



# **THE PEARLY-EYE 2010**

Field Reports of the NABA North Jersey Butterfly Club

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## **Pearly-Eye 2010**

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With the Assistance of Eileen Mahler  
and very helpful editing and comments by Joe  
Burgiel, Tom Halliwell, Jim Springer, Sharon  
and Wade Wander, and Chris Williams and of  
course the cooperation of 60+ observers.**

There were over 9000 records submitted in 2010 with about 8600 remaining after duplicates and questionable reports were eliminated. There were over 50 reports of trips that looked in vain for specially localized species, such that finding zero Arctic Skippers or Frosted Elfin is almost as important finding some.

I've learned a lot over the four years, both about butterflies and producing this report. The variations in weather and the coinciding of good butterfly weather with weekends, influences the likelihood that observers will encounter the very local species, for example, those listed by Sharon Wander as "Butterfly Species to Track in 2011".

**Highlights of 2010** were certainly the very many early records, Giant Swallowtail "abundance", Bronze Coppers in Vernon and invasion of Little Yellow. Many species registered all time early records, and a few all time late records.

**All-time Early Records:** Although 2009 produced only one all-time early (Oak Hairstreak) and one all time late (Hobomok Skipper) record, there were 30 all-time early records and 8 late records set or tied in 2010. This is truly amazing. Does it foretell long term trends. Certainly 2011 is NOT breaking many early records

**Pearly-Eye 2011.** Jim Springer has kindly offered to take over the Pearly-Eye for 2011.

## **WEATHER FOR 2010**

Hyperbole about weather has become common place, but even then 2010 was an exception in the competition to be the hottest, wettest and also driest.

The 2009-2010 winter was the third wettest on record (since 1895), and the wettest since 1979. Feb 2010 was the snowiest Feb in many parts of the state (although snow cover lasted longer in 2010-2011). The spring was the warmest ever and the year closed in 3<sup>rd</sup> place for warm temperatures. This accounts for the incredible number of record early reports, and the general consensus that many species of butterflies were out earlier this year. Most months had above average temperature and below average precipitation. Each month from March to Aug was among the hottest ever, making the period Jan-Aug the 2<sup>nd</sup> warmest ever, corresponding to lots of butterfly reports. Conversely, although most of Nov and Dec were not conducive to butterfly or watcher activity, the early season allowed some species (e.g. Delaware Skipper) to squeeze in an additional brood and set a late record.

**January:** No prolonged snow cover. Heavier snow in sNJ.

**February:** Temp reached 41F on 2/3, but last half of month quite snowy with accumulation and snow cover. In parts of NJ it was the snowiest Feb on record.

**March:** 60° on Mar 6. Heavy Noreaster on Mar 13th. First 70° day on Mar 18. Beautiful butterfly days Mar 17-21.

**April:** Tied for the warmest Apr on record. Excellent butterfly weather the first week with record temperature of 90F on Apr 7<sup>th</sup>,

**May:** Warmest spring since 1895.

**June:** Hottest June on record. Rainfall below normal.

**July:** Hot and dry. Overall rainfall was below normal, but inland areas such as Hunterdon Co. saw up to 10", while coastal areas felt a drought.

**Aug:** typical hot dry Aug. Overall the Jan-Aug 2010 period ranked 2<sup>nd</sup> hottest (only 1998 was warmer).

**Sept.** Warmer and dryer than average.

**Oct:** More normal temperatures and above average rain.

**Nov:** First killing frost Nov 1. Several clear warmish days in mid-month.

**Dec.** No butterfly weather, and no Dec. records of any butterfly including sNJ. 80% of days were below normal temperature.

Table 1. Lists the butterflies recorded in 2010. About 110 species of butterflies have been recorded in our region in recent years, of which about 95-105 are recorded in any year (97 in 2010 compared with 94 in 2009 and 100 in 2007 & 2008). The columns include the number of reports in 2010, 2009, 2008 and 2007. Each location by date observation constitutes a single data base entry. Multiple reports from different observers on the same date from the same location are combined into single entries. For each species, the percent of the total for all reports (8592 in 2010 and 4355 in 2009) is given. This is the relative frequency referred to in the text. This takes into account that there were almost twice as many reports in 2010 as in 2009. Also given are the earliest and latest 2010 records as well as the maximum count for 2010. The last two columns list the all-time earliest and latest dates, originally assembled by Tom Halliwell. Shading indicates a tie or record for 2010. Where the maximum number was from a 4JC, the maximum non-4JC report is given as well.

SPECIES	Percent of 2010 records	# reports 2010	# reports 2009	# reports 2008	# reports 2007	Earliest 2010 Date	Earliest 2010 Record	Maximum 2010 Season Count			Latest 2010 Date	Latest 2010 Record	All Time early record	All Time late record
								Date	Number	Location				
Pipeline Swallowtail	0.43%	37	0.09%	4	33	26	11-Apr MOR: Randolph Twp [VC]=1	8-Sep	14	BER: Palisades [VC]	25-Sep	SOM: Somerset [MG]=1	4/11/2010	11/9/2006
Black Swallowtail	2.04%	175	1.93%	84	99	106	20-Apr SUS: Canal Rd [mob]=1	11-Jul	32	MER: Mercer 4JC	3-Oct	SUS: Crater Lk [BS]=1	4/7/2000	10/19/2006
Giant Swallowtail	0.59%	51	0.37%	16	22	4	4-May SUS: Whittingham [SW, WW]=1	29-Jul	30-35	SUS: AT Lands [VC]	24-Sep	SUS: AT lands [VC]=1	5/4/2010	9/24/2010
Eastern Tiger Swallowtail	0.06%	572	5.40%	235	254	220	7-Apr SUS: KVSP [TH]=1	11-Jul	24/243	MER: Mercer 4JC MOR: Willowwood [JS]	25-Sep	MOR: Willowwood [JB, MB]=1	4/2/2006	10/11/2003
Canadian Tiger Swallowtail	0.00%		0.00%				Only NJ record was a 2001 SUS road kill [SW]							
Spicebush Swallowtail	3.19%	274	2.34%	102	188	157	29-Apr MER: Mercer Co Pk [HK]=2	7-Aug	80	MOR: Willowwood [NABA]	3-Oct	SUS: Whittingham [TH]=1	4/17/2004	10/14/2000
Zebra Swallowtail	0.00%		0.00%				NO RECENT RECORDS							
Checkered White	0.00%	0	0.00%	0	2	1	NO DEFINITE RECORDS IN 2010							
Cabbage White	9.14%	785	10.04%	437	483	394	17-Mar SOM: Somerset [PM]=1	Jul	821	MER: Mercer 4JC	15-Nov	SOM: Somerset Farms [PW]=1	1/29/2002	11/30/2003
Falcate Orange	0.40%	34	0.53%	23	33	10	4-Apr MOR: Mountainside Pk [JG]=2	11-Apr	40	MON: Assunpink [PW]	6-Jun	SUS: Walpack [JB, MB]=2 MID: Morgan Beach [GM]=2	4/4/2010	6/17/2003
Clouded Sulphur	4.43%	381	4.23%	184	170	140	11-Apr SOM: Fairview Farm [JB, MB]=1	3-Jul	48	MOR: Great Swamp [4JC]	13-Nov	SOM: Negri Nepote [PW]=3	2/25/2002	12/6/1994
Orange Sulphur	3.34%	287	5.26%	229	254	209	10-Apr SOM: Somerset [PW]=1	3-July	6	MOR: Great Swamp [4JC]				
Cloudless Sulphur	0.05%	4	0.02%	1	15	23	1-Aug SUS: Vernon [VC]=1	Sep 89	45	MOR: Mt Olive [JB, MB]	21-Nov	SUS: Franklinboro [VC]=1	3/7/2002	12/31/2004
Little Yellow	0.49%	42	0.00%	0	1	0	1-Jul MON: Sandy Hook 4JC=1	2-Sep	11	MON: Sandy Hook [KK]	25-Sep	MON: Sandy Hook [TH]=1	5/15/2004	11/4/2005
Sleepy Orange	0.01%	1	0.00%				6-Sep MON: Sandy Hook [VC]=1	4-Sep	80	MID: Pigeon Swamp [CL]	28-Oct	MID: Piscataway [MG]=1	8/17/2004	10/29/1992
Harvester	0.20%	17	0.30%	13	33	18	29-Apr MOR: Dismal Harmony [AK]=1	one report only						
American Copper	1.51%	130	1.56%	68	82	67	20-Apr MON: Big Brook [VC]=16	9-Oct	4	MOR: Dismal Harmony [AK]	13-Oct	MOR: Dismal Harmony [AK]=1	4/29/2010	10/20/2007
Bronze Copper	0.07%	6	0.00%	0	3	2	22-Jun SUS: Fredon [SW, WW]=1	10-Jul	7	119 SUS: Springdale 4JC 59 SUS: Montague [JB, MB]	17-Oct	SUS: Fredon [SW, WW]=2	4/4/2001	11/2/2003
Bog Copper	0.00%	0	0.02%	1	1	0	NO RECORDS IN 2010 LAST IN 2009	May	59	SUS: Montague [JB, MB]	24-Sep	SUS: Vernon [VC]=2	6/6/1986	9/24/2010
Coral Hairstreak	0.06%	5	0.16%	7	7	13	11-Jun MOR: Mountainside Pk [JG]=1	Six reports all singletons					6/22/2003	7/9/1994
Acadian Hairstreak	0.00%	0	0.00%	0			NO RECENT RECORDS. LAST IN 2005	1-Jul	6	MON: Sandy Hook [4JC]	1-Jul	MON: Sandy Hook [4JC]=6	6/8/1991	8/5/2003
Edwards Hairstreak	0.09%	8	0.05%	2	4	9	19-Jun SUS: Mecca Lake etc [JS, SW, CW, mob]=113	19-Jun	113	SUS: Mecca Lk [JS]	10-Jul	SUS: Springdale [4JC]=1	8/15/2004	8/2/2003
Banded Hairstreak	0.77%	66	0.32%	14	41	42	7-Jun SUS: Fredon [SW, WW]=1 MOR: Wildcat Ridge [VC]=7	20-June	19	MOR: Troy Meadows [JS+]	30-Jul	SUS: Fredon [SW, WW]=1	6/6/2004	8/13/2003
Hickory Hairstreak	0.00%	0	0.00%	0	7	10	NO RECORDS IN 2010 LAST REPORTED IN 2008	5-Jul	19	SUS: Swartswood [DA]			6/18/2004	8/2/1996
Striped Hairstreak	0.10%	9	0.09%	4	6	15	7-Jun SUS: Fredon [SW, WW]=1	3-Jul	2	MOR: Great Swamp [4JC]	10-Jul	SUS: Springdale [WW]=1	6/7/2010	8/24/2007
Oak Hairstreak	0.00%	0	0.02%	1	1	3	NO RECORDS IN 2010						6/14/2009	7/16/2005
Brown Elfin	0.06%	5	0.14%	6	12	2	11-Apr MID: Jamesburg [JS]=1 & MOR: Mountainside [AB]=1	30-Apr	10	SUS: Crater Lk Rd [JB, MB]	2-May	SUS: Walpack [SW, WW]=1	4/11/1998	6/7/2001
Frosted Elfin	0.00%	0	0.00%	0	0	0	NO RECORDS IN 2010. Last in 2005						4/28/1995	5/21/1992
Henry's Elfin	0.02%	2	0.07%	3	6	5	11-Apr MON: Sandy Hook [JG]=3	24-Apr	20	MON: Sandy Hook [PM+]	24-Apr	MON: Sandy Hook [mob]=20	4/7/2000	5/16/1998
Eastern Pine Elfin	0.02%	2	0.09%	4	9	10	11-Apr MON: Helmetta [JS]=1	two singleton reports			10-May	SUS: RiverBand Farm [NABA]=1	4/11/2010	6/8/1997
Olive Juniper Hairstreak	0.37%	32	0.48%	21	54	31	11-Apr MON: Sandy Hook [JG]=10	1-Jul	19	MON: Sandy Hook [4JC]	2-Aug	SUS: Fredon [SW, WW]=1	4/8/2002	9/14/1997
White M Hairstreak	0.17%	15	0.02%	1	3	12	25-Apr ESS: Montclair [AB]=1	20-Sep	2	SOM: Griggstown [SL]	13-Oct	MER: Trenton Marsh [CL]=1	4/25/2010	10/13/2010
Gray Hairstreak	0.85%	73	0.57%	25	68	49	2-Apr MOR: Mountainside Pk [VC]=2	11-Sep	11	MON: Sandy Hook [JS, PW]	24-Oct	MOR: Mountainside Pk [CM]=2	4/2/2010	11/2/2003
Red-banded Hairstreak	0.44%	38	0.32%	14	52	59	15-May MER: Mercer Co Pk [HK]=2 MON: Assunpink [JS]=4	15-May	4	MON: Assunpink [JS]	10-Oct	SUS: KVSP [JB]=1	4/30/2002	11/9/2006
Eastern Tailed-Blue	3.22%	277	3.44%	150	220	154	11-Apr MON: Assunpink [PM]=1	30-Aug	100+	SUS: AT Lands [VC]	17-Oct	SOM: Negri Nepote [MG+]=1	4/1/2000	10/31/1999
Spring Azure	0.84%	72	1.10%	48	68	35	25-Mar MOR: Boonton [VC]=1	11-Apr	40	MON: Assunpink [PM]	29-May	MID: Plainsboro [NABA]=1	3/15/2002	uncertain
Summer Azure	1.96%	168	1.88%	82	109	81	1-Jun SOM: D&R Canal [PM]=1 SUS: Vernon [VC]=2	11-Jul	8	MER: Mercer 4JC	26-Sep	SUS: High Point [BS]=1	uncertain	11/1/2003
Appalachian Azure	0.07%	6	0.16%	7	4	3	8-May SUS: Frankford [FW]=1	31-Jul	23	8 SUS: Whittingham [NABA]	4-Jun	MOR: Mendham [AK]=1	5/5/2008	6/30/2005
Northern Metalmark	0.08%	7	0.09%	4	4	9	19-Jun SUS: KVSP [TH]=2	5-Jul	6	WAR: White Lake [DA]	10-Jul	SUS: Springdale [4JC]=3	6/19/2010	8/2/2003
American Snout	0.42%	36	0.11%	5	9	10	6-May SUS: HyperHumus [mob]	2-Sep	25-30	MON: Sandy Hook [KK]	8-Sep	SUS: AT lands [VC]=1	4/17/2006	10/21/2000



