

Massachusetts Butterflies



Spring 2003, No. 20

Massachusetts Butterflies is the semiannual publication of the Massachusetts Butterfly Club, a chapter to the North American Butterfly Association. Membership in NABA-MBC brings you *American Butterflies*, *Massachusetts Butterflies*, *Butterfly Gardner*, and all of the benefits of the association and club, including field trips and meetings. Regular dues are \$30 for an individual, \$40 for a family, and \$60 outside the United States. Send a check made out to NABA to: NABA, 4 Delaware Road, Morristown, NJ 07960.

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Submission of Articles, Illustrations, and Season Records

We encourage all members to contribute to *Massachusetts Butterflies*. Articles, illustrations, descriptions of butterfly sites, garden reports, and book reviews are welcome and should be sent to the editor by September 15 (fall issue) or January 15 (spring issue).

Send Fourth of July counts to Tom Dodd by August 1 for the fall issue and your season sightings and records to Tom by December 1 for the spring issue. Sending your records periodically during the season will make data entry an easier task.

Contents

2	President's Message	<i>Madeline Champagne</i>
3	2002 Fall Migration of Northward-Bound Butterflies in the Northeast	<i>Brian Cassie</i>
5	Site Guide Project	<i>Sharon Stichter</i>
6	2002 Season Summary and Records	<i>Tom Dodd</i>
28	Butterfly Flight Periods in Newbury, MA, 1998–2002	<i>Sharon Stichter</i>

Cover: Japanese Woodblock by Kanzaka Sekka, 1904



From the New Editor

Sharon Stichter

I am delighted to be taking on the job of editing *Massachusetts Butterflies*. I know that everyone, myself included, gives Brian Cassie our heartfelt thanks for being the founder of this publication and for his many years of work as its editor. He will continue to be senior advisor to the magazine and to make important contributions to our knowledge of Massachusetts butterflies.

I expect to be getting in touch with a great many of you to solicit your contributions. I would like our publication to be *your* journal, to be a magazine that is widely read and accessible to both new and advanced butterflyers. In addition to our very important Season's Summary and Fourth of July Count Reports, I'd like each issue to include some gardening notes, a section on where to see butterflies (with maps), field trip accounts, and book reviews, so please be thinking about what you might contribute on these or other topics.

Two new books that I would like to have reviewed in upcoming issues are Jim P. Brock and Kenn Kaufman, *Butterflies of North America* (Kaufman Focus Guides) and John Himmelman, *Discovering Moths*, Downeast Books, 2002. If you would like to review either of these, please be get touch with me.

President's Message

Madeline Champagne

I am often asked the question "What good are butterflies?" And for those people who need to know that butterflies contribute something, the answers that they are part of the food chain for birds, rodents, insects, and other creatures and that they help to pollinate make people feel better about them. And people usually agree that they are beautiful to look at and interesting to know about.

However, I can see that for me, personally, and for many others who are interested in butterflies, these beautiful creatures have a great impact on how we view the world. I often assist people in raising Monarchs or other species. I firmly believe that anyone who raises a butterfly from egg or caterpillar to adult will view the world through different eyes. Especially when seeing a tiny caterpillar just days old, it is impossible to not think about how difficult their survival is in the wild and about their food plants and how the plants are disappearing or getting contaminated with pesticides. It is impossible to not wonder at the miracle of metamorphosis and to not be amazed about how they spend the winter, or, in the case of Monarchs, how they can survive that unbelievable migration to Mexico. Every butterfly we see is a survivor of a species that has ancestors from millions of years ago (butterfly fossils have been found from 48 million years ago).

Many people are interested in nature and think of it as a place that you go to—like a state forest or a sanctuary. But it is different when nature is your own yard, when a weed turns out to be a food plant, like sorrel for the American Copper, or when you realize that the green, white, and black caterpillar on your parsley or dill will be the beautiful Black Swallowtail. Or when you find out that the beautiful Tiger Swallowtail might have come from a caterpillar that was eating your trees or you find a folded-over sassafras leaf with a Spicebush Swallowtail caterpillar inside or identify that tiny caterpillar on the primrose flower. Or when you see a beautiful little butterfly nectaring on the clover that you decided to leave in the lawn.

The view of the landscape changes, too. To many people, a disturbed area left to grow wild is an ugly place, with weeds everywhere and dry dirt crunching underfoot. To a butterfly lover, the weeds are beautiful, each butterfly we see there is a jewel, and the dry dirt that crunches makes us appreciate even more how the plants and butterflies survive. And we pray that it remains left to grow wild.

On an NPR radio interview in Florida about the Miami Blue, a butterfly enthusiast said that she wasn't an environmentalist until she got interested in butterflies. That pretty much summed it up for me. The next time anyone wants to know what butterflies are good for, I'll tell them how butterflies are helping us to be aware of and to care for the environment.

2002 Fall Migration of Northward-Bound Butterflies in the Northeast

Brian Cassie

The year 2001 will be remembered in the Northeast and other areas of the United States and eastern Canada for grand migrations of the Red Admiral, American Lady, and Painted Lady. These species had noteworthy to historic flights during the spring and summer months and to a much more limited degree in the autumn. Their migrations were the highlights of the butterfly year.

During 2002, these Vanessa species and several regular migrants, including Mourning Cloak, Question Mark, and Monarch, failed to show in any appreciable numbers in New England. In fact, their northward and southward migrations were a bust, even compared to typical seasons but especially in comparison with the phenomenal flights of the previous year.

Nevertheless, there were significant butterfly migrations in the late summer and fall of 2002, and all of them featured uncommon to rare, so-called "southern" species. These are butterflies that are common in southern states and that, some years, expand their populations northward (and probably in other directions as well) during the middle and end of the butterfly season. These species include the relatively common Common Buckeye; the less common Pipevine Swallowtail, Cloudless Sulphur, Variegated Fritillary, and Fiery Skipper; the rare Little Yellow, Checkered White, Red-banded Hairstreak, American Snout, Long-tailed Skipper, Common Checkered-Skipper, Sagem, and Ocola Skipper; and the ultra-rare Queen. In addition, a Soldier was observed and photographed in the region. All of these species were found in New England in late summer-fall 2002. They were the saving grace of an otherwise very disappointing year for butterflies.

Following are short notes on the southern migrants that made it to New England. For the sake of space, I have not noted many specifics here, including observers' names. Thanks, of course, to the many observers in southern New England and the few elsewhere who found these butterflies and shared their findings via the Internet, telephone, or printed page. Special thanks to Lenny Brown for additional Connecticut records and Tom Dodd for Massachusetts records.. I hasten to add that this is probably not an exhaustive list, but it does include all of the reports I have received through January 2003. Please see Tom Dodd's 2002 Season Summary and Records in this issue of *Massachusetts Butterflies* for additional details of the Massachusetts reports.

Pipevine Swallowtail: May 25–September 29; all of the early reports of this species were from Connecticut, where a remarkable 40–50 were noted at one coastal site in mid-August. The two Massachusetts sightings were from September.

Checkered White: October 6; two in Connecticut (at different coastal locations).

Cloudless Sulphur: August 21–October 5; a significant flight year, with highest numbers found in Massachusetts (a new state high count of 100 at Morris Island, Chatham, on September 13) and small numbers reported from Connecticut (maximum 5). There were two rare inland Massachusetts reports, both from Worcester County in September.

Little Yellow: August 24 and September 27; the first record from the Kennebunk Plains, Maine, and the second, of two individuals, from Guilford, Conn..

Red-banded Hairstreak: August 16–27; Connecticut had two Red-banded Hairstreaks at Hamden eleven days apart, whereas the two Rhode Island individuals were both found on the same day. This species has never been found as far north as Massachusetts and should be diligently searched for at Dwarf Sumac and other flowers in August.

American Snout: May 31–September 19; at least two Connecticut sightings.

Variiegated Fritillary: July 12–October 6; singles noted at two Connecticut coastal locations. In Massachusetts, the species was noted from Martha's Vineyard to the Connecticut Valley, with a maximum of 13 at the Quabbin Reservoir in late September.

Common Buckeye: May 30–November 1; in Connecticut, a "large number" of individuals appeared in the first week of August. There were many eastern Massachusetts reports, mostly coastal; one from as far west as Quabbin Reservoir. Highest density was in the Westport-South Dartmouth, Mass., area, where numbers in the low 20s were observed on three dates in September.

Queen: August 12 and September 10; in Massachusetts, single Queens were observed at Methuen (at very close range by experienced observers) and at Marblehead (photographed). In Connecticut, two Queens were found in a park at Hartford (date unspecified). These were the only documented New England sightings of a species that staged an historic flight northward in 2002, with numerous Mid-Atlantic reports. There was one previous New England occurrence. *Note*: Much speculation surrounds the Queen "flight," and there are those observers who have suggested the Queens were releases. This species has a history of sporadic northward migratory flights and I believe the flight to have been genuine.

Soldier: On July 24, a Soldier was photographed in Milford, Conn. There was at least one other reported from the Mid-Atlantic region. The question of their origin has arisen because this species has no real history of vagrancy.

Long-tailed Skipper: September 7–October 2; two reports, the first at South Dartmouth, Mass., and the second at Killingworth, Conn.

