

*The 2024 Howard County
Butterfly Survey Results*



Special Thanks

- ***A huge thank you goes out to Kathy Litzinger who again this year took a lead role in the data collection and organization.***
- ***Another thank you to Bob Solem who provides the tools needed to get the data from an email to the spreadsheet where it can be analyzed. He also deals with walk announcements, the photo gallery, posted trip reports and a host of other things.***
- ***We hosted six butterfly walks this year. The leaders make the walks happen. Another big thank you goes to Kathy Litzinger, Woody Merkle, Linda Hunt, and Cris Ausin who co-lead the walks and whose expertise made the walks special for the participants.***
- ***A thank you to everyone who sent in a survey this past year with a particular thanks to the 23 people that sent in 10 or more surveys.***
- ***A VERY HUGE thank you goes out to the two people who submitted >100 surveys, Linda Hunt (156) and Kathy Litzinger (139).***
- ***Finally, a big thank you goes out to everyone who sent in photos this year. They are appreciated, are a big help in the educational aspect of the survey and they are cool to look at.***

11-Year Overview – Results

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total	2024 Rank
Observers	22	48	44	48	59	62	48	73	104	111	58		6
Surveys	372	696	715	870	958	748	706	1144	1044	878	928	9059	4
Duration(min.)	19970	19437	35924	50196	55787	49242	40684	61027	56668	48536	44909	482380	7
Species	68	70	75	70	71	73	69	69	70	70	70	81	4
Butterflies	10360	17570	21622	25053	25245	26258	20828	25897	23083	19553	21278	236747	7

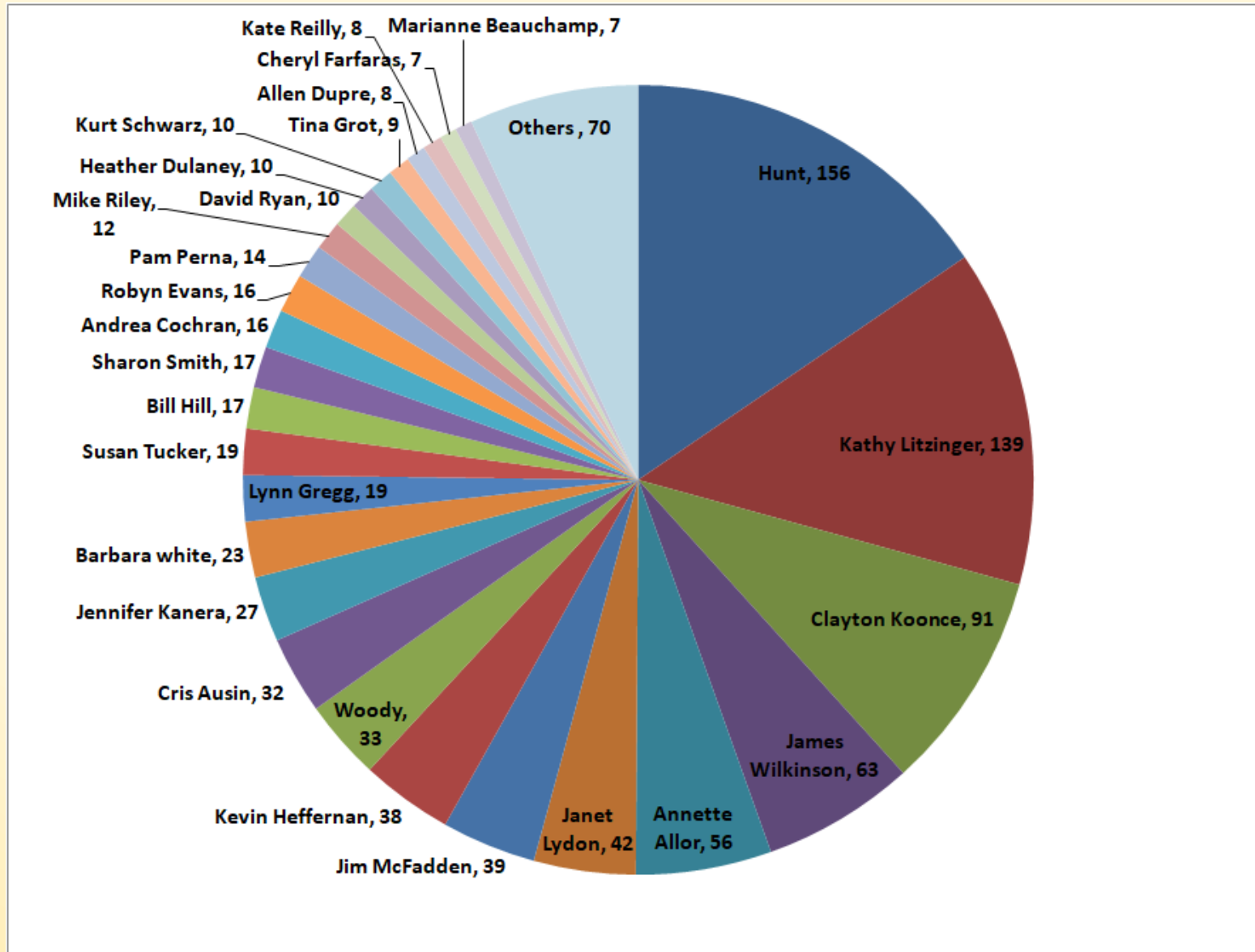
- A total of 58 observers handed in surveys. The six walks had 165 people attend.
- Fourth highest # of surveys.
- Participation in the survey is strong.
- Total # of species observed is **81** with the highest number in any year being 75 in 2016.
- *Have seen > 236,000 individual butterflies.*
- This amount of data has allowed us to plot flight times, early / late dates, etc.
- *482600 minutes = 8043 hrs = 201 40-hour weeks = 3.87 years*

Survey Participant List for 2024

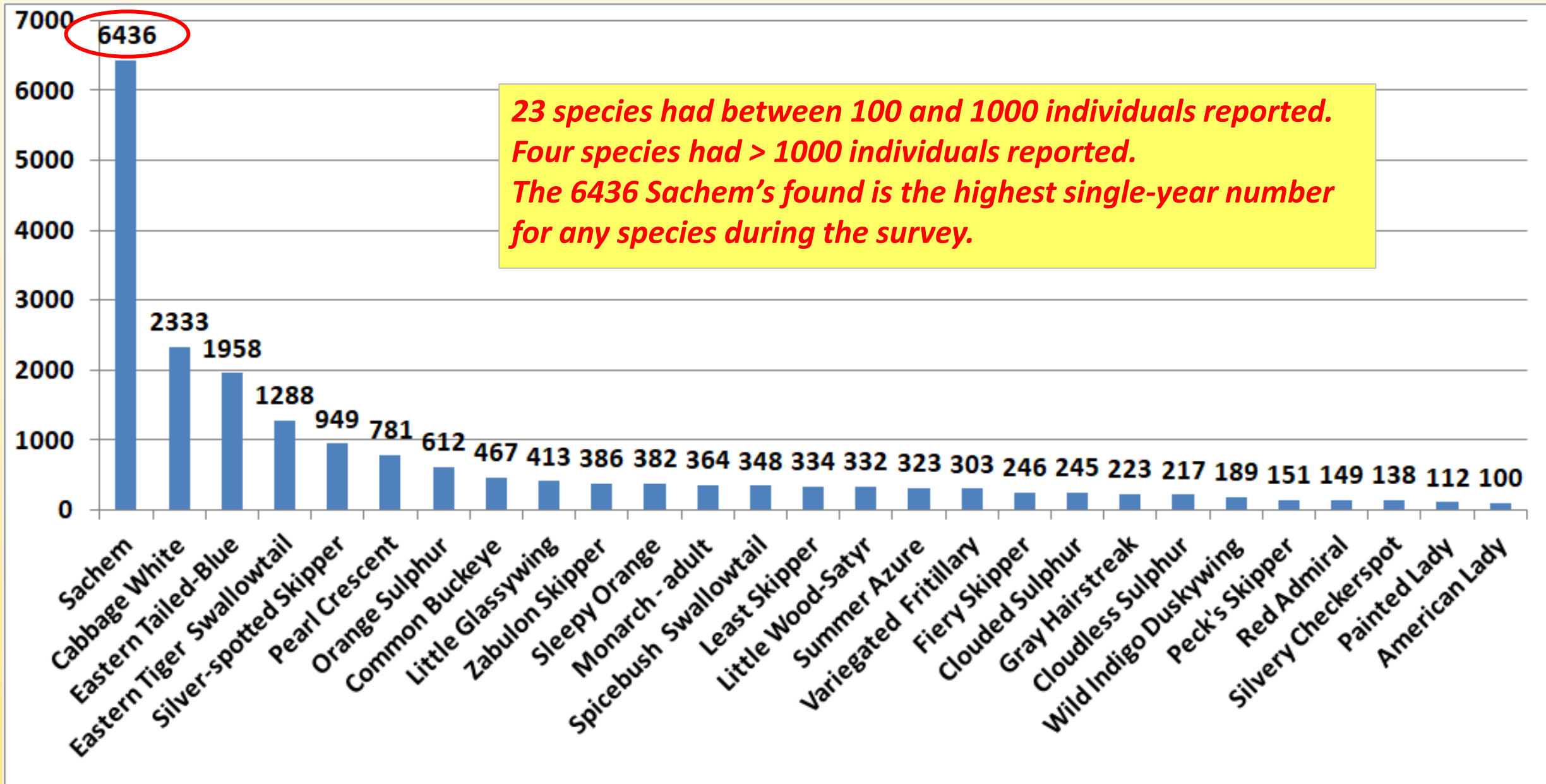
2024 Contributors: Annette Allor, Cris Ausin, Marianne Beauchamp, Terri Berkheimer, Bonnie Bezila, Susan Bishop, John Blaisdell, Martha Blaisdell, Mary Lou Clark, Andrea Cockran, Caleb Dean, Heather Dulaney, Allen Dupre, Ward Ebert, Robyn Evans, Cheryl Fafaras, Tim Foard, Lynn Gregg, Tina Grot, Kevin Heffernan, Bill Hill, Linda Hunt, Jenny Kanera, Clayton Koonce, Nancy Lawson, Kathy and Jack Litzinger, Janet Lydon, Lizabeth Malone, Jim McFadden, Winston McNod, Woody Merkle, Sue Muller, Vanessa Neill, Michael Osbourne, Bonnie Ott, Pam and Mike Perna, Gregg Petersen, Kaytlin Powell, Sue Probst, Kate Reilly, Heather Richardson, Mike Riley, David Ryan, David Sandler, Kurt Schwarz, Sharon Smith, Jo Solem, Alexandra Spring, Susanne Stahley, Carla Trevizo, Susan Tucker, Kelsey Wellons, Barbara White, Jim Wilkinson, Julie Wolf, and Dave Ziolkowski.

Number of Surveys Submitted by Individual

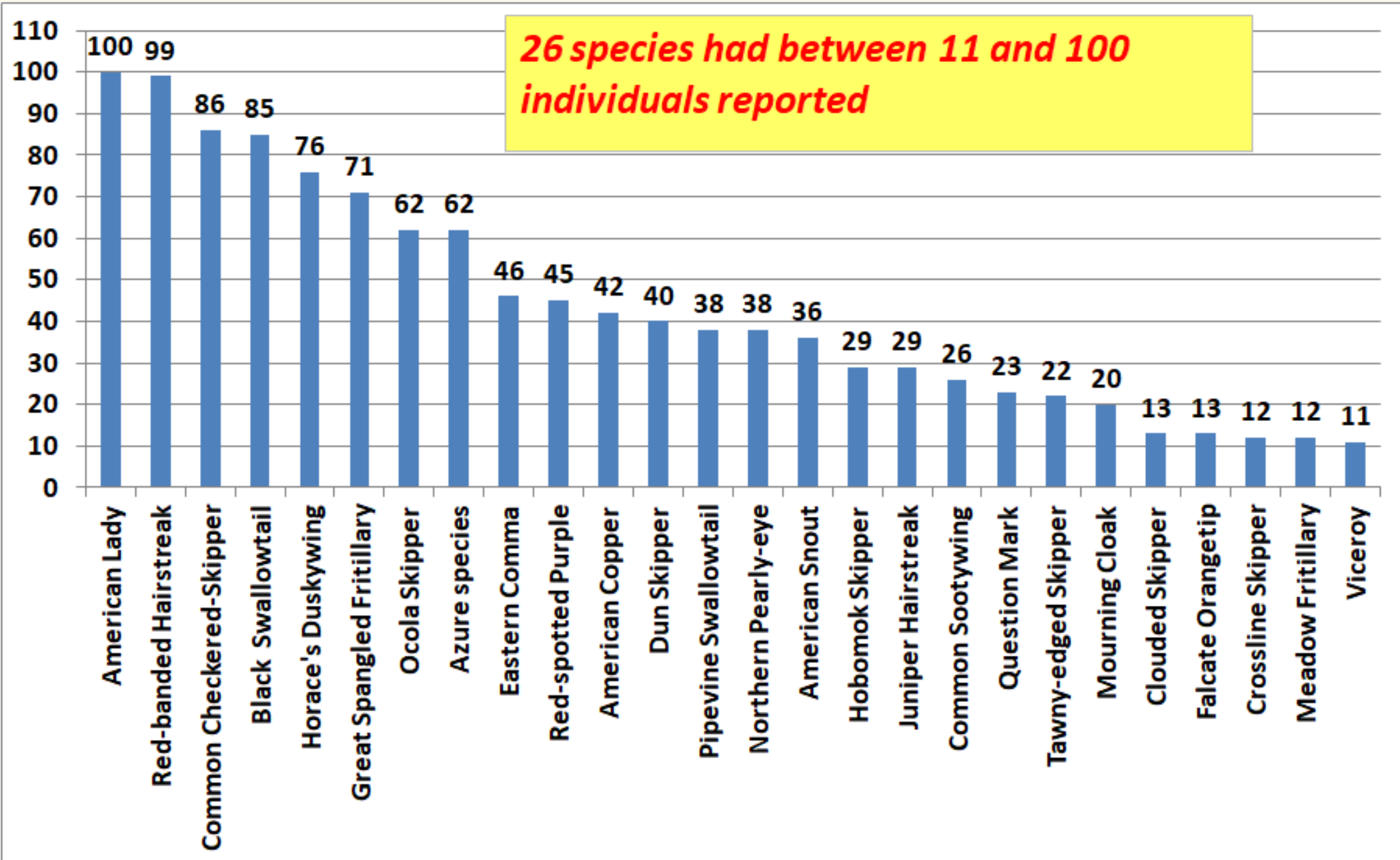
- **23 people submitted 10 or more surveys in 2024.**
- **Linda Hunt submitted a whopping 156 surveys (~ 3 every 4 days from April 1st through October 31st).**
- As a result, the number of surveys was about 82% of the peak year of 2021.
- There were 878 surveys submitted by 113 people this year. Multiple names on the same survey raises the number to 998. **Five people submitted 50% (526) of the surveys.**
- **Thanks to all 111 people who contributed to the survey this year**