SPECIES	Percent of 2010 records	# reports 2010		# reports 2009	# reports 2008	# reports 2007	Earliest 2010 Date	Earliest 2010 Record	Date	Number	Location	Latest 2010 Date	Latest 2010 Record	All Time early record	All Time late record
Vanegated Fritillary	0.16%	14	0.05%	2	31	32	27-Jun	SOM:Duke Farms(4JC)=1	17-Aug	27	MON:Assunpink[JS]	29-Sep	SOM:Negr Nepote [DS]=1	5/13/2004	11/15/2002
Great Spangled Fritillary	3.24%	278	4.06%	177	149	125	26-May	WAR:Hardwick Twp[SW,WW]=1	3-Jul	2	67 MOR:Great Swamp 4JC 63 SUS:Walpack [mob]	24-Sep	SUS:Fredon [SW,WW]=1	5/26/2010	10/14/2003
Aphrodite Fritillary	0.01%	1	0.00%	0	2	3	8-Sep	SUS:Vernon AT Land[VC]=1			ONLY ONE SIGHTING IN 2010			6/19/2004	9/27/2003
Silver-bordered Fritillary	0.08%	7	0.23%	10	13	7	15-May	MID:MountsMills[JS]=2	23-Jun	10	MID:MountsMills[HK]	22-Jul	SUS:BlueMtn Lake[JS]=1	5/7/2006	9/27/2003
Meadow Fritillary	0.42%	36	0.60%	26	47	32	21-Apr	WAR:White Lake[TH]=3	11-Jun	12	SUS:Canal Rd[VC]=3	Sep-31	SUS:AT lands [VC]=2	4/16/1995	10/17/1998
Silvery Checkerspot	0.00%		0.00%					NO RECORDS IN 2007-2010			A 2006 REPORT WAS THE FIRST IN A LONG TIME				
Harris' Checkerspot	0.00%		0.00%					NO RECORDS IN 2007-2010			LAST REPORTED 2003			6/11/2003	6/23/1994
Pearl Crescent	4.46%	383	4.48%	195	266	184	20-Apr	SUS:Canal Rd [mob]=1	27-Aug	130	SUS:Whittingham[SW,WW]	3-Nov	SOM:Negr Nepote[PW]=1	3/26/2002	11/15/2004
Northern Crescent	0.00%		0.00%					LAST REPORTED 1996							
Baltimore Checkerspot	0.08%	7	0.28%	12	21	20	2-Jun	SUS:Vernon AT Land[VC]=1	26-Jun	16	SUS:Canal Rd[NABA]	27-Jun	SUS:High Point & Frankford Twp [JB,MB]=2	6/2/2010	8/2/2003
Question Mark	0.91%	78	0.87%	38	54	75	22-Apr	MOR:MountainsidePK[VC]=1	28-Jul	8	SUS:AT Lands[VC]	28-Oct	MER:Trenton Marsh[CL]=1	3/11/2001	1/6/2007
Eastern Comma	1.37%	118	2.16%	94	101	90	16-Mar	SOM:D&R Canal[PW]=1	20-Apr to 30-Jul	10	three Sussex Co reports	14-Nov	MID:Plainsboro[CL]=1	2/21/2002	11/27/2003
Gray Comma	0.00%	0	0.00%	0	0	0		NO RECORDS IN 2010. ONLY ONE RECENT RECORD IN 2004							
Compton Tortoiseshell	0.08%	7	0.28%	12	13	19	18-Mar	BER:Campgaw[CM]=1	21-Mar	17	MOR:Rockaway Twp[RR]	25-Jun	SUS:Whittingham [mob]=2	2/26/2002	11/18/2001
Mourning Cloak	0.70%	60	1.70%	74	68	69	7-Apr	SUS:KVSP[TH]=1	3-Apr	9	SUS:Crater Lk Rd[JB,MB]	2-Oct	MOR:Madison Twp[JG]=1	2/19/2002	12/16/2006
Milbert's Tortoiseshell	0.00%	0	0.00%	0	2	3		NO DEFINITE RECORD IN 2010 Last reported 2008						4/10/2005	11/21/2003
American Lady	2.51%	216	2.62%	114	136	153	7-Apr	SUS:AT Lands[VC]=1	15-May	40	MOR:Mountainside[JG]	24-Oct	SUS:KVSP[TH]=1	4/3/2002	11/21/2003
Painted Lady	0.15%	13	0.57%	25	33	13	11-Apr	MON:SandyHook [JG]=2	15-May	3	MOR:Mountainside[JG]	25-Sep	MOR:Willowood [JB,MB]=1	4/5/05	12/22/2001
Red Admiral	3.45%	296	0.85%	37	83	192	4-May	three reports from SUS&SOM	27-Jun	600	SUS:Waikuli NWR [KW]	29-Oct	SOM:Somerset[MG,JB2]=1	3/24/2008	11/22/2003
Common Buckeye	1.49%	128	0.28%	12	62	38	21-May	SUS:Vernon [VC]=1	11-Sep	65	MON:Sandy Hook[JS,PW]	15-Nov	SOM:Negr Nepote[PM]=1	3/12/1990	12/16/2006
Red-spotted Purple	1.65%	142	1.13%	49	53	70	2-May	WAR:White Lake[JB,MB]=3	2-Jun	22	SUS:Walpack [mob]	10-Oct	SUS:HyperHumus [TH]=1	5/2/2010	10/26/2003
"White Admiral"	0.02%	2	0.03%	2	0	2	2-Jun	SUS:Walpack [JB&mob]=1	10-Aug	1	ONLY TWO SINGLETONS				
Viceroy	1.33%	114	1.22%	53	70	76	17-May	SUS:KVSP[JB,MB]=2	28-Aug	15	MOR:Mt.Olive [TH]	12-Oct	MOR:Mt.Olive [TH]=1	5/15/01	10/14/2008
Hackberry Emperor	0.48%	41	0.21%	9	22	35	2-Jun	SUS:Walpack [JB&mob]=1	29-Jul	6	SUS:AT Lands[VC]	29-Sep	SUS:Swartswood [TH]=1	6/2/2004	10/10/1994
Tawny Emperor	0.22%	19	0.32%	14	19	22	15-Jun	SUS:Whittingham [TH]=1	19-Aug	5	MON:Sandy Hook [KK]	11-Sep	MON:Sandy Hook [JS,PW]=1	6/7/2004	9/27/2001
Northern Peary-Eye	0.50%	43	0.57%	25	29	27	19-Jun	SUS:KVSP [TH]=2	10-Jul 26	8	SUS:Springdale 4JC SUS:Canal Rd[NABA]	4-Sep	SUS:DWGNRA [TH]=2	9/4/2000	9/4/2010
Eyed Brown	0.12%	10	0.14%	6	9	6	2-Jun	SUS:AT Lands[VC]=2	26-Jun	100+	SUS:Canal Rd[NABA]	27-Aug	SUS:AT Lands [DA]=1	6/4/2004	7/31/2006
Appalachian Brown	0.80%	69	0.90%	39	45	40	26-May	SUS:Whittingham [TH]=1	10-Jul	78	SUS:Springdale 4JC	10-Sep	SUS:Fredon [SW,WW]=1	5/22/2004	9/14/2003
Little Wood-Satyr	1.49%	128	2.37%	103	117	103	13-May	SUS:Sparta [SW,WW]=1	22-May	100	MOR:Schooly Mtn [JS]	29-Aug	SOM:Warren Twp [JS]=1	5/11/2001	9/6/2007
Common Ringlet	0.63%	54	0.53%	23	56	45	5-May	SUS:Camp Olympia [FW]=1	24-May	100	SUS:Fredon [SW,WW]	19-Sep	SUS:Berkshire Val WMA [mob]	5/6/2010	9/18/2002
Common Wood-Nymph	1.49%	128	1.81%	79	92	88	11-Jun	SUS:AT Lands [VC]=1	11-Jul	341	MER:Mercer 4JC				
Monarch	4.30%	369	5.28%	230	263	275	7-May	SUS:Vernon [VC]=1	15-Jul	60	MOR:Schooly Mtn[JS]	21-Sep	MOR:Mountainside [CM]=1	6/11/2010	9/27/1997
Silver-spotted Skipper	3.98%	342	4.23%	184	187	141	22-Apr	MOR:Mountainside [VC]=1	19-Jul 19	159	SUS:Springdale 4JC MER:Mercer 4JC	30-Oct	SUS:Hamburg [VC]=1	4/15/2006	11/23/2003
Long-tailed Skipper	0.00%	0	0.02%	1	4			NO RECORDS IN 2010 LAST RECORDED 2009	11-Jul	115	MOR:Willowood [JS]	13-Oct	MER:Trenton Marsh [CL]=1	4/22/2010	10/13/2010
Hoary Edge	0.15%	13	0.32%	14	6	19	5-Jun	MOR:Wildcat Ridge[JS]=7	21-Jul	7	MOR:Wildcat Ridge[mob]	12-Jul	SUS:KVSP[TH]=1	5/22/2002	7/21/2001
Southern Cloudywing	0.09%	8	0.07%	3	9	16	9-May	SOM:Negr Nepote[PW]=1	11-Jun	6	SUS:Walpack [JB,MB]	14-Aug	SOM:Gnggstown Grass [mob]=1	5/6/2010	9/2/2007
Northern Cloudywing	0.45%	39	0.90%	39	33	30	5-May	SUS:AT Lands [VC]=1	15-May	22	MOR:Mountainside [JG]	26-Jun	SUS:Canal Rd [NABA]=1	5/6/2010	7/26/2007
Dreamy Duskywing	0.08%	7	0.18%	8	13	9	24-Apr	MOR:Wildcat Ridge[JS]=2	15-May	6	MON:Assunpink [JS]	11-Jun	MOR:Mountainside [JG]=1	4/18/1998	6/26/2005
Sleepy Duskywing	0.00%	0	0.02%	1	2			NO RECORDS IN 2010 LAST RECORDED 2009	21-May 6	6	SOM:Sourlands [JG]			4/13/2006	6/1/2005
Juvenal's Duskywing	0.65%	56	0.96%	42	75	39	7-Apr	SUS:Cranbury Lk [AK]=1	22-Apr	25+	MOR:Mountainside [VC]	7-Jun	MOR:Wildcat Ridge[JB,MB]=1	4/7/2010	6/26/2003
Horace's Duskywing	0.35%	30	0.25%	11	28	46	9-Jul	MID:Plainsboro [HK]=1	11-Jul	4	MER:Mercer 4JC MOR:Willowood [JS]	19-Sep	BER:Overpeck Crk [BS]=1	5/10/2005	10/18/2006
Wild Indigo Duskywing	1.90%	163	0.94%	41	62	67	4-Apr	MOR:Mountainside [JG]=1	Aug	50+	MOR:Mt.Olive [TH]	28-Sep	MID:Woodbridge [BS]=1	4/4/2010	10/23/1993
Com Checkered-Skipper	0.58%	50	0.28%	12	40	34	27-Jun	SOM:Duke Farms(4JC)=6	22-Sep	175	SUS:KVSP[JS,JB,TH]	15-Nov	SOM:NegrNepote [PM]=2	4/23/2007	11/15/2010
Common Sootywing	0.14%	12	0.18%	8	9	15	5-May	MER:Mercer Pk [HK]=1	28-Jul	17	WAR:Depew Is [SW,WW]	21-Aug	SUS:Walpack [NABA]=1	4/30/2002	9/19/2005
Arctic Skipper	0.00%	0	0.00%	0	0	0		NO RECORDS 2010 2009 or 2008 or 2007						5/20/2001	6/21/1997
Swarthy Skipper	0.23%	20	0.28%	12	14	21	29-May	MID:MountsMills[NABA]=5	29-May	13	MID:Plainsboro [NABA]	28-Aug	MOR:Willowood [JS,CW]=2	5/22/1995	9/30/07