Common Checkered-Skipper: September 10–October 6; one along the coast of Connecticut and two in the Connecticut Valley of Massachusetts

Fiery Skipper: August 27–October 14; numerous coastal Connecticut records, with a maximum of five (though some reports used words such as “lots” and “multiples” instead of numbers). In Massachusetts, all but one of the records were from north or west of Boston, with a maximum of six at Wayland and Rockport.

Sachem: August 26–October 5; Connecticut witnessed most of the northern edge of an enormous northward flight of Sachems. This species was seen all along the coast in small numbers, with a maximum of five or six at Old Lyme on one occasion. The Sachem strayed into Massachusetts at South Dartmouth, with three in August and one in September and at Truro, with one in September.

Ocola Skipper: September 14–October 5; always late season and always found singly in New England. There were six Connecticut sightings and two Massachusetts sightings (both inland).



Site Guide Project: A Guide to Good Butterfly Sites in Massachusetts

Sharon Stichter

I would like to revive a project that a few Massachusetts Butterfly Club members began some years ago: to compile and publish inviting descriptions of some of our favorite butterflying sites around the state. These site accounts could be published first in *Massachusetts Butterflies*; later they might appear as a booklet. Would you be willing to write up a site near you, perhaps one where you have led field trips or have come to know as a special place? In your account, please include

1. A sketch map and text directions on how to get there
2. An description of what is interesting or unusual about the site, ecologically and in terms of butterfly and plant species, including nectar and larval plants
3. A strategy for how best to walk the site
4. A list of butterfly species seen

For an example of a site guide, see Matthew Pelikan, "The Great Meadow" in *MassButterflies* No. 10, Spring 1998. We will not include any sites with rare or threatened species. Please send your site descriptions to Sharon Stichter, Editor, at the address on the inside front cover. Thanks.

2002 Season Summary and Records

Tom Dodd

This year there were about 5000 butterfly sightings entered into MBC's database. The records are a great source of information from which long-term trends may be extracted. Due to space constraints however, only about 1000 of these records are published here. Many thanks to all the members who contributed sightings via email or mail. In addition, I would like to thank Cathy Dodd and Dale Rhoda for their valuable assistance in the data entry this year.

Observers

AK-A.Keith AM-A.McGinnis AR-A.Robb BA-B.Abrams BB-B.Bowker
BC-B.Cassie BN-B.Nikula BV-B.Volkle BW-B.Walker BWr-B.Wright
CD-C.Dodd CK-C.Kamp CT-C.Tibbets DLr-D.Larson DLu-D.Ludlow
DPe-D.Peacock DPR-D.Price DR-D.Rhoda DS-D.Savich
DSi-D.Silverstein DSm-D.Small EB-E.Baldwin EG-E.Giles EN-E.Nielsen
ES-E.Solberg FG-F.Goodwin GH-G.Howe JBe-J.Berry KHa-K.Haley KP-
K.Parker LS-L.Stillwell MA-M.Aliberti MC-M.Champagne
MFa-M.Fairbrother MFr-M.Freeman ML+SC-M.Lynch+S.Carrol
MPe-M.Pelikan MR-M.Rines NY-N.Young PW-P.Weatherbee
RFi-R.Finch RH-R.Hildreth RP-R.Pease RW-R.Walker SM-S.Moore
SP-S.Perkins SS-S.Stichter TD-T.Dodd TG-T.Gagnon TM-T.Moore
TW-T.Whelan VL-V.Laux WB-W.Bosse WM-W.Miller

Locations

APND-Allen's Pond, S Dartmouth BFDAM-Barre Falls Dam/Rutland State
Park, Barre BMBS-MAS Broad Meadow Brook Wildlife Sanctuary, Worcester
BMBS BI-Butterfly Institute Field Trip BMOOR-MAS Broadmoor Wildlife
Sanctuary, Natick BMOOR BI-Butterfly Institute Field Trip CRFAL-Crane
WMA, Falmouth CRGRO-Crane Pond WMA, Groveland DSTOW-Delaney
WMA, Stow DWWS-Daniel Webster Wildlife Sanctuary, Marshfield FANST-
Fannie Stebbins Refuge, Longmeadow GOOS-Gooseberry Neck, Westport
IRWS-MAS Ipswich River Wildlife Sanctuary, Topsfield LRA-Larkin
Recreation Area, Northbridge MBNEM-Martin Burns WMA, Newbury MBC-
Massachusetts Butterfly Club Field Trip MV-Martha's Vineyard NCG-
Northampton Community Gardens PL-Power Line SF-State Forest SP-State
Park

Fourth of July Counts: BRI#-Bristol BV#-Blackstone Valley
CBE#-Central Berkshire County CFR#-Central Franklin County
CON#-Concord FAL#-Falmouth IPS#-Ipswich MID#-Middleboro
MV#-Martha's Vineyard NBE#-Northern Berkshire County
NOH#-Northampton NWO#-Northern Worcester County
SBE#-Southern Berkshire County

2002 Season Summary

There were 101 butterfly species reported in 2002, with eight new early records and eleven late records. However, it didn't feel like a 101-species year. Most observers were reporting low numbers of butterflies throughout the state. What was the cause? We had a long drought starting in June and going through the summer. We also had some near, or at, freezing temperatures on May 18th and 19th across much of the state. Was it these reasons, or was it due to the previous winter's lack of snow? It's difficult to speculate on the cause. However, there were some very notable sightings during the fall migration—Queen, Long-tailed Skipper, Common Checkered-Skipper, Sachem, and Ocola Skippers, being among them.

If I could relive one day in 2002 to go butterflying, I would choose October 5th. There were three locations that were teeming with butterfly energy. The first place I would go to would be in Florence, where Tom Gagnon and Mark Fairbrother saw an Ocola Skipper (photographed) on one of Tom's many butterfly bushes. Then, I would join them at the Northampton Community Gardens where they found a Variegated Fritillary, a Common Checkered-Skipper, and had a quick glimpse of a Fiery Skipper. I would then go to Wayland to join Barbara Volkle, Steve Moore, and Erik Nielsen to see yet another Ocola Skipper (photographed), along with six Fiery Skippers (photographed), two Bronze Coppers, and a very late Tawny-edged Skipper. What a great day that would be!

Swallowtails

Swallowtail counts averaged fair to poor. Carl Kamp had a Tiger Swallowtail on April 19th, making it the earliest record by 10 days. After Tom Gagnon made his yearly pilgrimage to Mt Greylock on June 10, he wrote with regret in an email: "Usually I will count anywhere from 50 to 100 Canadian Tiger Swallowtails on the reservation. Saturday I had 6!" Though this could have been a local effect, it appeared to be the norm this year for many species in Massachusetts. The only swallowtail highlights were two Pipevine Swallowtails that appeared in Auburn and Northampton in late September.

Whites and Sulphurs

All these species (with the exception of Cloudless Sulphur) appeared to have below-average flights this year. However, the healthiness of the Mustard and West Virginia White flights in western Massachusetts is difficult to assess, having only a few observers that seek them out each year. Cabbage White and Orange Sulphur both posted record early dates on Martha's Vineyard. Cloudless Sulphurs staged a substantial irruptive flight from late August into early October. About 75% of them were observed during a one-week period

beginning Sept 7th. The last large flight in Massachusetts occurred in 1998. That flight also started in late August, but lasted into early December. It had over 500 individuals, compared to 172 this year. Virtually all observations of Cloudless Sulphur's occurred along the coast, although there were two rare inland records from Worcester County.

Coppers, Hairstreaks, Elfins, and Blues

Brian Cassie had an amazing six Harvesters along a Milford power line. This is an uncommon and local butterfly. Most observers would love seeing just one during the year. Frosted, Henry's, and Hoary Elfins appeared in good form. Although the record for any one location is eight, Fred Goodwin had a fine showing, with five Henry's Elfins in Ipswich. Brian Cassie and Madeline Champagne counted 164 Frosted Elfins in Foxboro, smashing the previous record of 30. In most cases, hairstreak numbers were on the low side. Andrew McGinnis and Tom Whelan found up to five Hickory Hairstreaks at Habitat Sanctuary in Belmont. Hickories are usually only reported in single numbers. While other observers were finding only one or two, Marj Rines found a mildly whopping seven Striped Hairstreaks on July 7. Bronze Coppers were found in previously known locations in the Sudbury and Concord River valleys. There were also two sightings (photographed) from Mass. Audubon's Ipswich River Wildlife Sanctuary. The sanctuary can now boast a list of 75 butterfly species with the addition of this copper. The blues seemed to be singing them, with their numbers lower than previous years. There were no reports of Bog Elfin or Early Hairstreak this year.

