

Summary of the 2018 Howard County Fall Count

by Mike McClure and Chuck Stirrat

The twenty fifth annual Howard County Fall Count was conducted on Sept. 15th, 2018 with the count data shown in the table below. This count has turned out to be below average Countywide for the number of bird species but also for the number of birds. For the warblers, the species count was near average while the number of individual warblers continued their slow but sure decline.

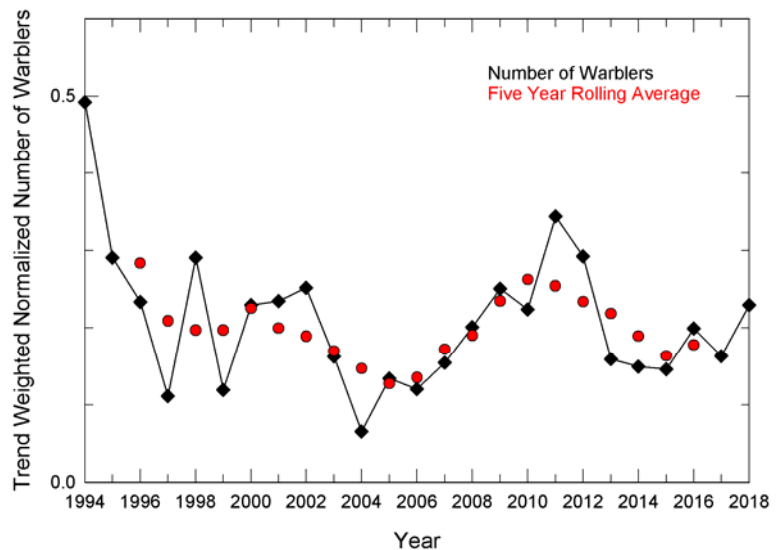
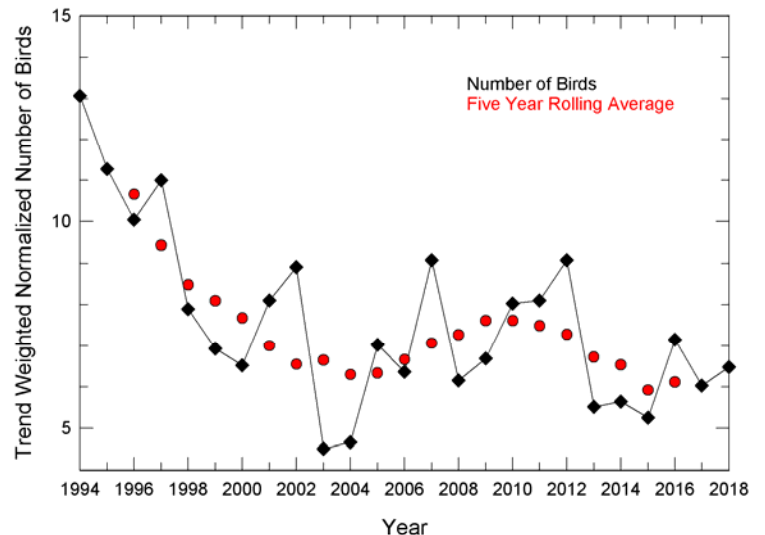
The number of participants, parties, and the overall effort as measured by the hours and miles continues to remain strong in spite of the occasional difficult season with few birds in the field, as was the case this year.

	Observed Birds Countywide		Observed Warblers Countywide		Statistics
	Species	Birds	Species	Birds	
2018 Numbers	119	10,340	21	366	
Historical High:Low	139 : 108	26,651 : 9,293	30 : 13	1,004 : 130	
Year 's of High : Low	2010 : 2004	1994 : 2004	1994 : 2004	1994 : 2004	
Averages for Birds & Species	124.8	15,525.24	23.44	430.08	
2018 Counters : Parties					51 : 44
Counters : Parties Averages					54.6 : 33.3
2018 Counters Hours : Miles					199.5 : 434.8
Counters Hours : Miles Averages					195.4 : 404.9

Saturday's temperature started at 73 degrees at 6:00AM with scattered clouds, rising to 87 degrees in late afternoon. The morning was comfortable-ish (dew point: 73 degrees) at 6:00AM becoming marginally uncomfortable in the late morning and afternoon with the dew point rising to 78 degrees by late afternoon. Winds were calm during the early morning but slowly changed to intermittent 3-6 mph accompanied with the occasional gusts ranging from 8-15 mph. Some areas had brief periods of mist/drizzle.

