Garden Moth Scheme Report 2014

Heather Young – April 2015

GMS Report 2014

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Cover photograph: Canary-shouldered Thorn (R. Young)

Introduction

The Garden Moth Scheme (GMS) welcomes participants from all parts of the United Kingdom and Ireland, and in 2014 received 358 completed recording forms, a slight decrease on 2013. Numbers of participants continued to increase in Ireland, along with the North-west and East Midlands of England. All regional coordinators are reporting a promising influx of new members for the 2015 season, so we should at least maintain if not increase the number of gardens included next time.

In 2014 a review was carried out of the GMS 'core species' – those that are recorded across the whole scheme – leading to an increase of the core species list to 233 for 2015. Regional coordinators were also asked to review and amend the other species on their regional lists, and several took the opportunity to add extra species common in their area. It was decided to offer a 'core species only' recording form to those members who would prefer a shorter list, although it remains to be seen how many will take this option. The species lists for all regions will now remain unchanged for 5 years, with a further review scheduled for 2019.

After entering the data for 2014 into the GMS database, we now have over 1 million records from almost 800 sites across the UK & Ireland – a very valuable resource!

Top 30 species 2014

The top 30 GMS species are shown below, ranked in order of abundance in terms of average numbers per garden in 2014, along with their figures for 2013, percentage change year on year and an indication of how widespread they are (Table 1).

Rank 2014	Rank 2013	Species	Average 2014 (358 traps)	Average 2013 (374 traps)	%↓↑		% traps with
1	1	Large Yellow Underwing	153.2	144.7	1.3	↑	98.0
2	3	Heart and Dart	89.5	42.7	100.8	↑	95.5
3	10	Dark Arches	50.3	34.6	39.0	↑	96.9
4	5	Common Rustic agg.	43.0	35.9	14.7	↑	94.7
5	20	Hebrew Character	38.9	18.0	106.8	↑	97.8
6	16	Garden Grass-veneer	37.3	20.6	73.5	↑	70.4
7	8	Light Brown Apple Moth	34.4	29.7	10.7	↑	72.9
8	34	Common Quaker	34.0	9.7	236.3	↑	95.3
9	10	Riband Wave	32.6	28.0	11.7	↑	95.8
10	7	Flame Shoulder	32.5	30.2	3.2	↑	90.8
11	2	Lesser Broad-bordered Yellow Underwing	28.7	47.7	-42.4	↓	93.9
12	11	Common Footman	28.3	27.3	-0.6	↓	79.9
13	4	Setaceous Hebrew Character	27.2	40.5	-35.7	↓	79.6
14	9	Square-spot Rustic	26.8	29.4	-12.8	↓	89.1
15	14	Brimstone Moth	24.3	24.5	-4.8	↓	95.3
16	22	Lunar Underwing	20.5	16.2	21.2	↑	65.6
17	36	Small Square-spot	20.2	8.2	136.2	↑	73.5
18	12	Lesser Yellow Underwing	17.8	26.4	-35.4	↓	94.1
19	13	Common Marbled Carpet	17.7	25.6	-33.9	↓	94.4
20	28	Shuttle-shaped Dart	16.7	11.8	35.5	↑	71.2
21	21	Marbled Minor agg.	15.0	16.3	-12.1	↓	86.9
22	27	Flame	14.3	12.5	10.1	↑	79.9
23	18	*Agriphila tristella*	14.3	19.8	-31.0	↓	68.4
24	29	Buff Ermine	14.2	11.5	18.1	↑	85.8
25	31	Bright-line Brown-eye	14.0	11.3	19.0	↑	87.2
26	23	*Agriphila straminella*	14.0	14.1	-5.1	↓	62.8
27	19	Willow Beauty	13.6	18.4	-28.9	↓	88.8
28	62	Clouded Drab	13.6	5.1	157.0	↑	88.8
29	32	Dingy Footman	13.1	10.6	18.3	↑	58.1
30	78	Uncertain	12.9	4.3	186.0	↑	23.2

Table 1. The thirty most abundant species in 2014 in terms of average number of individuals recorded per garden.

Large Yellow Underwing was again the commonest species, showing a slight increase in numbers over last year, although the other Yellow Underwings did not fare so well. The spring moths Hebrew Character, Common Quaker and Clouded Drab all had a much better year than 2013 following a milder start to the season. The Uncertain crept in at number 30 despite it not being on every regional list (hence the low figure for percentage of traps it appeared in). This moth will from 2015 onwards be recorded as an aggregate with the Rustic on the core list because of the difficulty in reliably separating the two species.