Brush-Footed Butterflies

On August 12, an email to the MassLeps group stated that Bryan Windmiller and a group of experienced observers witnessed a Queen in Methuen. They had good looks of the butterfly within 10 feet of it. The only previous Queen sighting in Massachusetts (B. Cassie email) was July 8, 1934 on Martha's Vineyard! On September 10th, another email was sent to the MassLeps group announcing: "*QUEEN in Marblehead right now: 9/10 Karen S Haley.*" Karen was also fortunate to have photographed this fantastic find. She had the photos immediately developed, and with the help of Fred Goodwin and Marj Rines, the photos were on-line within hours. What excitement! In an email, Harry Pavulaan stated that this was the subspecies "strigosus," indicated by the white scaling along the hind wing veins. It is a Mexican-Midwest subspecies and is more likely to migrate from its normal range, the southern United States through Central America into Argentina. Articles in the Autumn 2001 and Summer 2002 Lepidopterists' Society News report a first record for New Jersey (photographed) on July 17, 2001, as well as four other records in the northeast. As a side note, a search of the Internet found one site (www.thebutterflybox.com) that appears to sell Queens for wedding releases, although the USDA does have strict regulations limiting this. Moving on, the fritillaries all had

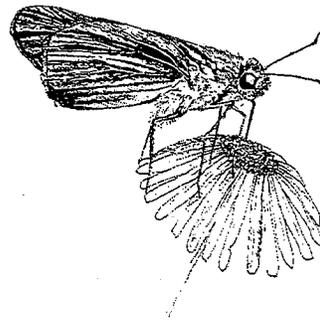
average to poor flights. Dennis Peacock found a lively location for Compton Tortoiseshell's in Hingham this year. No one reported any Milbert's Tortoiseshells. During July and August, Eastern Comma, Question Mark, Mourning Cloak, both ladies, and Red Admiral numbers were down at least 50% from any of the previous 3 years. Common Buckeyes had their second best flight in 10 years, chiefly along the coast. The browns, ringlets, satyrs, and wood-nymphs all had a less than average year. Monarch numbers were also fair to poor, with a poor southward migration.

Skippers

New high counts were tallied with Madeline Champagne and Brian Cassie seeing 8 Sleepy Duskywings in Foxboro, and Brian also seeing 15 Southern Cloudywings in Mansfield. Mark Lynch and Sheila Carrol also exceeded the high counts of Arctic Skippers, at 30, and Common Sootywings at 18. Finally, Tom Gagnon, with fellow MBC'ers saw 173 Least Skippers, just 3 higher than the previous record. Doug Savich and Claudia Tibbets found a good wetland for Black Dash and Mulberry Wing with 25 and 26, respectively. It was somewhat a lackluster year for resident skippers, but the migrant species were especially noteworthy. This is the second year straight that Tom Gagnon found a Common Checkered-Skipper at Northampton Community Gardens. Fiery Skipper totals (42) rivaled the fantastic numbers (57) of 1999. They have now been seen in 8 of the last 10 years. This year they were found in three locations: Northampton, Wayland, and Cape Ann. Because Fiery Skipper sightings were not widespread, the Wayland and Cape Ann

populations make me wonder if females had also arrived earlier in the year, finding suitable host grasses, and that these were their offspring. The Dartmouth/ Westport coastal area has proven again to be a great place to find migrant skippers. There were four Sachems reported from this area, with an astounding three seen on one day. Previous records of this species have always been one. Brian Cassie and other MBC members found a Long-tailed Skipper in Dartmouth. This skipper isn't one of those LBJ's (little

brown jobs). It is Silver-spotted Skipper size and has long tails with a gorgeous iridescent blue-green on it's hind wing and body. This is yet another rare migrant that there have been only one or two sightings of in 5 of the last 10 years. As stated earlier, there were two Ocala Skippers seen on October 5th. There have only been six other sightings of this species since 1992. Finally, there were no Common Roadside Skippers reported this year.



Ocala Skipper

Sarah Jane Cassie

2002 Butterfly Records

Pipevine Swallowtail			
Sep	28	NCG	1 TG
	29	Auburn	1 BW
Black Swallowtail			
May	6	Florence	1 TG
	21	Brookline	5 BC
Jun	22	Callahan SP, Framingham Royalston	3 1 BB CK
Jul	13	Horn Pond, Woburn	2 SM
	25	Chelmsford PL	2 TW
Aug	4	Florence E Longmeadow	1 1 TG KP
	4	Katama, Chappaquidick MV	5,1 AK
Sep	14	Amherst Daniel's Farm, Blackstone	1 1 TG ML+SC
Oct	5	NCG	1 TG
Tiger Swallowtail (spp)			
Apr	19	* Royalston	1 CK
May	5	Ipswich Oxford, Douglas	1 1,1 FG RH
	11	Quabbin Res Ipswich	2 1 TG FG
	26	Tully Trail, Royalston	7 CK
Jun	1	Huntington, Otis	15,13 ML+SC
	1	E Bridgewater Royalston	15 12 EG CK
	10	Mt. Greylock, Adams	6 TG
	26	BFDAM	9 ML+SC
Jul	11	Merrimac	6 JBe
	23	Newbury	3 SS
	25	Lake Rohuntha Dam, Athol	3 EB
	29	Florence	4 TG
Aug	11	FANST Fowl Meadows Reserv, Milton	3 2 TG+KP+MBC EN
Sep	8	Oak Bluffs Milford PL	1 1 MPe EN
	22	E Longmeadow	1 KP
Spicebush Swallowtail			
May	27	Mattapoisett-Fairhaven	1 ML+SC
Jul	7	Cape Ann	2 DS+CT
	12	Hoft Farm, West Tisbury	2 MPe
	14	Mt Greylock E Longmeadow	1 1 DSi KP
	26	West Tisbury	3 MPe
Aug	2	Cape Ann	2 DS+CT
	10	Milford PL	2 EN
	13,22	Newbury	2 SS
Oct	5	Newbury	2 SS
Mustard White			
Apr	14	Lenox	5 RP
May	11	Lenox	11 RP

West Virginia White

Apr	20	Tyringham	1	PW
May	4	Amherst	1	TG
	4	Mt Tom	1	RP
	10	SF, Savoy	10	PW
Jun	2	Mt Greylock, Adams	2	PW

Cabbage White

Feb	26 *	Oak Bluffs	1 1	MPe VL fide MPe
May	5	Rowley	26	JBe
Jun	23	Arnold Arboretum, Boston	30	DR
	25	Merrimac	54	JBe
	29	World's End; Turkey Hill R., Hingham	60;40	EN
Jul	21	Fort Hill, Eastham	50+	ML+SC
Aug	3	IRWS	21	FG
Sep	6	GOOS	165	RH
	7	Westport/S Dartmouth	189	BC+MBC
	7	LRA	87	RH
	19	GOOS	110	RH
Oct	2	Nobska Pt., Woods Hole	30+	AR
	24	Westport	3	RH
Nov	15	Chilmark	1	AK

Clouded Sulphur

Apr	12	W Tisbury	1	MPe
	19	Oak Bluffs E Longmeadow	2 1	MPe KP
May	5	MBNEM, Plum Island, Newbury	6,8	EN
	23	Cape Ann IRWS BMBS	8 26 6	DS+CT FG GH et al
Jun	23	Arnold Arboretum, Boston	15	DR
	29	World's End; Turkey Hill, Hingham	45;55	EN
Jul	6	Sheffield	20	ML+SC
Aug	11	FANST	17	TG+KP+MBC
Sep	7	Westport/S Dartmouth LRA	171 21	BC+MBC RH
	17	APND Nomans Land, MV	49 20+	RH AK
	21	Cape Ann	72	DS+CT
	28	GOOS Katama, MV	19 35+	BB+LS AK
Oct	1	New Salem Cape Ann	30 30	DSm DS+CT
	5	Community Gardens, Wayland	25	SM+BV+EN
	14	Cape Ann	10	DS+CT
Nov	26	W Tisbury	6+	AK

Orange Sulphur

Apr	12 *	W Tisbury	2	MPe
May	22	Katama, Edgartown	~40	MPe
Jun	3	DSTOW	30	EN
	29	World's End; Turkey Hill, Hingham	35;30	EN
Jul	10,11	Cape Ann	13	DS+CT
	21	Fort Hill, Eastham	15+	ML+SC
Aug	4	Katama, MV	100	AK
Sep	6	GOOS	49	RH

Orange Sulphur, continued

	6	Katama, MV	10+	AK
	10	GOOS Great Brook Farm, Carlisle	69 10	RH TW
	19	Westport	103	RH
Oct	1	Westport	112	RH
	20	Westport/S Dartmouth	111	BC+MBC
Nov	9	Westport/S Dartmouth W Tisbury	5 6+	BC AK
	26	W Tisbury	2	AK

Cloudless Sulphur

Aug	21	Chilmark Chilmark	1 1	MPe AK
Sep	7	Squibnocket, MV Westport/S Dartmouth	1 8	AK BC+MBC
	12	Marion	3	M Maurer
	13	GOOS	3	RH
	13	Morris Island	100	BA
	14	Morris Island, Chatham Marblehead	17 1	RP+KP KHa
	15	Douglas	1	C Hildreth
	18	Mt Wachusett	1	W Petersen
	19	GOOS Falmouth	2 2	RH AR
	29	GOOS	1	EN
Oct	2	Woods Hole, Falmouth	2	AR
	5	Oak Bluffs	1	MPe

Harvester

May	31	Hingham	1	DPe
Jul	14	S Hadley	1	TG+NY
Aug	3	Milford	6	BC
	26	Fowl Meadows, Milton	1	TM
Sep	7	LRA	1	RH
	9	Cape Ann	1	DS+CT

