. At College Creek, for example, we didn't record a single migrating Blue Jay!

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-Bird 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.

2019 Season Totals with 10 year average in parentheses

Species	Total (10 yr)	peak flight & date	Range of occurrence
Black Vulture	64(82)	9 on 4-11	3-7 to 5-22
Turkey Vulture	1129 (1193)	172 on 3-11	3-6 to 5-27
Osprey	126 (200)	11 on 4-17	3-6 to 5-9
Mississippi Kite	0 (2)		
Swallow-tailed Kite	0 (0)		
Bald Eagle	109 (100)	28 on 5-9	3-6 to 5-29
Northern Harrier	17 (34)	2 on 3 April dates	3-13 to 5-6
Sharp-shinned Hawk	26 (55)	10 on 4-17	3-12 to 5-1
Cooper's Hawk	12 (13)	5 on 3-11	3-7 to 5-1
Red-shouldered Hawk	2 (6)	1 on 3-11 and 3-23	3-11 to 3-13
Broad-winged Hawk	7 (7)	2 on 4-17 and 5-1	4-17 to 5-1
Red-tailed Hawk	16 (38)	8 on 3-11	3-11 to 5-7
American Kestrel	7 (22)	1 on 7 dates	3-25 to 4-12
Merlin	3 (6)	1 on 3-13, 4-30, 5-6	3-13 to 5-6
Unidentified	3		
Total	1549 (1866)	203 on 3-11	3-6 to 5-29

SONGBIRD RESEARCH

Prothonotary Warbler Nestlings and adult male.

Photo above by Shirley Devan. Photo on right by Judy Jones

Why are we studying Prothonotary Warblers?

These yellow gems of the swamp are most vulnerable to destruction of their habitat both in North America and in Central and South America. Partners in Flight has placed the Prothonotary Warbler on its "Watch List for Continental United States and Canada" published in 2016. Partners in Flight reports that 34% of the population has been lost over the years 1970 - 2014. [Source: https://partnersinflight.org/species/prothonotary-warbler/]

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 we do now 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.

In the past, the Observatory operated the Kiptopeke Songbird Station at Kiptopeke State Park from 1995 to 2012 with paid banders and volunteers documenting the spectacular fall migration which takes place at the tip of Virginia's Eastern Shore. Volunteers from the Virginia Society of Ornithology established the Station in 1963 and operated it until 1995. Under the Observatory, the Station operated daily from about mid-August through late November and made free presentations to all visitors. From 2005-2012, the Observatory conducted spring songbird banding and educational presentations at First Landing State Park in Virginia Beach. From 1999-2002, the Observatory conducted spring songbird banding and educational presentations at Eastern Shore of Virginia National Wildlife Refuge.

A study of Carolina Chickadees and their unusual Eastern Shore vocalizations has been ongoing for a number of years. An article was published in BIRDING magazine (March/April 2008).

Songbirds are also regularly monitored during fall migration from the observation platform and feeders at Kiptopeke, including the spectacular and unprecedented finch flight of 2012.

NORTH AMERICA HAS LOST MORE THAN 1 IN 4 BIRDS IN LAST 50 YEARS, NEW STUDY SAYS

Editor's Note: Birders and conservationists across the US and around the world were stunned to hear results of this study when it was released in the fall of 2019. Researchers studied 13 long term datasets plus recent weather radar technology to reach these conclusions. This report highlights the importance of long term datasets as we all work to understand and mitigate the risks to birds in the 21st century.

Sept 19, 2019

By Jillian Mock

Read the study here.

But while birds remain everywhere, people are actually seeing far fewer of them than just 50 years ago, according to a new study. It estimates that North America is home to nearly three billion fewer birds today compared to 1970—that's more than 1 in 4 birds that have disappeared from the landscape in a mere half a century.

"This was an astounding result, even to us," says lead author and Cornell Lab of Ornithology conservation scientist Ken Rosenberg.

Altogether, the research team—which included collaborators at the American Bird Conservancy, Smithsonian Conservation Biology Institute, U.S. Geological Survey, the Canadian Wildlife Service, and other institutions—analyzed the breeding population of 529 species by pooling data from the North American Breeding Bird Survey, Audubon's Christmas Bird Count, U.S. Fish and Wildlife Service waterfowl surveys, and 10 other datasets. They also analyzed more recent data collected by weather radar technology that can track large groups of birds as they migrate to estimate their numbers.

Far more surprising were far-reaching declines across habitats and bird types, says Nicole Michel, senior quantitative ecologist at the National Audubon Society, who was not an author of the study but provided some underlying data. About 90 percent of the missing birds came from 12 distinct and widespread bird families, including warblers, sparrows, blackbirds, and finches. Common birds found in many different habitats—even introduced, ubiquitous species like European Starlings—experienced some of the steepest drops. Feeder birds like the Dark-eyed Junco declined by nearly 170 million individuals, the study's models estimated, while White-throated Sparrows dropped by more than 90 million.

But while the results are troubling, there is some good news. Not all birds declined and some species even showed steady gains over time. Waterfowl as a group, for example, saw a population increase of 34 million individuals since 1970, thanks largely to wetland conservation efforts. Raptors, such as the Bald Eagle, also fared better with a gain of 15 million individuals thanks largely to a ban on DDT in 1972. The numbers show that taking steps like wildlife management, habitat restoration, and political action can be effective to save species in steep decline.

PROTHONOTARY WARBLER

NEST MONITORING REPORTS

Photo by Jim Easton taken June 2, 2019 of adult Prothonotary Warbler feeding nestlings in natural tree cavity.

By Shirley Devan, Dave Youker, and Gary Driscole

This is the fifth year volunteers have monitored 7 nest boxes at **Powhatan Creek Trail Park in James City County**.

Six of 7 boxes hosted Carolina Chickadee nests and 4 boxes had Prothonotary Warbler activity.

Two new females were banded and 10 warbler nestlings were banded:

- six nestlings from 2 boxes (boxes 2 and 5)
- one box had 5 eggs but was abandoned
- one box had a only a "sprig of moss"

Volunteer Jim Easton discovered a Prothonotary Warbler nest in a natural cavity in a tree near the boardwalk. Jim photographed adults and nestlings in May and June. Shirley Devan banded the four nestlings June 5.

Female Prothonotary Warbler removing a fecal sac from box 5 – a sure sign of nestlings inside. Photo by Jim Easton.

At **Chickahominy Riverfront Park in James City County,** volunteers banded 37 nestlings in 12 nest boxes along the Chickahominy River and Gordon Creek. This compares to 13 nestlings in 2018. This is the third year of monitoring nest boxes at the Park.

- 8 of 12 boxes fledged PROW nestlings and 2 boxes fledged 2 clutches
- 3 boxes fledged Carolina Chickadees in April and early May
- 4 new females banded
- 1 new male banded
- 3 females recaptured, one of which was banded in 2017.

Rare sighting of a banded fledgling! Inge Curtis, who lives on the Chickahominy River a short distance downriver from Chickahominy Riverfront Park, photographed a banded Prothonotary Warbler fledging August 11 on her pier. In her two photos above, we were not able to read any numbers on the band, so we cannot say for sure that this is a nestling banded at the park. However, I think it is a strong possibility given the proximity of the observation to the nest boxes at the park.

Prothonotary Warblers on the Dragon Run

By Gary Driscole

For spring and summer 2019, I continued to have 20 Prothonotary Warbler boxes in three locations along the Dragon Run in King & Queen County and Middlesex County. I started monitoring a bit earlier (March 12) and stopped July 20 due to lack of bird activity.

This year, the results were slightly better than last year. Water levels were fairly consistent and low throughout the summer. Here is a brief summary of the boxes on the Dragon Run.

Big Island – There were 33 Prothonotary Warbler fledglings in 6 of 11 boxes. There were 6 Carolina Chickadees fewer than last year.

Mascot Bridge – Three of the 7 boxes at Mascot had 17 Prothonotary Warbler fledglings. In addition, there were 7 Carolina Chickadee fledglings.

Herrin Property – There were 18 Prothonotary Warbler fledglings in the 2 boxes.

The total fledglings were 68 Prothonotary Warblers and 13 Carolina Chickadees.

Prothonotary Warblers at Northwest River Park

By Shirley Devan

CVWO volunteers monitored 84 Prothonotary Warbler nest boxes at Northwest River Park for the 9th consecutive year in 2019. This is a cooperative project of the Coastal Virginia Wildlife Observatory and the City of Chesapeake Parks, Recreation, and Tourism.

The Northwest River site continues to be part of the research of biologists and graduate students at VCU. At the request of Dr. Lesley Bulluck at VCU, for the second year, we collected fecal samples ("poop") from nestlings as we banded them. Dr. Bulluck and her PhD student Samantha Rogers are studying diet variations in Prothonotary Warblers across several study sites. We provided 20 fecal samples from both first and second clutches of nestlings.

Prothonotary Warblers demonstrate amazing site fidelity, meaning that many return to the same location and even the same nest box year after year.

Two females at least 7 years old were recaptured in 2019. Each was banded in 2013 as an adult. One has been recaptured at NW river every year since. One female banded in 2016 was captured 3 times at two different boxes. She laid a total of 12 eggs in 2019 in three clutches in two boxes. First two recaptures were at box 41. Her first clutch had 5 eggs and we estimate that 4 fledged without banding with one infertile egg. She built a second nest on top of first nest and laid 4 eggs that were predated. Third recapture occurred at box 27 where she laid 3 eggs. We estimate that 2 fledged without banding with one infertile egg.

Other highlights of the 2019 season:

- 99% (83 of 84 boxes) had Prothonotary Warbler (PROW) nesting activity ranging from a "sprig of moss" to successful fledging of nestlings.
- Six boxes hosted Carolina Chickadees in April and early May
- 65 boxes (77%) successfully fledged at least one nestling
- 32 boxes had two successful clutches each; 33 had only one successful clutch.
- 278 nestlings were banded in 65 boxes
- Estimated 105 nestlings fledged without banding
- 31 new females were banded
- 2 new males were banded

Many thanks to the staff at Northwest River Park who continue to support our monitoring efforts there over the years.

Prothonotary Warblers in Newport News

by Dave Youker

This was a particularly odd year for Prothonotary Warblers on the Lower Peninsula. The production at Harwoods Mill Reservoir was on par with recent years and resulted in 26 fledged birds. Conversely, Lee Hall Reservoir had no nesting activity in any of the boxes. This is the first time this has occurred, since the project started. Prothonotary Warblers sightings during walks around this reservoir were also down noticeably from recent years.