SPECIES	Percent of 2010 records	# reports 2010	2.43%	# reports 2008	# reports 2008	# reports 2007	Earliest 2010 Date	Earliest 2010 Record	Date	Number	Location	Latest 2010 Date	Latest 2010 Record	All Time early record	All Time late record	
														5/21/2004	10/19/2006	
Least Skipper	2.68%	230	2.43%	106	117	118	15-May	MON:Aasunpink [JS]=1	20-Jun	150	MOR:Troy Meadows [JS+]	2-Oct	SUS:Muckahaw Pond[TH]=4	5/21/2004	10/19/2006	
European Skipper	0.56%	48	0.48%	21	22	32	20-May	SUS:Whittingham [TH]=3	15-Jun	75	SUS:Whittingham[JB,MB]	3-Jul	MOR:Great Swamp [4JC]=3	5/20/2010	7/14/01	
Fiery Skipper	0.10%	9	0.07%	3	27	29	4-Aug	SUS:Fredon[SW,WWW]=1	9 SINGLETON RECORDS			7-Oct	SUS:Mt.Olive [TH]=1	7/3/2004	11/26/2001	
Leonard's Skipper	0.16%	14	0.09%	4	2	6	8-Aug	SUS:AT Lands [VC]=1	14 SINGLETON RECORDS			20-Sep	SUS:Fredon[SW,WWW]=1	8/8/2010	9/28/2005	
Cobweb Skipper	0.05%	4	0.05%	2	5	3	22-Apr	MOR:Mountainside[VC]=1	15-May	20	MOR:Mountainside[JG]	15-May	SUS:Riverbend Farm[NABA]=2	4/22/2010	6/11/2008	
Indian Skipper	0.33%	28	0.23%	10	18	13	15-May	WAR:White Lake[JB,MB]=2	15-May	40	MOR:Mountainside[JG]	11-Jun	SUS:AT Lands [VC]=1	5/8/1990	8/30/2003	
Peck's Skipper	3.11%	267	2.53%	110	155	107	10-May	MER:Mercer Co Pk[HK]=4	24-Jul	538	Raritan 4JC	21-Oct	SOM:Warren Twp[JS]=1	5/7/06	10/23/1995	
Tawny-edged Skipper	1.56%	134	0.96%	42	82	57	10-May	SUS:KVSP [TH]=1	30-Aug	30+	SUS:AT Lands [VC]	29-Sep	MID:North Brunswick[SL]=7	5/10/2010	10/14/1996	
Crossline Skipper	0.34%	29	0.34%	15	20	24	11-Jun	SUS:AT Lands [VC]=1	24-Jul	97	Raritan 4JC MID:North Brunswick[SL]	10-Jul	SUS:Springdale 4JC	5/11/2002		
Long Dash	0.07%	6	0.21%	9	2	11	22-May	MOR:Schooley Mtn [JS]=3	22-Jul	7	SUS:Flatbrookville[mob]	4-Sep	MOR:Mt.Olive[JB,MB]=1	5/11/2010	10/2/1994	
Northern Broken-Dash	0.79%	68	0.99%	43	63	58	10-Jun	MER:Mercer Co.Pk[HK]=3	31-May	80+	MOR:Schooley Mtn[mob]	31-May	SUS:Arctic Meadows [SW,WWW]=	5/22/2010	7/8/2008	
Little Glassywing	0.94%	81	1.29%	56	81	58	2-Jun	MID:Plainsboro [HK]=1	30-Jun	10+	MOR:Randolph Twp [mob]	19-Aug	SUS:AT Lands [VC]=1	5/27/1995	10/11/2004	
Sachem	1.01%	87	1.06%	46	111	86	8-May	SOM:Somerset [PW]=1	20-Jun	50	MOR:Troy Meadows [JS+]	28-Jul	SUS:AT Lands [VC]=3	6/1/2007	8/18/02	
Arogoa Skipper	0.01%	1	0.05%	2	1	0	30-Jun	MOR:Randolph Twp [mob]=1	17-Aug	55	SOM:Somerset Farms [MG]	3-Nov	SOM:Somerset Farms [PW]=1	5/8/2002	11/3/2010	
Delaware Skipper	0.49%	42	0.76%	33	47	43	15-Jun	SUS:Fredon[JB,MB]=1	ONLY ONE RECORD IN 2010			6/30/2002	8/2/2003			
Mulberry Wing	0.30%	26	0.25%	11	15	11	25-Jun	SUS:Whittingham[mob]=3	30-Jun	20+	MOR:Randolph Twp [mob]	23-Sep	SUS:Andover[SW,WWW]=1	6/12/2004	9/23/2010	
Hobomok Skipper	1.02%	88	0.90%	39	55	47	5-May	SUS:Whittingham[JB,MB]=1	3-Jul	92	MOR:Great Swamp 4JC	21-Jul	SUS:Fredon[SW,WWW]=1	6/25/2010	8/26/2003	
Zabulon Skipper	1.36%	117	1.13%	49	95	94	1-May	MER:Trenton Marsh[CL]=1	24-May	20	SUS:Fredon [SW,WWW]	29-Jul	MER:Trenton Marsh [CL]=1	5/6/2010	7/30/2009	
Broad-winged Skipper	0.33%	28	0.57%	25	24	47	1-Jul	MON:Sandy Hook[4JC]=6	13-Aug	32	SOM:Glenhurst Mead.[JS]	14-Sep	SUS:Whittingham[SW,WWW]=1	4/30/2004	10/17/1997	
Dion Skipper	0.06%	5	0.11%	5	8	18	25-Jun	SUS:Whittingham [mob]=8	25-Jul	100+	BER:DeKorte [NABA]	1-Sep	MER:Trenton Marsh[CL]=c10	6/28/06	9/22/2004	
Black Dash	0.30%	26	0.48%	20	30	28	2-Jun	SUS:AT Lands [VC]=1	25-Jun	8	SUS:Whittingham [mob]	24-Jul	MID:Raritan 4JC [JS]=1	6/20/1998	8/8/2004	
Dun Skipper	1.47%	128	1.52%	66	92	76	29-May	MID:Mounts Mills [NABA]=2	10-Jul	56	SUS:Springdale 4JC	28-Jul	SUS:Camp Olympia [FW]=1	6/2/2010	8/24/2003	
Dusted Skipper	0.07%	6	0.09%	4	4	6	15-May	MOR:Mountainside [JG]=11	11-Jul	30+	SUS:DWGNRA [SW,WWW]	5-Sep	MOR:Willowood[JB,MB]=1	5/25/2004	10/9/2007	
Pepper and Salt Skipper	0.03%	3	0.05%	2	4	4	21-May	SUS:High Point [mob]=3	15-May	11	MOR:Mountainside [JG]	11-Jun	SUS:Camp Olympia[FW]=1	5/13/2006	6/20/2006	
Corn Roadside-Skipper	0.00%	0	0.02%	1	1	1	NO RECORDS IN 2010. LAST REPORTED IN 2009			30-May	9	SUS:High Point [JB,MB]	5-Jun	SUS:High Point [NABA]=4	5/19/2001	6/21/1997
Ocola Skipper	0.01%	1	0.00%	0	0	1	6-Sep	MON:Sandy Hook [VC]=1	Only one record in 2010					5/14/2000	8/11/1998	
<b>TOTAL RECORDS:</b>	<b>100%</b>	<b>8592</b>	<b>100%</b>	<b>4355</b>	<b>5752</b>	<b>5188</b>										

## REFLECTIONS ON SOURCES OF ERROR IN THE PEARLY-EYE DATA BASE

Michael Gochfeld

As several reviewers identified errors in the data base from which the Pearly-Eye text is drawn, I had to reflect on how these errors occurred, what can be done to minimize them, and what impact they might have on future users of this (or indeed any data base). There is always the notion of *caveat emptor*, loosely translated as "let the user of these data beware." They were compiled by mortals.

There are various source of error that can creep into a large data base and there are several approaches to error checking to minimize errors, particularly important ones.

And we can all probably add other error sources to the following list.

### OBSERVER ERROR

Misidentification  
 Mis-recollection of species, date, location, number  
 Mis-reporting or mis-typing (typographic errors, transposition errors, auto-fillin errors)

### SUBMISSION ERRORS

Duplicate submissions with different place names  
 Observer not responding to questions (doesn't respond, doesn't remember, no written records)

### COMPILER ERRORS

Compiler fails to see, download or incorporate observations.  
 Mis-typing or mis-copying from submitted report into data base  
 Spreadsheet manipulation errors (auto-fillin errors, sorting errors, miscopying from one record to another)  
 Mis-attribution or scrambling (species-place-date combination somehow scrambled)  
 Failing to recognize unlikely combinations (species, date, place)  
 Accepting or rejecting identifications incorrectly

### DEFENSES AGAINST ERRORS

Compiler(s) familiarity with species-location-date-observer combinations  
 Double-checking all entries  
 Using various sort sequences to catch duplicate entries  
 Questioning difficult identifications or local or rare species  
 Sharing data with local experts to spot or question unlikely records.  
 Linking all reports to original emails

### ERRORS OF OMISSION

Some observers don't submit observations  
 Sometimes compiler overlooks a submission and fails to get it into the data base

I thank the careful readers who helped reduce the errors as much as possible.

## Annotated List of North and Central New Jersey Butterflies for 2010

Edited by Michael Gochfeld with the assistance of Eileen Mahler  
and review by Joe Burgiel, Tom Halliwell, Jim Springer, and Sharon and Wade Wander

Observers submitted more than 9000 butterfly reports for 2010. After winnowing out duplicates, the final count is about 8600 reports far more than in any preceding year. These reports by 60+ observers included 97 species and over 60,000 individual butterflies. The 97 species in 2010 compares with 94 in 2009, 100 in 2008 and 100 in 2007.

**DISCLAIMER:** I have questioned “unlikely” records submitted on rare or out-of-range species, and have requested photo documentation in such cases. Non-accepted, but not impossible records, included a putative Milbert’s Tortoiseshell at Sandy Hook, an unlikely location for an elusive species. Users of the Pearly-Eye information should take into account that for some sight records uncertainty ranges from possible to likely. Also, some rare species may be overlooked because of their presumed unlikeliness (for example, Checkered White occurrences may be obscured among the abundant Cabbage Whites).

Also, for many habitat specialists or localized species, the number of reports depends on exactly when and how often observers visit those sites at the right season in a given year.

For each species the frequency of reports is obtained by dividing the number of 2010 reports for the species by the total number of 2010 reports (8600). This takes into account that the number of observations of any species is dependent on the overall amount of field activity. Thus Dun Skipper with 125 reports in 2010 (1.46% of total) was relatively less frequent than in 2009 (66 reports = 1.52% of total). This is an imperfect metric,

Sharon Wander kindly provided detailed copy-editing, however, any typos that remain are my own responsibility.