American Copper

Apr	25	Chilmark	1	AK
May	4	E Longmeadow	6	KP
	19	Foxboro	14	MC+MBC
	26	BMoor BINST, Foxboro	12	BC
Jul	10	Oak Bluffs	19,12	MPe
	12	Chelmsford	6	TW
	21	Newbury Concord	10 12	SS EN
Aug	7	Chelmsford PL	10	TW
Sep	8	Milford PL	8	EN
	17,18	Nomans Island, MV	25,10	AK
Oct	28	Cape Poge, Edgartown	1	AK

Bronze Copper

Aug	20	Great Meadows, Concord	1	MR+SP
Sep	26	IRWS	1	FG
	29	Community Gardens, Wayland	1	BV+SM
Oct	2	Community Gardens, Wayland	4f	TM
	5	Community Gardens, Wayland	2	SM+Bv+EN
	8	IRWS	1	FG+B Spare

Bog Copper					
Jun	28	Rockport	21	FG+DS+CT	
Jul	7	Cape Ann	7	DS+CT	
	15	Tully Lake, Royalston	50	EB	
	16,17	Cape Ann	1	DS+CT	
Coral Hairstreak					
Jul	6	Williamstown Montague	1 3	PW TG	
	10	Oak Bluffs	2	MPe	
	13	Horn Pond, Woburn	2	SM	
	20	Williamsburg Chilmark	1 1	TG MPe	
	20	Laughing Brook Sanctuary, Hampden	2	KP	
	21	Concord	1	EN	
Acadian Hairstreak					
Jul	3	Horn Pond Mountain, Woburn	1	MR	
	7	Horn Pond Mountain, Woburn	8	MR	
	13	BV# Woburn	2 1	SM	
	21	BRI# Pittsfield	2 19	TG	
Edwards' Hairstreak					
Jun	30	E Longmeadow	2	KP	
Jul	3	Horn Pond Mountain, Woburn	1	MR	
	5	Habitat Sanctuary, Belmont	6	AM	
	7	Horn Pond Mountain, Woburn	12	MR	
	9	Blue Hills	4	BC et al	
	13	Woburn Belmont	5 2	SM AM	
	24	SF, MV	3	AK	
	26	W Tisbury	3-4	MPe	
Aug	9	SF, W Tisbury	1	MPe	
Banded Hairstreak					
Jun	30	Old Zachary Pond, Upton	1	CD+TD	
Jul	3	Woburn Cape Ann	5 2	MR DS+CT	
	5	E Longmeadow	2	KP	
	7	Horn Pond Mountain, Woburn	11	MR	
	9	Blue Hills	19	BC et al	
	10	Newbury Cape Ann Belmont	1 1 5	SS DS+CT AM	
	12	Foxboro	5	MC	
	13	Horn Pond, Woburn	3	SM	
	25	IRWS	1	FG	
Hickory Hairstreak					
Jul	7	NWO#	1		
	9	Habitat Sanctuary, Belmont	2	TW	
	10	Habitat Sanctuary, Belmont	5	AM	
	13	SBE# Woburn Alford	1 1 1	SM TG	
	18	Newbury	1	SS	
	29	IRWS	1	FG	

Striped Hairstreak					
Jul	7	Horn Pond Mountain, Woburn	7	MR	
	11	Cape Ann	2	DS+CT	
	18	Tea Lane, Chilmark	1	MPe	
	25	IRWS	2	FG	
Aug	3	IRWS	1	FG	
Oak Hairstreak					
Jun	29	Turkey Hill Reservation, Hingham	1	EN+MBC	
Brown Elfin					
Apr	14,15	BMBS	1,6	GH	
	19	SF, M.V.	13	MPe	
	21	Lexington	10+	MR	
May	5	SF, M.V. Turners Falls	17 6	MPe TG	
	7	BMBS	9	GH	
	19	Foxboro SF, Edgartown	2 5	MC+MBC MPe	
Jun	20 **	Sharon	1	BC	
Hoary Elfin					
Apr	14	SF, W Tisbury	2	MPe	
	19	SF, M.V.	9	MPe	
	27	SF, Edgartown	6	MPe	
May	5	SF, M.V.	9	MPe	
Frosted Elfin					
Apr	21 *	Lexington	1+	MR	
May	5	Amherst +Turners Falls	8	TG+MBC	
	19	Foxboro	35	MC+MBC	
	22	Katama, Edgartown	2	MPe	
	25	Foxboro	164	BC+MC	
	26	BMoor BINST Reservoir, Foxboro	30	BC	
Henry's Elfin					
Apr	13 *	Plum Island, Newburyport	1	BW	
	15	BMBS	1	GH	
	21	BMBS Lexington	1 1+	DPr MR	
May	4	Crane Beach, Ipswich Royalston	2 1	JBe DSm	
	5	Plum Island, Newbury	1	EN	
	5	Amherst +Turners Falls	2	TG+MBC	
	10	IRWS	1	FG	
	11	Willowdale SF, Ipswich	5	FG	
Eastern Pine Elfin					
Apr	16	SF, Edgartown	1	MPe	
May	4	E Longmeadow	5	KP	
	4	Oxbow NWR, Harvard Amherst	4 4	EN TG	
	5	Turners Falls Amherst Ipswich	5 11 3	TG TG FG	
	11	Quabbin Res	3	TG	
	25	Petersham	3	TG	
Jun	2	MBNEM	1	EN	

Juniper Hairstreak			
Apr	21	Farm Pond, Oak Bluffs	2 MPe
	30	Trade Winds, Oak Bluffs	2,3 MPe
Jun	17	Newbury	1 SS
Jul	13	MV#-Oak Bluffs	1 MPe
	20	Mt Holyoke	1 TG+NY+B Higgins
Hessel's Hairstreak			
Jun	1or2	Halifax	5 DPe
White M Hairstreak			
May	6	Brook St PL, Sherborn	1 RH
Jul	12	Park School, Brookline	1 BC
Sep	7	Westport/S Dartmouth	1 BC+MBC
Gray Hairstreak			
Mar	29 *	Turkey Hill	1 DPe
Apr	16	SF, W Tisbury	1 MPe
May	25	BMBS	2 GH+WM
	25	Foxboro	2 EN
Jul	12	Chelmsford	2 TW
	21	Concord	3 EN
Aug	9	SF, W Tisbury	2 MPe
	26	Westport/S Dartmouth Oak Bluffs	7 2 BC MPe
Sep	10	Cape Ann	3 DS+CT
	13	GOOS	5 RH
	14	Sylvan Nursery, Westport	2 SS+MBC
Oct	5	Community Gardens, Wayland	1 SM+BV+EN
Eastern Tailed-Blue			
May	4	Cape Ann	7 DS+CT
	19	Foxboro	9 MC+MBC
	23	BMBS Lexington	3 15 GH et al TW
	25	BMBS Hale Res, Westwood	18 6 GH et al EN
Jun	29	MBNEM, Turkey Hill Res, Hingham	2,6 EN
Jul	21	Concord	18 EN
Aug	5	Chelmsford PL Milford PL	3 26 TW EN
	20	Cape Ann	7 DS+CT
Sep	8	W Tisbury Milford PL	2 17 MPe EN
	21	Upton LRA	5 3 TD+CD RH
Oct	5	Holliston	1 RH
Spring Azure (spp)			
Apr	9	Milford, Holliston Truro	1,1 1 RH DSi
	14	28marg, 5 lucia, Petersham	33 EN
	14	Stoughton	11 DLr
	17	Petersham	36 EB
	18	Falmouth	27 AR
May	4	Royalston Quabbin area	10 ~30 DSm RH
	4	Oxbow NWR, Harvard	22 EN
	5	Ipswich SF, M.V.	36 ~30 FG MPe
	10	IRWS	55 FG

Spring Azure (spp) - continued

	11	Great Meadow, Arlington Ipswich	13 44	BWr FG
	25	Natick PL	18	BB+ES
Jun	1	Royalston	12	CK
Jul	17	Cape Ann	1	DS+CT
Aug	11	FANST Fowl Meadows Reserv, Milton	2 1	TG+KP+MBC EN
Sep	1	BFDAM	3	ML+SC
	13	Gay Head	2	AK
	19	Oak Bluffs	1	MPe

Silvery Blue

May	10	LRA	1	RH
Jun	1	Royalston	3	CK
	3	DSTOW	40	EN
	11	Berkshire Comm College	10	DPr
	11	Greylock Glen, Adams	1	PW
	21	Moran WMA, Windsor	5	ML+SC

Variegated Fritillary

Jun	1	Sachem Rock, E Bridgewater	1	EG
Jul	12	Vineyard Haven, Tisbury	1	MPe
	16	Cape Ann	1	DS+CT
Aug	7	Quabbin Res	2	DSm+MBC
Sep	1	Quabbin Res	4	TG
	19	Mountain Mdw Pres, Williamstown	1	PW
	21	Quabbin Res	6	TG
	22,28	NCG	3,2	TG
	29	Quabbin Res,	13	TG
Oct	1	Quabbin Res, New Salem	5	DSm
	6	NCG	1	TG

Great Spangled Fritillary

Jun	21	Moran WMA, Windsor	1	ML+SC
	29	MBNEM Grafton E Longmeadow	10 5 5	EN DPr+MBC KP
Jul	6	Bartholomew's Cobble, Sheffield	12	ML+SC
	6	Norton	30	RFi
	12	Chelmsford	8	TW
	18	Newbury Cape Ann	3 2	SS DS+CT
Aug	11	Fowl Meadows Reserv, Milton	10	EN
	27	Warwick	12	CK
Sep	7	LRA	6	RH
	13	BFDAM	6	CK
Oct	1	NCG	6	TG
	6	NCG	2	TG
	18	** Brook St PL, Sherborn	1	RH