The breeding cycle began in April with the construction of nests and was complete by the end of July. Here are the numbers for this past year. Harwoods Mill: 6 of 6 boxes occupied. 5 of 6 produced prothonotaries with 1 box producing 2 clutches. There was 1 nesting of Carolina Chickadees. Lee Hall: 0 of 5 boxes occupied. Wasps were present in every box each time they were checked. Totals for both reservoirs were: 26 prothonotaries and 7 chickadees.

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

CVWO Sponsors the 55th Cape Charles, VA Christmas Bird Count

By Harry Armistead on behalf of compilers George Armistead and Ned Brinkley.

Harry Armistead. Photo by Steve Thornhill.

This 55th Christmas Bird Count in the Cape Charles circle was December 30, 2019, a Monday, with 26 participants finding 148 species. Of most interest were two birds new to the count, a Yellow-throated Vireo and a White-winged Dove. After more than half-a-century, new species are not found every year.

This area at the end of the long Delmarva Peninsula both concentrates some species and makes others at times unusually scarce. We are still learning its salient features. Since only two active birders live here, the count is dependent on observers from elsewhere. Coastal Virginia Wildlife Observatory sponsors the count and helps in a big way to fund the fee for the all-important boat party, that finds the lion's share of shorebirds.

Notable are record highs of 15 Orange-crowned Warblers (seen by 5 parties) and 9 Blue-headed Vireos (seen by 2). A high tide helped produce good numbers of the three reclusive marsh sparrow species and 2 wrens: 36 Saltmarsh Sparrows, 19 Nelson's Sparrows, and 17 Seaside Sparrows plus 11 Sedge Wrens and 7 Marsh Wrens. Twenty Ipswich Sparrows are also a good total.

Other higher-than-normal totals are 7 Peregrine Falcons, 207 Brown Pelicans, 14 Red-Shouldered Hawks, 1,847 Black-bellied Plovers, 9,009 Dunlin, 52 Clapper Rails, and 374 Double-crested Cormorants. Nice but not that unusual totals include 36 Bald Eagles, 4 Whimbrel, 387 Willets, 21 Red Knots, and 61 American Woodcock. In most years this count achieves the national high for woodcock.

Semi-rare: Cackling Goose 1, Blue-gray Gnatcatcher 1, Greater White-fronted Goose 3, and Common Eider 1. A few of the totals may later be slightly downsized in an attempt to compensate for possible duplicate sightings of large, conspicuous, wide-ranging species, such as pelicans and eagles.

A larger-than-usual number of species were either absent or in very low numbers this time. Notably American Goldfinch 2, Rusty Blackbird 0, Purple Finch 0, Horned Lark 0, Snow Goose 0, Wood Duck 0, American Coot 0, Northern Bobwhite 0 (in precipitous decline all over the Mid-Atlantic region), Black-crowned Night Neron 0, Lesser Yellowlegs 0, Red-headed Woodpecker 0, Northern Pintail 1, White-winged Scoter 0.

PARTICIPANTS: Bob Ake, George Armistead (co-compiler), Harry Armistead, Pam Barton, Arun Bose, Dana Bradshaw, Ned Brinkley (co-compiler), Jack Carroll, Dan Cristol, Doug Davis, Kit Fechtig, Todd Fellenbaum, Teta Kain, Kathy Louthan, Grazina & Michael McClure, Chris Monahan, Rich Moncrief, Ellison Orcutt, Napier Shelton, Wes Teets, Sarah Trachy, Michael Walter, Bryan Watts, Bill Williams, Gary Williamson. Thanks to Eastern Shore of Virginia National Wildlife Refuge for permitting access to restricted areas and to Greg Cridlin for likewise letting our observers onto his farming property. Cape Charles count is December 30 every year. All are welcome.

The Big Sit on October 12, 2019

By Brian Taber

Since 1999 CVWO has participated annually in The Big Sit, the one-day bird survey from a fixed-spot, which takes place all across the country. Information about the event is on the Bird Watcher's Digest website. Our excellent site is the hawkwatch platform at Kiptopeke. On October 12th Hawkwatcher Anna Stunkel led the group of Megan Murante, Michael Ferrara, Harry Armistead, Chris and Betsy Foster, Paul Shanahan, Steve Thornhill, Rose Leong, Wes Hetrick and Joe Beatty. Some watchers were there for 10 hours. Our team often records 70+ species, but this year was slightly lower at 66. There was no recent cold front to bring waves of birds, but Common Loon, Common Nighthawk and Rose-breasted Grosbeak were fine highlights. There were 117 teams participating from 40 states and our team total was good enough for 15th place.

HEATHER KENNY RECEIVES 2019 GRADUATE STUDENT GRANT

Did you know there are "shy" bluebirds and "bold" bluebirds? Eastern Bluebirds have personalities just like humans.

Heather Kenny, recipient of CVWO's Bill Akers 2019 Graduate Student Grant, used the grant funds to help understand "how anthropogenic noise and personality interact to influence population level structure and trends in suburban Eastern Bluebirds."

Heather is a master's degree student at the College of William and Mary studying with Dr. Dan Cristol, Chancellor Professor of Biology and co-founder of William and Mary's Institute for Integrative Bird Behavior Studies.

"Are bold birds more likely than shy birds to settle in nests with higher levels of background noise?"

"Do shy-type birds alter their behavior more than bold-type birds in response to experimentally applied noise?"

"Are shy birds more likely than bold birds to move away from sites where noise was experimentally increased?"

Per Heather, "Results from this study will help inform responsible placement of future nest boxes to foster a healthy and diverse bluebird population that can persist well into the future."

CVWO is proud to support her research in 2019 with the Bill Akers Graduate Student Grant.

Photos submitted by Heather Kenny

Student grant recipients for 2020 are:

- Old Dominion University Bob Ake Grant goes to Nick Flanders
- William and Mary Ruth Beck Grant goes to Casey McLaughlin at William and Mary
- William and and Mary Bill Akers Grant goes to Robin Thady at William and Mary

Next year's annual report will feature their studies.

BUTTERFLY PROJECTS

Monarch on verbena by Jim Easton.

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

Reports from Monarch overwintering sites in Mexico, winter of 2019/2020: (From Monarch Watch and Monarch Joint Venture)

- The area occupied by overwintering Monarchs was 2.83 hectares vs 6.05 last year.
- This represents a population decrease of 53% from a year ago.
- Habitat loss and severe weather account for much of the decline.
- Need to continue long-term study to understand how Monarchs respond to environmental changes.

CVWO Monarch Biologist, Michael Ferrara, in the field at Kiptopeke, above, and demonstrating tagging to film crew, right. Photos by Keith Reagan.

MONARCH BUTTERFLY MIGRATION PROGRAM

By Michael Ferrara

The 2019 Coastal Virginia Wildlife Observatory (CVWO) Monarch Migration project was successful, with 761 Monarchs tagged and over 3,000 observed in daily point counts on the Eastern Shore of Virginia.

The 22nd season of the CVWO Monarch Migration project ran from September 15th to November 15th, 2019. As part of this project, I conducted roost surveys at Wise Point at the Eastern Shore of Virginia National Wildlife Refuge (ESVNWR) and point count surveys at the Visitor's Center for the ESVNWR for approximately 30 minutes daily beginning at 11 a.m. These daily surveys were conducted except on days when heavy rain, wind or storms stopped the migration and made observation difficult. Tagging of Monarchs was conducted at various locations around the peninsula, including ESVNWR, Kiptopeke State Park (KSP), Pickett's Harbor, Fisherman Island National Wildlife Refuge (FINWR) and Magothy Bay State Natural Area Preserve (MBSNAP). This year CVWO became a partner in Monarch Joint Venture allowing us to more easily communicate with other Monarch researchers and professionals.

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Tagging

761 Monarchs were tagged this season. After the high tagging numbers for the past 2 seasons, we obtained 1500 tags for this season. The majority of the migration occurred between 10/09/2019 to 10/22/2019 (Figure 1). During that period storms that moved through the area accounting for the days without a flight. Of the tagged Monarchs, 645 (84.75%) were tagged at KSP, 108 (14.2%) were tagged between the ESVNWR and FINWR and 8 (1.05%) were caught at the Department of Conservation and Recreation (DCR) sites (Pickett's Harbor and Magothy Bay State Natural Area Preserve) (Figure 2).

Figure 1: The number of Monarchs caught and tagged per day

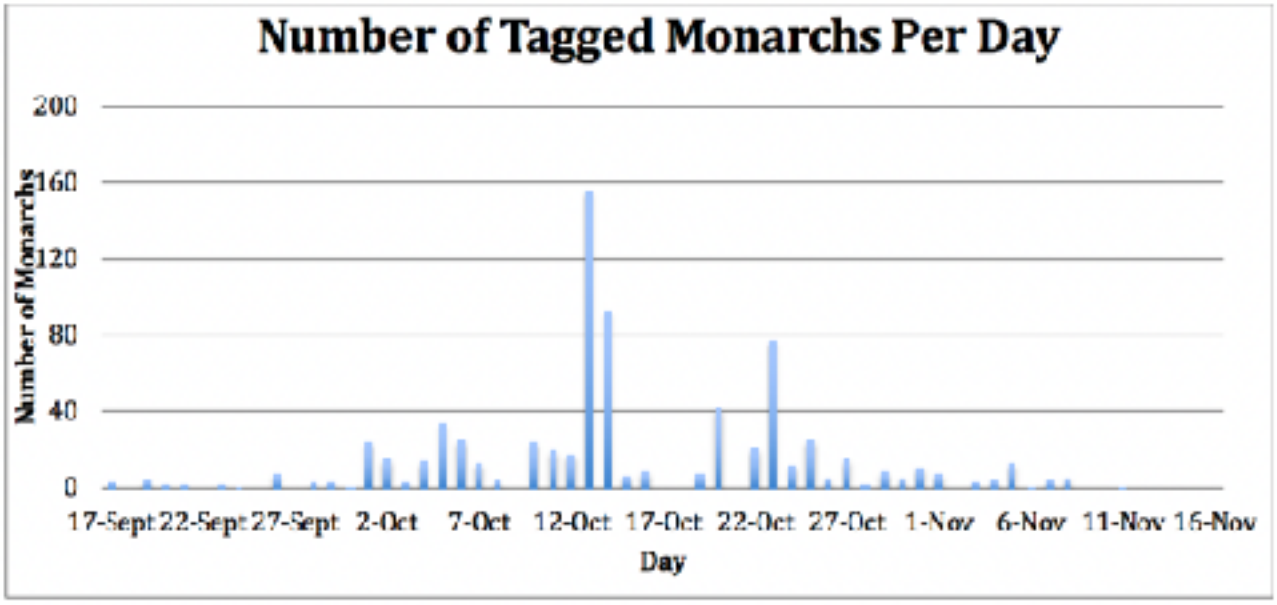
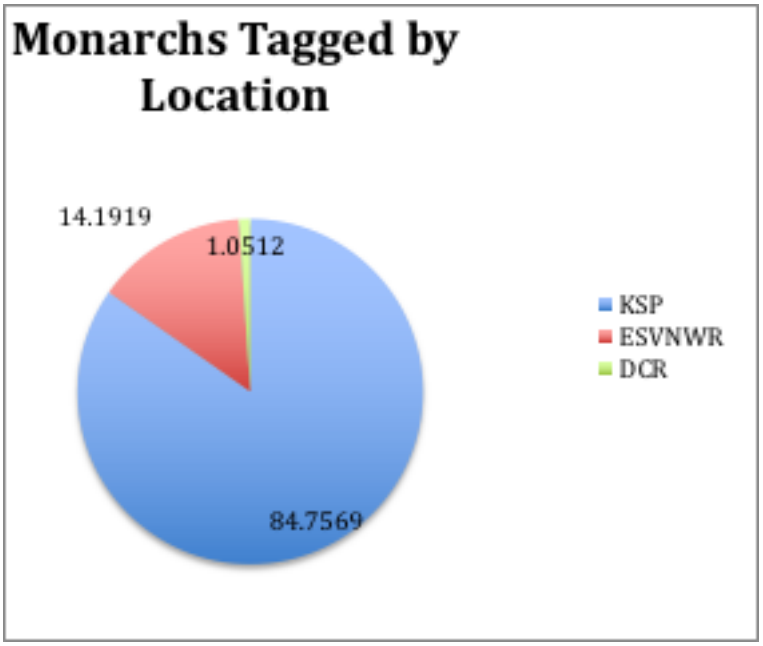