M GOCHFELD

**Pipevine Swallowtail:** Observations are confused because of many releases of captive-reared butterflies in several places. Some of these releases have “taken,” with recurrent sightings of “wild” adults in SOM:Somerset, prior to release of 2010 adults. There were about 37 sightings, unrelated to recent releases. The 4/11 report from MOR:Randolph Twp [VC] was two weeks earlier than the previous record. A sparse Apr-May brood was followed by a five-week gap, and then, judging from reports of worn and fresh individuals, two overlapping broods in Jul-Aug and Aug-Sept. The only report from its Palisades stronghold was 14 on 8/9 [VC], well below the 50 reported on 8/10/2008 [VC].

**Black Swallowtail:** 175 records, but relatively similar proportion of total reports (2.0% in 2010 vs 1.9% in 2009). Eight reports from SUS, MOR, MON between 4/20 and 4/24, then a gap followed by daily reports 5/4 to 5/9, followed by another one-week gap, with only nine records from 5/15 to 6/26. Then reported almost daily from 6/26 to 9/25 with several doubledigit days.

**Giant Swallowtail:** After many 2008 late-summer sightings, at least 16 singleton records from 8/1 to 9/6/2009, and the discovery of caterpillars on Prickly Ash in fall 2009, overwintering followed by an early spring 2010 brood was anticipate. This expectation was

confirmed by 11 reports from 5/4 to 5/7/2010 including double digits at SUS:AT Lands. Reports of this first brood continued intermittently to 6/16. Second and larger brood reported from 7/10 to 8/10 with six double-digit days including 30+ on 7/29 SUS:AT Lands [VC]. Sightings became more sparse after Aug 14, with a 3<sup>rd</sup> brood evident in late Aug & Sept. The 5/4 and 9/24 records were the earliest and latest reported for this species in nNJ. Hopefully these records confirm re-establishment of this species in NJ.

**Eastern Tiger Swallowtail:** Relatively the same frequency as in 2009 (572 reports = 5.4%). With almost continuous records after 4/7, it is difficult to discern discrete broods. Double digit days clearly increase from 4/30 to 5/15, then none in the ensuing 5 weeks until the 4JCs began on 6/27. A clear resurgence of high counts occurred from 7/10 onward, with triple-digit days after 7/21. The high counts continued through mid-Aug. After a double--digit count on 9/11 MON: Tatum Park [JS,PW], reports tapered off quickly to the last sighting on 9/25 MOR:Willowood [JB,MB=1]. At SUS:Whittingham at least 10 black females were seen among 150+ Tigers [NABA].

**Spicebush Swallowtail:** First on 4/29 MER:Mercer Pk [HK=1], then regularly through May, June, and July. Double-digit days in mid to late-July probably represent 2<sup>nd</sup> brood. More double digits from Aug 6-19. Single numbers continued throughout Sept.

**Checkered White:** The Newark Airport colony site was visited on four occasions. Most whites seen there are Cabbage White, but unidentified whites were seen on 6/16 [MG=1] and 6/30 [TV=4]. There were no confirmed reports in 2009, two in 2008, and one in 2007. The colony (or former colony), spans the border of Union and Essex counties. Checkered Whites frequently nectar on Camphor Weed blooming along the fenceline of Parking lots P3 and P1 which are mostly in Union Co.

**Cabbage White:** This species accounts for 9.1% of all reports. The 3/17 SOM:Somerset record ties the earliest 2009 report. Last seen 11/15 SOM:Somerset Farms [PW=1]. No unusual numbers.

**Falcate Orangetip:** Relatively fewer reports than in 2008 or 2009 of this highly local species with populations in northwestern (SUS & MOR) and central (MON-MER) NJ. 4/4 MOR:Mountainside Pk [JG=2] was a record early date (previous record 4/8/2000). Reported at Mercer Co. Park laying on Winter Cress (*Barbarea vulgaris*) but nectaring on Garlic Mustard [HK]. At Riverbend Farm (in Flatbrookville) uses Tower Mustard (*Arabis glabra*) as a host plant rather than Smooth Rock Cress (*A. laevigata*) as most other populations in nNJ do, and emerges later in order to do so [JB].

**Clouded Sulphur:** Relatively as frequent in 2010 as in recent years. First on 4/11 SOM:Fairview Farm [JB=1] then regularly with no gaps to the final date 11/13 SOM:Negri Nepote [PW=1]. However, numbers increased from 6/19 to 7/4 with additional peaks



7/19 to 8/21, 9/4 to 9/25, and 10/8 to 10/17. Double digits in early Oct is typical for this species.

**Orange Sulphur:** Substantially fewer records relatively in 2010 (3.3% of total) vs 2009 (5.2%) or 2008 (4.4%). Not reported until 4/10, with few Apr records. Reported frequently from 4/30 through 10/26 with a two-week gap followed by three Nov. sightings. Only two double-- digit days before 6/26. No obvious resurgence until 8/31, then numbers increased through 9/22. The triple-digit days at SOM: Negri Nepote in July 2009 were not repeated in 2010.

**Cloudless Sulphur:** Four records: 8/1 SUS:Vernon [VC=1], then three records at MON:Sandy Hook 9/2 [KK=11], 9/11 [JS,PW=2], and 9/25 [TH=1]. Only one record in 2009 compared with 15 in 2008 and 23 in 2007.

**Little Yellow:** After zero records in 2009 and one in 2008, 2010 represents an irruption year, including many nwnNJ records of this typically coastal southern immigrant. First reported 7/1 MON:Sandy Hook [4JC=1]—not a record early date., but preceded any South Jersey records. Next found 7/22 with several late July-early Aug reports. Then almost daily from Aug 26 to Sept 25. The season total of 42 reports was unprecedented, with 12 reports of double digits, including about 80 at MID:Pigeon Swamp [CL].

**Sleepy Orange:** One report 9/6 MON:Sandy Hook [VC=1], after no reports 2007-2009.

**Harvester:** Only 16 reports, relatively fewer than in 2009 (0.2% vs 0.3%), and only 3 of these away from the MOR:Dismal Harmony site where the 4/29 [AK=1] report was more than two weeks earlier than previous record (5/14/2008). This site (discovered in 2007 by Koster) was visited repeatedly, providing some information on at least three distinct broods. Sightings were grouped into 4/29-5/26, 8/13-9/14, and 10/8-10/13. It was "absent" (not found) at Dismal Harmony on 5/10 & 5/20, 5/30-6/30 (one Walpack record on 6/14), and absent again in most Aug visits. One report came from the traditional SOM:Scherman Hoffman site (where missed in 2009), two from SUS: Flatbrook-Roy WMA.

**American Copper:** Probably a typical year, with same relative frequency as in 2009 (1.5%), and relatively slightly more frequent than in 2008 and 2007. Many double-digit days, particularly early in season. Only triple-digit day was 7/10: SUS:Springdale 4JC=110.

**Bronze Copper:** A season highlight was the six reports, all from SUS, of this rare and often missed species. First 6/22 SUS:Sparta Mtn [SW,WW=1] was "worn." Next 6/26 SUS:Canal Rd [NABA=1]. These represent an early brood. Three Sept. records— from SUS:AT Lands on 9/8, and twice on 9/24—were in different areas, probably far enough apart to represent separate colonies [VC]. 9/24 was a record late date (previously 9/4).

**Bog Copper:** Another species on Sharon Wander's "Butterfly Species to Track"t, but no 2010 records. Single records in 2008 and 2009. None in 2007. A highly local species that must be sought specifically. NABA-nNJ members found it on several trips southward to Lakehurst, Collier's Mills, and Parker Preserve. A trip to known nNJ habitat at Mashipacong Bog was spoiled by poor weather.

**HAIRSTREAKS:** Most hairstreaks, except Banded were remarkable by their continued virtual absence.

**Coral Hairstreak:** Is it spiraling into oblivion, with only 5 reports compared with 7 in 2009 and 2008? Recorded from MOR, MID, MER, MON only.

**Edwards Hairstreak:** Found near Scrub Oak in nwnNJ and sNJ. Upsurge to 8 reports in 2010, all from SUS between 6/19 and 7/10; at least five separate sites: AT Lands, AT above Mecca Lake (high of 113 on 6/19 [mob], Crater Lk. Rd, Sunrise Mtn, Stokes SF.

**Banded Hairstreak:** Recovered substantially in 2010 with 66 records after being designated "a candidate for the best (or worst) disappearing act in 2009, with only 13 reports." Records widely scattered with no unusual dates or numbers.

**Hickory Hairstreak:** No records in 2010 or 2009. This species is difficult to identify, so photo-documentation and study are recommended. Has it declined? Are people not bothering, or more are they more reluctant to identify it? Were some previous records mis-identified? Perhaps all of the above. Reports should be supported with a photo wherever possible.

**Striped Hairstreak:** Same status for this declining species as in 2009. First on 6/7 SUS:Fredon [SW,WW=1].was a record early date (previous record 6/16). All 9] records in north in SUS, MOR, BER. But seen regularly by NABA-nNJ members on trips to Ocean Co. (Lakehurst, Colliers Mills).

**Oak Hairstreak:** After the record early 2009 observation, this erratic species was not recorded in 2010. Previously three reports in 2007, and one each in 2008 and 2009.

**Brown Elfin:** In nNJ, a highly local species that must be sought out. Fewer reports (5) in 2010 than in 2009 (6) and 2008 (12). First on 4/11 MID:Jamesburg [JS=1] and MOR:Mountainside [AB=1] tied previous early record. Continues to be reliable at Crater Lake Rd and also along ATat Millbrook Gap in Apr. Also seen at MOR:Mountainside Pk, with the last 5/2 at SUS:Walpack [SW,WW=3].

**Hoary Elfin:** *This Bearberry specialist probably occurs in scattered colonies from Ocean Co. southward, but all 2009 south Jersey records (5) are from the BUR:Warren Grove site 4/13 to 5/9. Max 30+ there on 5/9 [NABA trip]. This species has a wildly disjunct range from Nova Scotia to Alaska. No records in our area, except for an historic record from Middlesex Co. (no data available). South Jerseyans have been challenged to find it away from Warren Grove [Jack O'Connor]*

**Frosted Elfin:** No records since 2005. Several of the Elfin's are highly localized and the number of records reflects whether they were looked for or not. Vain searches therefore become notable. Jim Springer visited its former Assunpink site 3x in Apr-May 2010. It was declining, before habitat management, and its host, *Baptisia*, is still present. This species is vulnerable to bad habitat management practices. Most South Jersey records are from Cape May Co: Lizard Tail Swamp, but that population was greatly reduced by the prolonged flooding in 2010 which wiped out much *Baptisia*, reflected in smaller numbers in 2011 [DS2].



**Henry's Elfin:** This holly feeder occurs mainly on the Coastal Plain, and our records are only from MON:Allaire & Sandy Hook, although holly occurs more widely. Two 2010 records at Sandy Hook on 4/11 [JG=3] and 4/20 [mob=20]. In nNJ and cNJ Henry's is not a species you just bump into while looking for other butterflies. However, it is widespread in sNJ along with its Holly host [DS2].

**Eastern Pine Elfin:** Another highly local species on Sharon Wander's list (Pearly-Eye 2009). This species occurs near pines in nwNJ, mainly in SUS, and in the sNJ Pine Barrens, with no sites known in between. The only two reports in 2010 were 4/11 MID:Helmetta [JS=1] (a northern tip of pine barren habitat) and 5/16 SUS:Riverbend Farm [JB=1].

**'Olive' Juniper Hairstreak:** This is a fairly conspicuous and widespread hairstreak, corresponding to its widespread host, Eastern Red Cedar. Relatively fewer reports in 2010 (32 = 0.4%) than in 2009 (21 = 0.5%), and much less than in 2008 (54 reports). First record was 4/11 MON:Sandy Hook [JB=10]. Spring records continue to 5/16, then a gap until summer brood appeared 6/27 SOM:Duke 4JC=3.

**Hessel's Hairstreak:** Only described in 1950, this species ranges north to Maine, but despite records from Long Island and Westchester, and Ocean-Burlington southward., none are known for this White Cedar specialist from MER-MON north.

**White M Hairstreak:** 15 records is substantially more than 2009 and 2008, but there were 12 in 2007 despite far fewer total submissions. Reports widely scattered including all-time early report 4/15 ESS: Montclair [AB=1] and all-time late record 10/13 MER:Trenton Marsh [CL=1]. Previous records were 4/28/89 and 10/9/06.