Trapping preferences

GMS recorders in 2014 employed a range of different trap bodies with an even greater array of different bulb types and wattage. The 'weapon of choice' for 40% of recorders was the Robinson Trap with a mercury vapour bulb (MV), closely followed by the Skinner Trap, although the type of lighting was very evenly spread between MV and Actinic (Fig. 1). All but one of the Heath Traps were kitted out with Actinic tubes, as were all of the Bucket Traps, and the 'Other' column represents one each of the Hugo Trap (Actinic), Russell Trap (MV) and Gladiator Trap (Actinic).

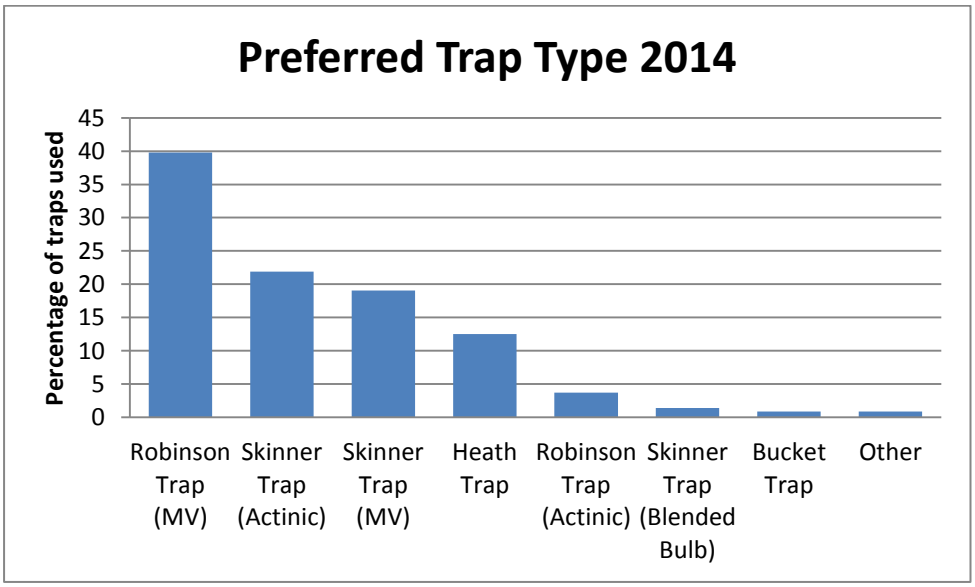

Fig. 1. Percentage of recorders using various combinations of trap body and lighting.

The GMS allows a certain amount of flexibility for trapping if the target night of Friday is inconvenient for recorders, although deciding which night to trap based on the weather forecast is discouraged except in circumstances when stormy conditions pose a danger to equipment. Most people still managed to trap on a Friday night, and if not, generally stuck to one night either side (Fig. 2).

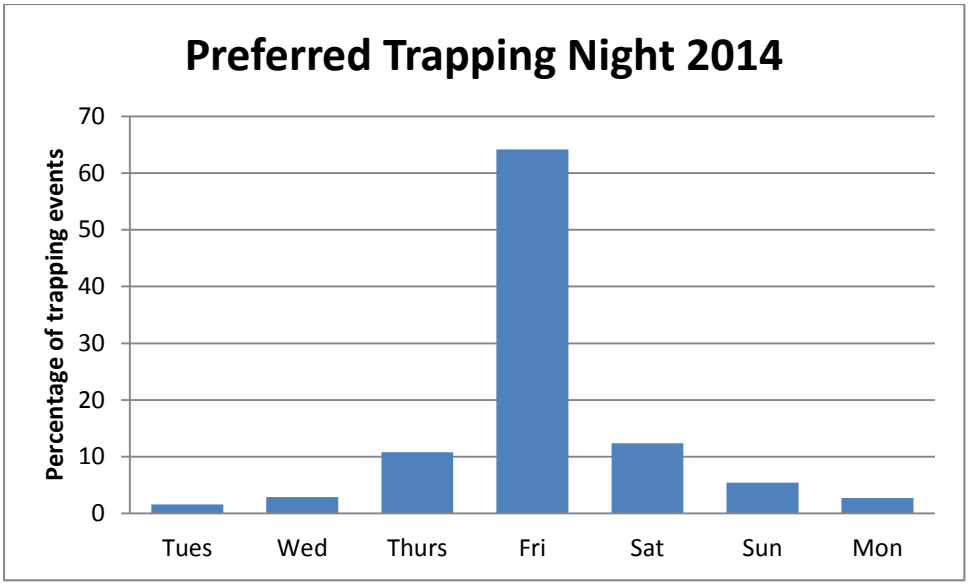

Fig. 2. Percentage of recorders trapping by night of the week in 2014.