Figure 2: The Percentage of Monarchs Tagged by Location



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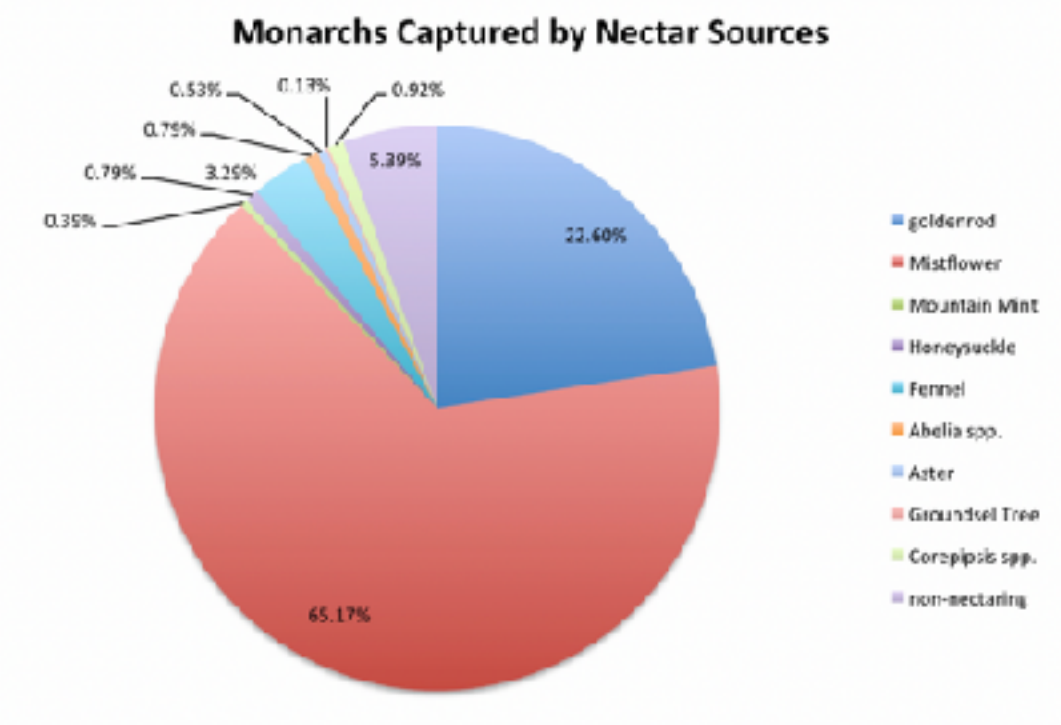
Nectar Sources

The primary nectar sources for Monarchs this season included Blue Mistflower *(Conoclinium coelestinum)* and Goldenrod *(Solidago spp.)*. Minor nectar sources included *Corepipsis spp.*, *Abelia spp.*, honeysuckle (*Lonicera spp.*) and Dog Fennel *(Eupatorium capillifolium)* among a few other species. Occasionally Monarchs were seen resting on Loblolly pine *(Pinus taeda)*, but it was difficult to catch them due to the height at which they would land on the pines. Mistflower was the primary nectar source throughout the season with over 65% of Monarchs being caught on it (Figure 3). Most of these Monarchs were caught in the Pollinator field around the hawk watch platform. Goldenrod was the second most important nectar source for Monarchs this season as 22.6% of those tagged were captured on goldenrod. Goldenrod was abundant throughout the DCR sites, Kiptopeke State Park and the Eastern Shore of Virginia National Wildlife Refuge (Figure 3). Additionally, goldenrod was noted as the primary nectar source for migrating Monarchs at the ESVNWR and DCR sites. During the month of November few Monarchs were observed nectaring. Many of these captured Monarchs were found roosting on Pine trees, flying through the air or sunning on the ground.

Figure 3: The Percentage of Monarchs Captured by Nectar Source



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Sex Ratio

Of the 761 Monarchs tagged, 463 were male and 298 were female. This ratio falls between those of the last 3 years. This year males made up 60.8% and females made up 39.2% of all tagged Monarchs. These findings are more in line with the ratios of last year of 59% males, compared to the 65% males that were tagged the two years prior. This ratio is expected, as males tend to outnumber females in the population of any species. In comparison, this is consistent with literature that suggests female Monarchs are declining as of this decade and make up about 43% of the population (Davis, A. K. & Rendon-Salinas, E. (2009). See "Are female Monarch butterflies declining in eastern North America? Evidence of a 30-year change in sex ratios at Mexican overwintering sites." *Biology Letters*, 6(1), 45-47. Doi:10.1098/rsbl.2009.0632).

Wing Length

265 Monarchs had their wings measured. Due to time constraints, the priority was to tag as many Monarchs as possible on the busiest days. Wings were measured on days with relatively fewer Monarchs. The front edge of the wing was measured from the tip to where it meets the thorax. The wing was measured using a clear plastic ruler. The average wing length was 5.19 cm (5.2cm was the average in 2018), with 5.2 cm (0.3 cm lower than last year) appearing most often. The range was smaller than last year with the smallest Monarch being 40 mm (10 mm larger than the smallest last year) and the maximum was 59 mm (1 mm smaller than last year). There was a standard deviation of 2.62 mm. This was more inline with the 2.32 standard deviation from 2017 than with the 4.94 standard deviation in 2018.

Mass, Wing Condition and Wing Damage

Tagged Monarchs were massed, had their wing condition assessed and checked for damage. Monarchs were massed on a scale of 1-3, based on the segments of their abdomens. A score of 1 represented a concave abdomen equal to about one quarter of a gram. A score of 2 showed a parallel abdomen and is equivalent to half a gram. A score of 3 showed convex abdomen and weights of approximately three quarters of a gram. This system is designed to tell how fat the Monarch is, rather than its overall size. A ranking of a 3 indicates that the Monarchs were very well fed. Of the Monarchs tagged, 363 individuals or 47.8% of them had a size 3 abdomen. This was approximately midway between the 28% from last year and the 83% from the year before. There were 277 Monarchs that had a size 2 abdomen. This number equated to 36.4% of the captured Monarchs, which was a drop from 49 percent of those Monarchs captured last year. The other 120 Monarchs had a score 1 abdomen, which made up 15.8 percent of the Monarchs captured.

Wings were rated on a scale of 1-5 with 1 being pristine and newly hatched, 2 being in excellent condition with only a few scales missing, 3 being satisfactory and missing a few patches of scales, 4 being poor and missing many scales, and 5 being very poor also missing many scales, with possibly transparent wings. Most of the Monarchs had pristine wings (64.5%, 490 out of 760). There were 229 Monarchs that had wings in excellent condition, which equated to 30.1% of those tagged. Thirty-six (4.7%) had scales in satisfactory condition. Five (0.67%) Monarchs were captured with wings in poor condition and no Monarchs had wings in very poor conditions.

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. 613 of the 760 (80.7%) of Monarchs had no wing damage. Monarchs with 3 or 4 damaged wings made up 1.1% (9 Monarchs). Forty-three Monarchs (5.7%) had 2 damaged winglets and 95 Monarchs (12.5%) had 1 damaged winglet.

Most of the Monarchs had a wing rating of 1 with no wing damage and a mass of 3. This indicates most of these butterflies were in relatively good condition for the migration. A few Monarchs were seen around the Eastern Shore for multiple days at a time, but many of them moved through the region relatively quickly.

Point Counts

A total of 137 Monarchs were observed behind the ESVNWR Visitor Center during point counts this season. This was a steep decline from the 704 observed last year. I believe this is due to the reduction in the number of point counts per day from 2 to 1, the location change for the point count, and the limited field of view at the

new Point Count location. The largest number observed in one-day was 54 Monarchs on October 12th. Point counts conducted after November 3rd were done at 10 a.m. to compensate for daylight savings time. Anna Stunkel (this year's hawk counter) kept track of Monarchs flying past the KSP hawk watch during the entire day. Anna prioritizes counting raptors on busier days but she is still able to get a good estimate of the number of Monarchs that fly near the platform over the course of the day. Anna counted 3,041 Monarchs during the season with a peak of 766 on October 5th. In addition, she recorded more than 100 Monarchs on 8 different days from September 1st to November 30th.

Roost Surveys

Roost surveys were conducted at Wise Point on days with large flights at sunrise and sunset. The roost site was checked only when the platform observed a large number of Monarchs flying past. This year there were Monarchs seen roosting on multiple occasions at Wise Point, although they were seen in very low numbers compared to past accounts. In total there were 115 Monarchs seen roosting at Wise Point this season, with a high count of 42 on October 12th. For the most part, Monarchs were seen roosting only on the days with large numbers observed at the hawk watch platform. This held true except toward the end of the season when Monarchs were observed roosting on days when none were observed front the platform. There were also Monarchs seen roosting on trees outside of Wise Point although they were never in concentrated numbers.

Recaptures

This season I captured 1 Monarch on the Eastern Shore of Virginia that had been tagged at another location. This Monarch was identified on September 13th and its tag was AAUS939. Along with this Monarch there were 4 Monarchs recaptured that had been released during Outdoor Exploration Day. The tags for these were ABCM162, ABCM126, ABCM104 and ABCM124.