Counters continue to complain about the lack of birds. This problem is reflected in the data from 25 years of Fall Counts. The graphics for the total number of individual birds and warblers observed countywide is represented by their Rolling Five Year Average [RFYA] data. The RFYA's seems to support that the numbers had reached their lows during the mid 2000's, began to rise, and now seem to be in decline. For how long is, of course, unknown. It is worth noting that the RFYA is by design slow to change direction and requires several years of sighting increases or decreases to respond. However, this apparent decline [now ongoing for 5 years] may just be the normal variation as the resident local population declines with several difficult winters in a row. Only additional data will answer the question; are we seeing the beginning of another precipitous decline similar to that of the early Fall Count years?

There were 13 species for which there was only one bird sighted countywide and 8 species for which there were only two birds sighted countywide. The single bird sighting remains high but is down from a prior high of 19 in 2015 while the two birds sighting is down from 15 also in 2015. Species showing moderately high numbers (>500) are: European Starling, 1,557; Canada Goose, 1,526; Doves [Mourning + Rock], 650; Crows [American+Fish+species], 541; and Blue Jay, 512.



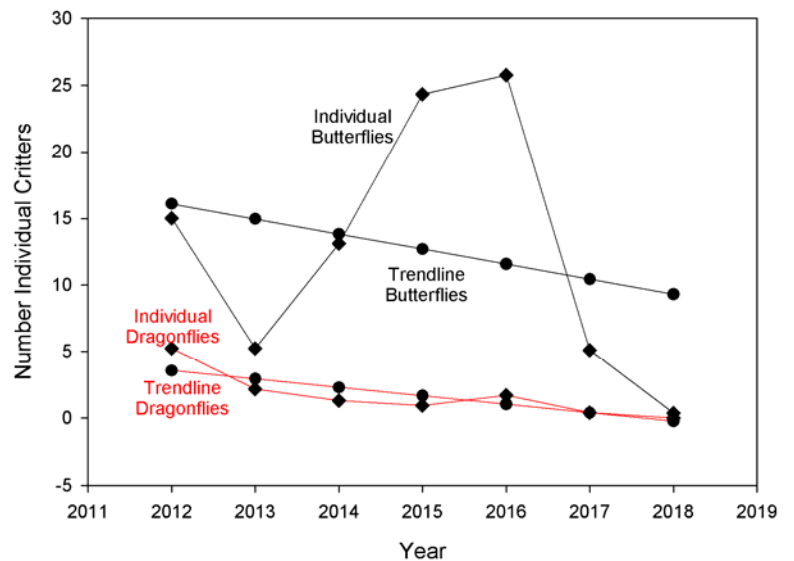
Birds count participants are: Debbie Belchis, Karan Blum, Jim & Marilyn Brinkley, Dennis Coskren, Jeff Culler, Ralph Cullison III, David Cummings, Susan & **Wes Earp (Area 1 Coordinator)**, Kristin Gressitt, John & Meg Harris, **Karen & Kevin Heffernan (Area 3 Co-coordinators)**, Bill & Gayle Hill, David Holmes, Ed Huestis, Michael Kerwin, Clayton Koonce, **Allen Lewis (Area 7 Coordinator)**, Kathie Lillie, Anne Looker, Felicia Lovelett, Rosa Lubitz, Brigitte Lund, Janet Lydon, **Mike McClure (County Co-coordinator & Areas 2 & 4 Coordinator)**, John McKitterick, Barry Miller, Sue Muller, Sue Neri, Ben Newton, Cyndy & Steve Parr, Howard Patterson, Matt Rogosky, Russ Ruffing, David Sandler, **Kurt Schwarz (Area 5 Coordinator)**, Jo Solem, Michelle Stewart, **Chuck Stirrat (County Co-coordinator & Area 6 Coordinator)**, Tom Strikwerda, Eva Sunell, Tim Thompson, Robin Todd, Anthony VanSchoor, Mark Wallace, Michele Wright. **Lastly, a very special thanks to Mary Lou Clark, who hosted the evening tally.**

For the seventh year counters were given the option to list the species of butterflies, dragonflies and damselflies seen as they were counting birds. A total of 16 people turned in a list: Bill & Gayle Hill; Karen & Kevin Heffernan; Linda Hunt; Grazina & Mike McClure; John & Meg Harris; Sue Muller; Jo Solem; Anne Looker; Janet Lydon, Michele Wright, Karan Blum and Brigitte Lund;. See the table for greater detail.