Aphrodite Fritillary

Jun	21	Savoy E Longmeadow	1 1	ML+SC KP
	21	Moran WMA, Windsor	1	ML+SC
Jul	13	Moran WMA, Windsor	3	ML+SC
	20	Laughing Brook Sanctuary, Hampden	7	KP

Aug	17	Laughing Brook Sanctuary, Hampden	2	KP
	27	Warwick	2	CK
Sep	11	BMBS	1	GH
Atlantis Fritillary				
Jun	21	Windsor, Monroe, Savoy	6,3,3	ML+SC
Jul	13	Moran WMA, Windsor	1	ML+SC
	21	October Mtn, Pittsfield	5	TG
Silver-bordered Fritillary				
May	23	Cape Ann	9	DS+CT
Jun	3,20	Cape Ann	39	DS+CT
	28	Rockport	13	FG
Jul	16,17	Cape Ann	35,36	DS+CT
	23	Cape Ann	43	DS+CT
Aug	4	Quabbin Park	6	ML+SC
	6,19	Cape Ann	13,8	DS+CT
Sep	8	Milford PL	9	EN
	21	Waring Field, Rockport	16	MBC
	28	Cape Ann	2	DS+CT
Meadow Fritillary				
May	14	Williamstown	1	PW
Jun	2	Mt. Greylock, Adams	1	PW
Jul	6	Bartholomew's Cobble, Sheffield	4	ML+SC
Aug	21	Williamstown	3	PW
	28	Williamstown	2	PW
Sep	19	Williamstown	2	PW
Harris' Checkerspot				
Jun	10	BMBS	7	BW+RW+SS+MC
	10	WTAG Towers, Holden	20	TM
	18	BMBS	7	GH
	22	Royalston	5	CK
	26	BFDAM	9	ML+SC
	29	MBNEM	1	EN
Pearl Crescent				
May	8	Florence	1	TG
	22	Cherry Hill Res, Newbury	25	FG
	27	Mattapoisett-Fairhaven	28	ML+SC
	27	Cape Ann	41	DS+CT
Jun	1	Crane WMA, Falmouth Milford PL	47 40	AR BB
	3	Cape Ann Falmouth	40 23	DS+CT AR
	26	BFDAM	33	ML+SC
Jul	25	Lake Rohunta Dam, Athol	50	EB
Aug	5	Milford PL	110	EN
	10	Milford PL	115	EN
	11	FANST	67	TG+KP+MBC
Sep	17	Nomans Island, MV	100+	AK
Oct	15	Chilmark	1	AK

Baltimore Checkerspot

Jun	1	Sachem Rock, E Bridgewater	1	EG
	21	Canton	150	CK
	24	Coffin's Field, Edgartown	1	MPe
	26,28	Weir Hill Reservation, N Andover	12	FG
	29	World's End; Turkey Hill R, Hingham	2;30	EN
	29	Mill Pond Rec Area, W Newbury	60	EN
	30	Cape Ann	1	DS+CT
Jul	1,2	Cape Ann	1,1	DS+CT
	14	Topsfield S Darmouth	22 1	FG MA

Question Mark

Apr	16	SF, W Tisbury	1	MPe
May	10	Oak Bluffs	1	MPe
	22	E Bridgewater	1	EG
	30	Newbury	2	SS
Jun	2	Cherry Hill Reservoir, W Newbury	2	EN
	20	Newbury	2	SS
Jul	21	Concord	1	EN
Sep	12	Westport/S Dartmouth	5	BC
Oct	4	GOOS	1	RH

Eastern Comma

Mar	14	Rocky Narrows, Sherborn IRWS	1 1	MFr FG
Apr	3	BMBS	2	GH et al
May	4	Oxbow NWR, Harvard	2	EN
Jun	9	E Longmeadow	1	KP
Jul	10	NBE#	1	
	13	SBE#	1	
	20	NOH#	1	
Sep	21	LRA	2	RH

Compton Tortoiseshell

Mar	15	Wampatuck SP, Hingham	8	DPe
	29	Wampatuck SP, Hingham	3	DPe
	30	Oxbox NWR, Harvard	1	EN
	31	Ware River Watershed	2	ML+SC
Apr	11	Norwell	5	DPe+DLu
	12	Wampatuck SP, Hingham	3	WB
May	4	Royalston	1	DSm
Oct	18	Ipswich	1	JBe

Mourning Cloak

Jan	29	W Tisbury	1	R Woodruff fide MaPe
Feb	26	Wakefield Lexington	1 1	P&F Vale fide MR MR
Mar	14	Natick Mt Tom Cape Ann	1 4 3	ES TG DS+CT
	28	Holy Cross College, Worcester	1	RLent
Apr	3	BMBS Cape Ann	5 6	GH et al DS+CT
	10,11	BMBS	4	GH et al
	11	Norwell	3	DPe+DLu
	14	Willowdale SF, Ipswich	4	FG

Mourning Cloak, continued			
24	IRWS	4	FG
Jun 8,10	Mt Greylock	3	TG
21	Moran WMA, Windsor	5	ML+SC
30	Mt Greylock BMBS CapeAnn	3 3 4	TG BB DS+CT
Sep 7	Westport/S Dartmouth	6	BC+MBC
Nov 8	Concord	1	MR
American Lady			
Apr 16	Cape Ann	1	DS+CT
19	Newbury SF, M.V.	2 6	SS MPe
May 5	SF, M.V.	6	MPe
10	Holliston	4	RH
19	Foxboro SF, Edgartown	4 9	MC+MBC MPe
20	SF, W Tisbury	11	MPe
25	Foxboro BMBS Westwood	3 2 5	EN GH et a EN
Jun 1	E Bridgewater	5	EG
Aug 27	Warwick	3	CK
Sep 28	GOOS	6	BB+LS
Oct 28	Falmouth	1	AR
Painted Lady			
May 31	Cape Ann	1	DS+CT
Aug 1	Marblehead	1	KHa
Sep 5	Squibnocket, MV	1	AK
12	Westport/S Dartmouth	1	BC
13	Gay Head, Aquinnah	1	MPe, AK
22	Legg' s Hill, Marblehead	1	KHa
Oct 14	Community Garden, Wayland	1	BV+SM
Red Admiral			
Apr 14,19E	Longmeadow	1,2	KP
May 5	Newbury Oak Bluffs, W Tisbury	1 1,1	SS MPe
5	Lexington	1	TW
Jun 1	Cape Ann	2	DS+CT
3,28	Brookline	2,3	BC
29	Dauphinais Park, Grafton	2	DPr+MBC
Sep 28	GOOS	3	BB+LS
Oct 25	Chilmark	1	AK
Common Buckeye			
Jun 1	Edgartown	1,1	MPe
Jul 5	Squibnocket, MV	2	AK
Aug 4	Quabbin Park	2	ML+SC
27	Bourne Falmouth	2 3	AR SS
Sep 14	Westport/S Dartmouth	21	BC+MBC
19	most at GOOS	24	RH
28	GOOS	9	BB+LS
Oct 1	most at GOOS	12	RH
20	Westport/S Dartmouth	6	BC+MBC
Nov 1	Gay Head /Cliffs, Aquinnah	1	MPe

Red-spotted Admiral (White Admiral form)

Jun	22	Southampton	1	TG
	30	Hawley	1	TG
Jul	9	Habitat Sanctuary, Belmont	1	TW
Sep	7	Horseneck Beach, Dartmouth	1	BB+LS

Red-spotted Admiral (Red-spotted Purple form)

May	23	Franklin Ave., Oak Bluffs	1	MPe
Jun	21	Moran WMA, Windsor	5	ML+SC
	22	Southampton Royalston	5 2	TG CK
	24	Coffin's Field, Edgartown	2	MPe
	26	BFDAM	5	ML+SC
Jul	1	Coffin's Field, Edgartown	4	MPe
Aug	9	SF, W Tisbury	3	MPe
	27	Florence Chilmark Warwick	1 2 4	TG AK CK
Sep	10	SF, W Tisbury	1	MPe

Viceroy

May	31	Chelmsford	1	TW
Jun	2	River Bend Farm, Uxbridge	2	GH+BW+RW
	2	W Newbury, Westwood	6,2	EN
Jul	23	Great Meadow, Concord	10	BC
Aug	5	Milford PL	11	EN
	19	Easton	9	BC
Sep	7	LRA	9	RH
	8	Milford PL	7	EN
	9	Chelmsford PL	4	TW
	21	LRA	12	RH
Oct	1	Quabbin Res, New Salem	1	DSm

Hackberry Emperor

Jul	13	SBE#	1	
	14	Forest Park, Springfield	1	TG
Aug	11	Forest Park, Springfield	2	TG+KP+MBC

Tawny Emperor

Jul	20	Northampton	1	TG
Aug	11	Forest Park, Springfield	4	TG

Northern Pearly-Eye

Jul	6	Ashley Falls, Sheffield	1	ML+SC
	6	Bartholomew's Cobble, Sheffield	1	ML+SC
	7	NWO#	5	
	21	CBE#	5	
	27	MID#	1	