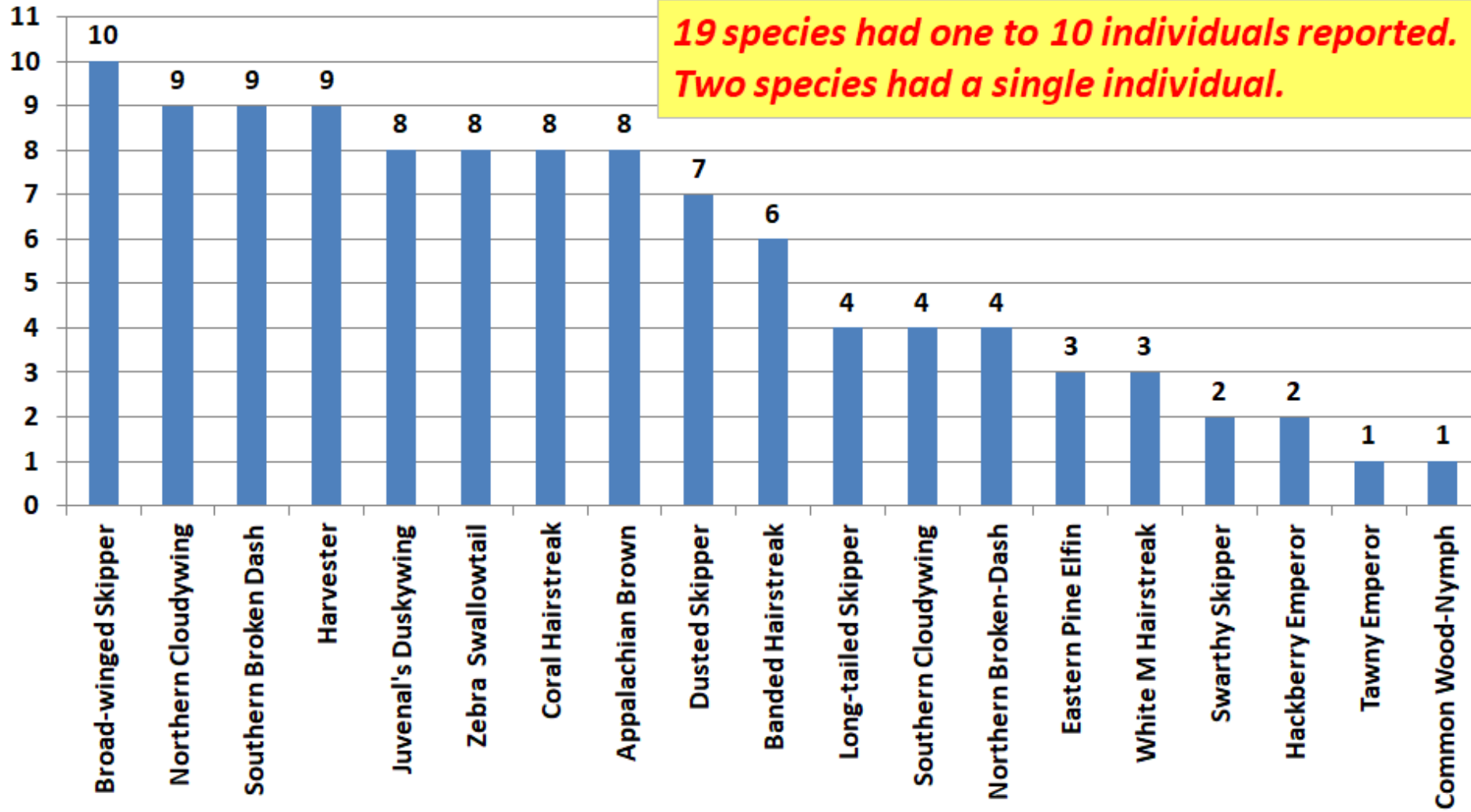
Number of Butterflies by Species



Number of Butterflies by Species



Number of Butterflies by Species

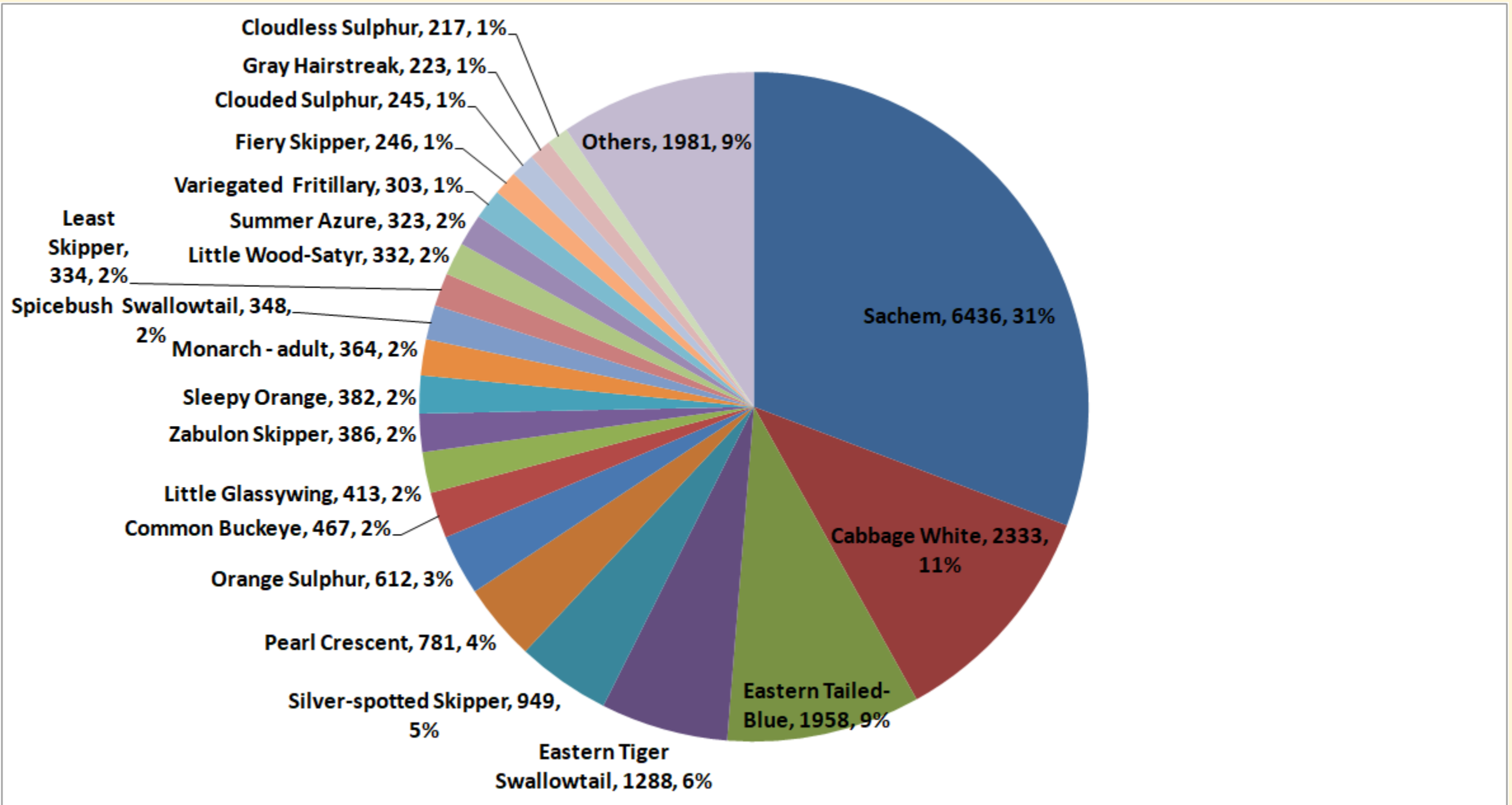


Tawny Emperor
Annette Allor

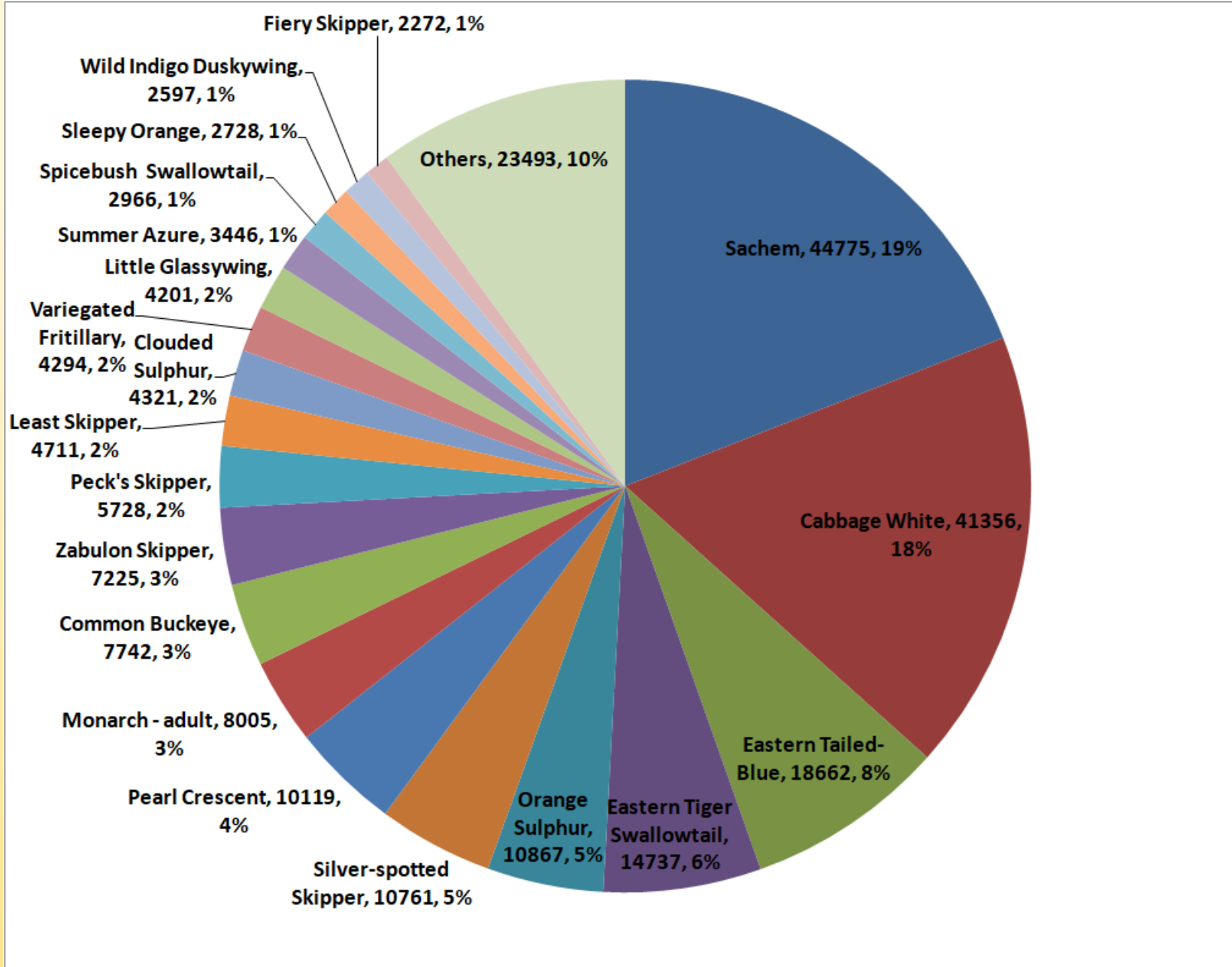


Common Wood-Nymph
Annette Allor

Species Status: Most Numerous Species of 2024



Most Numerous Species Reported in 11-year Survey



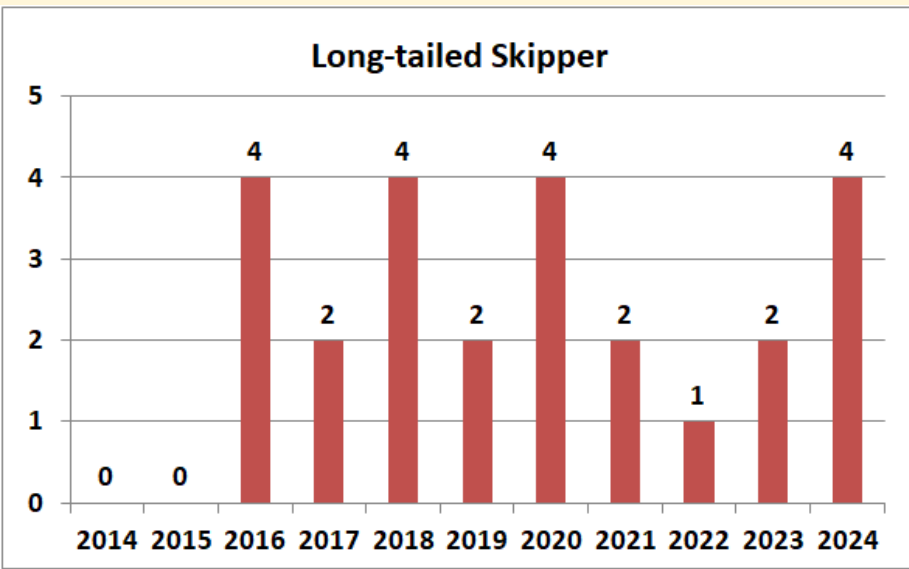
	11 yr	2024
Sachem	1	1
Cabbage White	2	2
Eastern Tailed-Blue	3	3
Eastern Tiger Swallowtail	4	4
Orange Sulphur	5	7
Silver-spotted Skipper	6	5
Pearl Crescent	7	6
Monarch - adult	8	12
Common Buckeye	9	8
Zabulon Skipper	10	10
Peck's Skipper	11	23
Least Skipper	12	14
Clouded Sulphur	13	19
Variegated Fritillary	14	17
Little Glassywing	15	9

Number of Species Found Each Year

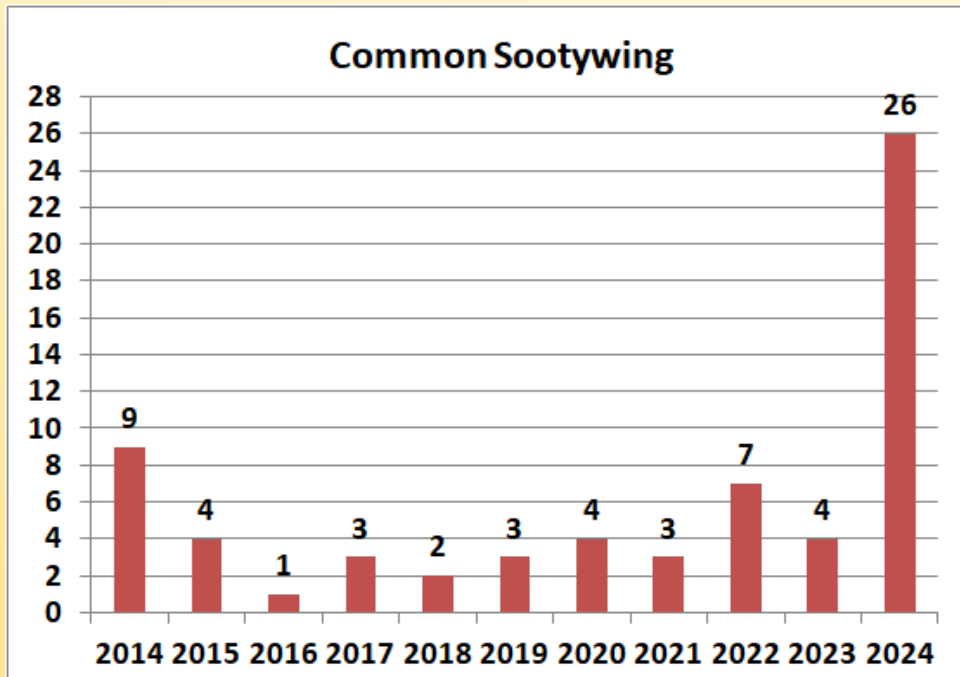
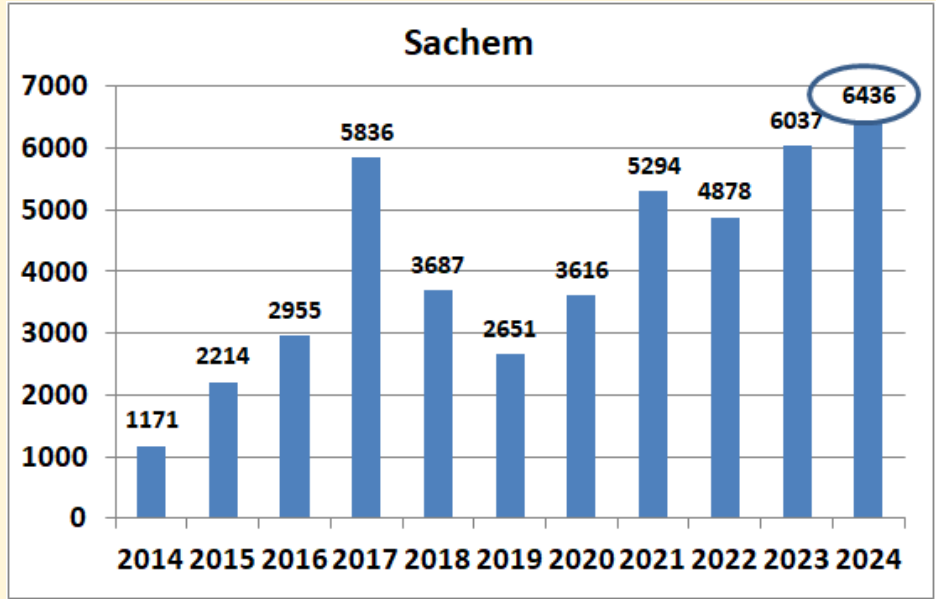
- 61 of the 81 species seen in the survey have been found in all eleven years

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
Cloudless Sulphur (10)		X	X	X	X	X	X	X	X	X	X	Seen nine or ten years. Will most likely be seen every year.
Harvester (10)	X	X	X	X	X		X	X	X	X	X	
American Snout (10)	X		X	X	X	X	X	X	X	X	X	
Silvery Checkerspot (10)	X	X	X		X	X	X	X	X	X	X	
Long-tailed Skipper (9)			X	X	X	X	X	X	X	X	X	
Clouded Skipper (9)		X	X	X	X	X	X	X	X		X	
Tawny Emperor (9)			X	X	X	X	X	X	X	X	X	
Eastern Pine Elfin (7)	X	X	X	X		X	X				X	The number of these six species seen will determine the number of species seen in a given year.
Mulberry wing (6)		X	X			X		X	X	X		
Giant Swallowtail (6)	X		X	X		X			X	X		
Dusted Skipper (6)	X	X	X	X	X						X	
Little Yellow (4)		X	X			X		X				
Checkered White (2)			X		X							
Hayhurst's Scallopwing (1)		X										Species seen in only one of the 11 years. Are unlikely to be seen most years.
Brazilian Skipper (1)						X						
Dainty Sulphur (1)						X						
Bronze Copper (1)			X									
Henry's Elfin (1)					X							
Northern Oak Hairstreak (1)										X		
Spring Azure (1)	X											
Total for Year	68	70	75	70	71	73	69	70	70	70	70	
Total for Survey	68	72	77	77	78	80	80	80	80	81	81	

Species Status: Highest Annual Count in 11-Years



Long-tailed Skipper
Kathy Litzinger

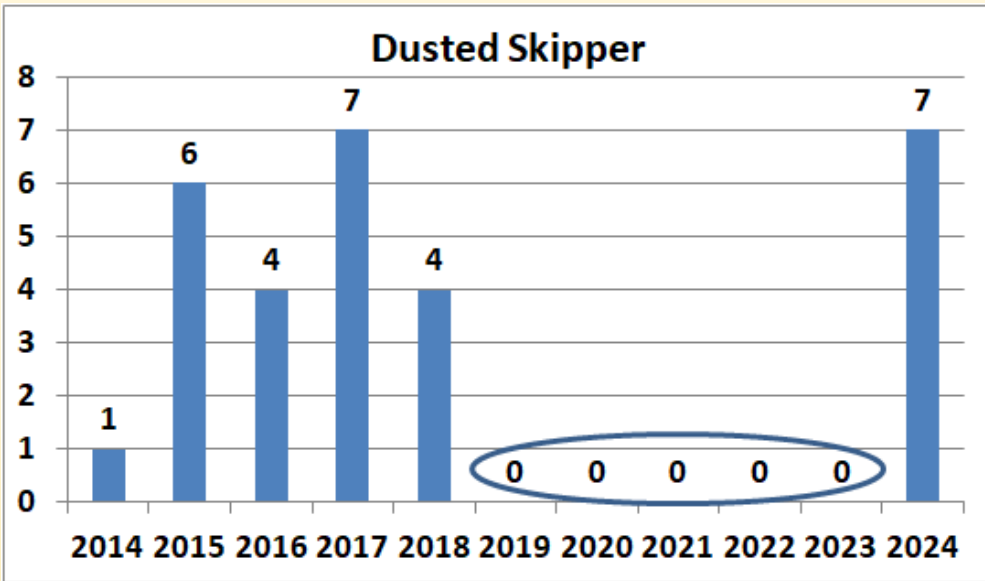


Common Sootywing
Annette Allor

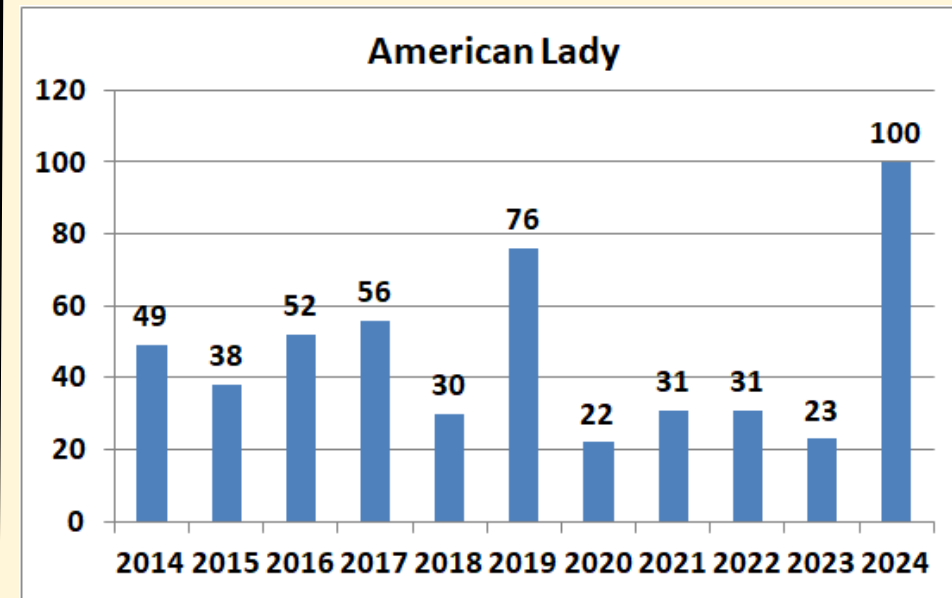


Sachem - Annette Allor

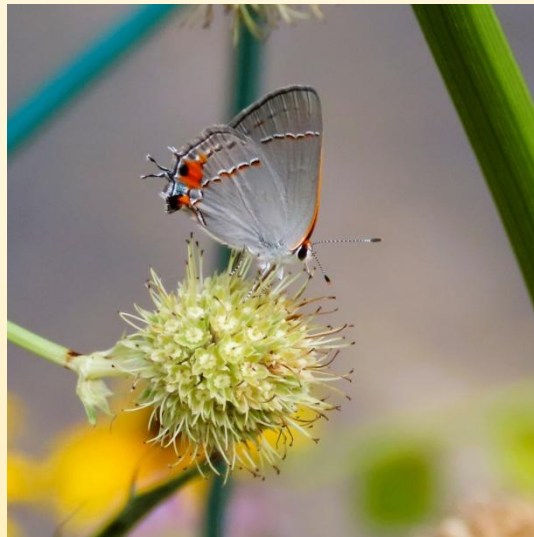
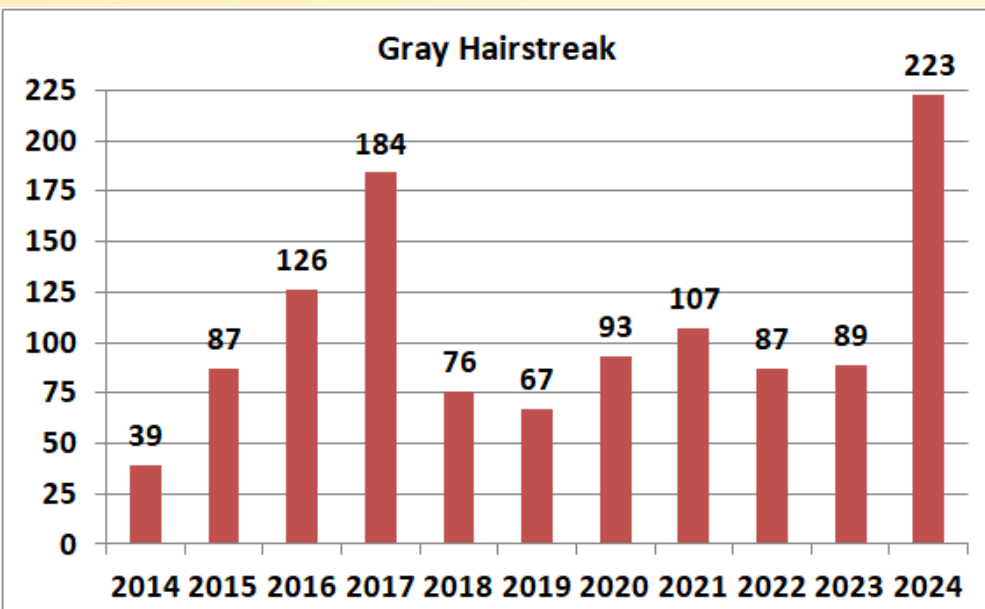
Species Status: Highest Annual Count in 11-Years