	Obs. Butterflies Countywide		Obs. Dragonflies Countywide		Statistics
	Species	Butterflies	Species	Dragonflies	
2018 Numbers	33	1,362	6	39	
Historical High:Low	43: 22	2,285: 305	16: 16	150 : 39	
Year 's of High : Low	2016 : 2013	2016 : 2013	2016 : 2018	2016 : 2018	
Averages for Ind. & Species	33.71	1,107.71	12.43	104.43	
2018 Counters : Parties					16 : 9
Counters : Parties Averages					15.7: 10.1
2018 Counters Hours : Miles					14.0 : 8.0
Counters Hours : Miles Averages					56.4 : 132.5

The Butterfly Count was below normal for both the number of species and individuals, respectively. There was only one species of butterflies with >100 individuals sighted; Sachem 798. This year's total sighted individuals, 1,362, is slightly more than half of the 2,285 sightings on last year's count. This decrease is probably due to a combination of fewer counters and parties but also less countywide coverage with only 5 areas reporting results. Also of note, the butterfly trendline is increasing but with data of this variability, a rolling average is really required to properly represent the direction of the trend. At this point there's only six years of data and a five year rolling average would yield two data points or a straight line.

The Dragonfly Count was equally disappointing with even fewer participants then for the butterflies. This year also set a new low for number of species at 6, down from the prior low of 11. For dragonflies, the onlspecies [>10] was: Autumn Meadowhawk 11, . Only two areas reported results! Unlike for butterflies, the Dragonfly trendline is decreasing. With only seven years of data, it's difficult to draw too much from the graphics.



Complete bird, butterfly, and dragonfly results are posted on the HCBC's website at <http://howardbirds.org/howard/counts.htm>.

Plan now to join us on a future seasonal count and if possible attend the tally as well. Next year the 2019 Fall Count will be held on the 3rd Saturday of September which will be the 21st.

Howard 2018 Fall Count Birding Totals

BIRD COUNT - HOWARD CO.		Season:	Fall	Type:	Regular	Area:	Howard	Date:	9/15/2018
Species & Codes (1) / Area No.:		1	2	3	4	5	6	7	Totals
Canada Goose	A	264	173	298	126	238	106	321	1,526
Wood Duck	B	31		9					40
Mallard	A	24		6	29	81		22	162
Wild Turkey	* C						2		2
Rock Pigeon	A	59	17	4	60	1	2	1	144
Mourning Dove	A	78	68	51	49	25	65	170	506
Yellow-billed Cuckoo	A				1	1	2		4
Black-billed Cuckoo	B						1		1
Common Nighthawk	B	22		1	2		2		27
Chimney Swift	A	2		129	52		50	3	236
Ruby-throated Hummingbird	B	9	1	8	6	1	7	2	34
Killdeer	A	1		10	46				57
Spotted Sandpiper	B		2				2		4
Solitary Sandpiper	B				1				1
Greater Yellowlegs	B			1		1	2		4
Double-crested Cormorant	B		1		1	3		7	12
Great Blue Heron	A	2	8	3	6	7	6	4	36
Great Egret	B	1		2	1	1		1	6
Green Heron	A	8		1	3	8		8	28
Black Vulture	A	15	5	31	34	3	48	37	173
Turkey Vulture	A	65	15	67	18	4	46	46	261
Osprey	B	3		3	2	1	4	1	14
Bald Eagle [ad/im/unk]	B	7	1		4		5	2	19
Northern Harrier	B	1		1					2
Sharp-shinned Hawk	B		1	2					3
Cooper's Hawk	B			1			3	1	5
<i>accipiter species</i>							2		2
Red-shouldered Hawk	A	14	6	13	10	3	5	20	71
Broad-winged Hawk	B				4		6	3	13
Red-tailed Hawk	A	4			2		8	4	18
Eastern Screech-Owl	B			1					1
Great Horned Owl	B	1	1				1		3
Barred Owl	B	1			3		4	1	9
Belted Kingfisher	A	5	4	1	3	5	2	3	23
Red-headed Woodpecker	* C	5	1	3			2		11
Red-bellied Woodpecker	A	40	9	19	34	16	16	44	178
Downy Woodpecker	A	26	7	15	12	6	16	25	107
Hairy Woodpecker	A	5	1	6		1	4	5	22
Northern Flicker	A	4	1	10	7	7	4	15	48
Pileated Woodpecker	A	17	4	6	3	3	5	6	44
American Kestrel	A	1	2	2		1	3		9
Merlin	* C			1			1		2
Peregrine Falcon	** C						1		1
Olive-sided Flycatcher	** C	1	1			1			3
Eastern Wood-Pewee	A	22	8	13	4	22	9	14	92
Acadian Flycatcher	* A	2		1	1	2			6
<i>Trail's Flycatcher</i>	* B			1					1
Least Flycatcher	* B						1		1
<i>Empidonax species</i>		5					1	1	7
Eastern Phoebe	A	10	4	2	4		4	2	26
Great Crested Flycatcher	@ A			2	2		2	1	7
Eastern Kingbird	@ A	4					5		9