Eyed Brown

Jun	29	MBNEM	1	EN
Jul	10	NBE#	33	
	13	BV# MV# SBE#	3 4 10	
	20	NOH#	7	
	27	Gate 33, Quabbin	1	ML+SC

Appalachian Brown			
Jul	3	IRWS	1 FG
	7	Quabog WMA, W Brookfield	2 ML+SC
	18	Cape Ann Tea Lane, Chilmark	6 3 DS+CT MPe
Aug	5	Cape Ann	2 DS+CT
	11	FANST	6 TG+KP+MBC
	25	Milford PL	2 BC
Little Wood-Satyr			
May	19	Foxboro	1 MC+MBC
Jun	1	Farm Pond, Oak Bluffs	34 MPe
	2	Tisbury Meadow, Tisbury BMBS	85+ 50 MPe BB
	10	BMBS	40 BW+RW+SS+MC
	10	Draper Field, Hopedale DSTOW	20 34 BB ML+SC
	11	Sherborn PL	20 BB
	12,13	Chilmark	15 AK
	18-22	MV	10+ AK
	20	IRWS	22 FG
Jul	10	Newbury Cape Ann	2 2 SS DS+CT
Aug	4	E Longmeadow	2 KP
Common Ringlet			
May	21,31	Cape Ann	1,7 DS+CT
Jun	3	Dover, DSTOW Cape Ann	65,10 21 EN DS+CT
	20	IRWS	104 FG
	26	BFDAM	55 ML+SC
Jul	13	Moran WMA, Windsor	10 ML+SC
Aug	3	IRWS	248 FG+MBC
	17	Laughing Brook Sanctuary, Hampden	5 KP
Sep	1	BFDAM	26 ML+SC
	23	Moran WMA, Windsor	3 PW
Common Wood-Nymph			
Jul	5	SF, Edgartown	1 MPe
	6	Norton Williamstown	14 15 RFi PW
	19-30	Cape Ann	max 110 DS+CT
Aug	2,6	Cape Ann	63,41 DS+CT
	3	IRWS	16 FG
	19	Newbury	21 SS
	27	Waring Field, Rockport Warwick	21 7 FG CK
Sep	4	Cape Ann	8 DS+CT
	21	Upton	1 TD+CD
Monarch			
Jun	9	Florence Newbury	1 1 TG SS
Jul	5	Cape Ann	2 DS+CT
	5,25	IRWS	1,3 FG
Aug	3	IRWS Newbury	5 2 FG SS
	26	Westport/S Dartmouth Squibnocket, MV	5 5 BC AK
Sep	13	Aquinnah	~45 MPe
	13	Cape Ann GOOS	26 84 DS+CT RH

Monarch, continued			
	15	Gay Head	250+ AK
	23	Moran WMA, Windsor	35 PW
	29	GOOS	41 EN
Oct	1	Westport Phillipston	31 23 RH EB
	2	NCG	30 TG
	4	GOOS	42 RH
	24	Westport	6 RH
Nov	14	Norton Pt, MV	2 AK
Queen			
Aug	12 *	Methuen	1 B Windmiller et al
Sep	10 **	Marblehead	1 KHa
Silver-spotted Skipper			
Jun	1	Milford PL	1 BB
	23	Arnold Arboretum, Boston	7 DR
	30	BMBS	6 BB
Jul	5	Tisbury	9,2 MPe
	12	Foxboro	5 MC
	21	Concord	8 EN
Aug	3	Wachusett Res G35,W Boylston	23 CD+TD+MBC
	11	FANST	6 TG+KP+MBC
Sep	17	NCG	4 TG
Oct	5	NCG	3 TG
Long-tailed Skipper			
Sep	7	S Dartmouth	1 BC+MBC
Hoary Edge			
Jun	9	Sunderland	2 TG
	25	BMBS	4 DP+WB
Jul	12	Horn Pond Mountain, Woburn	7 AM
	20	Upton NOH#	1 2 TD+CD
Southern Cloudywing			
Jun	8	Mansfield	15 BC
	9	Sunderland	1 TG
	24	Old County, W Tisbury	6 MPe
	29	Dauphinais Park, Grafton MBNEM	1 2 DP+MBC EN
Jul	7	NWO#	1
	21 **	Concord	1 EN
Northern Cloudywing			
May	31	Cape Ann	13 DS+CT
Jun	2	Cape Ann	19 DS+CT
	10	Draper Field, Hopedale	13 BB
	11	Greylock Glen, Adams	3 PW
	18	BMBS	3 GH
	22	Royalston	3 CK
	29	Dauphinais Park, Grafton MBNEM	1 4 DP+MBC EN
Jul	15	IPS#	1

Dreamy Duskywing					
May	7	Holliston	1		RH
	19	Foxboro	6		MC+MBC
	25	BMBS Foxboro	11 4		GH et al EN
	28	BMBS	7		GH
Jun	8	Mansfield	8		BC
	10	BMBS	4		BW+RW+SS+MC
	25	BMBS	1		DPr+BW
Sleepy Duskywing					
Apr	21	Lexington	1		MR
May	7	Falmouth	2		AR
	19	Foxboro SF, Edgartown	1 6		MC+MBC MPe
	20	SF, W Tisbury	5		MPe
	25	Menemsha Hills, Chilmark Foxboro	1 8		MPe BC+MC
Jun	1	Royalston	1		CK
Juvenal's Duskywing					
Apr	14	Uxbridge Westfield	2 2		BW TG
	14	E Longmeadow BMBS	1 1		KP GH
May	7	BMBS	15		GH
	11	Willowdale SF, Ipswich	12		FG
	19	BMOOR BI, Sherborn SF, Edgartown	8 22		MBC MPe
	25	Chilmark Hale Res, Westwood	14 11		MPe EN
Jun	24	Coffin's Field, Edgartown	1		MPe
Horace's Duskywing					
May	16	Fulling Mill, MV	1		AK
	25	Foxboro	1		BC+MC
Jul	21	BRI#	4		
Wild Indigo Duskywing					
May	19	SF, Edgartown Foxboro	1 1		MPe MC+MBC
	25	BMBS Foxboro	7 25		GH+WM BC+MC+EN
Jun	2	BMBS	10		DPr
	3	Dover	10		EN
Jul	21	Concord	11		EN
Aug	7	Chelmsford PL	12		TW
Oct	6	NCG	1		TG
Common Checkered-Skipper					
Sep	10,12,22,24	NCG	1f		TG
Oct	2,5,6 **	NCG	1		TG
Common Sootywing					
May	10	Northbridge	1		RH
	25	Foxboro	4		EN
Jun	3	DSTOW	14		EN
	10	DSTOW	18		ML+SC
Jul	21	Concord	1		EN
Aug	25	NCG	2		TG
Sep	3	NCG	2		TG
	21 **	Marblehead	1		KHa

Arctic Skipper

Jun	1	Royalston Williamstown	3 1	CK PW
	21	Moran WMA, Windsor; Monroe	30;1	ML+SC
	26	BFDAM	1	ML+SC

Least Skipper

Jun	2	Tisbury Meadow, Tisbury	1	MPe
	23	Arnold Arboretum, Boston	25	DR
Jul	2	Cape Ann	8	DS+CT
Aug	11	Milton FANST	7 173	EN TG+MBC
	27	Waring Field, Rockport	68	FG
Sep	1	Waring Field, Rockport	30	BV+SM
	21	Waring Field, Rockport	8	MBC
Oct	6	Cape Ann	1	DS+CT

European Skipper

Jun	9	E Longmeadow	1	KP
	20	IRWS Mill Pond, W Newbury	121 20	FG TW
	22	Rock Meadow, Belmont	200	AM
	22	Callahan State Park, Framingham	120	BB
	23	Arnold Arboretum, Boston	40	DR
	25	Merrimac	100+	JBe
	26	Weir Hill Reservation, N Andover	300	FG
	26	BFDAM	641	ML+SC
	29	Turkey Hill, World's End R, Hingham	150,250	EN
Jul	1	Cape Ann	159	DS+CT
	13	Moran WMA, Windsor	470+	ML+SC
	27	MID#	1	

Fiery Skipper

Aug	27	Waring Field, Rockport	1	FG
Sep	21	Rockport; Eastern Pt, Gloucester	6;1	MBC
	22,28	NCG	1	TG
Oct	1	Woods Hole, Falmouth Cape Ann	1 4	AR DS+CT
	5	NCG	1	TG
	5	Community Garden, Wayland	1f,5m	SM+Bv+EN
	6,9	Cape Ann	4,1	DS+CT
	14	Community Garden, Wayland	1	BV+SM
	14	Cape Ann	4	DS+CT

Leonard's Skipper

Aug	25	Florence Milford PL	1 1	TG BC
	27	Warwick	4	CK
Sep	7	LRA	4	RH
	8	Milford PL Mill Brook, W Tisbury	2 3	EN MPe
	17	Nomans Island, MV NCG APND	2 1 1	AK TG RH
	29	Cape Poge, Edgartown	2	AK

Cobweb Skipper

May	5	SF, W Tisbury	1	MPe
	19	Foxboro SF, Edgartown	5 19	MC+MBC MPe
	22,25	BMBS	5,10	GH et al
Jun	1	Florence	3	TG+NY
	2	BMBS	1	DPr