In the photos above and below, CVWO Biologist Michael Ferrara shows film crew, Collins Reagan, tagging. Photos by Keith Reagan.

Education

During this season, I gave multiple informal lectures. Many of these lectures were along trails at KSP, ESVNWR and at the CVWO hawkwatch platform. Since my time at the hawk watch was limited, I was unable to participate in many of the formal talks with groups visiting the platform. Along with the informal lectures, I gave a presentation to the Friends of Kiptopeke about the work I did this season and the Monarch's migration down to Mexico. I assisted Kiptopeke Park staff to educate the students of Kiptopeke Elementary School about Monarchs. We visited the school and set up Monarch caterpillars for a few classes to raise. Additionally I led a Monarch discussion and walk with a group at the ESVNWR.

Conclusion

The 2019 Monarch migration-tagging season was very successful. The migration had somewhat low numbers compared to recent years potentially due to significantly strong winds and a smaller migration from the Northeast this year. This can be seen with Anna's relatively huge Monarch count from the hawk watch platform. Stronger winds would keep Monarchs higher in the sky making them difficult to capture and tag. The pollinator field created by KSP in 2016 near the hawk watch provided an excellent location for Monarchs looking to feed on Mistflower and goldenrod. ESVNWR had expansive fields of goldenrod that were heavily utilized by Monarchs although they were relatively difficult to access for tagging. This year goldenrod was not the prominent nectar source for Monarchs, which was a surprise. Even more interesting, goldenrod was very prevalent at MBSNAP, Pickett's Harbor and parts of KSP such as Taylor Pond yet Monarchs were rarely seen in these areas.

DELMARVA TIP BUTTERFLY COUNT

21ST ANNUAL JULY BUTTERFLY COUNT: 2019 SUMMARY

Photo by Shirley Devan's camera set on 10-second timer

By Lynn Davidson

Note: All averages refer to the last five year average (2014-2018).

The 21st annual Delmarva Tip "4th of July" Butterfly Count was held on July 28, 2019. The weather was good for butterflies but somewhat hot for butterfly counters, with well-above average temperatures of 84 – 92 degrees and partly cloudy skies. Twenty observers participated this year, which is average for the past five years. We logged a total of 34 hours.

The 46 species we found is just one below the highest annual tally ever, counted in 2012. However, the 1264 total butterflies counted is 37% lower than average and the lowest since 2014 when fewer than 800 were found on a cloudy and relatively cool day.

QUICK STATS

- 1264 individuals of 46 species were tallied
- 60 species are on the cumulative species list (all 20 years)
- No new species were added to cumulative list this year
- 3 species broke the record high number of individuals
- 9 species had above average number of individuals
- 1 species broke the record low number of individuals
- 16 species had below average number of individuals
- None of the 35 regularly occurring species were missed

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Highlights of this year's Count:

- Giant Swallowtail was located for the seventh year in a row, with four individuals counted.
- Gulf Fritillary was found for only the third time, with a new high of two individuals.
- New record high counts were tallied for Cloudless Sulphur (10 more than the former record high in 2012) and Broad-winged Skipper (two more than the previous high count in 2002).
- Aaron's Skipper was found for the fourth time in 21 years.
- A record 18 species of skippers were discovered.

In the opposite extreme, a new all-time low count of only 21 individuals was set for Cabbage White, with the previous low of 31 adults set in 2010. Last year's count of Cabbage White also had a poor showing with just 38 individuals. The population of this crop pest is highly dependent upon the type of crops planted in the area. The cumulative number of butterfly species found over the 20 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 nine of them, roughly average for another ten species, and below average for 16 species (or 46% of the regular species). This general pattern for the butterfly numbers has been frequent during at least the last 11 years.

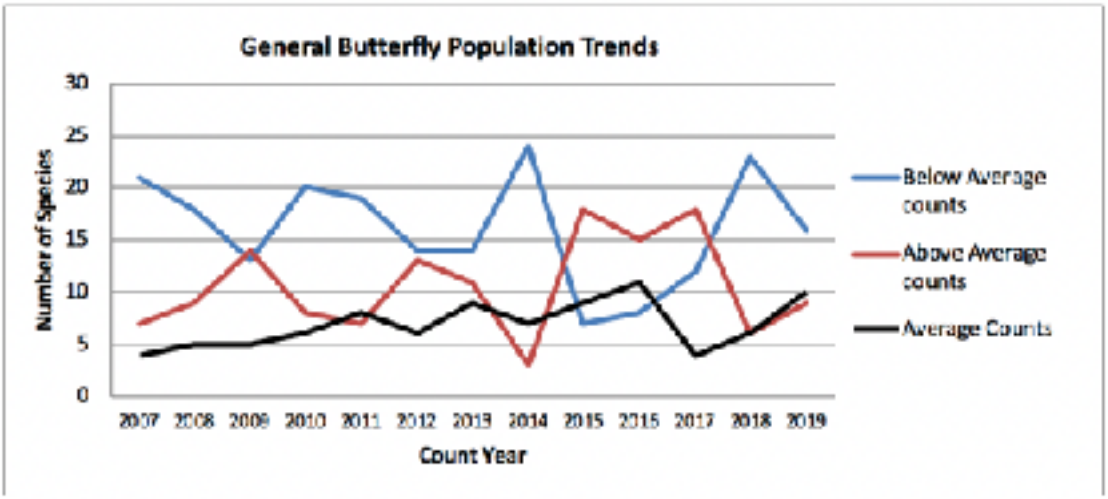
Including this year, seven of last 13 years resulted in the number of species with below average counts (or "poor" counts) being greater than the number of species with above average counts (or "good" counts), usually by more than double. In three of the years since 2008, these numbers were relatively equal, and only for the three years from 2015 to 2017 were the number of species with good counts greater than the number of species with poor counts. The "trend" data for the last 11 years are provided in Table 1, and the last 13 years are shown in Figure 1.

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

Category	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Above average	14	8	7	13	11	3	18	15	18	6	9
Below average	13	20	19	14	14	24	7	8	12	23	16
Average*	5	6	8	6	9	7	9	11	4	6	10

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

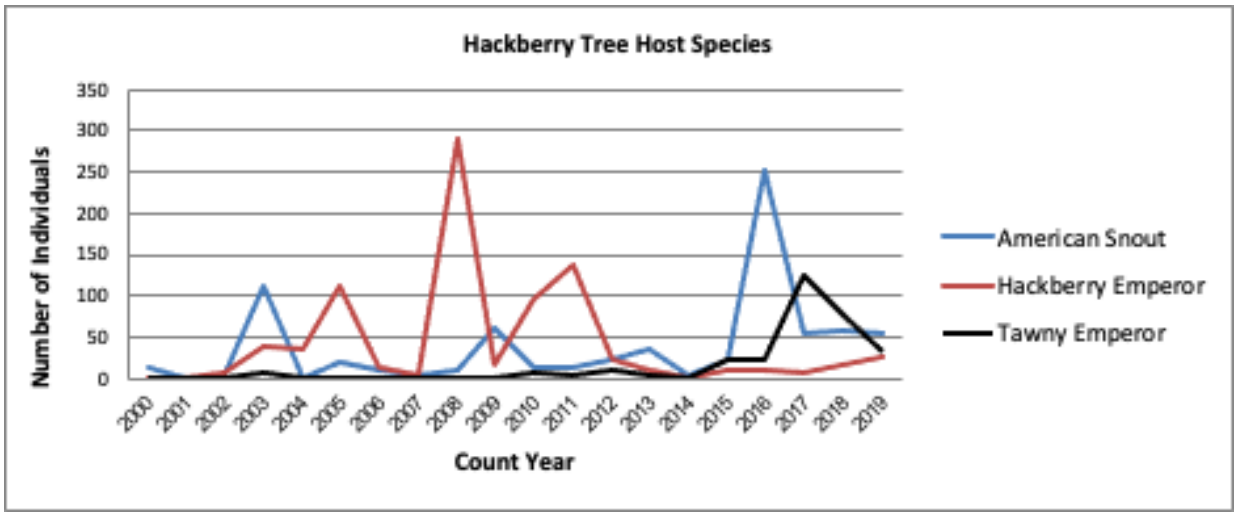
Figure 1. Annual number of species per Trend Category, relative to the prior five-year average for each species.



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, and hours spent counting. Because of these numerous influencing factors, it is difficult to know the importance or meaning of these trends.

Other interesting insights can be gleaned from looking at the species count data. For example, three species with similar life histories are American Snout, Hackberry Emperor, and Tawny Emperor. All three utilize hackberry trees as a larval host and are attracted to the nutrients found in animal scat, carrion, rotting fruit, moist mineral soils, and the sap at tree seeps. Despite their similar lifestyles, other factors clearly influence their population cycles, since their high and low counts, as shown in Figure 2, do not appear to be synchronized with each other in any obvious way.

2019 Count Results: A Microsoft Excel spreadsheet summary of all yearly counts is available upon request to Lynn Davidson (hal.lynn@comcast.net).



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.

Black Swallowtail: 62
Giant Swallowtail: 4
Eastern Tiger Swallowtail: 97
Spicebush Swallowtail: 71
Palamedes Swallowtail: 16
Cabbage White: 21
Clouded Sulphur: 2
Orange Sulphur: 2
Cloudless Sulphur: **92**
Gray Hairstreak: 15
Red-banded Hairstreak: 13
Eastern Tailed-Blue: 27
Summer Azure: 18
American Snout: 56
Gulf Fritillary: 2
Variegated Fritillary: 26
Pearl Crescent: 13
Question Mark: 10
American Lady: 12
Painted Lady: 3
Red Admiral: 31
Common Buckeye: 248
Red-spotted Purple: 109
Viceroy: 5
Hackberry Emperor: 26
Tawny Emperor: 33
Common Wood-Nymph: 22
Monarch: 17
Silver-spotted Skipper: 65
Horace's Duskywing: 6
Common Checkered-Skipper: 24
Common Sootywing: 23
Swarthy Skipper: 10
Clouded Skipper: 5
Least Skipper: 1
Fiery Skipper: 4
Southern Broken-Dash: 1
Northern Broken-Dash: **1**
Little Glassywing: 4
Sachem: 1
Zabulon Skipper: 22
Aaron's Skipper: 2
Broad-winged Skipper: **22**
Dun Skipper: 7
Salt Marsh Skipper: 1
Ocola Skipper: 2
dark swallowtail sp.: 7
anglewing sp.: 2

JAMES CITY COUNTY MARINA BUTTERFLY GARDEN

In mid-summer Phalen Daum of Scout Troop 103, shown in photo lower right, adopted the Marina Garden near the James City County Marina as an Eagle Scout project and worked with his brother and parents to install pavers, build benches, and repair raised garden beds. Phalen arranged with a local contractor to donate the pavers. Many thanks to James City County for free mulch.