Dusted Skipper
Annette Allor

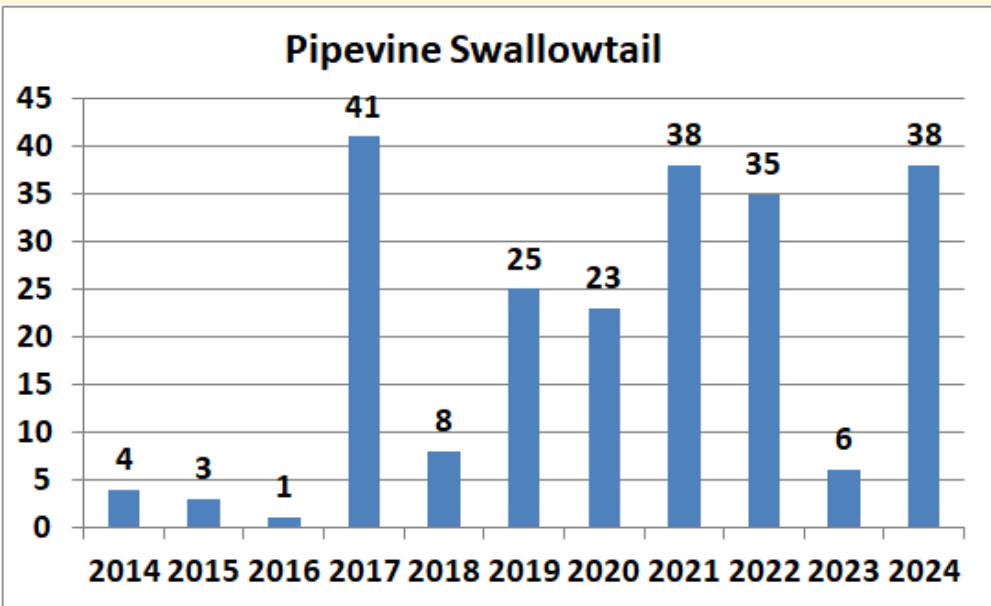


American Lady - Kevin Heffernan

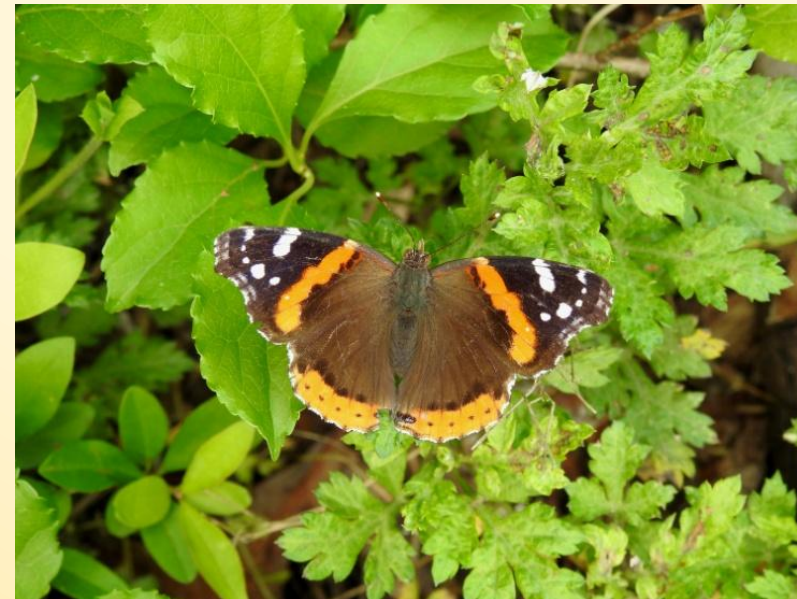
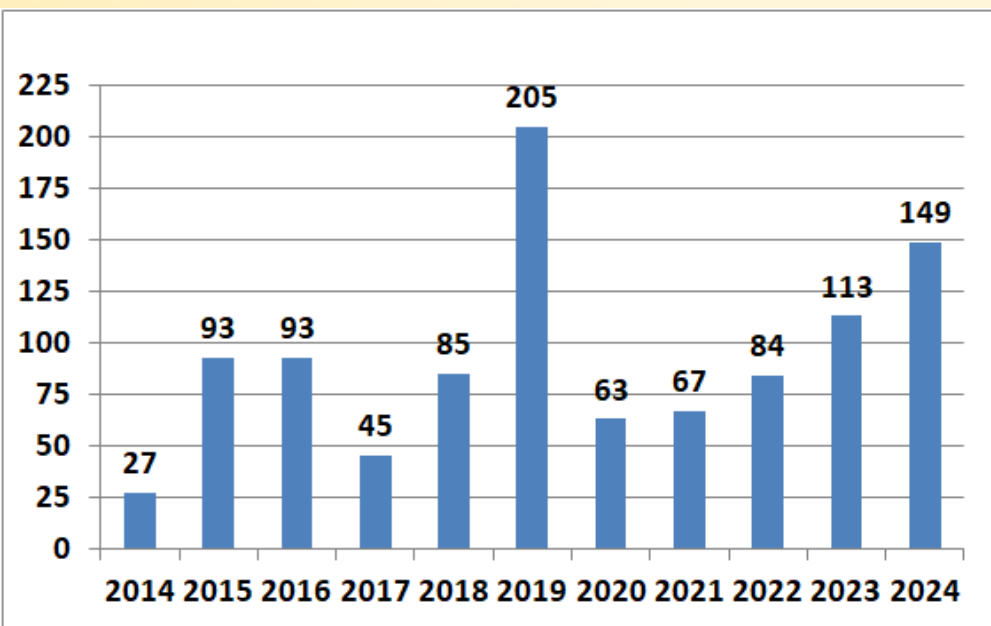


Gray Hairstreak
Clayton Koonce

Second Highest Annual Count in 11-Years



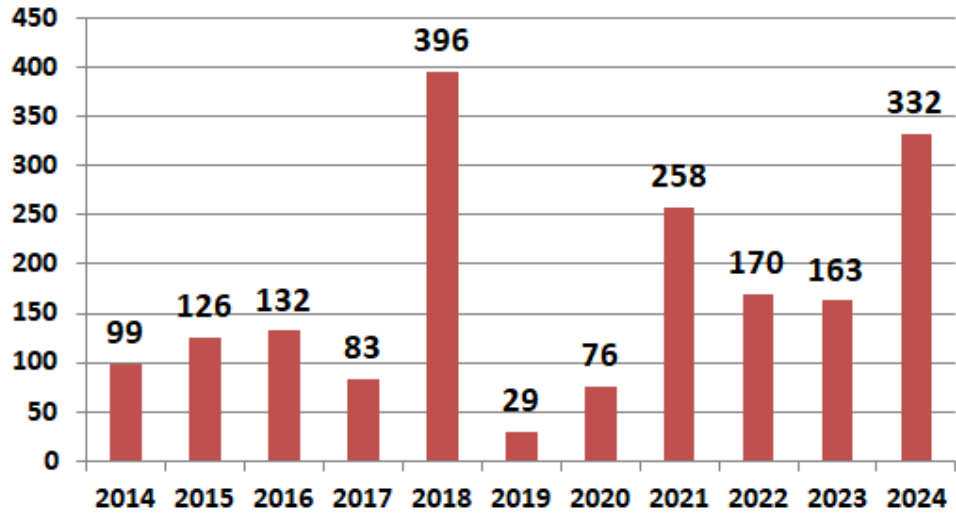
Pipevine Swallowtail
Barbara White



Red Admiral
Annette Allor

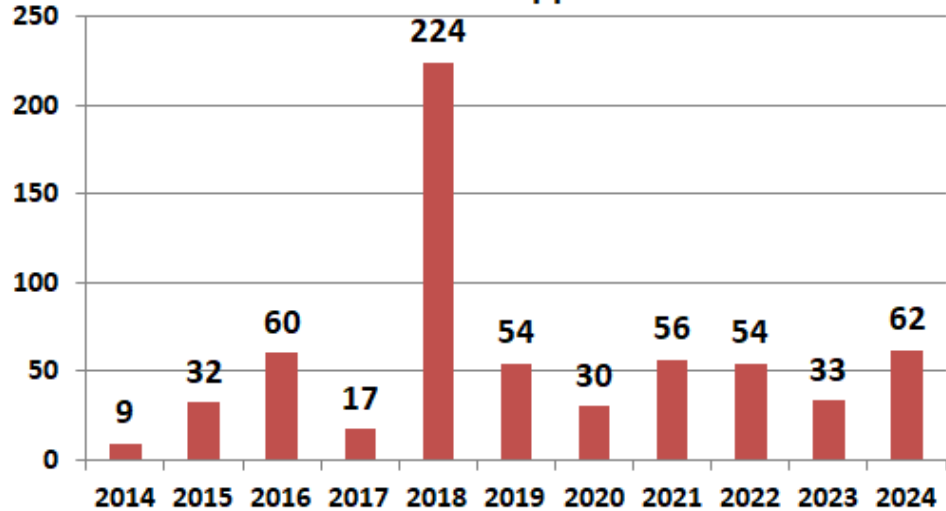
Second Highest Annual Count in 11-Years

Little Wood-Satyr



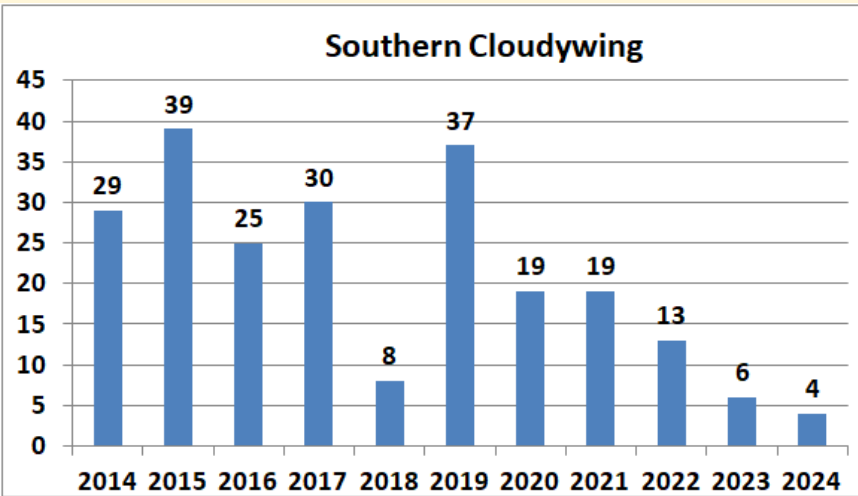
Little Wood Satyr – Bill Hill

Ocola Skipper

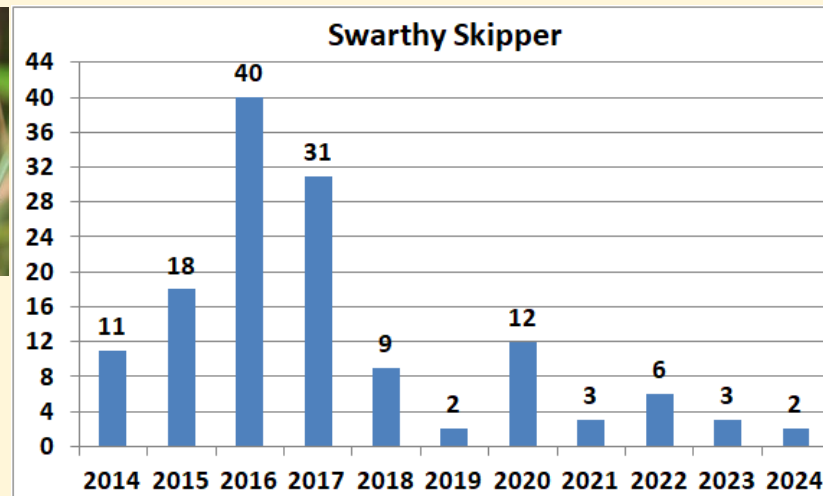


Ocola Skipper - Pam Perna

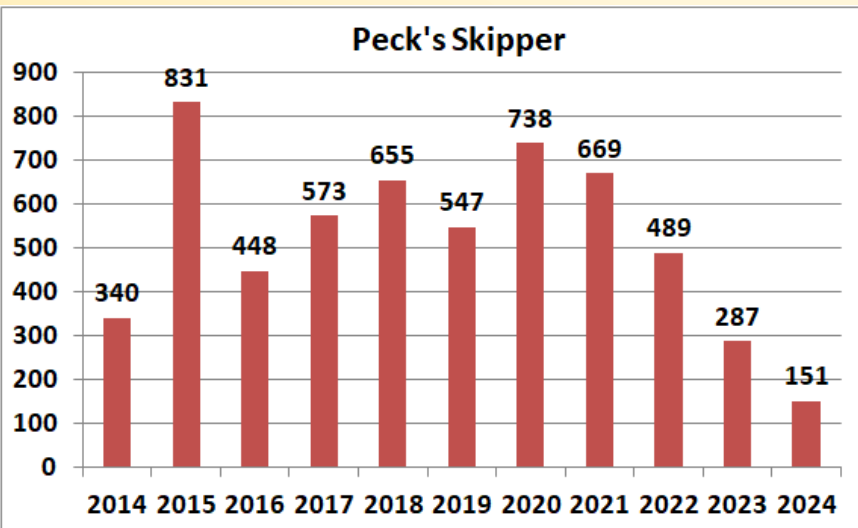
Species Status: Lowest Count in 11-Years



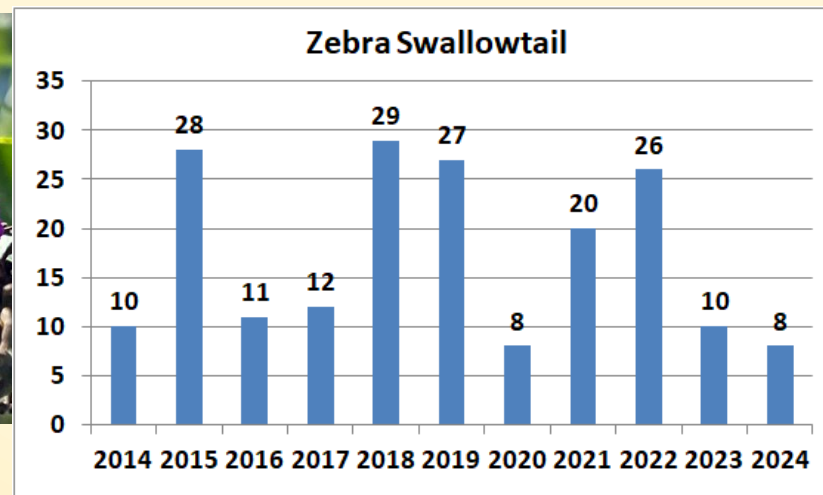
Southern Cloudywing
Linda Hunt



Swarthy Skipper
Cris Ausin



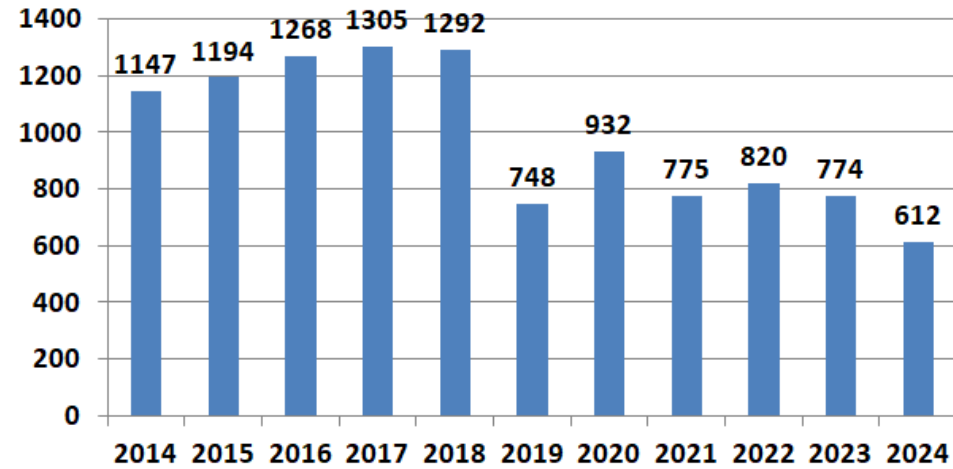
Peck's Skipper
Everette Behr



Zebra Swallowtail
Sue Probst

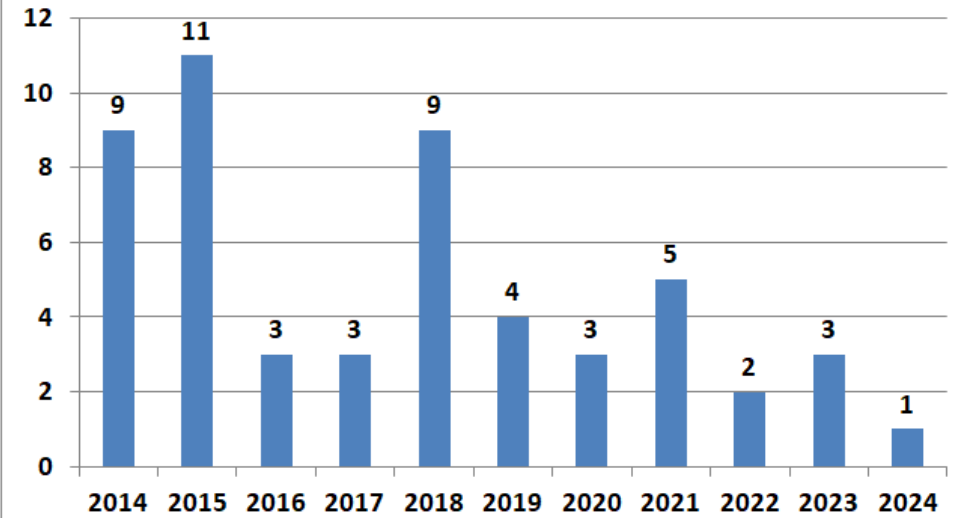
Species Status: Lowest Count in 11-Years