Howard 2018 Fall Count Birding Totals

BIRD COUNT - HOWARD CO.		Season:	Fall	Type:	Regular	Area:	Howard	Date:	9/15/2018
Species & Codes (1) / Area No.:	1	2	3	4	5	6	7	Totals	
White-eyed Vireo	A	8		8	2	1	5		24
Yellow-throated Vireo	B	1		1	1	2			5
Blue-headed Vireo	B						2		2
Philadelphia Vireo	* C							25	25
Red-eyed Vireo	A	6	11	12	12	17	16	22	96
Blue Jay	A	81	20	77	103	42	49	140	512
American Crow	A	97	21	40	50	17	24	54	303
Fish Crow	A	14		4	4	6	14	3	45
<i>crow species</i>		14		53	65		28	33	193
Common Raven	*	2	1	4					7
Horned Lark	* C	30		2					32
Carolina Chickadee	A	10	5	16	21	8	22	32	114
Tufted Titmouse	A	16	4	7	25	13	19	25	109
Red-breasted Nuthatch	* C	2			2		3		7
White-breasted Nuthatch	A	22	5	15	19	10	9	26	106
House Wren	A	5		4	1	2	4	1	17
Winter Wren	@ B	1							1
Carolina Wren	A	72	14	63	43	37	31	94	354
Blue-gray Gnatcatcher	A	2	6	2		3	3		16
Ruby-crowned Kinglet	@ A	1							1
Eastern Bluebird	A	63	12	19	15	3	11	27	150
Veery	B	1		1	1			1	4
Gray-cheeked Thrush	* C			1					1
Swainson's Thrush	B				1	1	5	2	9
Wood Thrush	A	3		4		5	2		14
American Robin	A	18	6	17	29	35	29	70	204
Gray Catbird	A	70	6	52	49	21	84	31	313
Brown Thrasher	A	7		5	1		6		19
Northern Mockingbird	A	7	3	10	4	2	24	31	81
European Starling	A	919	55	42	53	47	45	396	1,557
Cedar Waxwing	A		15	12			37	1	65
House Sparrow	A	20	2	36		14	60	176	308
House Finch	A	15		13	15	5	26	29	103
American Goldfinch	A	50	2	39	57	15	76	47	286
Eastern Towhee	A	10		3	1	2	21	2	39
Chipping Sparrow	A	69	8	12	4		6	23	122
Field Sparrow	A		1	2			1		4
Savannah Sparrow	* B			14	6				20
Song Sparrow	A	4		22	10		4	2	42
Lincoln's Sparrow	* C	1							1
<i>unidentified sparrow</i>		2							2
Yellow-breasted Chat	A	1		1					2
Bobolink	B	2		27			3		32
Baltimore Oriole	A			1			6		7
Red-winged Blackbird	A		6		4		26	1	37
Brown-headed Cowbird	A	63						2	65
Common Grackle	A				1		2		3
Ovenbird	A	3		2		1	6	6	18
Worm-eating Warbler	@ B						1	1	2
Blue-winged Warbler	@ B						2	1	3
Black-&-white Warbler	A	5		6	2	3	14	14	44
Tennessee Warbler	B					1		1	2