Thanks to Phalen, his brother James, and his parents, the garden is easier to navigate and more attractive for visitors to enjoy the pollinator plants and the butterflies attracted to the garden from spring to fall.

CVWO received permission to restore the abandoned garden from Billsburg Brewery in January 2018. CVWO volunteers added many new plants in 2018 and 2019. The Marina Garden, over 4,300 square feet, is located at 2054 Jamestown Road, Williamsburg near the Colonial Parkway and Billsburg Brewery. Visitors the the brewery and the marina visit and enjoy the plants, flowers, and butterflies.

Photos by

Brian Taber

CREOLE PEARLY-EYE (*ENODIA CREOLA*) BUTTERFLY

MONITORING IN COLONIAL NATIONAL HISTORICAL PARK

By Kenneth Lorenzen, Nancy Barnhart, Adrienne Frank, Gary Driscole, Jan Lockwood, Shirley Devan, and Brian Taber

This project was proposed in 2017, initiated in 2018, and continued in 2019. It is a joint effort by volunteers from the Historic Rivers Chapter of Virginia Master Naturalists and the Coastal Virginia Wildlife Observatory, with permission from the US National Park Service and Colonial National Historical Park (CNHP). This report discusses our 2019 observations and findings and provides comparisons with our 2018 research results.

OBJECTIVES

Our objectives for 2019 were to: 1) search for stands of Switch Cane (*Arundinaria tecta*) in nearby locations outside the Study Area; 2) conduct butterfly surveys in the Study Area twice per week from mid-May through as late as mid-October to document the number and timing of Creole Pearly-eye broods; 3) document pearly-eye caterpillar feeding on Switch Cane; 4) record all butterfly species, and the numbers of each, sighted in the Study Area; 5) search within the Study Area for known host plants of the Northern Pearly-eye (*Enodia anthedon*) and compile a list of grasses, rushes, and sedges for addition to the table of Study Area vegetation we generated in 2018; and 6) search for pearly-eye butterflies in forests east of the Study Area that were included in our original project proposal but could not be explored in 2018.

Switch Cane

The search for Switch Cane was conducted in: 1) unexplored CNHP forests east of the Study Area, 2) along sections of the Colonial Parkway (Parkway) in the vicinity of the Study Area to the Historic Jamestowne Visitor Center on Jamestown Island, and 3) on Jamestown Island via the island's Loop Drives. Roadside searches were conducted by automobile; unexplored forests east of the Study Area were searched by foot. During automobile searches we found six stands of cane, mostly on Jamestown Island. No cane was found during our foot search of unexplored forests east of the Study Area.

Pearly-eye Butterfly Surveys

In 2019 we conducted butterfly surveys in the Study Area twice per week from May 16 through September 27. During each survey, GPS locations were recorded for as many pearly-eye butterfly sightings as possible, and both stands of Switch Cane in the Study Area were routinely examined for evidence of pearly-eye caterpillar feeding and the presence of pearly-eye caterpillars. All other butterfly species observed, and their numbers, were recorded as well.

Above photo of Creole Pearly-eye Butterfly by Ken Lorenzen

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Surveys conducted on July 31 and August 11 were curtailed by rain prior to completion, and only one survey per week could be conducted during the weeks of July 28, August 4, September 1, and September 15 due to the unavailability of observers and/or inclement weather. The number of observers participating in a survey was typically three or four, but ranged from as few as one to as many as seven. The average time spent per survey was 2.6 hours (range = 1.5 - 4.25 hours). In 2019, observers collectively spent 347.4 hours conducting surveys.

During 2018 we sighted all three species of pearly-eye butterflies [Creole, Northern, and Southern (*Enodia portlandia*)] in the Study Area. Due to the close similarity in appearance of the three species and the difficulty in making visual identifications, we wanted to photographically document as many pearly-eye sightings as possible. The images obtained would be studied and compared at a later time to confirm the species of each butterfly and eliminate any duplicates.

We logged 913 pearly-eye sightings during 2019, 752 of which we were able to photograph. We determined that 126 individuals had been photographed more than once and we were able to eliminate 180 duplicate photos. The remaining 572 photographed sightings were identified as: 413 Northern Pearly-eyes, 149 Creole Pearly-eyes, and three Southern Pearly-eyes. Seven photographed individuals could not be identified to species and the remaining 161 sightings were identifiable only as pearly-eyes. The high number of unidentified pearly-eyes likely includes many individuals encountered more than once in areas where numerous pearly-eyes were present, but without photographs it is impossible to know how many of these unidentified individuals were tallied multiple times during surveys.

Our first Creole Pearly-eye butterfly sighting of 2019 occurred on May 18 and our last Creole sighting occurred on September 12. In hindsight, we should have started conducting surveys in mid-April to better establish the appearance of the first brood of Creoles, but we based our mid-May start date on reports that the first brood of Creoles in Virginia appears in early June. As it turned out, climate data showed March and April of 2019 were warmer in the Williamsburg, VA area than during the same period in 2018, allowing pearly-eyes and other butterfly species to appear earlier than expected.

As in 2018, most of the pearly-eye butterflies we encountered were concealed in the predominant forest undergrowth, Japanese Stiltgrass (*Microstegium vimineum*), an invasive non-native plant, taking flight only when we neared their hiding places. Disturbed butterflies usually re-settled quickly in the stiltgrass or on a tree trunk or branch within several yards of their previous perch. Each time a pearly-eye took flight, we remained still and watched until it landed, at which time we moved slowly to a position where we could attempt to photograph it. Unfortunately, some butterflies flew up to 10 yards or more before landing and we often lost sight of them before a photograph could be obtained.

While walking through the stiltgrass, we occasionally disturbed multiple pearly-eye butterflies at one time (sometimes as many as four or five) and we had to choose which butterfly to follow. While following that butterfly, it was not uncommon for us to disturb one or more additional pearly-eyes, compounding the issue of which butterfly to follow. Thus, in our efforts to photograph as many pearly-eyes as possible, an unknown number of individuals escaped our attempts.

According to various reports, all three pearly-eye species are most active at twilight, but often are active on overcast days. Hoping to observe pearly-eye activity, we conducted several surveys on overcast days in 2018 and 2019, but our experiences were different each year. In 2018 we conducted two surveys under completely overcast conditions but we did not observe any pearly-eye activity other than a few butterflies that took flight after we disturbed them; this was not considered active flight. However, during two out of three surveys conducted under completely overcast conditions in 2019, we did observe pearly-eye butterflies actively flying. On the third overcast day, our observations were the same as in 2018.

During this activity, a pearly-eye perched on a tree trunk (almost always head down) would leave its vantage point to investigate another butterfly flying close by, often pursuing the passerby in circles for several seconds or more. Then the first butterfly would break away and return to a tree trunk (often the same one) to resume its vigil. Sometimes three pearly-eyes became involved in these short-lived pursuits. We identified the perched individuals

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as Northern Pearly-eyes, but we were not able to identify the species being pursued. Based on descriptions of this behavior in the literature, we believe the perched Northerns were males exhibiting territoriality and mating, *i.e.*, individuals waiting for the opportunity to mate with a passing female or chase off rival males or other intruders.

At no time during any of our 2018 surveys did we observe any pearly-eye butterflies on or near either stand of Switch Cane in the Study Area, but during our May 21, 2019 survey we did observe a single Creole in one stand; it looked very fresh and had likely emerged recently. Based on photographs obtained, we believe the individual was a male. No pearly-eye butterflies were observed on or near either stand of cane during any other surveys conducted in 2019.

Following our August 6, 2019 survey, we drove to Jamestown Island and conducted a foot survey in and around one of the stands of Switch Cane we observed during an earlier automobile search. Japanese Stiltgrass was present in the forest near the cane, although it was not as widespread as stiltgrass in the Study Area. A single Creole and a single Northern Pearly-eye butterfly were sighted near the cane. Evidence of pearly-eye caterpillar feeding on cane leaves was observed frequently, but no caterpillars were found. Correspondingly, no caterpillars were found in either stand of cane in the Study Area between July 4 and August 22.

We sighted only three Southern Pearly-eye butterflies in 2019: one on May 16, one on May 18, and one on July 10. Finding Southerns in two consecutive years is encouraging, but the extremely low number of individuals observed each year is of concern. Southerns are obviously the rarer butterfly in the Study Area compared to Creoles, although Creoles are the least common of the three pearly-eye species overall.

While there is some variation in the characters used to separate the three pearly-eye butterfly species (*e.g.*, number of ventral forewing eyespots and post-medial line differences), one character in particular is used to separate Southern Pearly-eye butterflies from Creoles and Northerns: completely orange antennae. Both Creoles and Northerns have black antennal clubs with orange tips. In 2019 we observed and photographed a Creole with completely orange antennae. This unusual sighting may represent a genetic mutation, or it may represent evidence of interbreeding.

Butterfly Species and Numbers

The number of species sighted during a single survey ranged from 6 to 21. The highest number of species sighted during a one-month period was 34, in August. The total number of butterfly species sighted was 51, which included 11 species not sighted in 2018 (two species sighted in 2018 were not sighted in 2019). The highest number of butterfly sightings during a one-month period was 1411, also in August. The total number of butterfly sightings made during 2019 was 3142.

The five butterfly species sighted most often during 2019 were: 1) Least Skippers (*Ancycloxypha numitor*), with 946 sightings; 2) Northern Pearly-eyes (*Enodia anthedon*), with 413 sightings; 3) Clouded Skippers (*Laramus accius*), with 183 sightings; 4) Appalachian Browns (*Satyrodes appalachia*), with 182 sightings; and 5) Eastern Tailed Blues (*Cupido comyntas*), with 181 sightings.

The higher number of butterfly species and individuals sighted in 2019 can be attributed, in part, to expanding our surveys to include forest interiors and to conducting surveys twice weekly for the duration of the study period. These improvements led to greater opportunities for sighting not just pearly-eye butterflies, but all butterfly species. Another factor possibly contributing to the higher numbers, as mentioned earlier, were the warmer months of March and April 2019, allowing first broods to get an early start and later broods to be larger.

Some exceptional butterfly sightings for the Study Area were made during 2019: a White Admiral (*Limenitis arthemis arthemis*) [considered a form of the Red-spotted Purple (*Limenitis arthemis astyanax*)] was sighted on August 6, and two Harvesters (*Feniseca tarquinius*) were sighted, one on June 11 and one on July 21.