Orange Sulphur

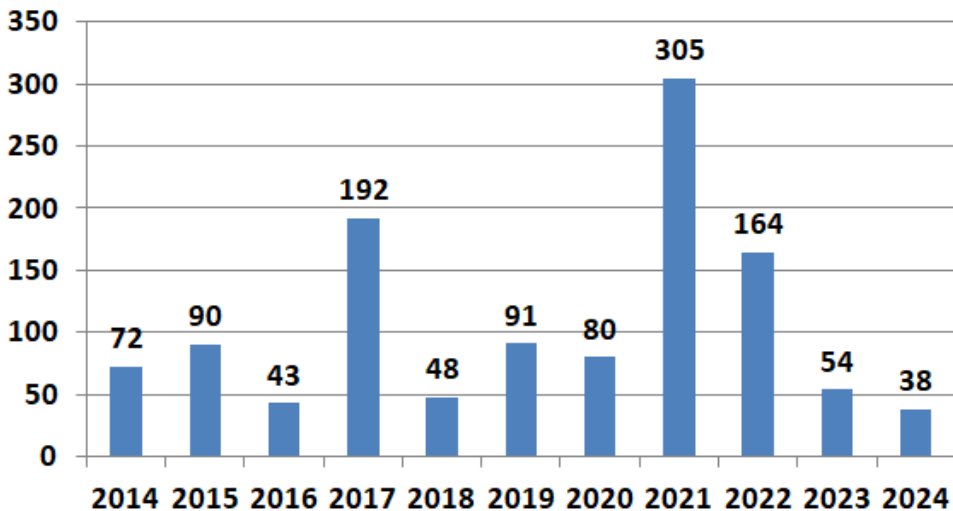


Orange Sulphur
Cris Ausin

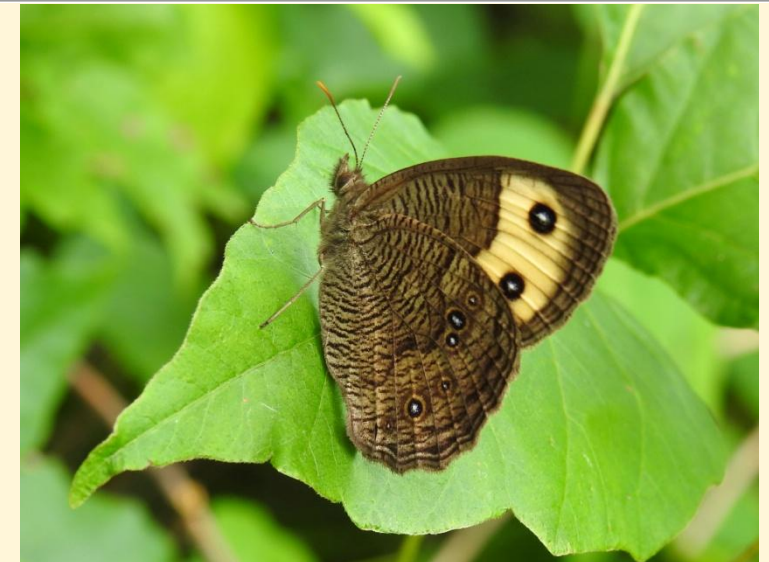
Common Wood-nymph



Northern Pearly-eye

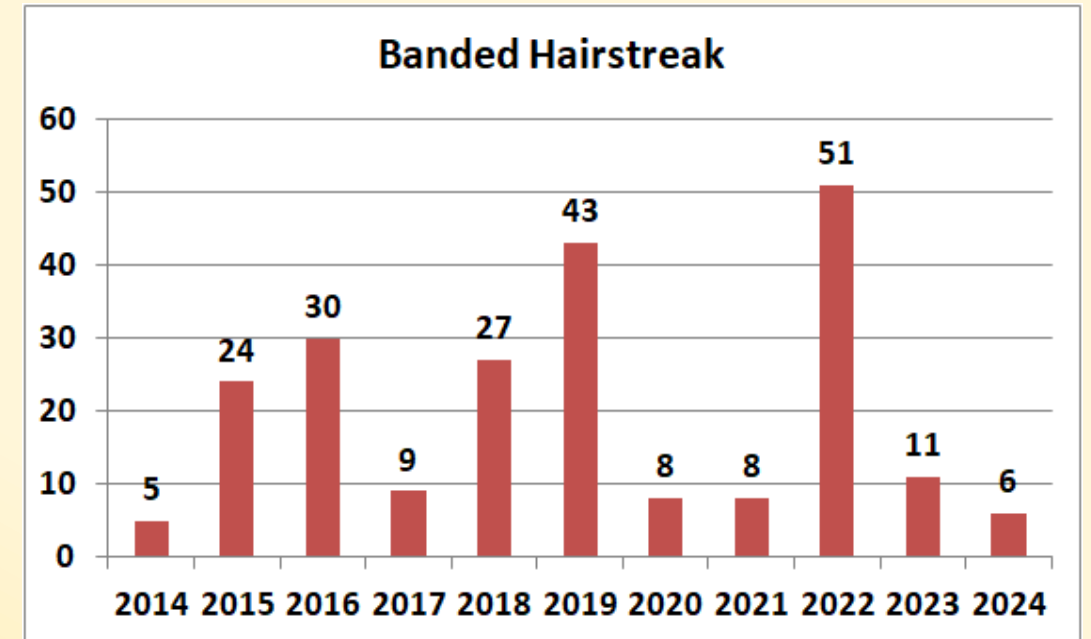
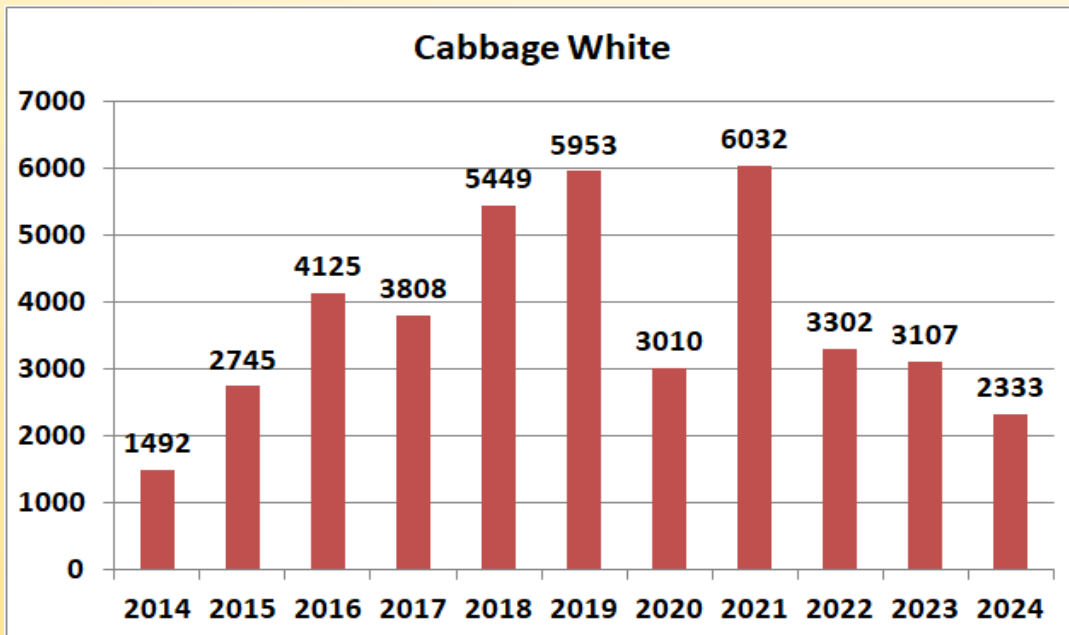
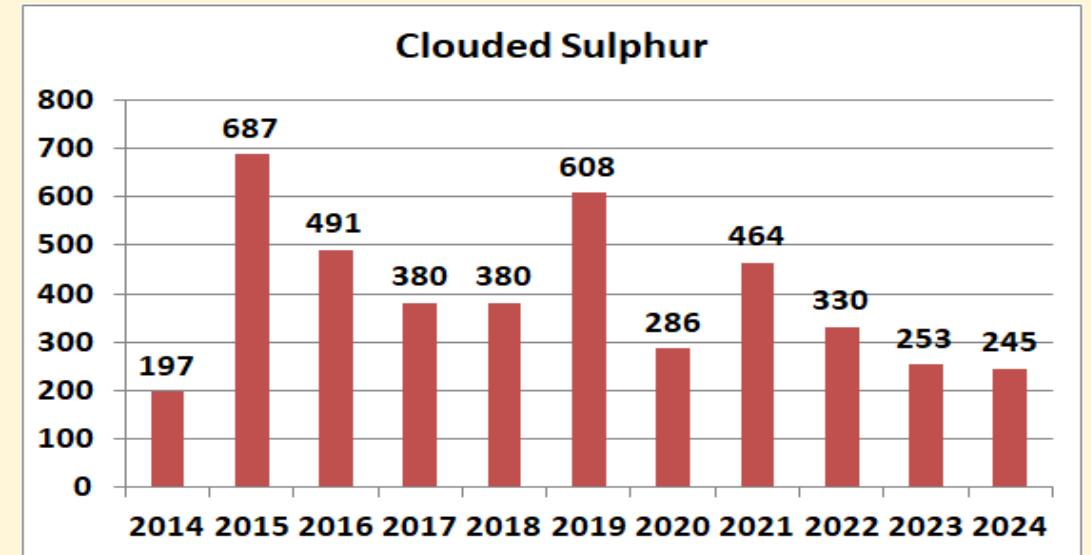
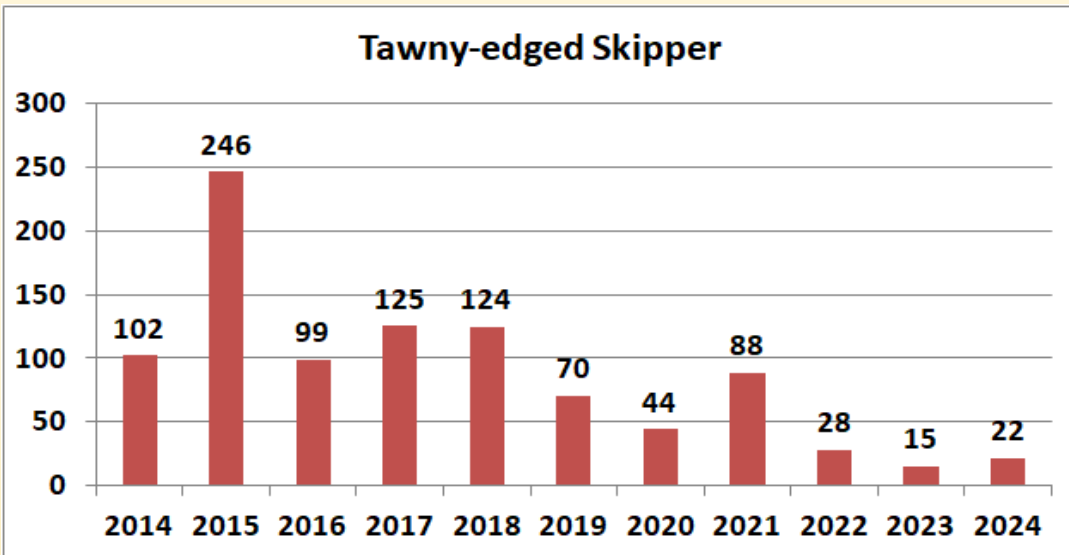


Northern Pearly-eye
Annette Allor



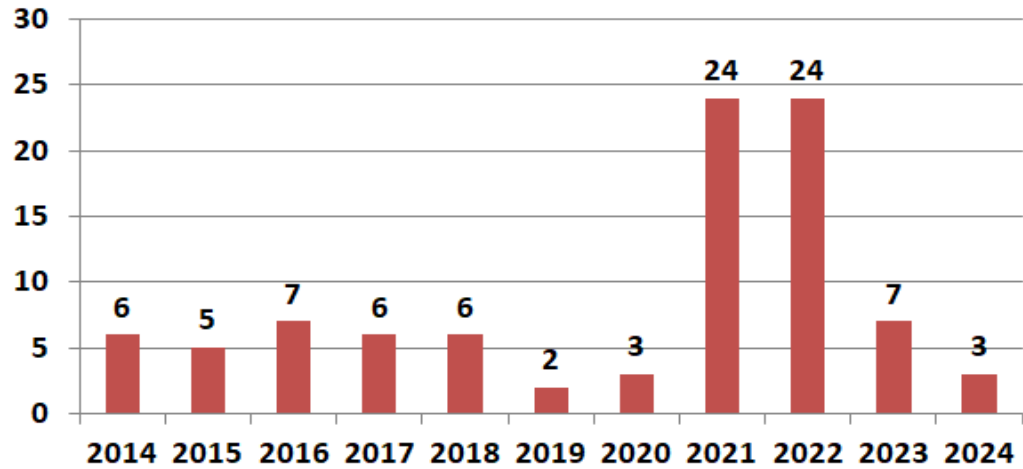
Common Wood Nymph
Annette Allor

Species Status: Second Lowest Count in 11-Years

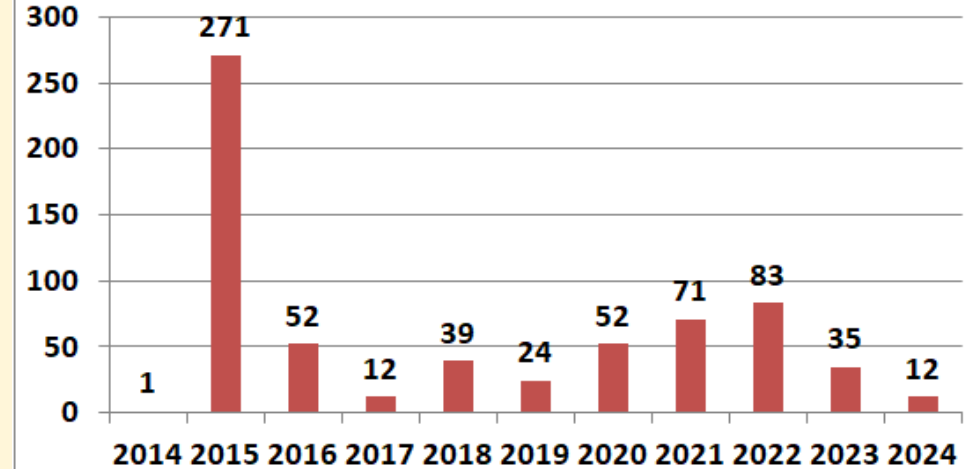


Species Status: Second Lowest Count in 11-Years

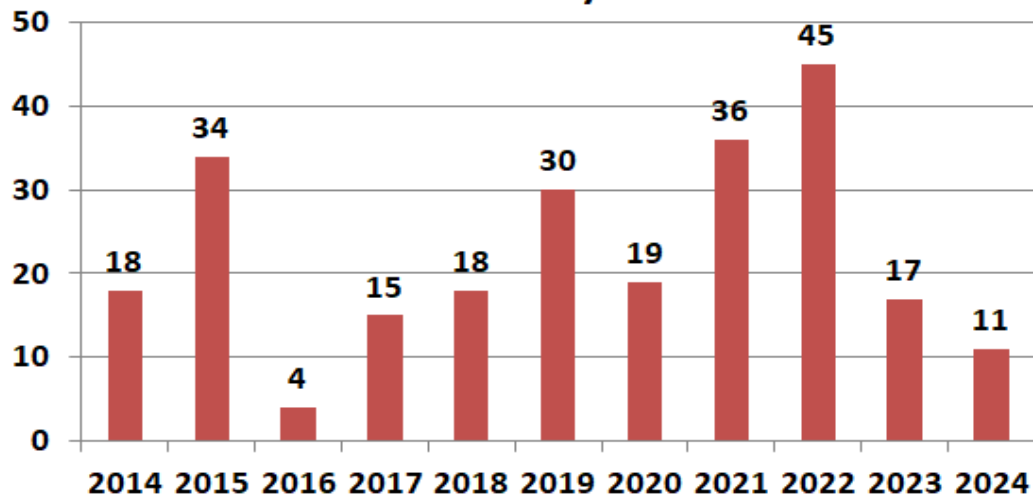
White M Hairstreak



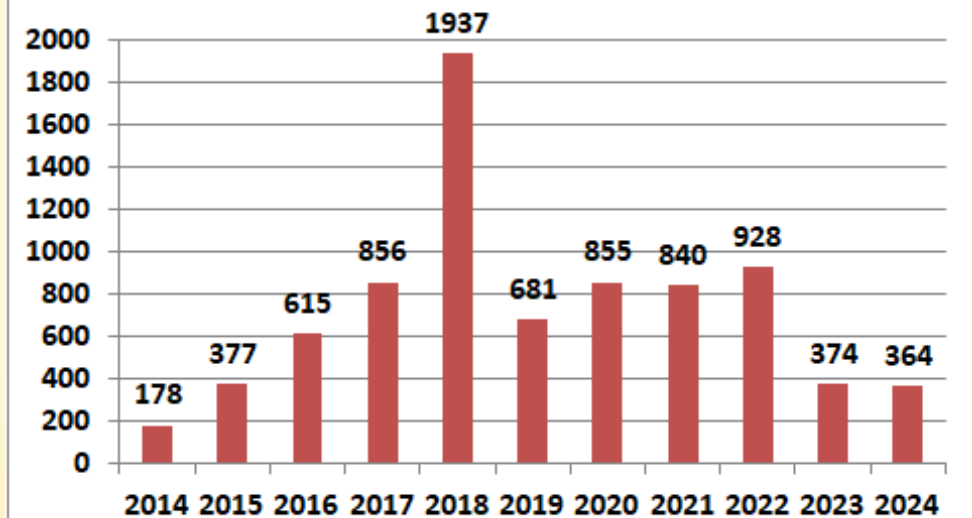
Meadow Fritillary



Viceroy



Monarch

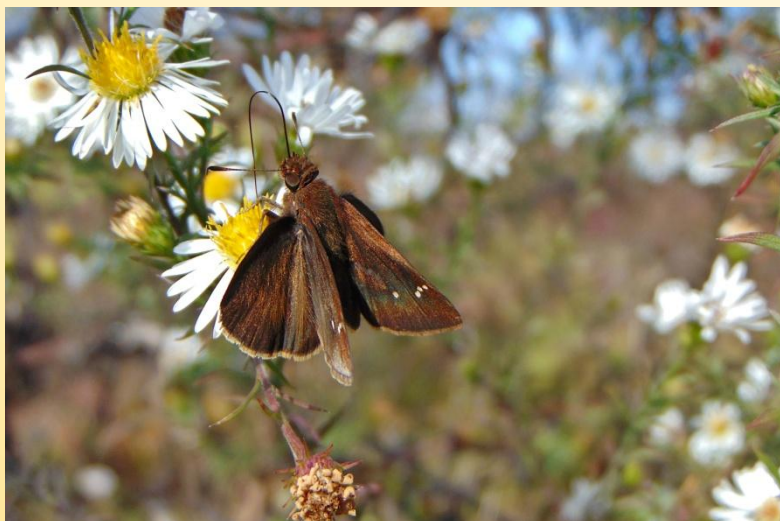


New Early Dates

<u><i>Species</i></u>	<u><i>New Early - Late Date</i></u>	<u><i>Old Early - Late Date</i></u>	<u><i>Observer</i></u>	<u><i>Location</i></u>
Clouded Sulphur	3/13/2024	3/29/2018	Bonnie Ott	REI Pond
Sleepy Orange	3/14/2024	4/4/2023	Annette Allor	MPEA
Falcate Orangetip	3/29/2024	3/30/2020	Jim Wilkinson	Gateway
American Lady	4/9/2024	4/11/2017	Sue Mueller	Ridgeley Community Center
Pipevine Swallowtail	4/16/2024	4/29/2017	Kathy Litzinger	Patapsco Valley State Park
Zabulon Skipper	4/23/2024	5/1/2019	Bill Hill	Western Regional Park
Sachem	4/30/2024	5/2/2017	Annette Allor	St. Anthony's
Peck's Skipper	5/2/2024	5/3/2017	Annette Allor	Daniels
Harvester	5/2/2024	5/22/2023	Annette Allor	Daniels
Least Skipper	5/3/2024	5/4/2014	Tim Foard	Hugg-Thomas WMA
Hobomok Skipper	5/3/2024	5/15/2023	Annette Allor	Wincopin Trail
Swarthy Skipper	5/16/2024	6/1/2017	Annette Allor	St. Anthony's
Northern Pearly Eye	5/21/2024	5/21/2023	Annette Allor	Allor home
Appalachian Brown	5/21/2024	5/28/2015	Annette Allor	Allor home