Howard 2018 Fall Count Birding Totals

BIRD COUNT - HOWARD CO.		Season:		Type:		Area:		Date:	
Species & Codes (1) / Area No.:		1	2	3	4	5	6	7	Totals
Nashville Warbler	B						1		1
Kentucky Warbler	@ A							1	1
Common Yellowthroat	A	11	7	22	8	11	13	47	119
American Redstart	A	10	2	10	3	3	13	10	51
Northern Parula	A			2			5	1	8
Magnolia Warbler	A	2		3	2		8	1	16
Blackburnian Warbler	B	1		1			1		3
Chestnut-sided Warbler	A	6		3	1		8	1	19
Blk.-thrted. Blue Warbler	A	3		2			3	4	12
Palm Warbler	@ A					1			1
Pine Warbler	B	2							2
Prairie Warbler	A	1		2	1				4
Blk.-thrted. Green Warbler	B	2					5		7
Canada Warbler	B	1					2	3	6
Wilson's Warbler	B						1		1
<i>warbler species</i>		14				4	3	25	46
Scarlet Tanager	A		1	3	1	1	4	2	12
Northern Cardinal	A	96	10	63	65	53	45	109	441
Rose-breasted Grosbeak	B	1	1	5	1		1		9
Blue Grosbeak	B			1			7		8
Indigo Bunting	A	8		9	2	3	2		24
Area Total Birds:		2,634	565	1,499	1,215	831	1,303	2,293	10,340
Area Total Species:		84	49	84	69	57	90	69	119
Area No.:		1	2	3	4	5	6	7	Totals
Supplemental Data									
Time Start:		6:30 a	7:12 a	5:45 a	6:30 a	6:00 a	7:30 a	6:45 a	5:45 a
Time Stop:		8:00 p	12:37 p	3:45 p	5:58 p	3:00 p	5:55 p	4:00 p	8:00 p
Hours on Foot:		34.5	8.0	27.4	18.3	12.5	18.0	34.0	152.7
Hours by Car:		16.0	.6	2.2	.9	.7	1.8	8.8	31.0
Hours by Boat:									
Hours Other:			.3			1.0			1.3
Miles on Foot:		12.8	5.4	18.2	13.7	11.1	13.9	43.2	118.3
Miles by Car:		119.0	8.3	28.2	29.7	19.0	21.0	91.0	316.2
Miles by Boat:									
Miles Other:									
Hours Feeder Watching:		1.0				.5		4.5	6.0
Hours Stationary:		2.0			4.6	.2	2.5		9.3
Hours "Owling":		.5							.5
Miles "Owling":		.3							.3
County Weather		Temperature		%Clouds		Wind (Speed & Dir.)		Precip.(Type & Amt.)	
Dawn		73 ° F		100%		0-5 ENE		Trace, drizzle	
AM		76 ° F		70=100%		0-5 ENE		brief shower early	
Noon		84 ° F		50-85%		0-5 NE		None	
PM		87 ° F		20- 85%		0-5 N		None	
Dusk		82 ° F		95%		calm		None	
Comments on Weather:		drizzle at dawn, brief shower ~8 am in east, No precip after that.							
(.e.g amount of ice, fog, etc.)		Humidity jumped as sun came out midday dew point 73, 73, 75, 78, 78							
Area Code:		1	2	3	4	5	6	7	Totals