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Pearly-eye Caterpillars

Creole Pearly-eye caterpillars are reported to feed at night and spend the day hiding at the base of cane plants. During our surveys prior to June 28, we had been finding evidence of pearly-eye caterpillar feeding in both stands of cane in the Study Area but had not found any caterpillars. During our June 28 survey, we observed one plant in the east stand of cane that had numerous leaves with very fresh-looking evidence of pearly-eye caterpillar feeding activity. We did not see any caterpillars on the leaves so we decided to search the leaf litter at the base of this plant and quickly found a single, late-stage pearly-eye caterpillar hidden near its base.

Finding no other caterpillars in the leaf litter, we turned our attention back to the leaves on the plant. During this search we discovered one third-stage caterpillar on the underside of a leaf blade, near the tip. With their cryptic coloration and long, slender bodies, they were very difficult to see. We learned that we needed to examine the leaves of young plants (further discussion below), and more importantly, turn leaves over and look closely near the blade tips. Once we started using this technique, we became fairly proficient at finding caterpillars, which have pinkish to reddish horns on their heads and tails. These protrusions probably contribute to camouflage, helping caterpillars blend in with the tip of a leaf blade no matter which way the caterpillar faces. During our next survey on July 4, we found two more third-stage caterpillars, then we saw no caterpillars until August 22 when we discovered a group of six newly-hatched caterpillars.

All three pearly-eye species are reported to lay eggs singly or in clusters on host plants. We never witnessed a pearly-eye butterfly laying eggs, but we did find remnants of egg clusters on the underside of several cane leaves that also had evidence of pearly-eye caterpillar feeding. During surveys conducted between August 22 and September 3, we found five different groups of first-stage caterpillars totaling 30 individuals. Since caterpillars hatching from egg clusters often remain together, at least initially, these groups of newborn caterpillars confirm that Creole Pearly-eyes (and possibly Southern Pearly-eyes) lay eggs in clusters. These first-stage caterpillars also represent the offspring that will grow and overwinter as mature larvae, then in early spring, develop into the first pearly-eye flight of 2020.

Almost all first- and second-stage caterpillars were found on leaves of young cane plants no more than about 24" tall, or on leaves of young stems of similar height arising from the base of mature cane plants. Third-stage caterpillars were found on the leaves of plants up to about 48" tall, but we never observed pearly-eye caterpillar feeding evidence on the highest leaves of mature cane plants (about 75" high). All pearly-eye caterpillars were found on the underside of cane leaves, almost always near the tips.

Based on our observations, young caterpillars (first- through third-stage) appear to remain on cane leaves both day and night to feed, while older caterpillars (fourth- and fifth-stage) descend cane stems at, or before, dawn to spend the day hiding in leaf litter on the ground, then ascend cane stems at dusk, or shortly thereafter, to feed on cane leaves during the night.

Both Creole and Southern Pearly-eye butterflies use Switch Cane as a host plant. We found only one Southern Pearly-eye butterfly in 2018 and three in 2019, meaning that the majority of pearly-eye caterpillar feeding evidence we observed during the past two years was caused by Creole Pearly-eye caterpillars. Since caterpillars of both species look identical, it is impossible to know how many Southern Pearly-eye caterpillars might actually be present on cane leaves in the Study Area without caging and rearing all pearly-eye caterpillars found.

Northern Pearly-eye Host Plants

Northern Pearly-eyes are reported to utilize a wide variety of woodland grasses (Family Poaceae) as host plants [*e.g.,* Bearded Shorthusk (*Brachyelytrum erectum*), White Cutgrass (*Leersia virginica*), and various panic grasses to name just a few], all of which occur in James City County. According to some sources, Northern Pearly-eyes in New Jersey and Maryland have adapted to using Japanese Stiltgrass as a host plant. With the abundance of stiltgrass in the Study Area and so many Northerns sighted in locations corresponding with the greatest concentrations of the plant, we believe Northerns in the Study Area also have adapted to using Japanese Stiltgrass as a host plant.

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In 2018 we did not make a special effort to include grasses in the Study Area vegetation list we compiled, but in 2019 we wanted to determine if any of the commonly reported host plants for Northern Pearly-eyes might be present in sufficient quantities to support the number of Northerns we were seeing. One source mentioned sedges as a host plant for Northerns, so we included sedges and closely-related rushes in our search for grasses.

During 2018 and 2019 we identified two different species of panic grass in the Study Area: Bitter Panic Grass (*Panicum amarum*) and Velvet Panic Grass (*Dichanthelium scoparium*). We also identified three different species of sedges: Bottlebrush Sedge (*Carex comosa),* Sallow Sedge (*Carex lurida*), and Broom Sedge (*Carex scoparia*). While it is possible that some Northerns in the Study Area use one or more of these plant species as hosts, there were not enough of these plants present to support the large population of Northerns we observed. With no other host plants available in sufficient quantity, Japanese Stiltgrass appears to be the primary host for Northern Pearly-eye butterflies in the Study Area.

While searching for Switch Cane in the CNHP forests east of the Study Area we encountered various amounts of stiltgrass, although not as much as in the Study Area. This suggested Northern Pearly-eyes might be present but none were sighted during foot searches conducted on June 29, July 25, and August 21.

Summary

We had a very successful research season in 2019, accomplishing all of our project objectives. We found six stands of Switch Cane within a few miles of the Study Area; we documented two broods of Creole Pearly-eye butterflies in the Study Area and established flight times for both broods; we documented several growth stages of pearly-eye caterpillars feeding on Switch Cane leaves and verified that the feeding patterns we observed in 2018 and 2019 were caused by pearly-eye caterpillars; we recorded all butterfly species, and the numbers of each, observed during surveys conducted in the Study Area; we recorded GPS locations for as many pearly-eye butterflies as possible; we identified various grasses, rushes, and sedges observed in the Study Area for addition to the list of vegetation we reported in 2018; and we conducted several surveys in the forests east of the Study Area that were included in our 2017 project proposal but not explored in 2018.

When we completed our research in 2018, we were uncertain as to why Creoles seemed to favor only a few specific locations in the Study Area. After completing our 2019 research, we now believe the reason adult Creole Pearly-eyes congregate in certain areas is the presence of one or more reliable sources of food (*e.g*., sap flows, fungi, decaying organic matter, etc.) at those locations. An additional benefit of such gatherings is that both sexes are present in higher numbers and opportunities for successful matings are greatly increased. We believe that soon after emergence, adult Creole Pearly-eyes move away from their host plants and congregate during the day in areas where food is available and mating can take place. Mated females then return to their host plants at twilight to oviposit.

As mentioned above, we found six additional stands of Switch Cane growing outside the Study Area. Evidence of pearly-eye caterpillar feeding activity was found at several of those stands, which is important because it means that another population of Creole Pearly-eye butterflies exists in CNHP. We do not know if the same is true for Southern Pearly-eye butterflies.

Acknowledgements

We would like to thank the following organizations and individuals for their assistance with this project: the United States National Park Service, Colonial National Historical Park, and especially Dorothy Geyer, USNPS Natural Resource Specialist, for approving our research proposal and granting permission for us to access park property in the Study Area and on Jamestown Island; the James River Association, especially Emily Cope, Lower James Regional Outreach Manager, for granting our team access to the Study Area, and Ryan Walsh, Lower James Restoration Coordinator, for assisting with several of our surveys; the Historic Rivers Chapter of Virginia Master Naturalists; the Coastal Virginia Wildlife Observatory; Helen Hamilton, for helping identify grasses, sedges and rushes from the Study Area; and Allen Belden, for providing valuable comments and guidance.

WILLIAMSBURG AREA BUTTERFLY COUNT

Shirley Devan and Mike Smith counting butterflies at Warhill. Photo by Judy Jones

By Adrienne Frank

This year's butterfly count was a huge success! We had four all time highs: total species, total individuals, number of participants, and high individual counts for many species. Our species count was 53. After photo review, we lost one species, but we still had more species than in past years. 3033 individual butterflies were counted and that is 1500 more than ever before. 23 species had the highest number of individuals since we have been counting.

It was a good year for butterflies, especially as compared to last year. In 2018, we had a cold spring and a late frost. This year 2019, the butterflies seemed to come out early and were able to find host plants and good nectar sources. Our butterfly enthusiasts found a few new locations in the county where flowers were planted (e.g., the Lavender and Kelrae Farms) and added those locations during the count day.

Forty observers was a record number of participants for the count. Almost half of the participants have been participating in the Williamsburg Count since its inception, and have continued to gain knowledge and observational skills over time. A number of people from other regions participated in our count as experts or observers, including folks from Harrisonburg, Richmond, Gloucester, Matthews, and the Northern Neck. The Northern Neck Chapter of the Master Naturalists has created a new butterfly circle in their region, using our model and experts to get it off the ground.

Six groups counted on August 10th. One group had a shortened day, but the other groups were out in the field from 9:00 am to almost 4:00 pm. Each sector had unique attributes and sightings of species that other groups lacked. Here are some highlights.

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- Upper York Sector had 50 Carolina Satyrs, 14 Spicebush Swallowtails, and 2 Sootywings. Their species number was higher than in previous years despite loosing access to a typical area due to a closed road.

- Lower York Sector had 3 Juniper Hairstreaks, seen only once on previous counts. They also had the high count for Gemmed Satyrs (17) and Zabulon Skippers (38). In part because New Quarter Park is on the brackish Queen's Creek, we count on this sector to have high counts of Saltmarsh Skippers (13), Delaware Skippers (11), Aarons Skippers (2), and also Northern Pearly-eyes (3).

- Williamsburg City had an incredible number of Fiery Skippers (108), Horace's Duskywings (17), and Common Checkered Skippers (5). The City had our only American Snout for the day.

Centerville Corridor Team at the Sweethaven Lavender Farm. Left to right: Barbara Neis, Judy Jones, Shirley Devan, Tom Pendleton, Karen Grass, Mike Smith. Photo by Kerry Messer

- Upper James City County had high counts for Eastern Tiger Swallowtail (256), Little Glassywings (19), and Northern Broken Dash (5). This sector had the only sightings of Swarthy (2) and Dion (2) Skippers.

- The Freedom Park team had a slightly shortened day but still had the high count for Dun Skippers (5) and Viceroys (3). All butterflies were counted but we wonder if some butterflies were releases from the Butterfly Festival (i.e., Viceroys, Painted Ladies, Pipevine Swallowtails, and Monarchs).

- Centerville Corridor added the Lavender Farm and combed the large fields at Colonial Heritage. They had an incredible number of species (40) and individuals (1173) for their sector. They counted 356 Common Buckeyes, 101 Eastern Tailed Blues, 82 Silver Spotted Skippers, and 51 Sachem. Centerville was the only sector to have Tawny-edge and Crossline Skippers.