New Late Dates

<u><i>Species</i></u>	<u><i>New Late Date</i></u>	<u><i>Old Late Date</i></u>	<u><i>Observer</i></u>	<u><i>Location</i></u>
Silver Spotted-skipper	11/5/2024	10/28/2023	Annette Allor	St. Anthony's
Little Glassywing	11/6/2024	10/10/2018	Kathy Litzinger	Rockburn
<i>Gray Hairstreak</i>	11/11/2024	11/11/2021	Annette Allor	St. Anthony's
Red-banded Hairstreak	11/11/2024	11/5/2020	Annette Allor	St. Anthony's
American Lady	11/11/2024	11/6/2017	Annette Allor	St. Anthony's
Clouded Skipper	11/18/2024	11/6/2017	Winston McNod	Troy Hill
Black Swallowtail	11/20/2024	11/4/2023	Annette Allor	St. Anthony's
<i>Common Buckeye</i>	11/27/2024	11/27/2015	Terri Berkheimer	Belmont



Clouded Skipper
Winston McNod



Black Swallowtail
Annette Allor



Red-banded Hairstreak
Annette Allor

Mount Pleasant Butterfly List

- Cris Ausin photographed an Appalachian Brown by the Davis Branch at Mt. Pleasant. This would not have been possible before 2018 when the site was reworked into wetlands after the Ellicott City flood.
- The Appalachian Brown is the 69th species on the Howard County Conservancy list.
- The 12 missing species include seven that have only been seen in one year, one seen in two years, and one in four years. The other three have only been seen in a single location.
- Best guess for the next species: Checkered White or Little Yellow.



Appalachian Brown - Cris Ausin

Spreadwing Skippers				Swallowtails				Brush-footed Butterflies			
	Silver-spotted Skipper	C	X		Pipevine Swallowtail	U	X		American Snout	R	X
	Long-tailed Skipper	R	X		Zebra Swallowtail	U	X		Variigated Frit	C	X
	Southern Cloudywing	R			Black Swallowtail	U	X		Great Spangled Frit	C	X
	Northern Cloudywing	U	X		Spicebush Swallowtail	C	X		Meadow Fritillary	U	X
	Hayhurst's Scallopwing	VR	X		Giant Swallowtail	R	X		Silvery Checkerspot	U	X
	Juvenal's Duskywing	C	X		Eastern Tiger ST	A	X		Pearl Crescent	A	X
	Horace's Duskywing	C	X	Whites and Sulphurs					Question Mark	U	X
	Wild Indigo Duskywing	C	X		Checkered White	R			Eastern Comma	U	X
	Common Checkered-Skip	U	X		Cabbage White	A	X		Mourning Cloak	U	X
	Common Sootywing	U	X		Falcate Orangetip	U	X		American Lady	C	X
Grass Skippers					Clouded Sulphur	C	X		Painted Lady	C	X
	Swarthy Skipper	U	X		Orange Sulphur	A	X		Red Admiral	C	X
	Clouded Skipper	R	X		Cloudless Sulphur	U	X		Common Buckeye	C	X
	Least Skipper	C	X		Little Yellow	R			Red-spotted Purple	C	X
	Fiery Skipper	U	X		Sleepy Orange	U	X		Viceroy	U	X
	Peck's Skipper	C	X		Dainty Sulphur	R			Hackberry Emperor	R	X
	Tawny-edged Skipper	U	X	Gossamer-Winged Butterflies					Tawny Emperor	R	X
	Crossline Skipper	C	X		Harvester	R	X	Satyrs			
	Southern Broken-dash	U	X		American Copper	U	X		Northern Pearly Eye	U	X
	Northern Broken-dash	U	X		Bronze Copper	VR			Appalachian Brown	U	X
	Little Glassywing	A	X		Coral Hairstreak	R	X		Little Wood Satyr	C	X
	Sachem	A	X		Banded Hairstreak	U	X		Common Wood Nymph	U	X
	Mulberry Wing	VR			Henry's Elfin	VR		Milkweed Butterflies			
	Hobomok Skipper	U	X		Eastern Pine Elfin	R			Monarch	C	X
	Zabulon Skipper	C	X		Northern Oak Hairstreak	VR					
	Broad-winged Skipper	R	X		Juniper Hairstreak	U	X				
	Dun Skipper	U	X		White M Hairstreak	R	X				
	Dusted Skipper	R			Gray Hairstreak	C	X				
	Ocola Skipper	R	X		Red-banded Hairstreak	U	X				
	Brazilian Skipper	VR			Eastern Tailed-blue	A	X				
					Spring Azure	R					
					Summer Azure	C	X				

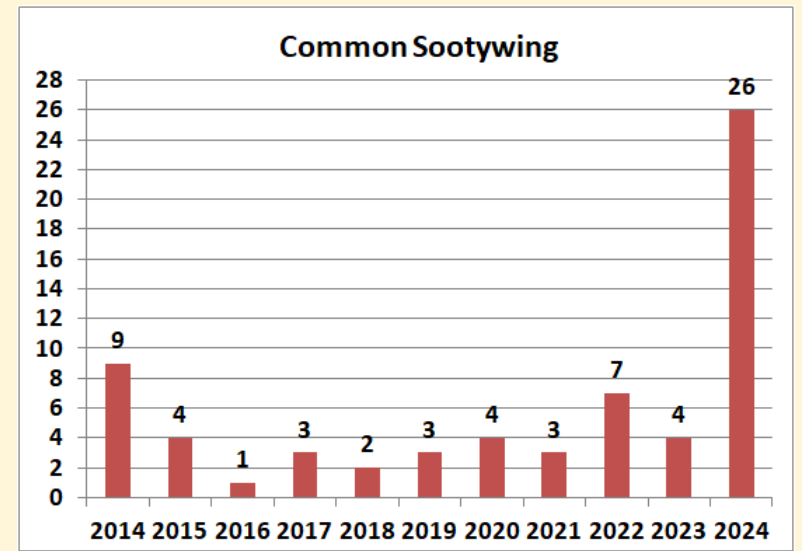
Sleepy Orange Life Cycle

- On July 5th, Kathy Litzinger observed a Sleepy Orange ovipositing in her garden
- She went out a couple of days later to find and photograph the eggs
- ***Amazingly, she watched as the caterpillar emerged from the egg***
- ***Below are photos of the adult ovipositing, the egg, the caterpillar shortly after it hatched, the chrysalis, and the freshly eclosed adult.***



Common Sootywing

- Sixty-one species including Common Sootywing have been seen each year of the survey.
- A total of 40 Common Sootywings were seen in the first 10 years of the survey, the fewest total of the 61 species
- Elkhorn Garden Plots is a typical location where they are seen
- Annette Allor reported 10 Sootywings at Little Portion Farm on July 26th. This single report alone exceeded the totals for each year in the first 10 years of the survey.
- A total of 26 were reported for 2024. This equals the total of the last seven years combined.



Common Sootywing
Annette Allor

We have found pockets of diversity for Common Sootywing, Broad-winged Skipper, American Copper, and Silvery Checkerspot to name a few. How many others are out there?

Eastern Pine Elfin

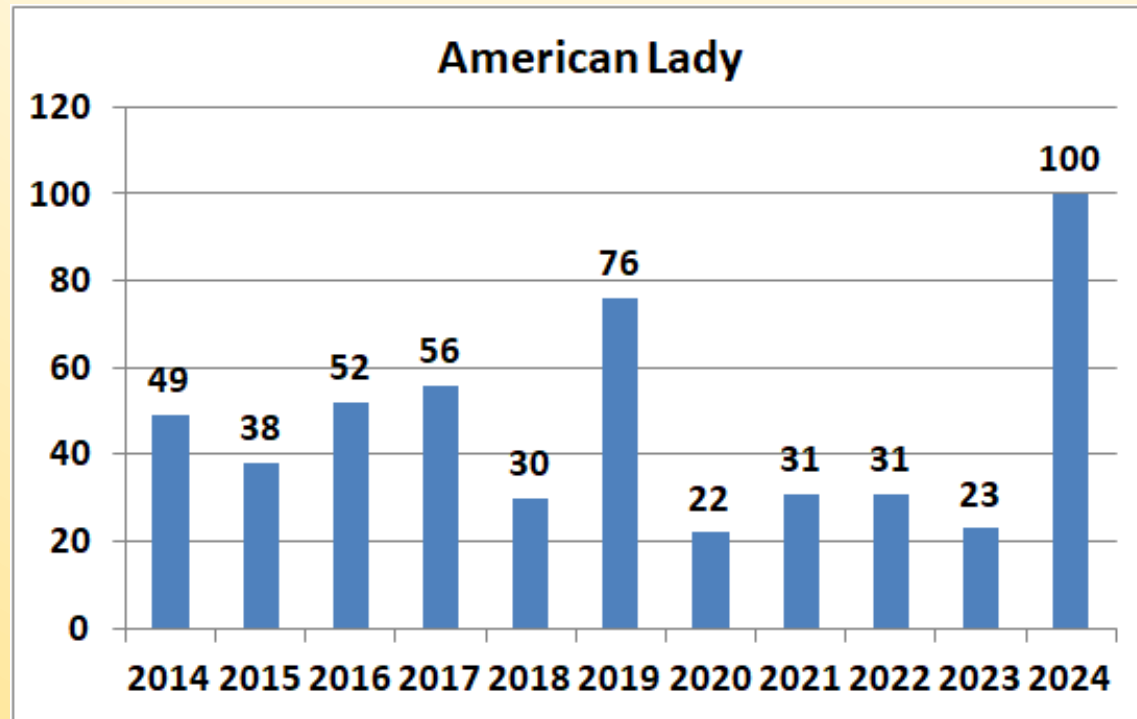
- Eastern Pine Elfin is a butterfly of low detectability (Dave Ziolkowski)
- A total of 16 were reported in six of the first seven years of the survey.
- It had not been seen since 2020.
- It is single-brooded and typically flies from early-April to late May
- The typical place to find this species is at Trinity Cemetery.
- Annette Allor was determined to find one this year and stopped over at Trinity Cemetery six times before she found two of them nectaring on Pussytoes on April 14th. She found a third on April 23rd.
- One of our goals is to find other locations in the county where these can be found.



Eastern Pine Elfin
Annette Allor

American Lady

- From early in 2024, it was obvious that American Lady was going to have a good year.
- In 2023, a total of 23 were reported. This year 32 were reported by the end of April.
- We surpassed the peak year count of 76 on July 19th. A total of 100 were reported.
- Sue Mueller reported one on April 9th to establish a new early date.
- Annette Allor found one on Nov 11th to establish a new late date.



American Lady ovipositing on Pussytoes
Kevin Heffernan

Bounce Back Years (Slide 1 of 2)

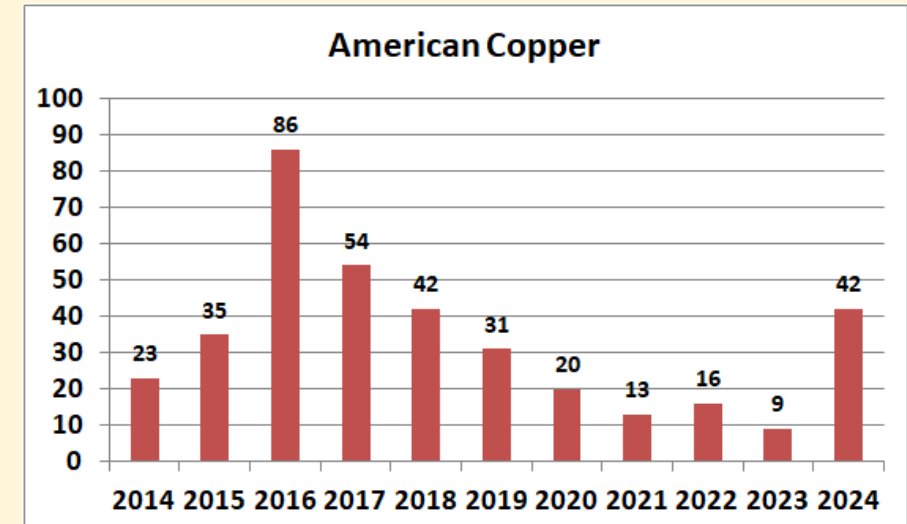
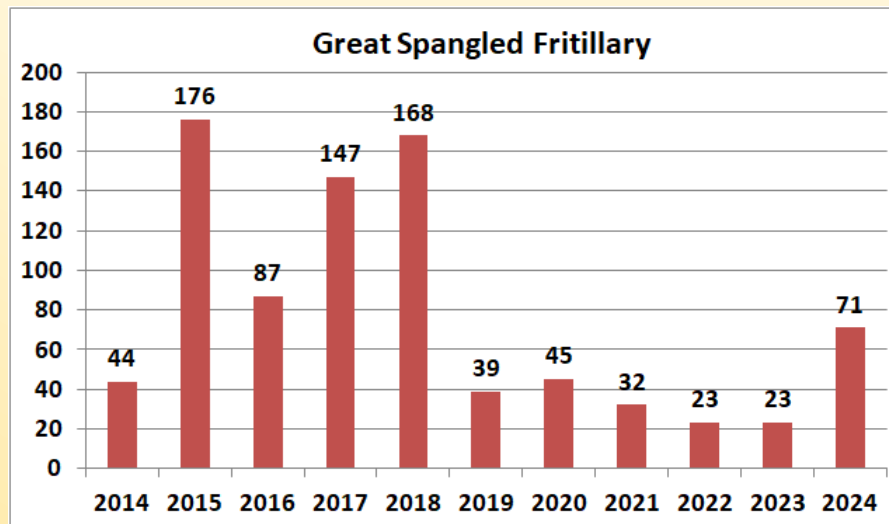
- Several species that have been species of concern had good years.
- Great Spangled Fritillary:
 - numbers were the highest since 2018.
 - most of them were found at Schooley Mill Park.
- American Copper:
 - had the highest numbers since 2017.
 - Linda Hunt found all 42 of them at Foxfield Farm.
 - She found 20 by April 30th exceeded each of the last three years.



American Cooper
Linda Hunt



Great Spangled Fritillary
Kevin Heffernan

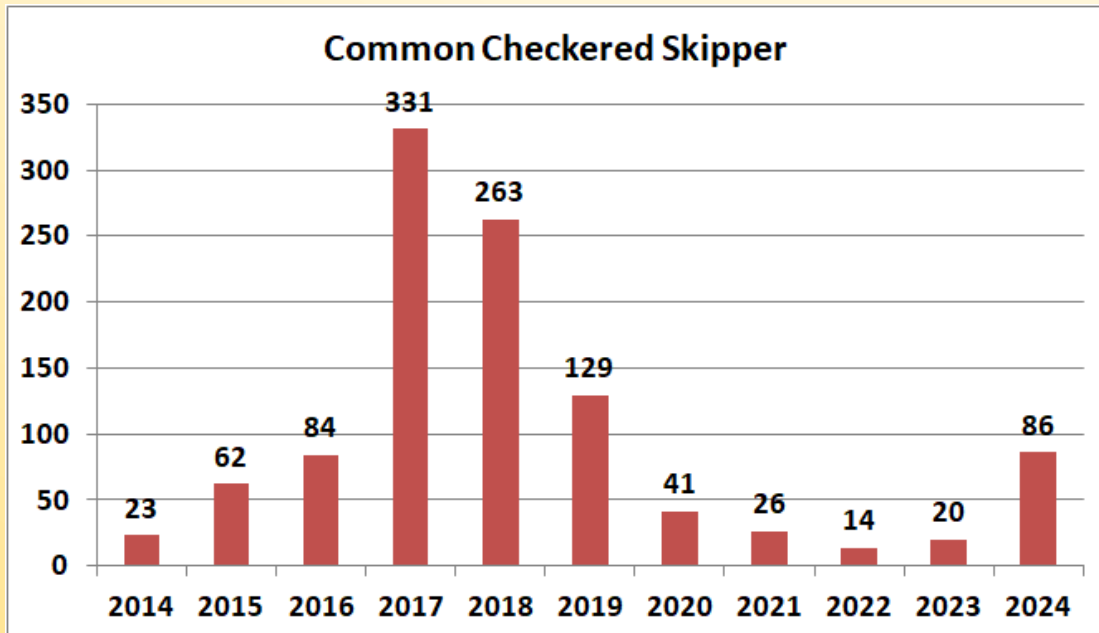


Bounce Back Years (Slide 2 of 2)

- Common Checkered Skipper:
 - had the highest numbers since 2018.
 - Fourth highest in 11 years.
 - many were found at St. Anthony's Shrine.