Howard 2018 Fall Count Birding Totals

BIRD COUNT - HOWARD CO. Species & Codes (1) / Area No.:	Season: Fall		Type: Regular		Area: Howard		Date: 9/15/2018	
	1	2	3	4	5	6	7	Totals
Deer Seen:	26	7		10	6	13	27	89
Total Observers in Area:	10	4	8	5	5	9	12	51
Total Parties in Area:	7	2	7	5	5	8	10	44
Total Party-Hours (Reg.):	50.5	8.6	29.6	19.2	13.2	19.8	42.8	183.7
Tot. Party Hours (Feeder Watch):	1.0				.5		4.5	6.0
Total Party-Hours (Station'y):	2.0			4.6	.2	2.5		9.3
Total Party-Hours (Owling):	.5							.5
Total Party-Hours:	54.0	8.6	29.6	23.8	13.9	22.3	47.3	199.5
Total Party-Miles:	132.1	13.7	46.4	43.4	30.1	34.9	134.2	434.8
Area No.:	1	2	3	4	5	6	7	Totals

Fall Count Results, September 15, 2018

Butterflies & Moths*	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6	Area 7	Totals
Admiral, Red				2	1			3
Azure, Summer			2		11		5	18
Buckeye, Common			25	34	3		2	64
Checkered-Skipper, Common								
Checkerspot, Silvery								
Cloak, Mourning								
Comma, Eastern				1				1
Copper, American			4					4
Crescent, Pearl			18	67	39		34	158
Duskywing, Horace's							1	1
Duskywing, Wild Indigo							2	2
Fritillary, Great Spangled			1	1				2
Fritillary, Meadow								
Fritillary, Variegated	1		15	22	6		1	45
Geometer, Chickweed								
Glassywing, Little								
Hairstreak, Gray			2		4	1	4	11
Hairstreak, Red-banded								
Hairstreak, White M								
Lady, American								
Lady, Painted								
Mark, Question			1	3	1			5
Monarch	3		26	10	9	7	6	61
Moth, Ailanthus Webworm								
Moth, Fall Webworm [Caterpillar]								
Moth, Henry's Marsh [Caterpillar]								
Moth, Salt Marsh [Catapillar]								
Moth, Yellow-striped Armyworm								
Orange, Sleepy			2		27			29
Pearly-eye, Northern								
Purple, Red-spotted			2	10		1	1	14
Sachem	3		75	23	113	3	105	322
Skipper, Clouded								
Skipper, Dun			1					1
Skipper, Fiery								
Skipper, Least			12		2		5	19
Skipper, Long-tailed			1					1
Skipper, Ocola					3		2	5
Skipper, Peck's			9	1	15		18	43
Skipper, Silver-spotted	1		1		2			4
Skipper, Swarthy								
Skipper, Tawny-edged					1			1
Skipper, Zabulon							1	1
Snout, American								
Sulphur, Clouded	3		2		1			6
Sulphur, Cloudless					1			1
Sulphur, Orange			8		5	1	3	17
Swallowtail, Black			3					3
Swallowtail, Eastern Tiger			2	4	3	1		10
Swallowtail, Giant								
Swallowtail, Pipeline								
Swallowtail, Spicebush				1				1
Swallowtail, Zebra								
Tailed-Blue, Eastern	2		25	5	33		146	211
Viceroy			1					1
White, Cabbage	10		47	71	53	70	45	296
Wood-Nymph, Common								
unidentified species				1				1
Total Individuals	23	0	285	256	333	84	381	1,362
Total Species	7	0	24	15	21	7	17	33

Dragonflies & Damselflies*	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6	Area 7	Totals
Amberwing, Eastern								
Bluet, Familiar				8				8
Bluet, Skimming								
Dancer, Blue-fronted								
Dancer, Seepage								
Darner, Common Green				1	5			6
Darner, Shadow								
Darner, Fawn								
Dasher, Blue					5			5
Forktail, Eastern								
Forktail, Fragile								
Glider, Spot-winged								
Glider, Wandering								
Meadowhawk, Autumn				14				14
Meadowhawk, Blue-faced								
Pennant, Halloween								
Pondhawk, Eastern					3			3
Saddlebags, Black				1	2			3
Saddlebags, Carolina								
Skimmer, Twelve-spotted								
Skimmer, Slaty								
Skimmer, Widow								
Whitetail, Common								
<i>unidentified species</i>								
<i>Total Individuals</i>				24	15			39
<i>Total Species</i>				4	4			6