**Gray Hairstreak:** Reports up from 2009, and widely scattered. All-time early record of 4/2 MOR:Mountainside Pk [VC=2] (previously 4/3/2002).

**Red-banded Hairstreak:** Relatively more reports for this southerly species in 2010 (38=0.4%) than in 2009 (14=0.3%), and a more typical distribution, mainly MOR and SOM, with only one PAS record. The only SUS record was also unusually late: 10/10 SUS:KVSP [JB=1], after a three-week gap.

**Eastern Tailed-Blue:** No trends obvious from 2007 to 2010. Double-digit days 4/22 to 5/2, then not again until 6/13 to 6/27. and 7/22 through Aug. Triple-digit days 8/30-9/11 suggest a large 4<sup>th</sup> brood, and continued common with many double-digit days to 9/29. Then a two-week gap to the two Oct reports.

**Spring Azure:** Only one Mar report, but many beginning 4/1. What seems most striking is the relative dearth of records from cNJ: HUN+MID+SOM+ MER+MON=10. We used to see this often in SOM:Somerset. Is the apparent decline an artifact of observation activity? Most records 4/1 to 5/6, after which a one-week gap with only 4 mid-late May records. *Pearly-Eye 2008* carried an article on the current suggested taxonomy of azures in NJ. Unless one makes a concerted effort to identify individuals to species or at least to color form, it is somewhat arbitrary to divide azure sightings into spring and summer. Our spring-flying Spring Azures tend to be bright blue, while our summer-flying "Summer" Spring Azures are often

quite white and moth-like. Holly Azure could occur in late spring on Coastal Plain (MON) and Cherry Gall occurs at the same time in northwest NJ (D. Wright in Pearly-Eye 2008).

**Summer Azure:** Relative frequency of reports similar to 2009. The 6/1 early date is an arbitrary determination. The cutoff seems reasonable, with a clear decline in spring records after 5/6 and only 4 records 5/14-5/29. No double-digit days other than 4JC.

**Appalachian Azure:** Only six records 5/8 to 6/4—relatively fewer than 2007-2009. This Black Cohosh specialist is among the local species that needs to be sought out in areas with its hostplant.

**Northern Metalmark:** Seven reports of this localized species, including 4 at SUS:KVSP.

**American Snout:** A banner year with 36 reports. A 5/6 SUS:HyperHumus [mob=1] was not early (earliest report 4/17/2006), and was followed by a three-week gap. Unlike the two habitat-restricted previous species, this erratic butterfly could appear almost anywhere, not necessarily close to its Hackberry host. Most numerous at MON: Sandy Hook where up to 30 seen 9/2 [KK].

**Variiegated Fritillary:** 13 reports—intermediate between 2 in 2009 and 30+ in 2007 and 2008. No reports before 6/27 and none after 9/29, but a remarkable count of 27 on 8/27 at MON: Assunpink [JS].

**Great Spangled Fritillary:** Relatively less frequent in 2010 3.2%) than in 2009 (4.1%), but record early report on 5/26 WAR:Hardwick Twp [SW,WW=1]. As a gauge of relative abundance, only 67 on Springdale 4JC compared with 344 in 2009 and 717 in 2008.

**Silver-bordered Fritillary:** A highly local wet-meadow species. The Mounts Mills and Blue Mtn. Lake colonies persisted, and a new site was found in the SUS:Flatbrook Valley on 7/6 [FW=1].

**Meadow Fritillary:** 2010 had even fewer reports than 2009, which was considered a down year. Away from SUS and WAR only two MOR reports, but this species has been recorded in SOM:Duke Farms as recently as 2008

**Pearl Crescent:** Frequency of reports quite stable 2007-2010. Numbers generally low in 2010, Several April reports, all single digits. Many double-digit reports 5/4 to 5/14, then mainly single digits until more double digits 6/15 to 7/18 and again 7/24 to 8/7, and 8/13 to 9/14 (many high counts), and a lower peak 9/19 to 9/25. Mercer 4JC had 358 compared to 2084 in 2009 and 2826 in 2008.

**Baltimore Checkerspot:** The 7 reports this year was much lower than 2009 (12) and 2008 or 2007, but 6/2 SUS:Vernon [VC=1] report was earliest ever. As in 2009, only reported from SUS.

**Question Mark:** Frequency similar to 2009 and well below 2007. 4/22 sighting was a month earlier than the first 2009 sighting. This species does not generally overwinter in cNJ or nNJ., except along the coastal plain.

**Eastern Comma:** Overwinters as an adult; one of the first early-spring butterflies and one of the last flying in late autumn.

relatively less frequent in 2010 with 118 reports (1.4%) compared with 94 reports (2.2%) in 2009.

**Compton Tortoiseshell:** Only 7 reports in 2010, half the number of previous years. The report of 17 ON 3/21 MOR:Rockaway Twp [R] was higher than recent maximum counts. 5 reports 3/18 to 3/23, one on 4/22 and then two-month gap to last record 6/25. No report records.

**Mourning Cloak:** Relatively fewer reports in 2010 (60=0.7%) than in 2009 (74=1.7%) or 2008 and 2007. Reported regularly 3/7 to 3/16, then two-week gap and only seven June, three July, one Aug, and one early Sept reports, followed by six reports from 9/19 to 10/2.

**Milbert's Tortoiseshell:** No reports in 2010 or 2009. Recent reports include only one in 2008 at SUS:Vernon AT, three in 2007, two in 2006, and an unprecedented 9 in 2005, all from SUS. Encounters in recent years include Wallkill NWR, Vernon, Walpack, and KVSP, sites that were visited regularly in 2010

**American Lady:** Relative frequency about the same as 2009, lower than 2007 or 2008. Fewer reports (116) than in 2008 and 2007. First report on 4/7 SUS:AT Lands [VC=1] was about three weeks earlier than 2009. Then from 4/21 virtually no gaps to last report on 10/24. Spate of double-digit days 5/15 to 5/22 and again 7/18 to 7/31. Sporadic doubledigits thereafter.

**Painted Lady:** Only 13 reports in 2010, the lowest in four years.

**Red Admiral:** A highlight of 2010 was heavy migration which contrasted with 2009 and 2008. Movement first recorded 5/4, then almost daily to 9/25, with only 7 Oct records, last on 10/29 SOM:Somerset [MG=1]. However, several peaks can be detected. Double- and triple-digit days were common 5/6 to 5/22. Then mostly single digits to 6/24, with several triple-digit reports 6/25 to 6/28. Except for the 4JCs, no double digits again to 7/30 SUS:Wallkill R. [TH=25+] and 9/19 HUD:Secaucus [BS=20].

**Common Buckeye:** Many more reports (128=1.5%) than in recent years. In 2009, most records were from SOM-MON-MER, with only one each in SUS and MOR, whereas 2010 produced many SUS-WAR-MOR records. One May and nine June records, then becoming commoner through July. Several double-digit days from Aug 17. Five sightings in first half of Nov.

**Red-spotted Purple:** More frequent in 2010 (142 records=1.6%) than 2007-2009. 5/2 WAR:White Lake [JB, MB=3] was earliest ever. More or less continuous from 5/2 to 9/22 then 17 day gap to final record 10/10 SUS:Hyper Humus [TH=1]. Scattered double digit days 6/2, 7/3, 8/15 do not reveal discrete broods.

**"White Admiral"** Two reports (same as 2007 and 2009): 6/2 SUS:Walpack [mob=1] and 8/10 SUS:Fredon [SW,WW=1].

**Viceroy:** Relative frequency in 2010 (114 reports=1.3%) similar to 2009 (53=1.2%). Recorded almost daily from 5/17 to 9/25, with four Sept records. No double-digit days until 7/12, then sporadically thereafter.

**Hackberry Emperor:** Some recovery in 2010 (41 records = 0.5%) compared with only 9 in 2009. But only 5 reports from cNJ.

**Tawny Emperor:** Only 19 records, relatively fewer than in recent years, with two from MER and four from MON. This species continues to be unrecorded in MID-SOM-MER-HUN.

**Northern Pearly-Eye:** Status virtually identical to 2009, 2008, and 2007. Recorded only in SUS-WAR-MOR.

**Eyed Brown:** Status appears stable for this local species. The browns are difficult to distinguish, and photo documentation is desirable. 6/2 SUS:AT Lands [VC=2] beats previous early record 6/4/04. Nine reports from SUS:Vernon represent two colonies. One report from SUS:Whittingham [WW, SW = 1]. Often numerous where it occurs, so report of 100+ SUS:Canal Rd [NABA] is not unprecedented.

**Appalachian Brown:** Status similar to 2007, 2008, and 2009. Scattered double-digit days. After first 5/26 record, reported almost daily to mid-Aug, then sporadically (eight reports) to last on 9/10.

**Unidentified Brown:** 5/16 MER:Princeton Greenway Meadows Park [CW=200-300]. Species should be documented in 2011.

*Georgia Satyr:* Record on 6/16 at OCE:Lakehurst Klots Bog [SW,WW=4] was considered "early." There is an old MON record, but otherwise no recent records from our area of cNJ and nNJ..

**Little Wood-Satyr:** Relatively many fewer reports in 2010 [128 reports=1.5%] compared with 2009 [103 reports=2.4%], but similar to 2007 and 2008. Reported continuously 5/13 to 7/12, then 5 July and 2 Aug reports, last on 8/29 SOM:Warren Twp [JS=1]. Peak flight in late May.

**Common Ringlet:** Fewer records in 2010 (54) and 2009 (23) than in 2007 (45) and 2008 (56). Except for 4 MOR and 3 WAR reports, all were in SUS. Record earliest date of 5/5 SUS:Camp Olympia [FW=1]. Previous record was 5/7/2006.

**Common Wood-Nymph:** Relatively less frequent in 2010 (128 records = 1.5%) compared to 2009 (79 records=1.8%). Otherwise status similar to recent years. 6/11 SUS:AT Lands [VC=1] is a new early date (previously 6/13/2005). Reported almost daily from 6/16 to 9/11 with two later records on 9/15 and 9/21.

**Monarch:** Many indications of abundance in late summer 2010, but actually relatively fewer reports (369 reports = 4.3%) vs 2009 (230 reports = 5.3%). Four May and two early-June reports, then noted most days 6/11 through 10/30, but no Nov reports. Massive migration occurred at Cape May 9/19 (see article), but was barely mirrored in our area. Highest non-4JC count 9/19 HUD:Seaucus [BS=49].

**Silver-spotted Skipper:** Relatively less common than 2009 (3.98% vs 4.2%), but earlier. Record early date 4/22 MOR:Mountainside Pk [VC] (previously 4/26/2008). 13 reports in 2010 preceded the earliest 2009 date of 5/14. After a one-week gap, reported virtually daily from 4/29 with no gaps until Sept 25. Only two Oct records, with the latest 10/13 MER:Trenton Marsh [CL], tying the all-time late date. Several double-digit days after 5/15 with peak numbers evident the 2<sup>nd</sup> and 4<sup>th</sup> weeks of June, 1<sup>st</sup> week of August, and Aug 28-Sept 5.

**Long-tailed Skipper:** No sightings in 2010, compared with one in 2009 and 4 in 2008.

**Hoary Edge:** 13 records from 6/5 to 7/10, mainly in SUS and MOR, with single records from WAR and BER. The number of sightings of this skipper varies considerably from year to year.

**Southern Cloudywing:** Eight records (compared with only 3 in 2009). First on 5/9 SOM:Negri Nepote [PW] is earliest by a week (previously 5/15/93). Main brood 6/6 to 7/1, and last seen on 8/14 SOM: Griggstown [mob].

**Northern Cloudywing:** Relatively half as common in 2010 (39 records = 0.45%) as in 2009 (30 records = 0.9%). However, two early records on 5/5 and 5/6 on SUS:AT and Canal Rd [VC] (previous earliest record 5/7) Reported almost daily from 5/13 to 6/19, then a one-week gap to the latest records on 6/25 and 6/26 SUS:Canal Rd [NABA=1].

**Dreamy Duskywing:** 7 scattered records from 4/24 to 6/11, none in double digits. Recorded from SUS, MOR, SOM, and MON.