Indian Skipper

May	25	Foxboro, Hale Res, Westwood	1,1	EN
Jun	1	Florence M.V.	27 29	TG+NY MPe
	2	Tisbury Meadow, Tisbury	29	MPe
	8	Mansfield	16	BC
	18	BMBS	1	GH
Jul	6	CFR#	1	

Peck's Skipper

May	17	Hoft Farm, W Tisbury	1	MPe
	30	E Longmeadow Upton	15 40	KP TD+CD
Jun	10	Draper Field, Hopedale	18	BB
Aug	4	E Longmeadow Upton	40 15	KP TD+CD
	10	E Longmeadow Milford PL	34 19	KP EN
	11	Fowl Meadows Reserv, Milton FANST	18 33	EN TG+MBC
Sep	21	Waring Field, Rockport	10	MBC
Oct	6	Cape Ann	1	DS+CT

Tawny-edged Skipper

May	16	Holliston	1	RH
	25	Hale Res, Westwood	5	EN
	29	E Longmeadow	7	KP
Jun	1	Trade Winds, Oak Bluffs	9	MPe
	2	E Longmeadow	22	KP
	8	Mansfield	13	BC
	20	IRWS	6	FG
Aug	4	E Longmeadow	33	KP
	10	E Longmeadow Milford PL	12 5	KP EN
	17	Laughing Brook Sanctuary, Hampden	11	KP
	19	Easton	8	BC
	25	IRWS	7	FG
Oct	5 **	Community Gardens, Wayland	1	SM+BV+EN

Crossline Skipper

Jul	5	SF, Edgartown	2	MPe
	13	Horn Pond, Woburn W Tisbury	3 3	SM AK
	21	Concord	4	EN
	30	Upton	2	TD+CD
Aug	2	Upton	1	TD+CD

Long Dash

Jun	1	Farm Pond, Oak Bluffs Milford PL	2 3	MPe BB
	2	Wakeman Center, Tisbury	17	MPe
	10	Draper Field, Hopedale	11	BB
	24	Coffin's Field, Edgartown	12	MPe
Jul	9	Habitat Sanctuary, Belmont	2	TW
Aug	26	Wampeskett, Tisbury	1	MPe

Northern Broken-Dash

Jun	29	E Longmeadow MBNEM	2 1	KP EN
Jul	18	Tea Lane, Chilmark	5	MPe
Aug	5	Milford PL	9	EN
	27	Waring Field, Rockport	2	FG

Little Glassywing

Jun	30	World's End, Hingham	3	MC
Jul	6	E Longmeadow	5	KP
	25	Cape Ann	1	DS+CT
Aug	3	Wachusett Res - Gate 35,W Boylston	2	CD+TD+MBC
	10	E Longmeadow Milford PL	1 1	KP EN

Sachem

Aug	26	Dartmouth	3	BC
Sep	14	Westport/S Dartmouth	1	BC+MBC
	29 **	Truro	1f	ML+SC

Delaware Skipper

Jun	1	Milford PL	1	BB
	18	Mill Pond, W Newbury	3	FG
Jul	7	NWO#	22	
	18	Cape Ann	2	DS+CT
	25	Lake Rohunata Dam, Athol	1	EB

Mulberry Wing

Jul	6	CON#	6	
	14	Lake Rohunata Dam, Athol	6	EB
	18	Cape Ann	25	DS+CT
	25	IRWS	6	FG
Aug	5	Milford PL	14	EN
	25 **	Milford PL	1	BC

Hobomok Skipper

May	25	Natick PL E Longmeadow BMBS	3 1 1	BB+ES KP GH
Jun	2	BMBS E Longmeadow MBNEM	12 6 6	BB KP EN
	10	Draper Field, Hopedale	6	BB
	10	BMBS	9	BW+RW+SS+MC
	27	Cape Ann	7	DS+CT
Jul	7	Cape Ann	2	DS+CT
	13	Moran WMA, Windsor	1	ML+SC
	21 **	CBE#	1	

Zabulon Skipper					
Aug	4	E Longmeadow	1	KP	
	11	Forest Park, Springfield	1	TG+KP+MBC	
	11	FANST	8m,4f	TG+KP+MBC	
	17	Laughing Brook Sanctuary, Hampden	3	KP	
	25	E Longmeadow	1	KP	
Sep	7,8	E Longmeadow	2	KP	
Broad-winged Skipper					
Jul	13	BV#	1		
	18	Cape Ann	3	DS+CT	
Aug	3	Hawthorn Pond, Marblehead	50+	KHa	
	11	Fowl Meadows Reserv, Milton	45	EN	
Sep	7	Westport/S Dartmouth	2	BC+MBC	
Dion Skipper					
Jul	10	NBE#	5		
Black Dash					
Jul	6	CFR#	1		
	18	Cape Ann	26	DS+CT	
Aug	5	Cape Ann	1	DS+CT	
Dun Skipper					
Jun	26	BFDAM	3	ML+SC	
Jul	5	SF, Edgartown	5+	MPe	
	20	NOH#	78		
	21	CBE#	75		
Aug	4	Quabbin Park	33	ML+SC	
	17	Hampden DSTOW	1 1	KP ML+SC	
Dusted Skipper					
May	25	Foxboro, Hale Res, Westwood	12,4	EN	
Jun	1	Florence	21	TG+NY	
	3	Dover	8	EN	
	10	Draper Field, Hopedale	9	BB	
	18	BMBS	1	GH	
Jul	6	Mountain Mdw Pres, Williamstown	2	PW	
Pepper and Salt Skipper					
May	25	BMBS	1	GH+WM	
	26	E Longmeadow	1	KP	
Jun	1	Royalston	2	CK	
	8	Mt Greylock, Adams	2	TG	
	10	Mt. Greylock, Adams	2	TG	
Ocola Skipper					
Oct	5	** Florence	1	TG+MFa	
	5	** Community Gardens, Wayland	1	SM+BV+EN	

Butterfly Flight Periods in Newbury, Mass., 1998–2002

Sharon Stichter

Over the past decade or so, through the efforts of MBC members and our Club record-keeping, we have begun to build up a good picture of butterfly distribution, flight times, and relative abundance throughout the state. Recently I have been focusing on one region, Essex County, which has its own ecological coherence as well as historical importance. I have been trying to determine the differences and similarities between this region and the state as a whole.

Essex County encompasses varied landscapes and habitat types. Biologically, it lies in a transition zone between the Canadian zone to the north and west and the warmer upper Austral zone to the south and southwest. There are many great spots to find butterflies in this part of the state. They range from Waring Field and Eastern Point on Cape Ann, especially known for attracting late-season coastal migrants, to the Ipswich River area with its Mourning Cloaks and Compton Tortoiseshells to the diverse habitats of Martin Burns and Crane Pond Wildlife Management Areas in Newbury and Groveland. In this report, however, I am going to focus on my backyard in Newbury, a dry 2.5-acre hilltop near coastal salt marshes and Plum Island. This site has a comprehensive data series because I have made twice-weekly, alternate-day, or even daily observations over the past five seasons. Since 1995, I have seen a total of 52 species here.

I have been keeping records on (1) arrival and departure dates for migratory species, (2) flight periods, that is, number of broods and their timing, and (3) relative abundance from year to year for several species common at my site. In general, the season is shorter here than it is south of Boston. In-migrants that breed here arrive later and leave earlier, and flight periods of resident species begin later and end earlier. As Table 1 shows, American Ladies and Monarchs have nearly always been seen 2 to 3 weeks earlier on the Cape and Islands than here. They even seem to arrive earlier in south central Mass. (Holliston) and the Valley (Florence) than here!

A resident species such as the Banded Hairstreak also emerges a week or two later in this area, but Mourning Cloaks do not seem to follow this pattern; Ipswich River Wildlife Sanctuary, a wooded river valley to the south, has Mourning Cloaks flying relatively early, perhaps from a locally overwintering population, and in 1998 captured the state early record. Table 1 also shows that the fall migration of American Ladies and Monarchs begins earlier here; usually both species are moving south in October, with the last sighting by midmonth, whereas those lucky folks in the Cape, Islands, and South Dartmouth areas often see them well into November.