The following was information submitted to the North American Butterfly Association (NABA) and will be published in their annual booklet summarizing all of the counts in North America.

Region 17 - Mid-Atlantic (DC, DE, MD, VA)
Williamsburg, VA – Williamsburg Area Butterfly Count – Year 6 (August 10, 2019)

Williamsburg Area Circle - 37.3563°, -76.7383°, center at 2000 ft. NW of jct. of Rt. 199 and I-64. See 2014 report for habitats. Imminent threats to habitat: continuous development, increased invasive species (e.g., Stilt grass, Tree of Heaven), and roller coaster temperatures. Habitat changes since last year: Road closure, new Lavender Farm, a few more gardens with native plants, slightly less mowing in state and county parks. **10 August 2019;** 0900-1600 hrs; sun AM 76-100%, PM 76-100%; 74-85°F; wind 2-5 mi/hr. 40 observers in 5 parties. **Total party-hours** 40; **total party-miles on foot** 25. **Observers:** *N. Barnhart, A. Belden, G. Broome, S. Brubaker, G. Carpenter, J. Carpenter, S. Crockett, S. Devan, G. Driscole, Adrienne Frank, L. Garris, R. Garris, S. Gill, D. Gordon, R. Gosden, K. Grass, J. Jones, T. Kain, A. Kopinitz, S. Kopinitz, L. Lawrence, P. Lawryniuk, J. Lockwood, K. Lorenzen, P. Murphy, S. Mutell, J. Navia, K. Navia, B. Neis, L. Nickel, T. Pendleton, S. Powell, M. Smith, B. Taber, J. Thomas, R. Thomas, J. Towne, S. Towne, J. Tyndall, J. Wright.*

53 species, 3033 individuals - Pipevine Swallowtail 6, Zebra Sw. 50*, Black Sw. 30*, E. Tiger Sw. 732*, Spicebush Sw. 51, Cabbage White 13, Clouded Sulphur 3, Orange Su. 2, Cloudless Su. 62*, Sleepy Orange 71*, Juniper Hairstreak 3*, Gray Ha. 19*, Red-banded Ha. 23, E. Tailed-Blue 159*, 'Summer' Spring Azure 37, Am. Snout 1, Variegated Fritillary 44, Pearl Crescent 55, Question Mark 5, Am. Lady 19, Painted La. 37*, Red Admiral 26, Com. Buckeye 421*, Red-spotted Admiral 13, Viceroy 5*, Hackberry Emperor 2, N. Pearly-eye 5*, Gemmed Satyr 19, Carolina Sa. 95*, Monarch 93*, Silver-spotted Skipper 201*, S. Cloudywing 5, Horace's Duskywing 25*, Com. Checkered-Sk. 7*, Com. Sootywing 3, Swarthy Sk. 2, Clouded Sk. 52*, Least Sk. 23, Fiery Sk. 197,* Tawny-edged Sk. 4*, Crossline Sk. 1, S. Broken-Dash 10*, N. Broken-Da. 8*, Little Glassywing 35, Sachem 138, Delaware Sk. 14, Zabulon Sk. 123*, Aaron's Sk. 2, Broad-winged Sk. 15, Dion Sk. 2, Dun Sk. 11, Salt Marsh Sk. 16, Ocola Sk. 38*. * *High # for species since count inception*

WATERBIRD PROJECT

Piping Plover by Dave Youker

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.

WATERBIRDS TEAM REPORT

By Bill Williams

American Avocets by Bill Williams

The 2019 CVWO Waterbirds Team field work was devoted entirely to surveys of Craney Island Dredged Materials Management Area (CIDMMA) in Portsmouth. The team's CIDMMA activities were performed in collaboration with the Norfolk District Office of the United States Army Corps of Engineers (USACE) and authorized by the Virginia Department of Game and Inland Fisheries (VDGIF).

Two projects performed by the Team in previous years were completed this year by other agencies. An annual early summer survey of Grandview Nature Preserve in Hampton was carried out by the Virginia Department of Game and Inland Fisheries (VDGIF). The monitoring of seabird colonies on the south "island" of the Hampton Roads Bridge Tunnel (HRBT), done for decades by Waterbirds Team members, was contracted to the Virginia Tech Department of Fish and Wildlife Conservation, as preparation for the expansion of the tunnel complex and associated facilities.

CIDMMA Bird Monitoring Surveys

Craney Island Dredged Material Management Area is a 2,500-acre restricted access USACE facility located at the confluence of the James and Elizabeth rivers in Portsmouth, Virginia. Its highly dynamic interior serves as the confined disposal site for material dredged from numerous maintenance, permit, and private projects in the greater Hampton Roads, Virginia area.

Weather permitting, 4-person teams conduct weekly bird monitoring surveys there throughout the year. The purpose of this field work is to provide USACE and CIDMMA staff real-time data as a resource for compliance with the facility's *Long-term Bird Management Plan for the Craney Island Dredged Materials Management Area*. Surveys typically begin near civil-sunrise and conclude between 1300 and 1400 hours (EST). Coverage consists of walking and/or driving all non-restricted roadways within the facility including the paved road leading to and from the Portsmouth Landfill. During every survey the total number of individuals of every bird species detected by sight and/or sound is recorded. All 2019 data were entered into the Cornell Laboratory of Ornithology's eBird database and/or the Virginia Breeding Bird Atlas 2 eBird database portal. Relevant data were also submitted for the VDGIF's annual Virginia Atlantic Coast Least Tern Survey, American Oystercatcher Survey, and Plover Survey.

An Overview of 2019 Findings

The total of 210 bird species documented on the facility in 2019 was indicative of CIDMMA's significant value to a broad spectrum of avifauna year-round. From 10 January–19 December the team logged 311 hours (= 1244 person-hours) during 46 weekly surveys. The average number of species per visit was 76 with a range of 53 on 10 January to a high of 105 on 25 April. Waterbird diversity included 2 "goose" species (Canada Goose & Brant), Tundra Swan, 24 duck species, 30 shorebird species and 11 heron/ibis species.

Continued on next page...

Breeding was confirmed for 29 species; another 23 species were considered probable/possible breeders. Among the probable breeding species was Northern Bobwhite. One-two were heard throughout the season into August. At least 18 Black-necked Stilt nests were observed, however the number of young these produced was undetermined. Eight Least Tern nesting sites were identified by USACE staff. Mid-June monitoring indicated these colonies were occupied by a total of 156 adults. Once colony sites were discovered, each was posted so that access was curtailed until early August or until no further breeding activity was detected for more than one week. This access restriction prevented the Team from gathering productivity data for the species.

The facility's importance to several waterbird populations was once again evidenced by Virginia's highest 2019 single-day counts of Northern Shoveler (1305 on 28 February), Green-winged Teal (669 on 7 February), Black-necked Stilt (115 on 20 June) and American Avocet (156 on 22 August) being recorded there. The Black-necked Stilt total was the highest ever recorded in the Commonwealth, exceeding the previous high of 110 established at CIDMMA 10 August 2017 (Williams, 2018).

Non-avian Fauna

The team routinely records anecdotal detections of non-avian fauna at CIDMMA. The 2019 list included:

Mammals: coyote, Atlantic bottlenose dolphin, white-tailed deer, raccoon, eastern gray squirrel, eastern cottontail rabbit, river otter, mink, muskrat, beaver, opossum

Reptiles: diamond-backed terrapin, yellow-bellied slider, northern red-bellied cooter, painted turtle, snapping turtle, box turtle, "black" rat snake, banded watersnake

Amphibians: bull frog, leopard frog, squirrel tree frog, green tree frog, spring peeper, southern toad,

The 2019 Waterbirds Team Members were: Bob Ake, Edward S. Brinkley, Andy Hawkins, Alex Minarik, Lee Schuster, Brian Taber, Bill Williams and Dave Youker

Literature Cited

Williams, B. 2018. Fall Records: August-November 2017. Coastal Region. Virginia Birds 14(2):25-3

Least Tern on nest by Bill Williams

Black-necked Stilt at 4-egg nest by Bill Williams

WOOD DUCKS IN NEWPORT NEWS

Wood Duck eggs in nest box in Newport News. Photo by Dave Youker

Dave Youker's selfie as he balances in his kayak to check eggs in a nest box

By Dave Youker

This past year was another good year for Wood Duck productivity; however it was particularly troublesome with regard to snakes. Rat snakes were found in 3 of the 7 nest boxes scattered around Harwoods Mill Reservoir. All boxes were occupied by Wood Ducks during 2019, but only 3 boxes had second clutches. Five boxes had second clutches last year, but the presence of snakes probably deterred some follow-on breeding attempts.

The average number of eggs per box was 20.9. With these 10 separate nestings, the total number of eggs was 209.

Two boxes had snakes present early in the breeding cycle which caused the nests to be abandoned, and no further activity was observed in these boxes. The other box where the snake occurred had subsequent nesting activity and successfully fledged 11 Wood Ducks. Predator deterrence has been installed in hopes of preventing future snake problems.

Nesting commenced in March and was complete by the end of June. Total number of Wood Ducks fledged was 97. Following the Wood Duck nesting, there was no subsequent nesting by other avian species such as has occurred in previous years.

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

Rare Northern Wheatear by Nancy Barnhart

ANNUAL KIPTOPEKE CHALLENGE

A SINGLE-DAY BIRDING COMPETITION

By Dave Youker

All year long we were celebrating the 25th anniversary of CVWO. And this year's Kiptopeke Challenge (KC) was our 25th consecutive year for this single-day birding competition. Ten teams competed this year on September 28, and they recorded 154 species for the day. Of the 154 species, 29 were seen by only a single team while 18 species were seen by every team.

Routinely during a KC, a species is found that hasn't occurred during any of the previous Challenges. This year was no exception as a Northern Wheatear showed up on the Eastern Shore, and most teams had the good fortune to see this special bird. This brings our composite list for the 25 years to 262 species. See the photo above of the rare find.

The team compiling the most species for the 24-hour category was the C'ville Ceruleans anchored by Baxter Beamer, Tucker Beamer and Max Nootbaar. Their species total for the day was 114. Our 3-hour category was won for a second year in a row by the Hampton Roads Bird Club. This team consisted of Andy Hawkins, James Abbott and Stuart Sweetman, and they totaled 61 species. The winner of our Special Venue category was the Piping Platformers, a.k.a. Hawkwatch team. This team of six (Anna Stunkel, Meagan Murante, Michael Ferrara, Jim Flynn, Marissa Benavente and Kevin McGann) tallied 61 species. Our Youth Team category winner doubled as our 24-hour winner, and that was the C'ville Ceruleans. Congrats to all category winners!

Continued on the next page...