Information [Required]	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6	Area 7	Totals
Hours by Foot	6.0	0.0	5.5	14.6	7.1	2.9	2.0	38.1
Hours by Car	2.3	0.0	0.0	1.0	0.8	0.1	0.5	4.6
Miles by Foot	2.5	0.0	3.0	7.2	5.1	2.8	1.3	21.9
Miles by Car	10.0	0.0	0.0	29.7	18.0	0.5	4.0	62.2
Total Observers in Area	2		2	4	4	3	1	16
Total Parties in Area	1		1	3	2	1	1	9

Fall Count, Cumulative Results

Butterflies & Moths*	2012	2013	2014	2015	2016	2017	2018	Sum	Max	Min	Misses	Average
Admiral, Red	6			2	2		3	13	6	2	3	1.9
Azure, Summer	2			6	11	5	18	42	18	2	3	6.0
Buckeye, Common	18	3	96	98	140	17	64	436	140	3	1	62.3
Checkered-Skipper, Common	4	1	1	12	5			23	12	1	3	3.3
Checkerspot, Silvery	2							2	2	2	7	.3
Cloak, Mourning			2					2	2	2	7	.3
Comma, Eastern	1	9	1	2	2		1	16	9	1	2	2.3
Copper, American				1	1		4	6	4	1	5	.9
Crescent, Pearl	69	10	70	114	395	30	158	846	395	10	1	120.9
Duskywing, Horace's	1			1	2		1	5	2	1	4	.7
Duskywing, Wild Indigo		1	13	5	18		2	39	18	1	3	5.6
Fritillary, Great Spangled	2		4	8	1	1	2	18	8	1	2	2.6
Fritillary, Meadow	3		2	21	3			29	21	2	4	4.1
Fritillary, Variegated	14	14	26	92	59	4	45	254	92	4	1	36.3
Geometer, Chickweed	1		4	1				6	4	1	5	.9
Glassywing, Little					1	1		2	1	1	6	.3
Hairstreak, Gray	2		3	4	5	5	11	30	11	2	2	4.3
Hairstreak, Red-banded	5		2		5			12	5	2	5	1.7
Hairstreak, White M	2	1			2			5	2	1	5	.7
Lady, American			3	2	3	2		10	3	2	4	1.4
Lady, Painted	6		4	1	1	6		18	6	1	3	2.6
Mark, Question			1				5	6	5	1	6	.9
Monarch	47	7	67	49	75	12	61	318	75	7	1	45.4
Moth, Ailanthus Webworm	1		1	2	1			5	2	1	4	.7
Moth, Fall Webworm [Caterpillar]		7						7	7	7	7	1.0
Moth, Henry's Marsh [Caterpillar]		2				2		4	2	2	6	.6
Moth, Salt Marsh [Catapillar]		8						8	8	8	7	1.1
Moth, Yellow-striped Armyworm	1				30			31	30	1	6	4.4
Orange, Sleepy				1	4	1	29	35	29	1	4	5.0
Pearly-eye, Northern	1	2		1	2			6	2	1	4	.9
Purple, Red-spotted	8		2	4	13	1	14	42	14	1	2	6.0
Sachem	11	21	216	210	240	798	322	1,818	798	11	1	259.7
Skipper, Clouded	2			1				3	2	1	6	.4
Skipper, Dun			1				1	2	1	1	6	.3
Skipper, Fiery	5			7	5	1		18	7	1	4	2.6
Skipper, Least	11	28	103	30	152	50	19	393	152	11	1	56.1
Skipper, Long-tailed	1						1	2	1	1	6	.3
Skipper, Ocola				7	3		5	15	7	3	5	2.1
Skipper, Peck's	4		4	111	82	23	43	267	111	4	2	38.1
Skipper, Silver-spotted	2		8	20	13	5	4	52	20	2	2	7.4
Skipper, Swarthy					1			1	1	1	7	.1
Skipper, Tawny-edged			1	9			1	11	9	1	5	1.6
Skipper, Zabulon			4	2			1	7	4	1	5	1.0
Snout, American					2			2	2	2	7	.3
Sulphur, Clouded	21	47	38	134	47	8	6	301	134	6	1	43.0
Sulphur, Cloudless	2		5	3	10	1	1	22	10	1	2	3.1
Sulphur, Orange	12	33	113	68	60	10	17	313	113	10	1	44.7
Swallowtail, Black			1	1	2	1	3	8	3	1	3	1.1
Swallowtail, Eastern Tiger	15	4	4	23	22	4	10	82	23	4	1	11.7
Swallowtail, Giant			1					1	1	1	7	.1
Swallowtail, Pipeline												
Swallowtail, Spicebush	2	2	3	1	13	13	1	35	13	1	1	5.0
Swallowtail, Zebra					1			1	1	1	7	.1
Tailed-Blue, Eastern	11	12	111	56	469	13	211	883	469	11	1	126.1
Viceroy	3	3	8	6	1	2	1	24	8	1	1	3.4
White, Cabbage	100	89	164	119	378	75	296	1,221	378	75	1	174.4
Wood-Nymph, Common	1	1			1			3	1	1	5	.4
unidentified species	8		124	50	2	15	1	200	124	1	2	28.6
Total Individuals	407	305	1,211	1,285	2,285	1,106	1,362	7,961	2,285		None	1,137.3
Total Species	37	22	35	39	43	27	33	236	43		None	33.7