Common Checkered Skipper
Cheryl Farfaras



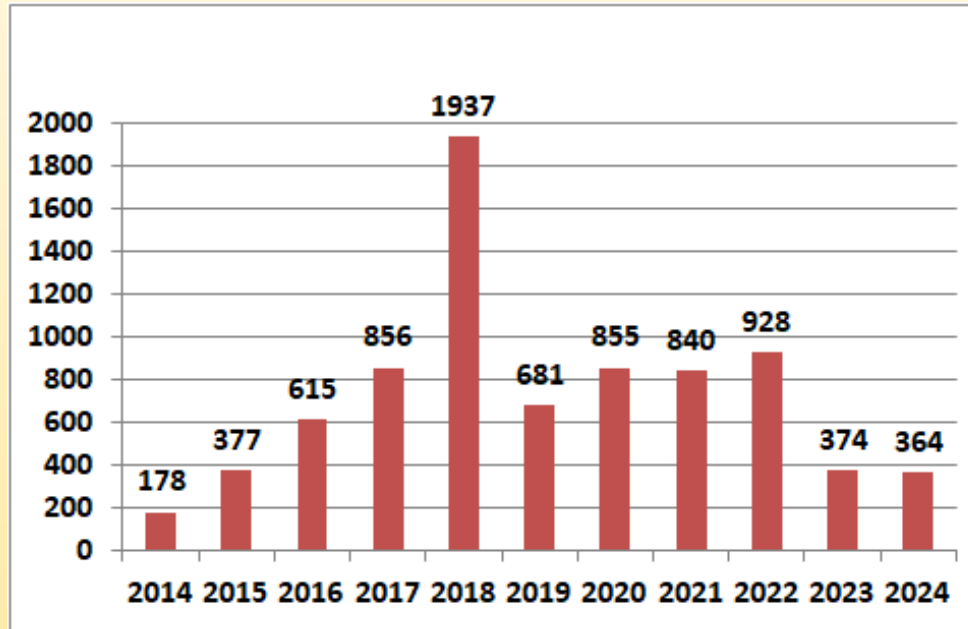
The common attribute to all three of these bounce back species is that they were all mostly found at a single location. We need to find multiple locations for each species.

Monarch status

- In the 1980's, over 4.5 million western Monarchs flocked to overwintering grounds in coastal California. In the mid-1990's, an estimated 380 million eastern Monarchs made the journey to their overwintering grounds in Mexico. Since then, the western population shrunk by more than 95% and the eastern population by 80%.
- By 2080, the western population has >99% probability of extinction and the eastern population has a 56% to 74% probability of extinction.
- The International Union for the Conservation of Nature (IUCN) has labeled the Monarch as vulnerable.
- On Dec 10, 2024, the USFWS is seeking public input on a proposal that the Monarch be listed as a threatened species under the Endangered Species Act.
- The numbers of Monarchs during the survey remained stable from 2016 through 2022.
- In 2023 & 2024, the numbers dropped to 374 and 364 (~40% of the 2022 numbers)



Monarch
Kevin Heffernan



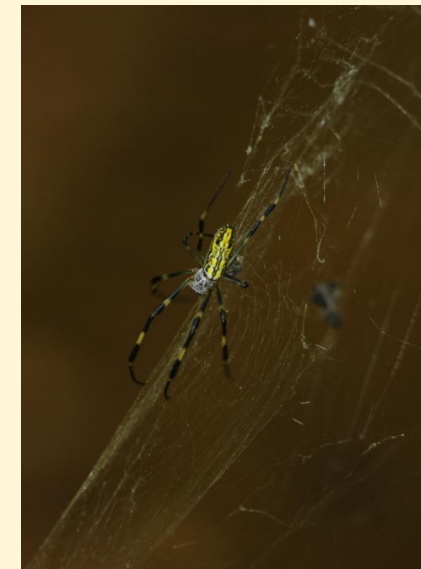
Monarch
Cris Ausin

Interesting Observations (1 of 4)

- Bonnie Ott found a Clouded Sulphur on March 13th, a full 15 days ahead of its previous early date. It is possible that this individual overwintered as an adult.
- Annette Allor found a winter form Sleepy Orange on March 14th, three weeks earlier than its previous early date. This individual definitely overwintered.
- Annette Allor found a Harvester on May 2nd, a whopping 20 days ahead of its previous early date.
- Bill Hill found a Zabulon Skipper on April 23rd and Annette Allor found a Sachem on April 30th. These are the first reports of grass skippers before May 1st during the survey.
- Annette Allor photographed a Cloudless Sulphur caterpillar on May 30th. The early date for this species is May 29th.
- The single Common Wood-nymph found by Annette Allor brings the 11-year total for this species to 53 individuals. This is the lowest number for any species that has been found all 11 years of the survey.



Sachem - Annette Allor



Joro Spider
Kathy Litzinger

Interesting Observations (2 of 4)

- According to the literature, Black Swallowtails use asparagus as a host plant. Annette Allor confirmed that on May 22nd.
- Pipevine Swallowtails are doing well in Barbara White's garden. She reported 22 of the 38 seen this year.
- Kathy Litzinger reported 11 Pipevine Swallowtails this year, including one on April 16th, a new early date by 13 days.
- Annette photographed a pair of Fiery Skippers mating on October 6th. Fiery Skippers are migrants and cannot survive the winter here. Will the female fly south to lay her eggs? Annette asked Harry Paavulaan about this and his answer is below.

"The sad thing is that many of these seasonal migrants continue to move north, even breeding, then perish with the first hard freeze. Odd that they don't know to head south. Cloudless Sulphurs are a great example. Some Nymphalids like Painted Ladies, Commas, Buckeyes have minor or partial southward movements in fall but their movements have never been documented like Monarchs. Nature can be cruel at times."



Black Swallowtail ovipositing on asparagus
Annette Allor



Interesting Observations (3 of 4)

- Jack Litzinger found a Little Wood Satyr in Jack and Kathy's yard on June 13th. This is the 54th species found in their yard. I am pretty sure that Kathy found the other 53.
- On Sept 12th, Jim Wilkinson found an aberrant Common Buckeye. The stripes on the forewings are red instead of the usual white. Looks like a cross with a Mangrove Buckeye.
- Silvery Checkerspots continue at Illchester Elementary school. A total of 138 were reported, most of them at the school.
- A total of 223 Gray Hairstreaks were reported this year. Of these, 70 were reported from St. Anthony's Shrine including 21 on August 12th.
- On August 12th, Kathy Litzinger found a Joro Spider.
- *St. Anthony's Shrine (Little Portion Farm) has made a big difference in several species annual counts including Common Sootywing, Common Checkered Skipper, and Gray Hairstreak. It was also where the only Tawny Emperor was found this year.*
- How many other spots that we are unaware of are out there?



Common Buckeye
Jim Wilkinson

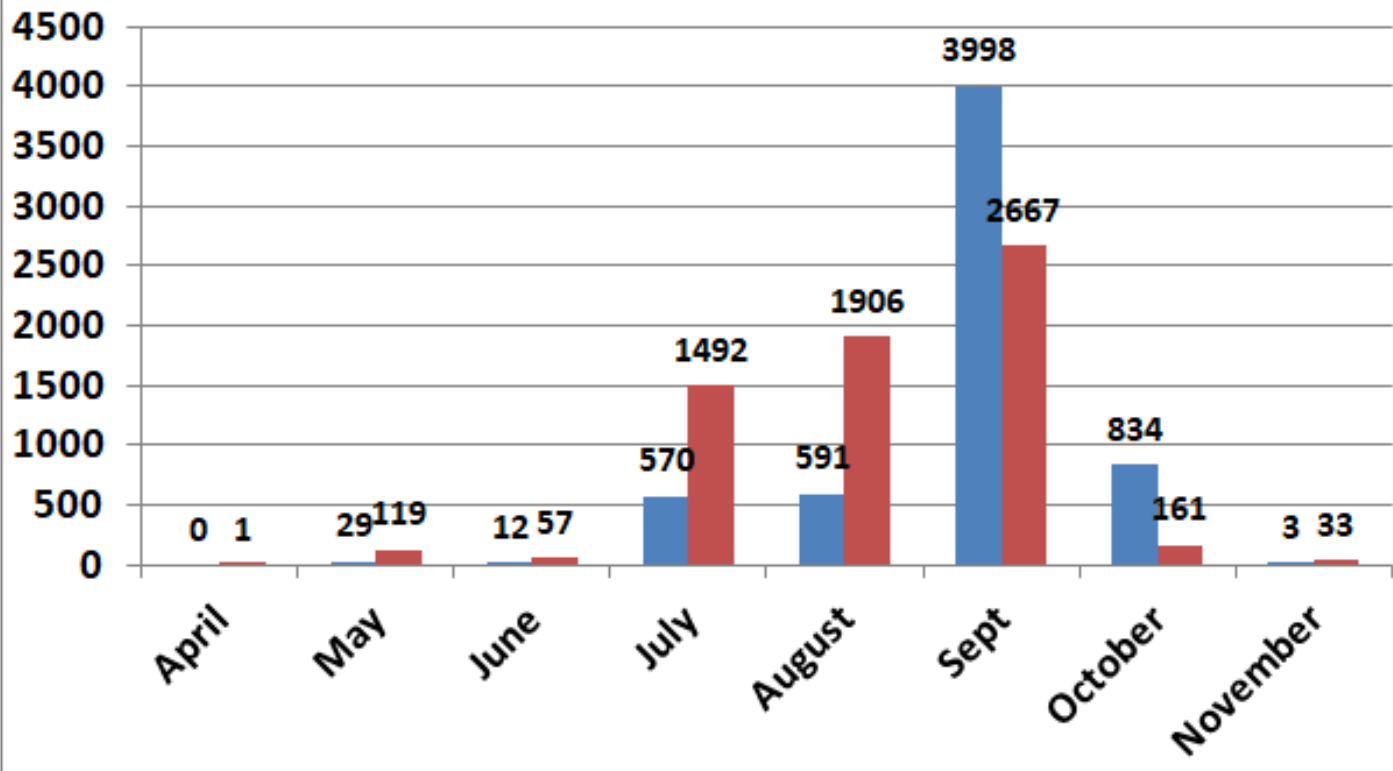


Gray Hairstreak
Annette Allor

Interesting Observations (Sht 4 of 4)

- The 6436 Sachems reported this year was the highest annual total for any species during the 11 year survey. The second highest was last year's Sachem total.
 - Comparing the two years monthly totals shows some interesting differences.

Sachem Monthly Distribution 2023 - 2024



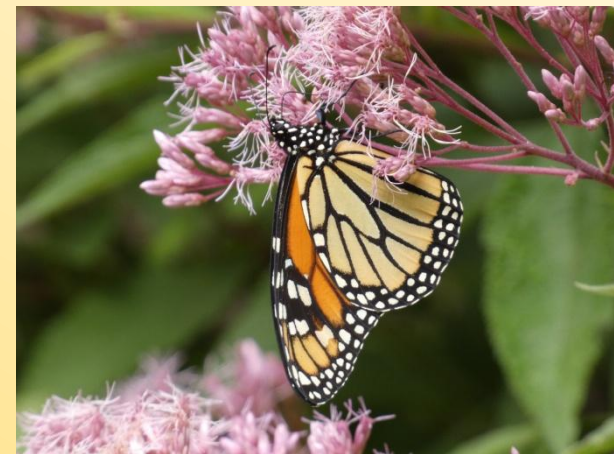
Male Sachem
Clayton Koonce

Six Butterfly Walks

- Held six butterfly walks between June 25th and Sept 1st.
- Five were at Mount Pleasant; the sixth was at Elkhorn Garden plots. One was cancelled due to weather.
- A total of 165 people attended
 - June 25th walk had the most people (35)
- An average of 19 species were seen
 - Max # of species was 25 of August 10th
- Each walk had four or five leaders
- Plan to have a similar number of walks this year as well



Group photo from July 23rd walk



Monarch
Cris Ausin



Summer Azure
Kurt Schwarz



Variegated Fritillary
Kevin Heffernan



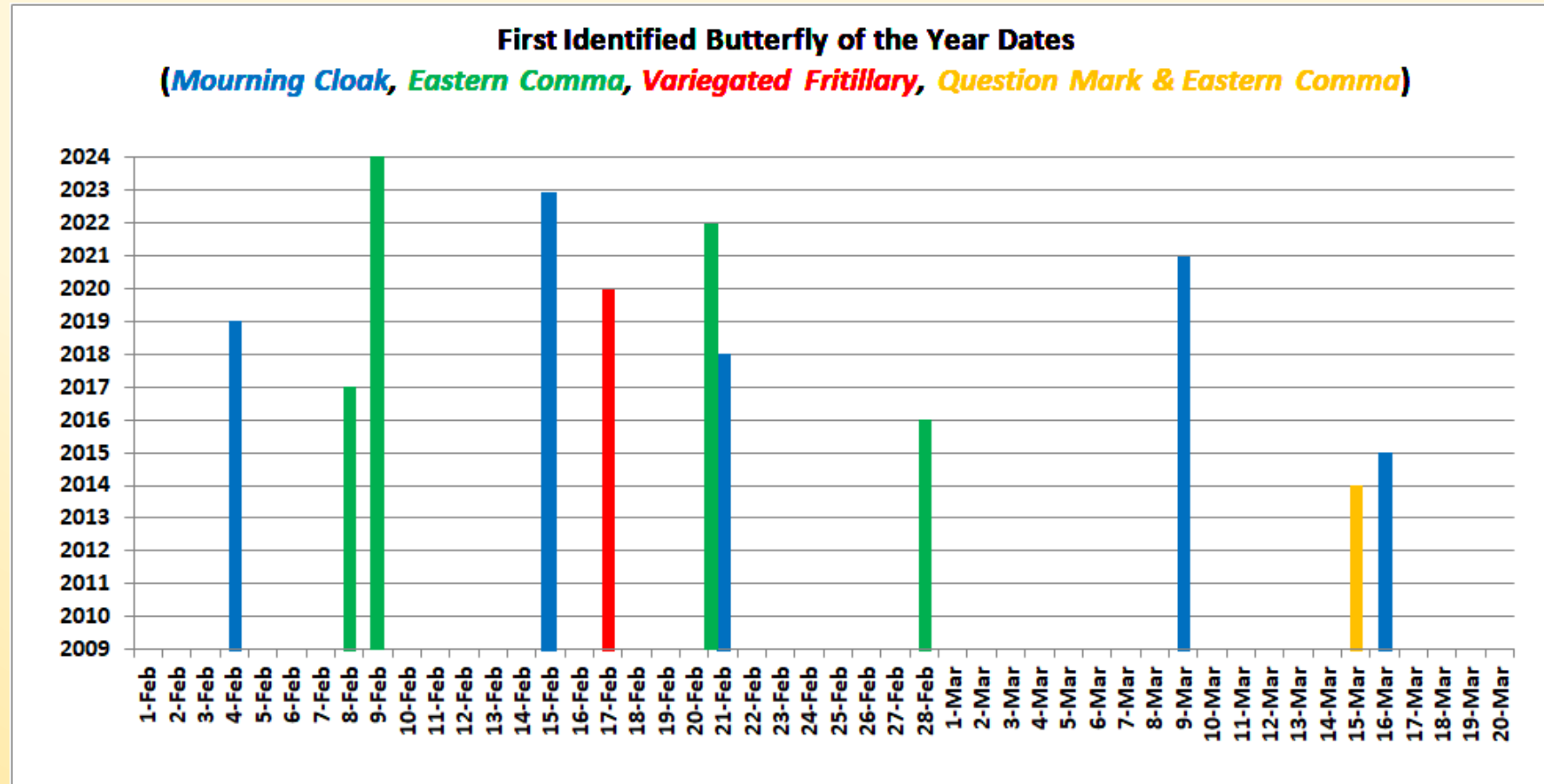
Hackberry Emperor
Vicki Sattler

First Butterfly of the Year 2024

- The first butterfly of 2024 was an Eastern Comma (no photo) found by Cheryl Fafaras on Feb 9th at MPEA.
- Chart shows dates & species of the first identified butterfly sighting for each of the eleven years of the survey
- A total of 19 butterflies were seen in February, 2023 including 14 in one day, February 23rd. In 2024, only 2 were reported in February.
- Earliest sighting date of an unidentified butterfly was five years ago, January 12th, 2020 by Bonnie Ott



Mourning Cloak
Annette Allor
Wincopin Trail
March 7, 2024

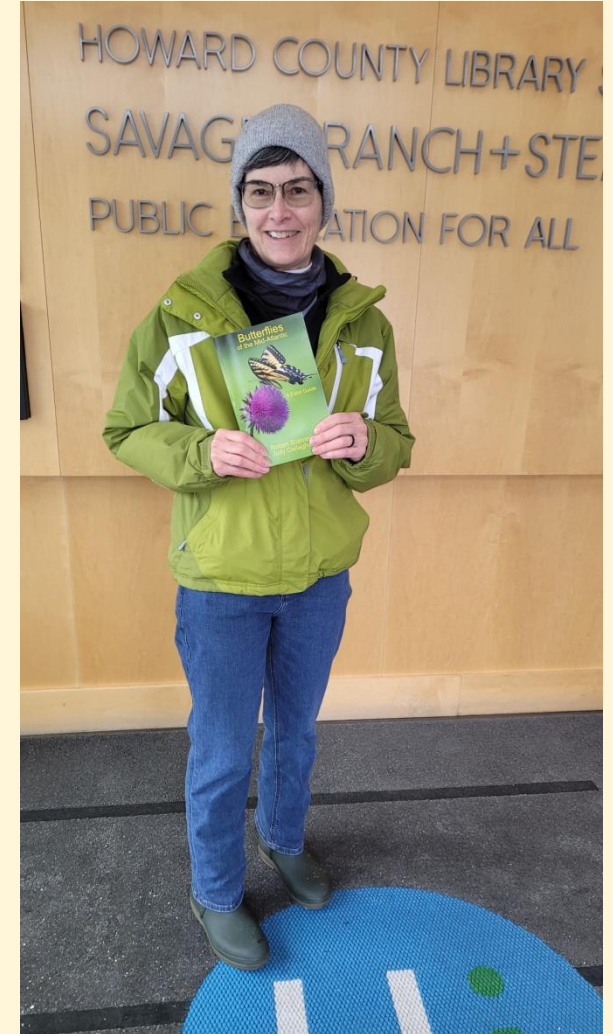


Last Butterfly of the Year 2024

- The last butterfly of the year contest has been held the last four years. The rules are that
 - Must be in Howard County
 - Must submit a photo and an Incidental Butterfly report
 - It cannot be one of the people involved in the survey
- The winner in 2024 was Terri Berkheimer who found a Common Buckeye at Belmont on November 27th
 - Terri received a copy of the “Butterflies of the Mid-Atlantic by Robert Blakely and Judy Gallagher