**Sleepy Duskywing:** No reports in 2010. 2009 report was from SUS:Crater Lake Rd. 2008 reports from HUN:Milford Bluffs, a site apparently not visited in 2010. Restricted to Scrub Oak habitats. This is a habitat localized and generally single-brooded species, so the number of sightings reflects visits to their specific habitat in the spring.

**Juvenal's Duskywing:** First on 4/7 SUS:Sussex Branch Tr. [AK=1] was earliest by one day (4/8/2000). Last on 6/7 MOR:Wildcat Ridge [JB,MB =1]. Juvenal's and Horace's Duskywing are difficult to distinguish, sometimes even from photographs. Juvenal's is generally believed to be single-brooded, reported mainly in April and May, although various authors (J.B. Smith 1910, Comstock (1940) and Shapiro (1966) identified some 2<sup>nd</sup> brood individuals. A 2<sup>nd</sup> brood individual would almost certainly be passed over as a Horace's. But it would be reasonable to pay as much attention to possible Juvenal's in summer as to possible Horace's in spring [MG].

**Horace's Duskywing:** Status fluctuates. More frequent reports in 2010 (30=0.35%) than 2009 (11=0.25%), but not as many as in 2007 (46=0.9%). The spring brood of this hard-to-identify species is little known and rarely reported. If they occur they are most likely called "Juvenal's." First identified on 7/9 more than a month after the last "Juvenal's" sighting. A 5/10/2005 photograph examined by several experienced NABA members elicited extensive discussion, and some controversy and is "accepted" as the basis for the earliest record [MG].

**Wild Indigo Duskywing:** Relatively twice as many reports (163=1.9%) in 2010 compared with 2009 (41=0.94%). First on 4/4 MOR:Mountainside Pk [JG =1] more than a week earlier than previous early record of 4/13/98. Aside from the 4JC, no double-digit days were reported before 8/9 BER:DeKorte [VC=26], after which double-digit days were frequent through 9/7. Crown Vetch formerly planted along roadsides is getting overgrown, so this species may decline. See detailed comments in Pearly-Eye 2009 regarding similar species.

**Common Checkered Skipper:** Relatively twice as many reports in 2010 (50=0.58%) compared with the "low year" of 2009, but not as frequent as 2007 or 2008. There were no Apr-May records that would indicate local overwintering. Indeed, no 2010 records until 6/27 SOM:Duke 4JC. Amazing triple-digit day 9/22 at SUS:KVSP [JB,TH,JS=175]. Nov. records only at SOM:Negri Nepote, last on 11/15 [PM=2].

**Common Sootywing:** Only 12 records of this once-common species, consistent with a slight, continuous decline in recent years. No unusual dates. One double digit day 7/28 SUS:DePew I [SW,WW=17]. As its host is widespread, it is not clear why this species has become so uncommon.

**Arctic Skipper:** Not found on several visits to its last known NJ location in High Point SP [JB,MB]. Last NJ report in 2005. It was first reported from NJ by Halliwell in the 1980s.

**Swarthy Skipper:** Status more or less stable over past four years. Of 20 records, only one from SUS and one from BER, with the rest from MOR southward. Only three field trip reports from MON:Big Brook Park, so the 2010 max of 13 is paltry compared with 200+ in 2009 and 500+ in 2005 from that location.

**Least Skipper:** Status relatively constant in recent years with 230 reports in 2010 (2.7%). No unusual dates. First on 5/15 MON:Assunpink [JS=1], then almost daily reports to 9/25, followed by a one-week gap to the latest report 10/5 SUS:Muckshaw [TH=4]. Many double-digit days, with high numbers in the 6/10 to 6/20, 7/28 to 7/31, 8/11 to 8/19, and 8/30 to 9/4 periods, and a very clear peak 9/21 and 9/22. The abundance and continuity of the data are consistent with almost continuously overlapping, rather than discrete, broods.

**European Skipper:** The 48 records in 2010 is higher than in recent years, but it seemed scarce in cNJ [MG]. Two records on 5/20 and 5/24 preceded the previous early date of 5/25/ 2004. Only one MID record, and none from MON or MER.

**Fiery Skipper:** Infrequently reported in 2010. 9 records 8/4 to 10/7 is well below the numbers seen in 2007 and 2008 but similar to 2009.

**Leonard's Skipper:** A highly local and vulnerable species, with 14 singleton records (nine from SUS:Fredon (Wanders' yard) the rest from SUS:AT lands, from 8/8 (tying previous early record) to 9/20. About 15 sites have been documented in previous Pearly-Eye issues, "all of which support only a few individuals" (SW 2009). This species should be listed as threatened in NJ [MG].

**Cobweb Skipper:** Status apparently stable, with 2-5 reports annually for the 2007-2010 period. The 4/22 MOR:Mountainside Pk [VC] sighting ties the previous early record. Four records from 4/22 to 5/16, including a very high count of 20 on 5/15 MOR:Mountainside Pk [JG]. This species flies early in the season, and bad weather may have discouraged field trips during this period.

**Indian Skipper:** Slightly more reports in 2010 than in recent years. No unusual dates, but the 5/15 MOR:Mountainside Pk [JG=40] count was much higher than recent season maximums.

**Peck's Skipper:** One of the commonest skippers in both nNJ and cNJ. Relatively more frequent reports in 2010 than 2009 (3.1% vs 2.5%), but numbers low with only two double-digit days before the 4JC. By far the highest one-day count was 7/24 Raritan 4JC=538 (previous high for that count = 105). This was also a national 4JC high for 2010. Overlapping broods suggested by fresh and worn individuals in mid-June, when number of reports clearly increased. Few reports between 6/25 and 7/10, followed by a resurgence through mid-July. These continued with daily reports, occasionally double digit, through 9/25. Only two Oct reports, the latest 10/21 SOM:Warren Twp [JS=1].

**Tawny-edged Skipper:** SUS:KVSP records on 5/10 and 5/13 [TH] precede the previous early record of 5/14/2002. Max of 97 on 7/24 Raritan 4JC exceeded previous high for this count of 37, and was much higher than maximum counts for 2007-2009. It was also a national 4JC high for 2010.

**Crossline Skipper:** Number of observations relatively similar to 2007-2009. Four June records, then almost daily through July, becoming less frequent in early Aug. All but two records are from SUS or MOR.

**Long Dash:** Another local species, where reports fluctuate from year to year depending on visits to favored locations. Only six reports, earliest on 5/22 MOR:Schooley Mtn [JS=3], beats previous early record of 5/24/2002. Four records from MOR and two from SUS, the latest on 5/31 SUS:Stillwater Twp Bear Creek WMA & Arctic Meadows [SW,WW] and MOR:Schooley Mtn [mob=80+].

**Northern Broken-Dash:** Relatively fewer reports (68=0.8%) in 2010 than 2009 (43=1.0%). Once one of the commonest early-summer skippers, this species has been uncommon in cNJ in recent years. The Raritan 4JC average was 17 for 1988-1998 and 11 for 1999-2010, with only one individual in 2010 the lowest ever. Although recorded almost daily after 6/10, observations increased greatly from 7/11 to 7/18. Only four Aug records, the latest 8/19 SUS:AT Lands [VC=1].

**Little Glassywing:** 2010 also seemed to be a low year for this species with 81 reports (=0.9%) compared with 56 reports in 2009 (1.3%). It was missed for only the 2<sup>nd</sup> time on the Raritan 4JC. After a 6/2 MID:Plainsboro report [HK=1] and scattered reports on 6/6 and 6/8, seen almost daily from 6/11 to 7/12 with a clear peak of double-digit days from 6/20 to 6/26. Only four records from 7/14 to 7/28, and no Aug records.

**Sachem:** Status in 2010 similar to 2009, but less frequent than 2008. Two records on 5/8 SOM:Somerset [PW=1] and PAS:Garrett Mtn [PW=2], followed by single records on 5/25 and 6/16, before becoming regular in July, and numerous in mid-Aug. Last seen 11/3 SOM:Somerset Farms [PW=1] (previous late record 11/1/2005).

**Arogos Skipper:** Only one report of this endangered species at a traditional powerline colony site 6/30 MOR:Randolph Twp [WW, SW, TH = 3 or 4]. Access is no longer permitted on the Kenvil site.

**Delaware Skipper:** Proportionally fewer records in 2010 than in previous years, but three Sept records all noted as "fresh" indicates an unusual late brood. Latest on 9/23 SUS:Andover Twp [SW,WW=1] (previous late date 9/1/2004).

**Mulberry Wing:** Status similar to previous years. 26 reports including a record early report 6/25 SUS:Whittingham [mob=3]. Previous early record 6/27/2004. Reports scattered through July to 7/21.

**Hobomok Skipper:** Relative status fairly constant in recent years. Record early date of 5/5 SUS: Whittingham [JB,MB=1] (previously 5/7/2002 & 2006). Reported almost daily from 5/13 to 6/19, followed by a one-week gap to two 6/25 sightings. Next reported on 7/11, one of four scattered July records.

**Zabulon Skipper:** More frequent than in 2009, but relatively fewer reports than in 2007 and 2008. Five records in first half of May followed by almost daily reports from 5/14 to 6/17. Only four reports from 6/20 to 7/19, then reported almost daily to 8/31, with a clear peak (including double digits) in the 8/7 to 8/17 period. Five Sept reports to 9/15 SUS: Whittingham [SW,WW=1].

**Broad-winged Skipper:** Relatively fewer reports in 2010 than 2007-2009, but high counts on 7/11 MER:Mercer 4JC=34 and 7/27 Raritan 4JC=11, in gardens away from "typical" *Phragmites* habitat. Maximum 7/25 BER:DeKorte [mob=100+].

**Dion Skipper:** Only five 2010 reports is fewer than in recent years. Earliest 6/25 SUS:Whittingham [mob=8]. Other sightings mainly on Great Swamp and Raritan 4JC, where a single individual found at the MID:Monroe cut [JS].

**Black Dash:** Fewer records than in recent years. First on 6/2 at SUS:AT Lands [VC=1] and also on 6/11 and 6/15, all preceding the previous early date of 6/20/2004.

**Dun Skipper:** Frequency of reports relatively stable 2007-2010. Three reports on May 29-30, then none until 6/11, after which it was reported nearly daily through 6/20. Double digits begin appearing 6/25 and continue to 8/14, suggesting a larger 2<sup>nd</sup> brood, with increased reports particularly in the 7/5 to 7/15 interval. 10 reports from 8/17 to 9/5 may represent a late brood.

**Dusted Skipper:** Six records from 5/15 to 6/11 with a high count of 11 on 5/15 MOR:Mountainside Pk [JG].

**Pepper-and-Salt Skipper:** Three observations 5/21 to 6/5 with up to 9 in usual place, roadsides in SUS:High Pt. St. Park. Regularly nectars on Wild Geranium.

**Common Roadside-Skipper:** None in 2010, compared with single records in 2007, 2008, and 2009. This is an inconspicuous and elusive species. No 2010 visits to Yards Creek or Raccoon Ridge where previously found.

**Ocola Skipper:** Only one record 9/6 MON:Sandy Hook [VC=1]. Last seen in 2007.



**Contributors:** The following people contributed sightings and are indicated by bracketed initials in the text & table 1. D. Amadio [DA], J. Arkin [JA], P. Bacinski [PB], F. Bader [FB], B. Barkley [BB], A. Barlow [AB2], S. Barnes [SB], B. Barouch [BB2], M. Barrett [MB], A. Baytas [AB], T. Beattie [TB], M. Britt [MB2], J. Burger [JB2], J. Burgiel [JB], D. Burnside [DB], J. Connor [JC], V. Corsello [VC], S. Galick [SG], J. Glassberg [JG], M. Gochfeld [MG], T. Halliwell [TH], B. Hardiman [BH], G. Himber [GH], A. Hoffenberg [AH], G. Howell [GH2], T. Jawdzik [TJ], F. & J. Kahan [FK], K. Keating [KK], S. Keller [SK], W. Kerlinger [WK], H. Kindervatter [HK], A. Koster [AK], J. Lampkin [JL], C. & M. Leck [CL], S. Lee [SL], J. McKee [JM], E. & G. Mahler [EM], C. Mayhood [CM], R. Muldowney [RM], P. Murray [PM], F. & P. Pfeiffer [FP], M. Pollock [MP], R. Radis [RR], S. Richart [SR], K. Risdon [KR], S. Rosenberg [SR2], D. Schulman [DS], D. Schweitzer [DS2], J. Scott [JSc]; B. Sendelbach [BS], J. Springer [JS], T. Sudol [TS], F. Sullivan [FS], C. Sutton [CS], P. Sutton [PS], K. Swaine [KS], D. Torino [DT], C. Vogel [CV], T. Vogel [TV], S. Wainwright [SW2], S. Wander [SW], W. Wander [WW], F. Weber [FW], C. Williams [CW], P. Williams [PW], K. Witkowski [KW], J. Wright [JW], C. Wyluda [CW]. **ABBREVIATIONS:** AT=Appalachian Trail, KVSP=Kittatinny Valley State Park, DWGNRA=Delaware Water Gap National Recreation Area. mob=many observers.