Dragonflies & Damselflies*	2012	2013	2014	2015	2016	2017	2018	Sum	Max	Min	Misses	Average
Amberwing, Eastern				1	23	3		27	23	1	5	3.9
Bluet, Familiar		1	5		1	3	8	18	8	1	3	2.6
Bluet, Skimming		2		1		1		4	2	1	5	.6
Dancer, Blue-fronted					1			1	1	1	7	.1
Dancer, Seepage		12						12	12	12	7	1.7
Darner, Common Green	35	79	62	19	19	15	6	235	79	6	1	33.6
Darner, Shadow				1	1			2	1	1	6	.3
Darner, Fawn	2	3	1	1				7	3	1	4	1.0
Dasher, Blue	3	6	1	1	35	15	5	66	35	1	1	9.4
Forktail, Eastern					20			20	20	20	7	2.9
Forktail, Fragile	10	2	2	1	3			18	10	1	3	2.6
Glider, Spot-winged					5			5	5	5	7	.7
Glider, Wandering	4	1	4	4	2			15	4	1	3	2.1
Meadowhawk, Autumn	15	1	1	1		4	14	36	15	1	2	5.1
Meadowhawk, Blue-faced		1						1	1	1	7	.1
Pennant, Halloween	1							1	1	1	7	.1
Pondhawk, Eastern	21	2	8	3	5	8	3	50	21	2	1	7.1
Saddlebags, Black	20	9	12	6	27	6	3	83	27	3	1	11.9
Saddlebags, Carolina	1							1	1	1	7	.1
Skimmer, Twelve-spotted	4	1	8	7	1	11		32	11	1	2	4.6
Skimmer, Slaty					1	1		2	1	1	6	.3
Skimmer, Widow	10	2	1	1	1			15	10	1	3	2.1
Whitetail, Common	16	4	15	3	5	16		59	16	3	2	8.4
unidentified species											8	.0
Total Individuals	142	126	120	50	150	83	39	710	150		None	101.4
Total Species	13	15	12	14	16	11	6	87	16		None	12.4

Information [Required]	2012	2013	2014	2015	2016	2017	2018	Sum	Max	Min	Misses	Average
Hours by Foot	54.7	46.7	39.1	54.4	84.4	33.5	38.1	350.9	84.4	33.5	None	50.1
Hours by Car	24.8	5.9	17.2	10.3	6.0	4.1	4.6	72.9	24.8	4.1	None	10.4
Miles by Foot	75.5	31.7	42.0	34.5	52.8	18.8	21.9	277.2	75.5	18.8	None	39.6
Miles by Car	211.5	129.8	100.5	110.2	62.8	49.5	62.2	726.5	211.5	49.5	None	103.8
Total Hours	79.5	52.6	56.3	64.7	90.4	37.6	14.0	395.1	90.4	.0	None	56.4
Total Miles	287.0	161.5	142.5	144.7	115.6	68.3	8.0	927.6	287.0	.0	None	132.5
Total Observers in Area	13	14	23	13	20	11	16	110	23	11	1	15.7
Total Parties in Area	10	8	12	8	15	9	9	71	15	8	1	10.1