Each of the other teams enjoyed this pleasant day of birding and turned in some great sightings. One of the other youth teams, Team Turnstones, had the second highest daily total with 104. Team members were Ezra Staengl, Conor Farrell, and Theo Staengl. The next highest total was shared by the Laughing Falcons and the Wandering Whimbrels. Each team identified 103 species. The Laughing Falcons is a veteran team composed of Bob Ake, David Clark, Elisa Enders Flanders and Nick Flanders. The Wandering Whimbrels consisted of Brian Taber and David Youker. Coming in just under the century mark with 98 was the Gulls Gone Wild team of Shirley Devan, Barbara Neis, Nancy Barnhart, Sue Mutell and Jan Lockwood. The Scattered Scoters were next with 80 species.

Hawkwatch platform at Kiptopeke State Park by Collins Reagan

This youth team was a first-time entrant and was comprised of Ira Lianez and Seth Kellogg. And our final 24-hour competitor was the Amazing Diving Mallards and Duckling which tallied 58 species. This team returned after missing several years and was augmented by an additional team member. Team members Paul Nasca and Heidi Krofft were accompanied by their son Samuel. Our last team was another first-time entrant, and they competed in the 3-hour category. The Dyke Marsh Birders from Northern Virginia tallied 41 species. Team members were Larry Meade, Ed Eder, Deapesh Misra and Larry Cartwright.

Routinely during a KC, a species is found that hasn't occurred during any of the previous Challenges. This year was no exception as a Northern Wheatear showed up on the Eastern Shore, and most teams had the good fortune to see this special bird. This brings our composite list for the 25 years to 262 species.

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 and winner of the Piping Plover trophy this year was once again Gulls Gone Wild which raised over $4,000 in donations. The total raised by all teams was an impressive total of $10,676! 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.

Scattered Scoters — Ira Lianez and Seth Kellogg with a dad for the team's driver

Amazing Diving Mallards with Duckling — Paul Nasca, Heidi Kroft and son, Sam

More 2019 Kiptopeke Challenge Team Photos

Wandering Whimbrels — David Youker and Brian Taber

The Dyke Marsh Birders — Ed Eder, Larry Meade, Larry Cartwright, and Deapesh Misra

Team Turnstone — Conor Farrell, Ezra Staengl, Theo Staengl

Gulls Gone Wild — Jan Lockwood, Barbara Neis, Nancy Barnhart, Sue Mutell, Shirley Devan

C'ville Ceruleans — Max Nootbaar, Baxter Beamer, Tucker Beamer

The Piping Platformers — Anna Stunkel, Michael Ferrara, Megan Murante

EDUCATIONAL OUTREACH

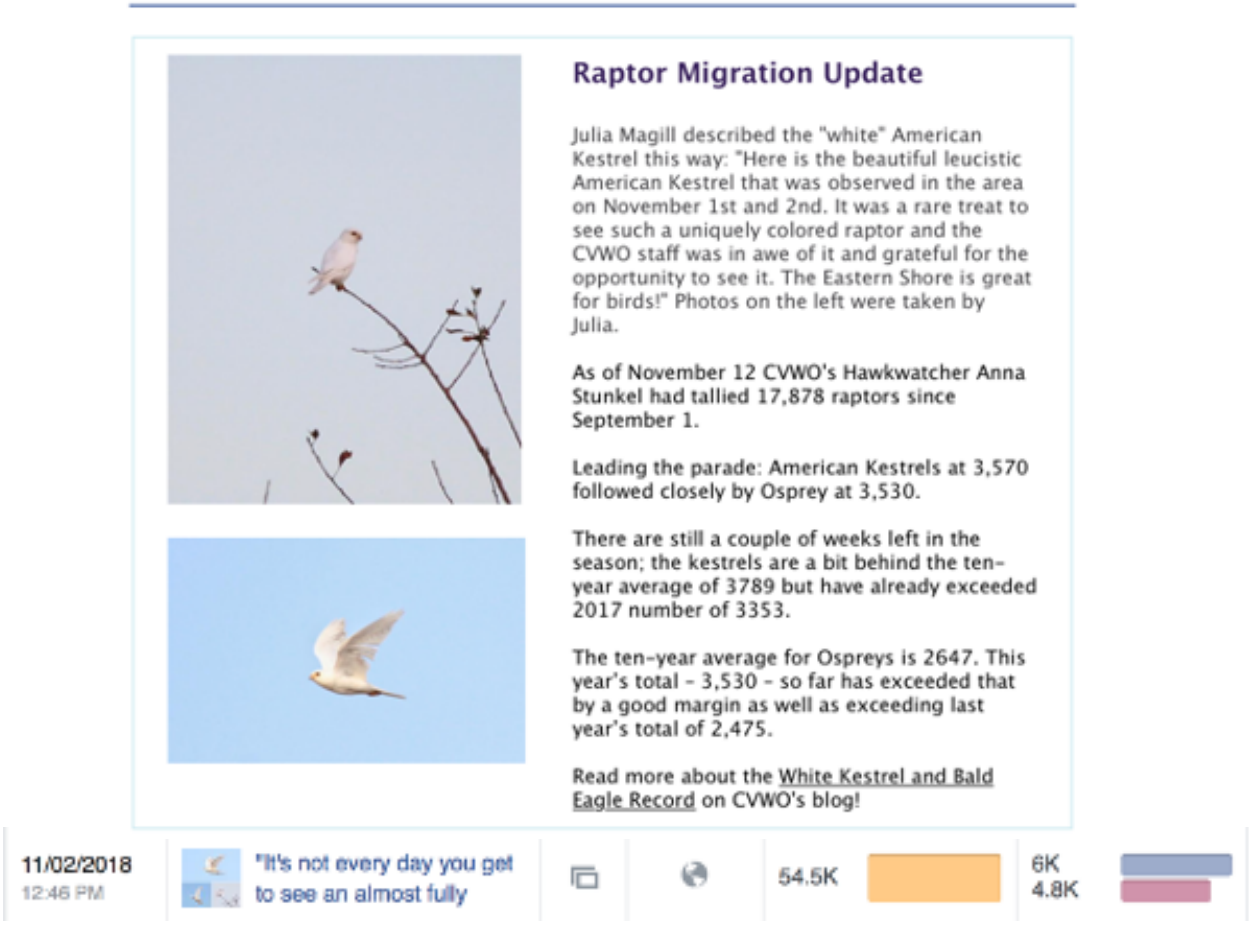
CVWO'S PUBLIC RELATIONS STRATEGY

By Lisa Reagan, Public Relations Strategist, CVWO

While CVWO's mission is to protect wildlife through field research, education and habitat, it is that part in the middle, "education," that requires us to capture our quarter century and ongoing field work and present it to the public through a progressive digital outreach strategy and multi-media platform. In August 2019, CVVWO launched a new website that serves as our virtual information hub, connecting the many avenues of public interaction through social media to our extensive project and data collections, with invitations for the public to subscribe to CVWO's free newsletter, become a supporter and receive a print version of our annual report, or support the observatory's work with multiple grant opportunities, annual events and special projects.

Reaching the Public Where They Are

Members of the public can discover CVWO's work through our Facebook, Twitter, Instagram and YouTube Channel. One example of the reach provided by social media is the lively discussion that was inspired by the photo of a rare white Kestrel. This photo was shared and reshared by over 54,000 people on their Facebook walls. (See the Facebook graphic and newsletter photo below.)



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 new 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 this past summer.

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.

New 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.

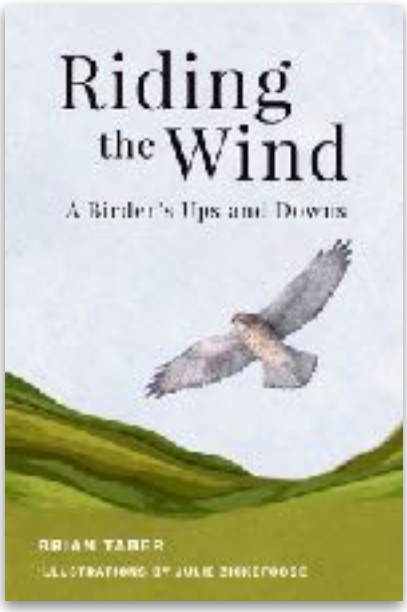
Our 25th Anniversary Celebration logo was designed by Megan Massa, who was recently recognized as the American Bird Association, ABA's Bird of the Year artist in 2019. Massa is a graduate of the College of William and Mary, where she studied biology and environmental science. She has created artwork for the Smithsonian Museum of Natural History and the Center for Conservation Biology, in addition to the ABA.

Café Press. You can find the 25th anniversary image on a variety of products in our Café Press store: https://www.cafepress.com/cvwo

A Prothonotary Warbler illustration by Anna Stunkel, our Kiptopeke Hawkwatcher for the past four years, will be featured on t-shirts later in the spring.

“Riding the Wind – A Birder’s Ups and Downs”

To celebrate CVWO's 25th anniversary, the Observatory published a special new donor item, a book by President Brian Taber entitled “Riding the Wind: A Birder's Ups and Downs.” It’s a book of essays about birds, birding, and conservation, eleven of which were previously published.



Anna Stunkel, our hawkwatcher, created the cover art. And 20 illustrations are by award-winning artist Julie Zickefoose.

For a donation of $20.00 per book (plus $5.00 shipping & handling), email Nancy Barnhart and she will mail a copy out to you. If you live in the Williamsburg area, you can save shipping and handling by visiting Backyard Birder at 1490 Quarterpath Road, or Wild Birds Unlimited, 4625 Casey Blvd, Suite 300.

You can also buy a copy from Buteo books.

Virginia's Wildlife Needs Your Help!

Many species of birds and butterflies across Virginia and North America are declining due to habitat loss, pollution and other factors. CVWO’s paid seasonal biologists and our dedicated volunteers work to solve those conservation problems by gathering data and providing public education. Your donations support that important effort.

Your welcome donations are tax-deductible, and supporters receive our e-newsletters and our annual report.

Support our nonprofit work securely by credit or debit card using Paypal at our website.

Or use the form on the facing page to renew your support, make a donation to our projects, or purchase a copy of Brian Taber’s book “Riding the Wind: A Birder’s Ups and Downs.” Mail your check made out to "CVWO" to:

Coastal Virginia Wildlife Observatory
PO Box 764
Lightfoot, VA 23090

Thank you for supporting the Observatory's work!

A financial statement is available upon request from the Virginia Office of Charitable and Regulatory Programs.
This publication is made possible with grant funding by the Chesapeake Bay Restoration Advisory Committee from the sale of Chesapeake Bay License Plates.

SUPPORT CVWO

Your donation can make a big difference in 2020. 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 2020 — 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 2020 research. Enclosed is my check for:

Support Level:

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

I would like to make an additional donation for:

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

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 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 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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