## South Jersey Butterfly Log Results, 2010: The Year of the Buckeye? Jack Connor

Our third year of gathering butterfly sightings on a shared Google spreadsheet drew approximately 60 observers who contributed more than 13,400 butterfly observations. We found 93 species in the state's southern eight counties (Ocean, Burlington, Camden, Atlantic, Gloucester, Salem, Cumberland, and Cape May), and most observers seemed to agree that 2010 was an excellent year for butterflies. Many participants noted it was the best season in a long time, and a few of us might even have claimed it was "the best I can remember" if anyone listening would trust our shaky memories.

In order of frequency, our most reported species were Cabbage White (900+ reports of 6000+ individuals) Monarch (800+ reports of 13,000+ individuals), Red Admiral (800+ reports), Sachem (700+ reports), Common Buckeye (~700 reports), Eastern Tiger Swallowtail (600+ reports), American Lady (500+ reports), Orange Sulphur (450+ reports), Spicebush Swallowtail (~450 reports), and Eastern Tailed-Blue (~450 reports).

Both Red Admiral and Common Buckeye numbers seemed notably up from recent years. Red Admirals were our most reliable species, recorded on 148 of the 155 days between April 29<sup>th</sup> and October 1. Buckeyes flew in numbers throughout the year and were often spectacularly abundant from early September into mid-October. Migrating Buckeyes out-numbered Monarchs along the coastline (and elsewhere) on a number of occasions with single observers recording triple-digit totals on many days. The two peak days were 9/22 and 10/18, when single observers (Stephen Mason at Cape May State Park and Will Kerling at Avalon) estimated more than a thousand individuals had passed by them. September 19<sup>th</sup> brought an enormous flight of monarchs through Cape May Point, guesstimates exceeded 100,000 individuals. Unfortunately, none of them entered their estimations into our log.

At the other end of the spectrum, more than a dozen species were recorded on three occasions or fewer: Bronze Copper, Edwards' Hairstreak, Oak Hairstreak, Meadow Fritillary, Georgia Satyr, Clouded Skipper, Mulberry Wing, Dion Skipper, Dusted Skipper, Common Roadside-Skipper, as well as European skipper (only 3 reports, 10 individuals), a surprisingly uncommon species in South Jersey),

The fall flight of southern species was a good one in Cape May County, and included Sleepy Orange (8 reports, 7/27-11/22), Long-tailed Skipper (2 reports on 9/18, possibly the same individual), Fiery Skipper (100+ reports, 7/24-11/17), Brazilian Skipper (1 record, 8/28), and daily multiple counts of Little Yellow (7/22-10/31), including two days (9/11 and 9/18) of triple-digit totals at Cape May Point State Park. On the other hand there were only 2 records of Ocola Skippers.

Four species recorded in 2009 went unreported in 2010: Giant Swallowtail, Edward's Azure, Black Dash, and most troubling perhaps, Leonard's Skipper, which was not found even in its one reliable colony at the Mannumuskin River Preserve. The last adult butterflies reported were two Red Admirals, seen separately in Cape May County on 11/29. Thanks to all observers for their diligence, alertness, and carefully-entered reports. A special shout-out goes to Will Kerling and Dave Amadio, who inspired and led our group with many thousands of entries.

**BUTTERFLY SPECIES TO TRACK IN 2011**

compiled and updated by Sharon Wander

SPECIES	# REPORTS IN 2010 PEARLY -	FLIGHT PERIOD	KNOWN/POTENTIAL NORTH/CENTRAL JERSEY LOCATIONS	COMMENTS
** = New to 2011 list	# of individuals may be greater than # of reports	Record early & late dates from Table 1 in 2009 Pearly-Eye + 2010 records	As reported in 2010 and earlier Pearly-Eyes. *? Indicates potential habitat but no recent records.	
HARVESTER	17 (most from 1 location)	4/29 - 10/20	Stands of beech/alder infested with woolly aphids. MOR: Brookside Park, Dismal Harmony Nat. Area, Schooley Mtn, Mountainside Park; SOM: Scherman-Hoffmann (one report in 2010); SUS: Flatbrook-Roy WMA	
BRONZE COPPER†	6	6/6 - 9/24	Erratic. SUS: AT Lands (Canal Rd.), Vernon; Flatbrookville; Paulins Kill WMA-Frankford; possible at Walkkill NWR, Sparta Mtn. WMA.	
BOG COPPER	1	6/22 - 7/9	Acid bogs with cranberry hostplant. MID: Jamesburg County Park (aka Helmetta); SUS: Mashipacong Bog (not public)	2010 Mashipacong visit spoiled by poor weather.
CORAL HAIRSTREAK	5	6/8 - 8/5	Erratic in nNJ. MON: Big Brook, Sandy Hook; MOR: Schooley's Mt., Willowood? SUS: DWGNRA (no 2010 reports from SUS-WAR);	
ACADIAN HAIRSTREAK	NONE (SINCE 2005)	6/29 - 7/12	Near shrub willows. SUS: fens (e.g., Sparta)	
EDWARDS' HAIRSTREAK	8	6/15 - 8/2	Near Scrub Oak. SUS: Crater Lake Rd., Sticksel Pond Rd, Hamburg Mt., Sunrise Mt., KVSP, AT above Mecca Lake; WAR: Yard's Creek	
STRIPED HAIRSTREAK	9	6/7 - 8/24	Erratic. BER: Flat Rock Brook; MOR: Schooley's Montague Twp., Randolph Twp. (persistent colony at Combs Hollow Rd. trailhead); SUS: Crater Lake Rd., High Point SP	Usually single individuals at scattered locations
EASTERN PINE ELFIN	2	4/11 - 6/8	Near pine stands. MID: Cheesequake SP; MON: Allaire? SUS: Crater Lake Rd., Flatbrookville, Walpack	Must be elsewhere near pines
APPALACHIAN AZURE	6	5/5 - 6/30	Near stands of Black Cohosh hostplant. HUN: Mt. Cushetunk, Tower Hill Res.; MER: Baldpate Mt.; SUS: Culver's Gap area; SOM: Sourlands. 2009 records from BER, MOR.	
SILVER-BORDERED FRITILLARY	7	5/7 - 9/27	Usually in rainy target herbaceous wetlands. MID: MON: Assunpink; MID: Jamesburg Co. Park, Mounts Mills gas line, Monroe gas line, Pigeon Swamp (formerly?) MON: Englishtown gas line, Monmouth Battlefield SP? Owl Haven? OCEAN: Butterfly Bogs? SUS: Crater Lake Rd., Blue Mt. Lake.	Hostplants are various violets including Lance-leaved.
HARRIS' CHECKERSPOT	NONE (SINCE 2003)	6/11 - 6/23	In wet meadows with stands of Flat-topped White Aster. Formerly MOR: Arven Meadow (Rockaway Twp.), Lake Denmark? Troy Meadows? SUS: Ogdensburg; UNI: Passaic River Park (Summit)	Very brief window, so mark your calendar!
BALTIMORE CHECKERSPOT**	7	6/2 - 8/2	Usually wet meadows with Turtlehead hostplant. Reports way down in 2010, and none away from SUS.	
MILBERT'S TORTOISESHELL	NONE (SINCE 2008)	4/10 - 11/21	Erratic. SUS: Silver Spray Farm, occ. elsewhere in DWGNRA; AT Lands & Walkkill NWR, Vernon.	
HOARY EDGE	12	5/22 - 7/21	Erratic. MOR: Mountainside Park; PAS: Ringwood SP; SUS: KVSP, AT Lands Vernon, Crater Lake Rd.	
DREAMY DUSKYWING**	7	4/18 - 6/26	Number of reports and individuals way down. MON: Assunpink WMA; SOM: Sourland Mts.; MOR: Wildcat Ridge WMA; HUN: Cushetunk Mtn. Preserve; SUS: Sparta Mtn. WMA.	Should be more widespread than limited records indicate.
SLEEPY DUSKYWING	0	4/13 - 6/1	Near Scrub oak hostplant. HUN: Milford Bluffs (none in 2009); SUS: found on Crater Lake Rd. in 2009; to be looked for at High Point SP, other Kittatinny Ridge sites, such as the Edwards' Hairstreak site at AT/Mecca Lake?	There MUST be other locations!
COMMON SOOTYWING	12	4/30 - 9/19	Erratic. BER: Meadowlands; MON: Assunpink; SOM: Negri Nepote; SUS: Hyper Humus, DWGNRA, Bear Swamp.	Formerly widespread and even common in cNJ.
ARCTIC SKIPPER	NONE (SINCE 2005)	5/20 - 6/21	SUS: Stokes S.F.	Need to search for other sites in extreme northern NJ. Check out stands of Wild
LEONARD'S SKIPPER	4	8/8 - 9/28	Very local in SUS: KVSP, Vernon AT Lands, Flatbrookville; Fredon Twp. No recent SOM records.	
COBWEB SKIPPER	4	4/22 - 6/11	MON: Thompson Park; MOR: Mountainside Park, Boonton; SUS: Flatbrookville	
LONG DASH	6	5/22 - 7/8	Herbaceous wetlands. MOR: Willowood, Mendham; Schooley Mtn, SUS: Vernon AT Lands, High Point/Stokes SF, Flatbrookville, Swartwood, Walpack; WAR: White Lake.	
AROGOS SKIPPER	1	6/30 - 8/2	Places in Succasunna Plains area of Randolph/Roxbury Twps. with Little Bluestem. MOR: Kenvil (this colony no longer accessible); Randolph Twp. Powerline (also not public where it crosses MCMUA lands).	3-4 in a single location on the powerline in 2010. Check suitable grasslands in HUN park system—apparently seen there by a state biologist in 2010.
DION SKIPPER	5	6/20 - 8/8	MID: Pigeon Swamp & Helmetta, Monroe; SUS: Hyper Humus, Whittingham; MOR: Great Swamp NWR.	
DUSTED SKIPPER	6	5/13 - 6/20	MOR: Mountainside Park, Wildcat Ridge; SUS: KVSP, Flatbrookville	
PEPPER AND SALT SKIPPER	3	5/19 - 6/21	HUN: Bethelhem Twp.; SUS: High Point SP	
COMMON ROADSIDE-SKIPPER	0	5/14 - 8/1	Erratic. MON: Allaire SP; WAR: Yard's Creek (not open to public), Raccoon Ridge, AT near Camp Mohican	

† Walkkill Bronze Coppers—just out of state: by Sharon and Wade Wander

Since many butterflies would like to find the highly local Bronze Copper anywhere, these directions to an almost-NJ colony are provided. There were a number of Bronze Copper sightings (all singletons) in New Jersey in 2010, including the Appalachian Trail in Vernon, Sparta Mountain and Canal Road.

"On September 15, 2010 we found 4 Bronze Coppers at the Walkkill River National Wildlife Refuge. The specific location was along the gravel road on the NORTH side of Oil City Road nearly opposite the Liberty Loop Trail parking lot. Park in the lot and walk across Oil City Road and then along the gravel road" We saw 4 fresh females. One was attempting to lay eggs on the basal leaves of Curly Dock (*Rumex crispus*). Do not let the fact that this location is (alas) in Orange County, NY, deter you. This location is an excellent example of the type of disturbed, floodplain habitat that Bronze Copper seems to prefer.

## FOURTH OF JULY COUNTS FOR 2010

Seven 4Jcs were conducted in our area in 2010. Several themes are apparent. The timing of the season and of some counts resulted in some new records and new misses. Bad weather interfered with some counts. Eastern Tiger and Spicebush Swallowtails were very high on several counts, while Sulphurs, Great Spangled Fritillary and Pearl Crescent tended to be low. Most counts were slightly below their all-time average for number of individuals.