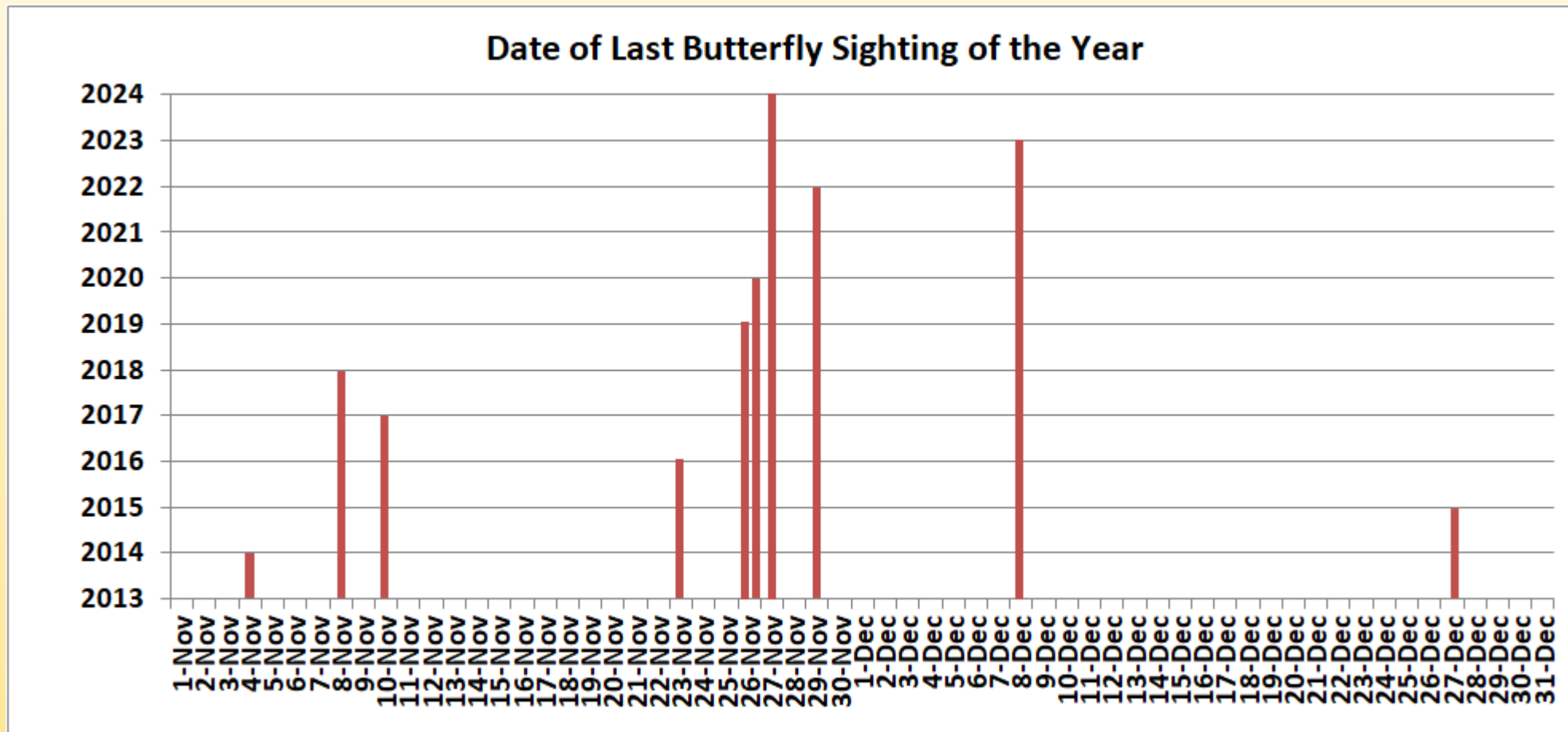
**Common Buckeye
Terri Berkheimer
Belmont
November, 27th, 2024**



**Terri Berkheimer
Winner of the Last Butterfly
of the Year contest**

Historical Last Butterfly of the Year

- Last date from Nov 4th to Dec 27th
- The following 12 species were the last ones found in a given year: Cabbage White, Orange Sulphur, Clouded Sulphur, Cloudless Sulphur, Sleepy Orange, Eastern Tailed-blue, Variegated Fritillary, Pearl Crescent, Eastern Comma, Painted Lady, Common Buckeye, and Monarch
- Eleven different people recorder the last butterfly of the year



Photos from Participants



Monarch (recently eclosed)
Andrea Cockran



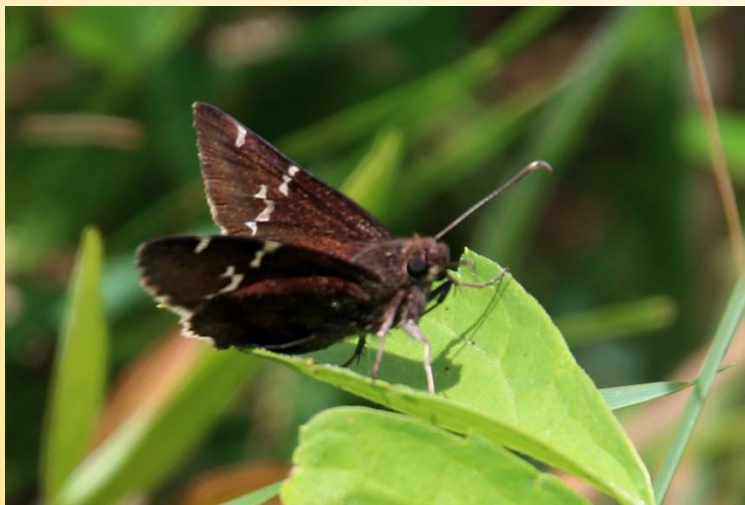
Broad-winged Skipper
Annette Allor



Long-tailed Skipper
Annette Allor



Red-banded Hairstreak
Heather Richardson



Southern Cloudywing
Linda Hunt

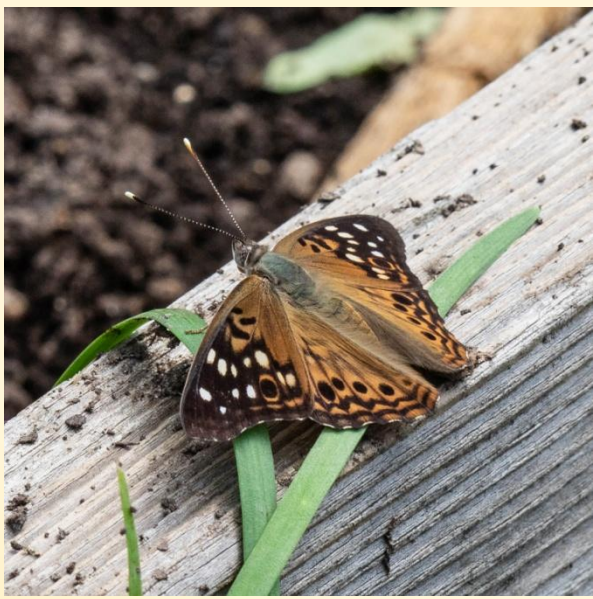


Coral Hairstreak
Annette Allor



Question Mark
Clayton Koonce

Photos from Participants



Hackberry Emperor
Kevin Heffernan



Zabulon Skipper
Bill Hill



Appalachian Brown
Annette Allor



Horace's Duskywing mating
Annette Allor



Juniper Hairstreak
Annette Allor



Chrysalis
Heather Hogard

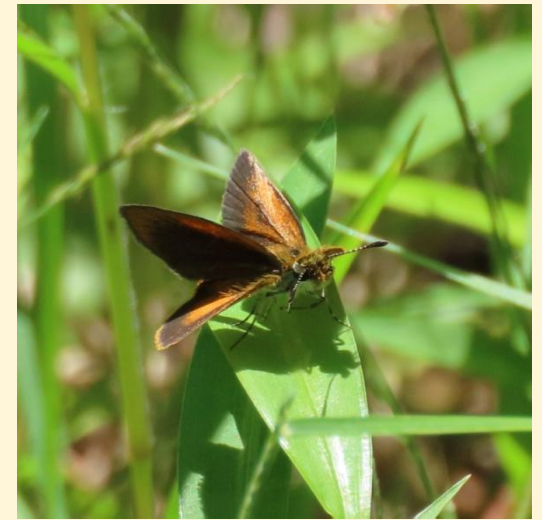
Photos from Participants



Northern Pearly-eye
Cris Ausin



Banded Hairstreak
Annette Allor



Least Skipper
Clayton Koonce



Eastern Comma
Annette Allor



Harvester
Bonnie Ott



White M Hairstreak
Linda Hunt

Photos from Participants



Common Checkered Skipper
Kelsey Wellons



Monarch
Kelsey Wellons

Butterfly of the Year - Dusted Skipper

- not seen in the county for >20 years prior to the survey
- found in three locations on the western shore, Patuxent Wildlife Research Center, Soldier's Delight, and on a single hill in the Murray Hill powerline;
- Linda Hunt initially found this species in 2014
- seen each of the first five years (2014 – 2018) of the survey
- In 2019, the county dumped dredge from the lakes next to the hill and the butterflies were not recorded from 2019 to 2023
- Linda Hunt kept returning in the subsequent years in the hopes that they would be refound and her persistence paid off this year.
- The seven recorded matches the peak year of 2017.



Dusted Skipper (Annette Allor)



Dusted Skipper (Annette Allor)



Murray Hill
5/17/19
Linda Hunt

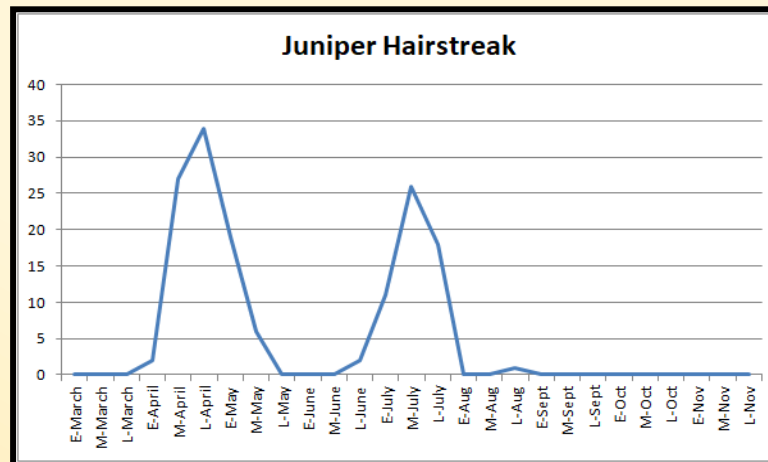
Educational Materials / Activities

- Dick Smith's "Butterflies of Howard County"
- Butterfly Identification Cheat Sheet
- Butterfly Flight Times graphs
- Butterfly Early and Late dates
- Butterfly Overwintering Strategies
- Annual "Butterfly Year" Presentations
- Pollinator garden design templates
- Pollinator garden design spreadsheet
- Butterfly photo gallery
- Butterfly walks
- Annual reports
- Last butterfly of the year contest
- **Butterfly year status emails**
- Butterfly talks
- Butterfly ID emails
- Recognize the first identified butterfly of the year

* Items in blue text are on the Howard County Bird Club website

** Many of these are pdfs that can be downloaded to your phone


	Early	Late
Pipeline Swallowtail	4/29/2017	11/16/2020
Zebra Swallowtail	3/28/2016	10/1/2018
Black Swallowtail	4/11/2017	10/28/2014
Giant Swallowtail	8/27/2014	10/2/2019
Eastern Tiger Swallowtail	4/1/2016	10/15/2020
Spicebush Swallowtail	4/9/2017	10/20/2017
Checkered White	9/12/2016	10/10/2018
Cabbage White	2/23/2017	11/25/2019
Falcate Orangetip	3/30/2020	5/22/2015
Clouded Sulphur	3/29/2018	12/27/2015
Orange Sulphur	2/25/2017	12/27/2015
Cloudless Sulphur	5/29/2019	11/26/2019
Little Yellow	8/31/2015	9/25/2016
Sleepy Orange	4/8/2020	11/18/2021
Dainty Sulphur	9/18/2019	10/4/2019



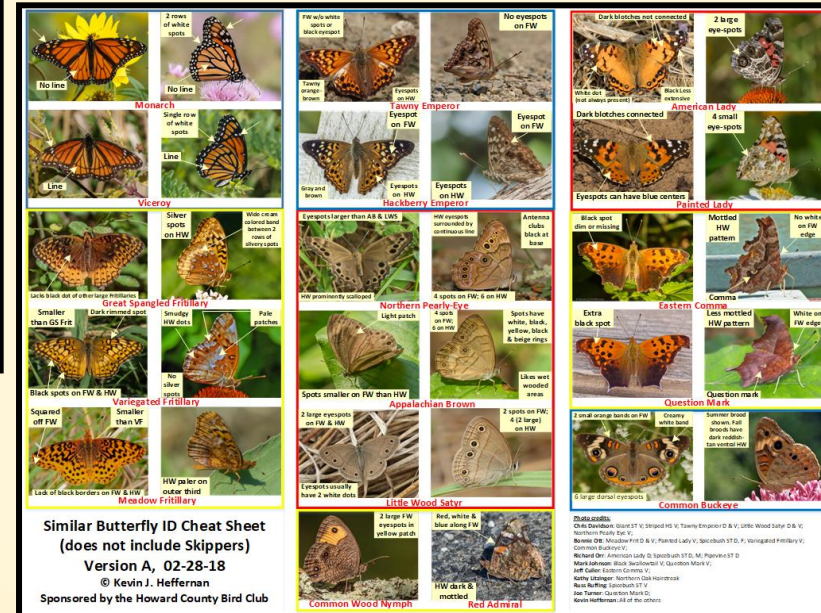
Overwintering Strategies	Egg	Caterpillar	Chrysalis	Adult
Hobomok Skipper		X		
Zabulon Skipper		X		
Broad-winged Skipper		X		
Dun Skipper		X		
Dusted Skipper		X		
Pipeline Swallowtail			X	
Zebra Swallowtail			X	
Black Swallowtail			X	
Eastern Tiger Swallowtail			X	
Spicebush Swallowtail			X	
American Copper		X		
Bronze Copper	X			
Coral Hairstreak	X			
Banded Hairstreak	X			
Question Mark				X
Eastern Comma				X
Mourning Cloak				X

THE BUTTERFLIES OF HOWARD COUNTY, MARYLAND

A Biological Summary and Checklist



The Howard County Chapter of the Maryland Ornithological Society
Richard H. Smith, Jr.



Similar Butterfly ID Cheat Sheet (does not include Skippers)
Version A, 02-28-18
© Kevin J. Heffernan
Sponsored by the Howard County Bird Club

Red Admiral
Red, white & blue along FW
HW dark & mottled

Common Wood Nymph
2 large FW eye-spots in yellow patch

Question Mark
2 small orange bands on FW
4-6 large spots on FW

Common Buckeye
Summer brood: black & white bands, dark red-brown face, ventral side
Fall brood: black & white bands, dark red-brown face, ventral side

Sixteen Step Process to Cure “Nature Deficit Disorder”

- 1. *Plant a native plant garden***
- 2. Use straight natives instead of native cultivars or hybrids if possible**
- 3. Use local ecotype native plants**
- 4. *Landscape for caterpillars***
- 5. *Use as many of the Keystone trees, shrubs and perennial plants as possible for caterpillars***
- 6. *Support native plant nurseries***
- 7. Remove invasive species**
- 8. Minimize the number of non-native plants, shrubs and trees in your yard**
- 9. Reduce the size of your lawn**
- 10. Leave the leaves**
- 11. Wait until mid-spring to clean up your garden**
- 12. Turn out the lights at night**
- 13. Reduce or eliminate insecticide use**
- 14. *Reduce or eliminate mosquito spraying***
- 15. Provide nest sites for bees (patches of bare ground, brush piles, nesting blocks)**
- 16. Spread the word**

What can you do at home to help butterflies?

Why plant *native* plants?

- Plants lace their leaves with nasty tasting or toxic chemicals to keep herbivores from eating them. Insects that eat these plants have had to adapt to these chemical defenses. The plant then adapts to the insect adaptation in a reciprocal evolution. Of the 6,752 species of butterflies and moths in North America with confirmed host records, 86% confine their larval development to plants within only three families out of the 268 plant families in North America. *They are not only unable to eat almost all of the non-native plants but also most native plants.* This is called “host plant specialization”. Many native solitary bees are pollen specialists requiring a specific plant as well.
- A study compared caterpillar numbers of four non-native invaded sites with four native sites of similar size. The results were that the non-native plots had 68% fewer caterpillar species, 91% fewer caterpillars and 96% less caterpillar biomass than the native sites. In other words, 91% less butterflies and moths , and 96% less food available for birds.
- *96% of our birds raise their young on insects. It takes from 6,000 to 9,000 caterpillars to raise a single brood of chickadees.*
- *A 2018 Smithsonian study concluded that in areas made up of <70% native plant biomass, Carolina chickadees will not produce enough young to sustain their populations. At 70 percent or higher, the birds can thrive.*
- Mt. Cuba Center conducted a survey of 14 local nurseries in PA, NJ, MD, and VA to determine what percentage of plant taxa sold by local nurseries are native?
 - *Results: 75% non-native, 19.3% native cultivars and hybrids, 5.7% straight natives*
 - Also: 2% are invasives and another 2% are on Invasive Watch List



New England Aster
“Purple Dome”

What can you do at home to help butterflies?