Table 1 Early and Late Sighting Dates 1998–2002

Earliest			Latest		
Statewide		Yard	Statewide		Yard
Date	Location	Date	Date	Location	Date
<i>Mourning Cloak</i>					
2/22/98	IRWS	5/20/98	11/13/98	Truro	10/17/98
2/11/99	Easton	4/24/99	10/29/99	Newbury	10/29/99
3/2/00	Provincetown	4/15/00	11/12/00	Belmont	10/22/00
3/9/00	Cape Ann		10/20/00	Westport	
3/16/01	Brewster	4/5/01	10/10/01	Chilmark	6/13/01
4/5/01	IRWS				
1/29/02	W. Tisbury	4/19/02	11/8/02	Concord	
3/9/02	IRWS				
<i>American Lady</i>					
4/12/98	M. Vineyard	4/27/98	11/22/98	Monomoy	10/31/98
4/27/99	Edgartown	5/11/99	11/22/99	Chilmark	10/2/99
4/1/00	Holliston	4/15/00	10/25/00	Woods Hole	10/14/00
4/4/01	M. Vineyard	4/26/01	12/3/01	Oak Bluffs	10/7/01
4/16/02	Wellfleet	4/19/02	10/28/02	Falmouth	9/20/02
5/11/02	IRWS				
<i>Monarch</i>					
5/5/98	M. Vineyard	6/28/98	10/25/98	M. Vineyard	10/18/98
5/29/98	IRWS				
5/13/99	Katama	5/27/99	11/23/99	Oak Bluffs	10/17/99
4/29/00	Chilmark	5/23/00	11/9/00	Chilmark	10/20/00
5/8/01	Chicopee	6/7/01	11/14/01	Cape Ann	10/20/01
5/22/02	Florence	6/9/02	10/9/02	Marblehead	10/5/02
			10/20/02	Westport	
<i>Banded Hairstreak</i>					
6/21/98	Northbridge		8/8/98	Upton; BMBS	
7/19/98	Essex Count				
6/12/99	Gill	7/7/99	7/31/99	Grafton	7/15/99
6/23/00	Royalston	7/6/00	8/25/00	Cape Ann	7/28/00
			8/17/00	Groveland	
6/20/01	Milford	7/3/01	8/22/01	Cape Ann	7/20/01
7/14/01	Cape Ann				
6/29/02	Upton	7/10/02	8/3/02	IRWS (Striped)	7/18/02
7/25/02	IRWS				

IRWS=Ipswich River Wildlife Sanctuary; BMBS=Broad Meadow Brook Sanctuary

Sources: *Massachusetts Butterflies*; MassLep postings; yard records

Compiled by S. Stichter November 2002

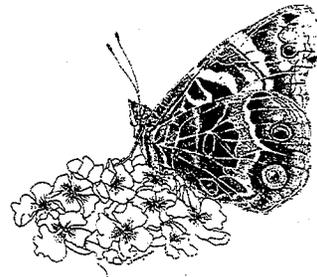
The pattern of late-beginning and shorter flight periods here compared to some other parts of the state is evident for three other common species on which I have kept records: Pearl Crescent, Common Wood Nymph, and Least Skipper. The first Pearl Crescents were seen in early May in places as far apart as Williamstown, Broad Meadow Brook WS, and Norfolk over the past five years, but never in my yard until May 20 at the earliest. Much the same can be said for Wood Nymphs and Least Skippers. No doubt the ocean effect on Essex County's granite and glacial till uplands makes spring a bit later here than further inland. At the other end of the season, often Cape Ann has fairly late sightings of these species, perhaps due to the ocean's warming effect.

Good and bad years for common butterflies in my yard are measured by the calculation of an index of relative abundance for each species.¹ This index is based on my frequent, sometimes daily, counts of individuals throughout the immediate yard and gardens and on a transect or path laid out through a nearby wetland, woods, and hayfield. Total numbers for the season are corrected by number of observer-days spent counting, as is done on the Fourth of July Counts (4JCs) by number of party-hours.

Good years for some species are not necessarily good years for all species. Table 2 shows that for Pearl Crescents 1998, 1999, and 2002 were good years; 2000 and 2001 were poor. For Common Wood Nymphs 1999 and 2000 were especially good years; other years were mediocre. Least Skippers had pretty constant flights throughout the five years examined, except for 2002.

An interesting finding, I think, is that these local variations in yearly abundance do not correspond very well to the statewide summations reported from the 4JCs and the Season Summaries in *Massachusetts Butterflies*.²

Calculations of relative abundance for these species were made from the 4JC data for these five years, although the 4JC data are not strictly comparable to my data because they are taken on one midseason day. For the Pearl



American Lady

Sarah Jane Cassie

Crescent, 2000 was a poor flight year both for the state and for my site. But their numbers appear to have rebounded statewide in 2001, which was not reflected well at my site. Brian Cassie also reported a poor showing for Pearl Crescents in the Westport-South Dartmouth area in fall 2000 but that they flew "true to form" in 2001.³

For Pearl Crescents and Common Wood Nymphs, Tom Dodd reported from 4JC data a marked decline in 2002 individuals counted per hour.⁴ At my site, however, 2002 was a good year for Pearl Crescents. There was a decline in Wood Nymphs in *both* 2002 and 2001 at my site, whereas there was a marked abundance of them in the 2001 4JC numbers. One possibility is that the low

numbers of Wood Nymphs at my site for two years in a row may be due to the spraying of the salt marshes for mosquito larvae, which began in 2001 as an alternative to land-based spraying. Wood Nymphs at my site love to hang out in the salt marsh; perhaps they are what some authors believe is a variety or subspecies designated *maritima*.⁵

Table 2 Relative Abundance, Newbury Site, 1998–2002

Year	Total Individuals	No. Days Observed	Relative Abundance*
<i>Pearl Crescent</i>			
1998	56	84	0.67
1999	58	87	0.67
2000	15	86	0.17
2001	28	97	0.29
2002	48	91	0.53
<i>Common Wood Nymph</i>			
1998	62	84	0.74
1999	165	87	1.90
2000	124	86	1.44
2001	59	97	0.61
2002	64	91	0.70
<i>Least Skipper</i>			
1998	21	84	0.25
1999	18	87	0.21
2000	18	86	0.21
2001	28	97	0.29
2002	12	91	0.13

*Index of Relative Abundance = total individuals observed divided by days spent observing

Prepared by Sharon Stichter, November 2002

Flight periods and broods for the three resident species under discussion have been tracked over the past five years, as shown in the charts below. The precise flight periods and distinct broods can be seen much more clearly from such observations at a single site than they can from statewide data such those compiled in MBC's Checklist of Butterflies of Massachusetts.⁶ Brood separations are less evident on the Checklist phenograms because broods are emerging at different times in different parts of the state and overlap on the Checklist charts. The Newbury line charts (see inside back cover) show one single-brooded species, the Common Wood Nymph; one that seems reliably

double-brooded here, the Least Skipper; and one that in “good” or abundant population years has been triple-brooded, the Pearl Crescent.

Year-to-year variation in the timing of the broods is evident, although Wood Nymphs seem remarkably consistent. Least Skippers seem to have a bit of difficulty getting started in the spring, probably owing to erratic weather. Similarly, in one year, 2001, the Pearl Crescent’s spring flight was rather a bust, and though there was a rebound midsummer, the fall flight was also a washout, as it had been in 2000.

It would be foolhardy to attempt to generalize much from the comparatively small numbers of butterflies seen in my backyard. The data for this one site do suggest that the Pearl Crescent is triple-brooded here in high-population years and that in poor years the third flight is attempted but not successful. It would be interesting to know if this is the case elsewhere in Massachusetts and New England. Glassberg⁷ says that Pearl Crescents are reliably triple-brooded only as far north as Philadelphia. If our weather is in a long-term warming trend, perhaps this is beginning to change.

With regard to Least Skippers, Glassberg⁸ shows a small third flight in October in New York State. The Massachusetts Checklist phenograms also suggest a third September and October flight in our state. In my Newbury yard and hayfield, however, I have been able to discern only two flights over each of the last five years. This may be because the population is relatively small or because the site is usually rather dry by late summer and fall. Both Waring Field in Rockport and Ipswich River Sanctuary usually have later flight dates for Least Skippers.⁹

This effort to track flight times and arrival/departure dates of some of Essex County’s common butterflies has not only been useful, but it has been fun. I hope that other Massachusetts butterflyers will be able to do some similar local studies so that we can learn more about the tremendously varied regions within our state.

References

¹For a quick discussion of various methods of measuring butterfly populations, see Robert Michael Pyle, *Handbook for Butterfly Watchers*, Houghton Mifflin, 1992, pp.109–119.

²Tom Dodd, “Season Summary and Records,” and “Fourth of July Butterfly Counts,” *Massachusetts Butterflies*, Nos. 11-18, August 1998–Spring 2002.

³Brian Cassie, “Fall 2000 Migration Watch at Westport-South Dartmouth,” *Massachusetts Butterflies*, Spring 2001, p. 4; and “Fall 2001 Migration Watch at Westport-South Dartmouth,” *Massachusetts Butterflies*, Spring 2002, n.p.

⁴Tom Dodd, “2002 Fourth of July Butterfly Counts,” *Massachusetts Butterflies*, Fall 2002, p. 10–11.

⁵M. Gochfeld and J. Burger, *Butterflies of New Jersey*, p. 211.

⁶A Checklist of the Butterflies of Massachusetts, 5/12/99, Tom Dodd, Compiler and Editor.

⁷Jeffrey Glassberg, *Butterflies through Binoculars: The East*, Oxford University Press, 1999, p. 113.

⁸*Ibid.*, p. 166.

⁹Fred Goodwin, personal communication, 2/09/03

Flight Periods, Newbury Yard

Pearl Crescent, Brood 1

Year	20	25	30	1	5	10	15	20	25	30
1998										
1999										
2000										
2001										
2002										

Pearl Crescent, Broods 2 and 3

Year	15	20	25	30	1	5	10	15	20	25	30	5
1998												
1999												
2000												
2001												
2002												

Common Wood Nymph

Year	5	10	15	20	25	30	1	5	10	15	20	25	30	1	5
1998															
1999															
2000															
2001															
2002															

Least Skipper

Year	10	15	20	25	30	5	10	15	20	25	30	1	5
1998													
1999													
2000													
2001													
2002													

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