### NATIONAL HIGHS FOR LOCAL FOURTH OF JULY COUNTS

**Locally, several NJ counts and the Northern Westchester 4JC contributed North American high counts for 13 species, most of them skippers.**

Source: NABA Butterfly Counts 2010 Report

Species & total # of counts recording it in 2010	Name of count with 2010 North American high count	2010 Max Individuals	All time Record High Count
American Copper (94)	Northern Westchester, NY	846	2976
American Lady (252)	Cumberland, NJ	310	800
Appalachian Brown (91)	Springdale, NJ	78	259
Hayhurst's Scallopwing (18)	Cape May, NJ	20	151
Wild Indigo Duskywing (113)	Northern Westchester, NY	158	348
Pecks Skipper (106)	Raritan Canal, NJ	538	644
Tawny-edged Skipper (135)	Raritan Canal, NJ	97	448
Crossline Skipper (87)	Northern Westchester, NY	25	138
Little Glassywing (144)	Northern Westchester, NY	126	835
Rare Skipper (5)	Cumberland, NJ	49	101
Mulberry Wing (40)	Northern Westchester, NY	174	185
Aaron's Skipper (9)	Cumberland, NJ	26	562
Black Dash (36)	Northern Westchester, NY	68	459

#### **DUKE FARMS COUNT June 26, 2010 Michael Gochfeld**

Contrary to good practice, and after much discussion, the Duke 4JC was moved a month early to coincide with the BioBlitz organized by Nellie Tsipoura. This plan will be continued in 2011. Although results are not comparable with the late-July counts, the species count (32) and individual count (948) were very similar to previous years. However, 17 of 32 species had new high counts. Only European Skipper and Little Glassywing were new.

#### **SANDY HOOK COUNT July 1, 2010 Kevin Keating**

Sandy Hook 4JC on 7/1/2010 encountered perfect weather, sunny with low wind. It recorded 36 species, six more than previous high, although not unusually high numbers. New to the list were Little Yellow, Juniper Hairstreak, Viceroy, Common Wood-Nymph, and Sagem. The Little Yellow was the earliest 2010 record for anywhere in NJ, and was followed three weeks later by the beginning of an unprecedented influx of this southern immigrant.

#### **GREAT SWAMP COUNT July 3, 2010 Chris Williams**

The weather was very unsettled and counts were generally low. The species count of 38 was 2<sup>nd</sup> lowest and below the average of 43.3 species. The 2132 individuals was below the average of 3078. There were no new species or no notable misses. 92 Mulberry Wing was an all-time high and 67 Great Spangled Fritillaries was an all-time low.

#### **SPRINGDALE COUNT July 10, 2010 Wade Wander**

Rain delayed start of count until 10:30, then it was cloudy and unseasonably cool until midafternoon. Prolonged hot and dry weather preceding count may have caused some species such as Mourning Cloak and Compton Tortoiseshell to aestivate. Unusual spring weather was certainly responsible for the early emergence of second broods of some species like Tawny-edged Skipper, and Common Ringlet, and early disappearance of single-brooded species such as European and Hobomok Skippers.

In addition to the below-average 47 species, 7 more were encountered on count week. Giant Swallowtail was new for count, bringing cumulative total to 77. Overwintering in NJ (actually within the count circle) was confirmed this year, and the species appears to be well established in limestone areas, where its prickly-ash foodplant grows. New high count of 174 for Eastern Tiger Swallowtail (previous: 80). Only 1 Edwards' Hairstreak was counted where about 110 were seen at same location on June 19. Second consecutive extremely poor year for Banded Hairstreak. Early emergence of Northern Metalmark resulted in only a few very worn individuals left on count day. The 6 Great Spangled Fritillaries was an all-time low. 27 Wild Indigo Duskywings was a new high.

**GREENBROOK SANCTUARY COUNT July 11, 2010 Nancy Slowik**

Count is confined to the Sanctuary. 7 counters tallied 10 species including one Pipevine Swallowtail, which is a characteristic species of the Pipevine-clad Palisades.

**MERCER COUNT July 11, 2010 Frank Bader**

The overall totals were 36 species and 2704 individuals. New for the count, was the Tawny Emperor. We missed Dun Skipper for the first time. Eastern Tiger and Spicebush Swallowtails were much higher than previous high counts and the Little Glassywing and Great Spangled Fritillary and Pearl Crescent numbers were low. Over the 8 years the species count averaged 37.8 and the individuals 3236.

**WALLKILL RIVER NWR COUNT July 17, 2010 Ken Witkowski**

The 38 species and 1593 individuals was above the 2009 and slightly below the 2008 counts. Giant Swallowtail (now believed to be breeding on the refuge), Spicebush Swallowtail, and American Snout were new to the count.

**RARITAN CANAL COUNT July 24, 2010 Michael Gochfeld**

The count was about one week later than average. The 39 species was slightly below the average of the past 10 years. A fresh Zabulon, mid-summer brood, was a first count record, probably due to the lateness of the count matching the earliness of the season. Eastern Tiger and Spicebush Swallowtails, and Silver-spotted, Least, and Broad-winged Skippers were new high counts. The Peck's Skipper (538) and Tawny-edged Skipper (97) were new high counts and also national high counts. For the first time, Pipevine Swallowtail larvae were detected from a tenuously established population in Somerset.

**BAITING FOR BUTTERFLIES — EILEEN MAHLER**

Baiting is commonly used for attracting moths, and is used in the tropics for trapping butterflies. It also works in New Jersey.

I start with a very ripe banana, usually one that had been frozen. To the mashed bananas, I add some molasses, and some beer to thin it out. I keep it in a covered plastic container on the porch for several days. It ripens very quickly in the summer heat.

I pour some into a dish hanging from a tree outside the window where I work. I mostly have activity in the mornings and late afternoons. Adding a bit of orange juice will help prevent it from drying out too quickly in the dish.

Other over-ripe fruit (plums, nectarines), could be added, but the banana is the important ingredient. There are lots of formulas out there. I found this the easiest, and the ingredients most available. For example, in early August, my bait attracted Eastern Comma, Appalachian Brown, Red Admiral, Red-spotted Purple, and Hackberry Emperor (new for our yard).

**ADDED NOTE ON SUMMER AZURE**

We have been using June 1 as an arbitrary cut-off between Spring and Summer (or "Spring" Spring and "Summer" Spring Azures. It seems to work pretty well. Away from known Appalachian Azure sites, there were only two 2010 azure reports between May 16 and June 1, the latter on May 29, probably a Summer Azure. "Summer Azures emerged here in southeastern Pennsylvania in explosive fashion on May 26th. This year's first brood is very pale on the venter with reduced to no black maculations. This pattern is no doubt the result of the heat in the last two weeks while final adult phenotype is constructed in the chrysalis." (D. Wright 5-31-2011)



4th of July Butterfly Counts - 2010 Compiled by Tom Halliwell

	Duke Farms (6/27)	Sandy Hook (7/1)	Great Swamp (7/3)	Springdale (7/10)	Greenbrook (7/11)	Mercer County (7/11)	Walkill NWR (7/17)	Raritan Canal (7/24)
Pipeline Swallowtail					1		1	
Black Swallowtail	15	15	1	18		32	29	14
Giant Swallowtail				4			3	
Eastern Tiger Swallowtail	20	20	47	174	8	243	83	221
Spicebush Swallowtail			4	35	2	54	26	74
Cabbage White	218	265	326	664	5	821	655	200
Clouded Sulphur	44	14	48	37		34	36	28
Sulphur sp. (white female)			2					
Orange Sulphur	62	58	89	21		66	15	31
Little Yellow		1						
American Copper	11	83	24	119				1
Coral Hairstreak		6						
Edwards' Hairstreak				1				
Banded Hairstreak	2		6	4				
Striped Hairstreak			2					
Juniper Hairstreak	3	19		1		9		1
Gray Hairstreak		3	3	1		10		3
Red-banded Hairstreak								1
Eastern Tailed-Blue	45	4	59	27		92	43	23
"Summer" Azure	1	5	2	19	1	23	10	13
Northern Metalmark				3				
American Snout		19					1	
Variogated Fritillary	1	3						2
Great Spangled Fritillary	16	1	67	32		11	10	14
Silver-bordered Fritillary				1				
Meadow Fritillary				1			2	
Pearl Crescent	187	25	491	532		358	362	12
Question Mark	1	3		7		1	7	
Anglewing sp.			1					
Eastern Comma	4			1			4	
Mourning Cloak	1				1			
American Lady		34		14		14	2	5
Lady sp.	1							
Painted Lady		1						1
Red Admiral	138	84	34	34	7	19	70	18
Common Buckeye		7	1	1		9	2	6
"Red-spotted Purple"	2	1	2	15	1	9	6	8
Viceroy		2	7	4		4	14	
Hackberry Emperor		3						
Tawny Emperor		1				1		
Northern Pearly-Eye			7	63				
Appalachian Brown			11	78		4	15	12
Little Wood-Satyr		1	63	12	2	4	2	
Common Ringlet	1			1			18	
Common Wood-Nymph	6	1	217	87		341	47	3
Monarch	34	35	26	98		34	44	19
Silver-spotted Skipper	8	33	16	48		159	2	103
Southern Cloudywing		2						
Horace's Duskywing						15	1	4
Wild Indigo Duskywing	2	1	114	27		26	11	4
Common Checkered-Skipper	6					1		2
Common Sootywing	1					2		
Swarthy Skipper		2						2
Least Skipper	54		106	13		78	21	138
European Skipper	3		3					
Peck's Skipper			1	7		32	13	538
Tawny-edged Skipper				4		5	5	97
Crossline Skipper				9			1	1
Northern Broken-Dash	14	6	79	45		8	5	1
Little Glassywing	15	6	94	38		4		
Sachem		2	3			146		62
Delaware Skipper	2		16	31		1	2	
Mulberry Wing			92	32			2	
Zabulon Skipper				2				24
Broad-winged Skipper		6	2	7		34	5	13
Dion Skipper			2	1				1
Black Dash			40	56				1
Dun Skipper	30		24	174	1		18	3
TOTAL SPECIES	32	36	38	47	10	36	38	39
TOTAL INDIVIDUALS	948	772	2132	2603	29	2704	1593	1704

The Pearly-Eye 2010 is a publication of the NABA North Jersey Butterfly Club, a chapter of the North American Butterfly Association Inc.(NABA). It is intended to highlight activities of the club and to provide an overview of the status of butterflies in central and northern New Jersey in 2008 (from Mercer and Monmouth counties north).

Editor for 2010 -Michael Gochfeld

Editor for 2011 -Jim Springer

**Submit sightings to [springer@naba.org](mailto:springer@naba.org)**

The Club meets on the first Tuesday of the month (except in July when there is usually no regular meeting and in November when it meets 2<sup>nd</sup> Tuesday) at 7:30 pm in the Haggerty Education Center of the Frelinghuysen Arboretum, 53 East Hanover Avenue, Morristown, NJ. A list of field trips, directions to meetings, and other useful information can be found on the chapter's website at <http://www.naba.org> (click on chapters).

Membership in the NABA-North Jersey Butterfly Club is included with annual membership in the North American Butterfly Association. (NABA Membership Services, 4 Delaware Road, Morristown, NJ 07960 or go to website: <http://www.naba.org> for further information

## 2010 NABA-NORTH JERSEY

The officers for 2011-2012 are:

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Alice Koster, secretary      [ajkoster@aol.com](mailto:ajkoster@aol.com)

### **SCHEDULED MEETINGS FOR 2010**

Jan. 5 "Borer Moths of NJ and Neighboring States" Tony McBride  
Feb. 2 "How Some Butterflies Get Their Names: A Personal Selection" Jeff Glassberg  
Mar. 2 "Fauna of Costa Rica" Chris and Paula Williams, Fred and Patty Pfeifer  
Apr. 6 ""Banners, Beauties, Bluewings, and Baytas--Ay Caramba!" Mexico trip, Part 1 Wade Wander  
May 4 "Skippers From A Top View" Sharon Wander  
June 1 "This Could Be In Your Own Backyard" John Yrizarry  
July--no meeting  
Aug. 3 "Amazonian Brazil--Butterflies, Moths and Harpies" Glenn Mahler  
Sept. 7 "Northern NJ Milkweeds (and the critters that love them)" Tom Halliwell  
Oct. 5 "Mexican Butterflies Part 2" Jim Springer  
Nov. 9 "Odonates" Alan Barlow  
Dec. 14 "Members' Night"