Plant a native plant pollinator garden

- See pollinator plant spreadsheet on HCBC website for garden design information
 - has 125 herbaceous plants, ~70 trees and shrubs, 6 vines and 11 grasses
 - has lots of references and notes
 - is being periodically updated
 - can be sorted to emphasize plants / conditions that you are looking for
 - Mt. Cuba Center just released a similar spreadsheet

<u>Herbaceous Plants</u>		Bloom time		Color, Height, Spread			Nectar, Host, Native, H-birds				Perennial, Biennial, Annual	Soil		Sun		Deer Damage Level					Pollinator Value				<u>Larval host</u>	<u>Comment</u>						
<u>Flowers</u>		Bloom start	Bloom end	Color	Height	Spread	Native	Nectar value	Host Plant	Hummingbirds	Perennial	Biennial	Annual	Wet	Moist	Dry	Full	Part sun	Shade	Rarely	Seldom	Occasionally	Frequently	Resistant	Very high	High	Medium	Low	PSU Top 20			
<u>Latin Name</u>	<u>English Name</u>																															
Actaea racemosa	Common Black Cohosh	6	8	White	4-7'	2-4'	Y	Y	Y	Y	P			M			P	S						X							Host for Spring Azure.	Hummingbirds; flowers have odor that repels some insects; nectar source for sweat and leaf-cutting bees, beetles and flies.
Agastache foeniculum	Anise hyssop	6	9	Lavendr to purple	2-4'	1.5-3'	N	Y	Y	Y	P			M	D	F	P							X								Special Value to native bees, bumble bees and honey bees; upright, clump-forming perennial of the mint family; is a wonderful accent when covered with bottlebrush blossoms and a cloud of butterflies; flowers are pollinated primarily by various types of bees including honeybees, bumblebees, Halictid bees, digger bees, leaf-cutting bees and masked bees; flowers are also visited by pollinating flies, butterflies, skippers, moths and the occasional hummingbird; is used as a butterfly nectar plant or as part of a grouping or mass planting; plants provide fragrance, showy blooms, and are valuable components of wildlife, wildflower, or butterfly gardens or meadows;
Agastache scrophulariifolia	Purple Giant Hyssop	7	9	Purple	4-6'	1-2'	Y	Y	Y	Y	P			M		F	P							X	X						Host for Summer Azure and two moths.	Special Value to native bees, bumble bees and honey bees; long bloom time in combination with their being nectar-rich makes them highly attractive to butterflies, hummingbirds and other pollinators; flowers are cross-pollinated primarily by honeybees, bumblebees, digger bees, leaf-cutting bees, Halictid bees, and Masked bees, which seek nectar or pollen; rated as very high pollinator value in NRCS study;
Allium cernuum	Nodding Onion	6	8	Pink	1-1.5'	.25-.5'	Y	Y	Y	Y				M	D	F	P							X								Special value to native bees; bulb, member of the lily family; rock gardens, border fronts, cottage gardens or naturalized areas; nectar and pollen of the nodding flowers attract primarily bees, including honeybees, bumblebees, Anthophorine bees, and Halictid bees; plants usually go dormant in summer after blooming and leaves disappear until cool weather returns; city of Chicago gets it's name from the Algonquin Indian name for this plant, "chigagou";

Best Native Nectar Plants for Butterflies

- Joe Pye Weed
- Beebalm
- Asters
- Goldenrods
- Common Milkweed
- Swamp Milkweed
- Butterfly Milkweed
- Purple Coneflower
- Gayfeather
- Boneset
- Thoroughwort
- New York Ironweed
- Field Thistle
- Buttonbush



Red-banded Hairstreak on Boneset
Clayton Koonce



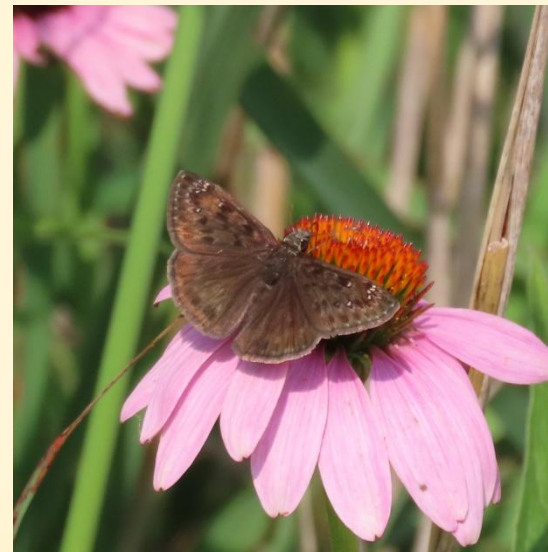
Clouded Sulphur on Aster
Annette Allor



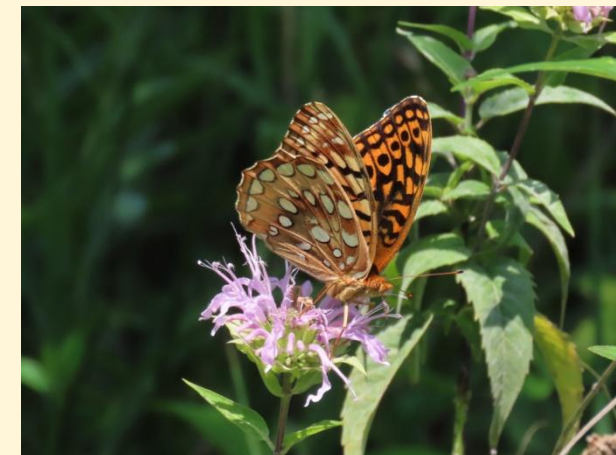
Monarch on Thistle
Kevin Heffernan



Viceroy on Buttonbush
Clayton Koonce



Horace's Duskywing on Purple Coneflower
Clayton Koonce



Great Spangled Fritillary on Beebalm
Clayton Koonce

Local Nurseries that Sell Only Straight Native Species

- Howard Ecoworks (Howard County)
- Chesapeake Natives (PG County)
- Seven Bends Nursery (Berryville, VA)
- Earth Sanga (Springfield, VA)

Nurseries that Sell Pre-planned Gardens

- **Ecoplantia (Frederick, MD & online)**
- **My Home Park (online)**
- ***Lauren's Garden Service (Trying to start pre-planned gardens this spring. Stay tuned.)***
- ***Howard Ecoworks (Trying to start pre-planned gardens this spring. Stay tuned.)***

Is It OK to Use Non-native Annuals in your Native Plant Garden?

- Plants native to this area are the best choice in pollinator gardens as they are disease-resistant and naturally adapted to the environment.
- Supplementing native plants with some non-native, non-invasive plants will guarantee a continuous supply of both nectar and pollen throughout the growing season.
 - Bees and other pollinators need a continuous supply of nectar to provide sugar for energy and pollen to provide vital proteins and fats.
- Choose old-fashioned simple blooming annuals instead of double blooms and hybrids
- ***The common advise is to try for a 70:30 or 80:20 native to nonnative ratio***
- Some plants to try are Zinnias, Lantana, Mexican sunflowers (Tithonia), Tall Verbena, Cosmos, Salvia, Angelonia, and Alyssum



Lantana



Cosmos



Mexican Sunflower



Tall Verbena



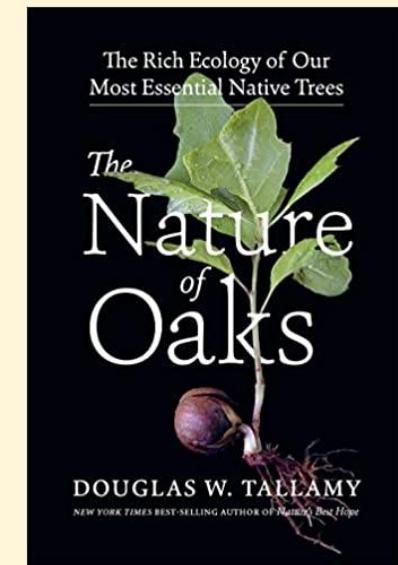
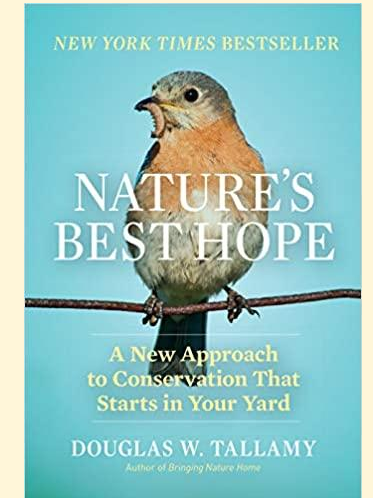
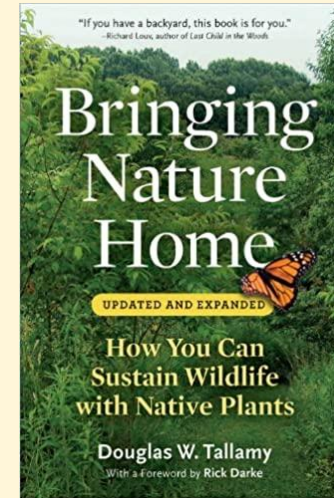
Salvia



Angelonia

Keystone Trees, Shrubs, and Herbaceous Plants

Data from Doug Tallamy's Research on Lepidopteran Use of Native Plants					
Woody Plants			Herbaceous Plants		
Common Name	Genus	# B/M Species	Common Name	Genus	# B/M Species
Oak	Quercus	534	Goldenrod	Solidago	115
Black cherry	Prunus	456	Asters	Aster	112
Willow	Salix	455	Sunflower	Helianthus	73
Birch	Betula	413	Joe pye, Boneset	Eupatorium	42
Poplar	Populus	368	Morning glory	Ipomoea	39
Crabapple	Malus	311	Sedges	Carex	36
Blueberry	Vaccinium	288	Honeysuckle	Lonicera	36
Maple	Acer	285	Lupine	Lupinus	33
Elm	Ulmus	213	Violets	Viola	29
Pine	Pinus	203	Geraniums	Geranium	23
Hickory	Carya	200	Black-eyed susan	Rudbeckia	17
Hawthorn	Crataegus	159	Iris	Iris	17
Spruce	Picea	156	Evening primrose	Oenothera	16
Alder	Alnus	156	Milkweed	Asclepias	12
Basswood	Tilia	150	Verbena	Verbena	11
Ash	Fraxinus	150	Beardtongue	Penstemon	8
Rose	Rosa	139	Phlox	Phlox	8
Filbert	Corylus	131	Bee balm	Monarda	7
Walnut	Juglans	130	Veronica	Veronica	6
Beech	Fagus	126	Little bluestem	Schizachyrium	6
Chestnut	Castanea	125	Cardinal flower	Lobelia	4



What can you do at home to help butterflies?

Reduce mosquito spray and insecticide usage!

Sprays are chemical insecticides called pyrethroids:

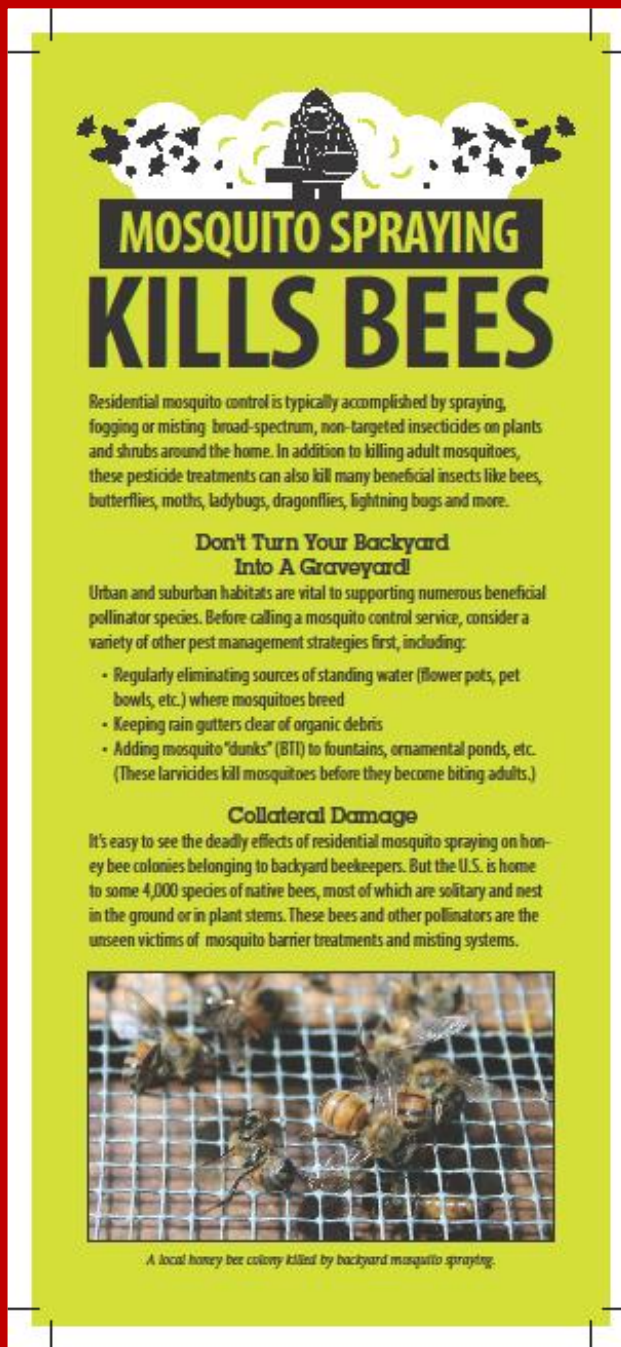
- *Pyrethroids used to kill mosquitoes kill all insects* (fireflies, butterflies, bees, beetles, true bugs, moths, dragonflies, etc.)
- Synthetic pyrethroids are similar to naturally-occurring substances (in chrysanthemums) but are more toxic & last longer in the environment
- They typically respray every 21 days

Mosquito fogging doesn't work:

- **In order to control mosquitos in the adult stage, you have to kill 90% of them**
- **Studies have shown that Mosquito Joe kills 10% of them which is why he has to keep coming back.** It is also quite expensive compared to an alternative.

Better to control mosquitos in the larval stage using the "Bucket of Doom" (for details see next slide)

- Get a bucket, fill it full of water, put in straw or hay, let it ferment for a day or two. Diatoms and algae that mosquito larvae like to eat are blossoming in the bucket. As the straw ferments, it releases carbon dioxide which attracts female mosquitos to lay their eggs. Then you add a mosquito dunk which is a natural bacterium that kills aquatic diptera and the only aquatic dipteran in the bucket is mosquito. **It is *Bacillus thuringiensis*, very targeted. You are not killing any other insects.**



**MOSQUITO SPRAYING
KILLS BEES**

Residential mosquito control is typically accomplished by spraying, fogging or misting broad-spectrum, non-targeted insecticides on plants and shrubs around the home. In addition to killing adult mosquitoes, these pesticide treatments can also kill many beneficial insects like bees, butterflies, moths, ladybugs, dragonflies, lightning bugs and more.


**Don't Turn Your Backyard
Into A Graveyard!**

Urban and suburban habitats are vital to supporting numerous beneficial pollinator species. Before calling a mosquito control service, consider a variety of other pest management strategies first, including:

- Regularly eliminating sources of standing water (flower pots, pet bowls, etc.) where mosquitoes breed
- Keeping rain gutters clear of organic debris
- Adding mosquito "dunks" (BTI) to fountains, ornamental ponds, etc. (These larvicides kill mosquitoes before they become biting adults.)

Collateral Damage

It's easy to see the deadly effects of residential mosquito spraying on honey bee colonies belonging to backyard beekeepers. But the U.S. is home to some 4,000 species of native bees, most of which are solitary and nest in the ground or in plant stems. These bees and other pollinators are the unseen victims of mosquito barrier treatments and misting systems.



A local honey bee colony killed by backyard mosquito spraying.

What can you do at home to help butterflies

Place “Buckets of Doom” in your yard to kill mosquito larvae

• Materials for the “Bucket of Doom”:

- One or more 3 to 5 gallon buckets (green can be used if you want to camouflage them),
- straw,
- Mosquito Dunks: Organic donut-shaped disks that contain Bti, a bacterium that occurs naturally in soil and is toxic only to mosquito larvae,
 - are non-toxic to wildlife, pets, fish, and humans.
- plastic wire, zip ties

• Instructions:

Step 1: Fill your bucket halfway with water. Then add straw. As the organic matter begins to ferment, it will produce carbon dioxide which attracts mosquitoes ready to lay eggs.

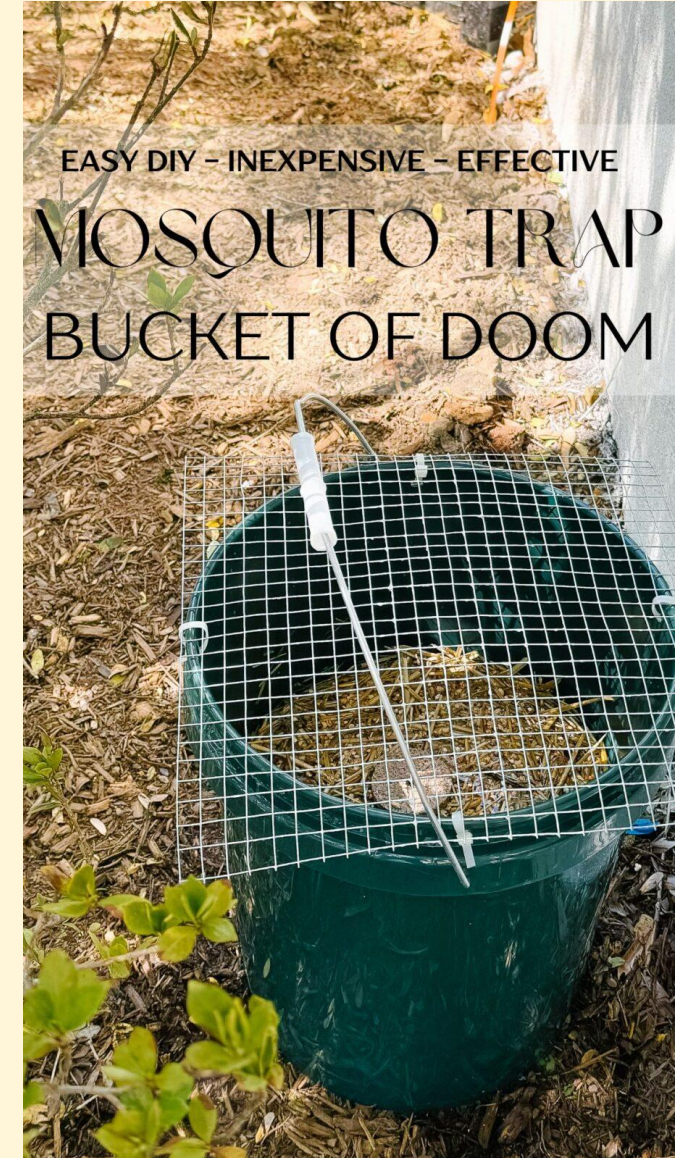
Step 2: Add mosquito dunk. You will need to add a new dunk every 30 days.

Step 3: While the dunks are safe for insects and animals, you can cover your buckets with plastic wire or a similar screening to keep curious animals (pets, birds, squirrels, etc.) and kids out of the bucket. Just drill a few holes around the bucket and attach with zip ties.

Step 4: Place your buckets in areas around your yard where mosquitoes like to hang out, ideally in a shaded area.

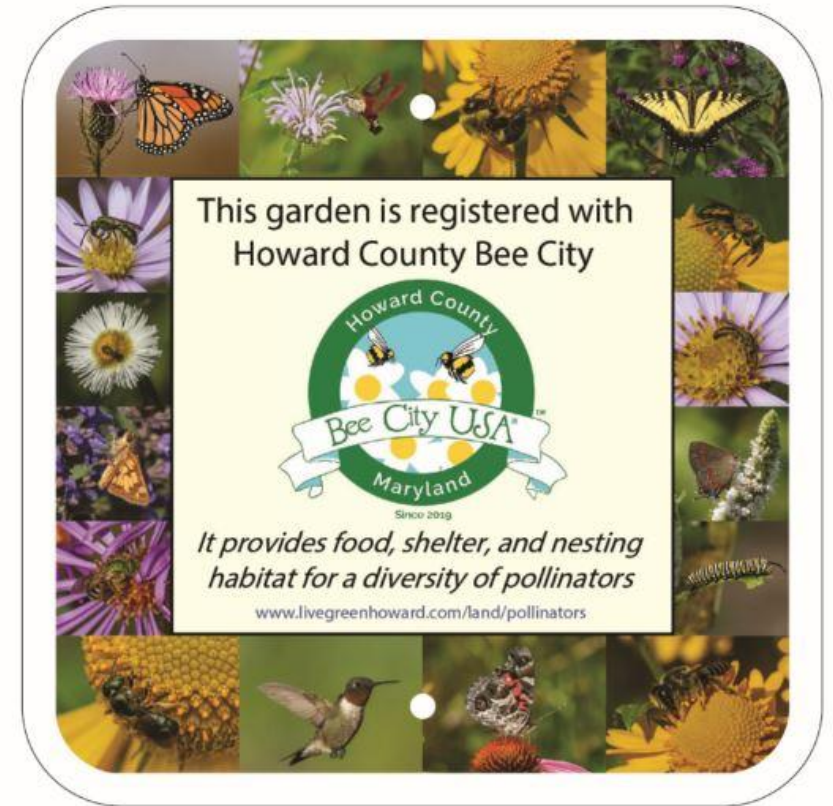
Note 1: You do not need to change the water in the bucket. However, if the water evaporates below the halfway mark, you can add more water to it.

*Note 2: **Susan Tucker used several in her yard last year and had no mosquitos.***



Embrace the “wild in your garden”

- *Your yard will be an oasis for bees, butterflies and birds in your neighborhood*
- *Register your garden with Bee City and receive a garden sign*
- *Report your butterfly sightings to the Butterfly Survey*
- *Sit back and enjoy the show*





Thank you, Volunteers!

Silvery Checkerspot
on *Rudbeckia laciniata*
Pam Perna's Garden
Woodbury 7/29/20