Winter GMS

The winter scheme ran for 17 weeks this time to realign the beginning of the main scheme to early March. Recorder numbers were down only slightly on last year, with 91 sets of results returned, but a very similar geographical spread as for previous winter recording schemes, not surprisingly heavily biased towards the South and West (Fig. 3).

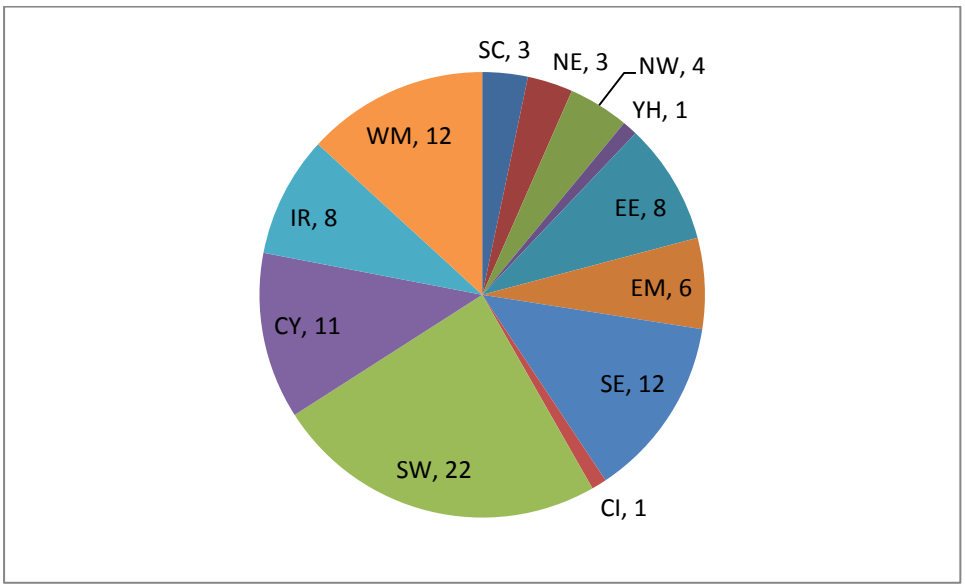

Fig. 3. Distribution of recorders for the 2014-15 Winter GMS.
[SC: Scotland; NE: North-east England; NW: North-west England; YH: Yorkshire & Humberside; EE: East England; EM: East Midlands; SE: South-east England; CI: Channel Islands; SW: South-west England; CY: Wales; IR: Ireland; WM: West Midlands]
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The top 20 species are shown below, ranked in order of abundance in terms of average numbers per garden in 2014/15, along with their figures for 2013/14 and percentage change year on year (Table 2).

Rank 2014/15 (2013/14)	Species	Average 2013/14 (94 Gardens)	Average 2014/15 (91 Gardens)	% change
	All species	22.91	21.77	-5.00
1 (1)	December Moth	4.69	4.30	-8.41
2 (8)	Light Brown Apple Moth	0.85	3.11	+265.41
3 (2)	Winter Moth	3.07	2.67	-13.14
4 (13=)	Rusty-dot Pearl	0.33	1.53	+363.17
5 (3)	Chestnut	1.77	1.12	-36.53
6 (10)	Pale Brindled Beauty	0.72	0.95	+30.64
7 (4)	Mottled Umber	1.62	0.92	-42.91
8 (5)	Feathered Thorn	1.45	0.81	-43.79
9 (15=)	Dotted Border	0.32	0.58	+83.49
10 (9)	Red-green Carpet	0.80	0.54	-32.51
11 (6)	November Moth aggregate	0.97	0.46	-52.32
12 (21=)	*Emmelina monodactyla*	0.19	0.34	+77.90
13 (11)	Scarce Umber	0.41	0.33	-20.54
14 (7)	Yellow-line Quaker	0.91	0.27	-69.97
15 (18)	Silver Y	0.27	0.26	-0.84
16 (53=)	Diamond-back Moth	0.02	0.24	+1036.26
17 (15=)	Spruce Carpet	0.32	0.23	-27.69
18 (17)	Early Moth	0.28	0.22	-20.54
19= (27)	Spring Usher	0.14	0.19	+35.08
19= (13=)	Angle Shades	0.33	0.19	-43.35

Table 2. The twenty most abundant species over the winter period of 2014/15 in terms of average number of individuals recorded per garden.

The overall average number of weeks with empty traps was up slightly on last year (10.55 from 9.64), perhaps because of the extra week of trapping, but the average number of moths per garden was down on 2013-14 (-5%).

December Moth was again the commonest moth in our gardens over the winter period, with numbers peaking at exactly the same time as last year, with 8 people recording the moth in double figures on the 28th or 29th November, the highest count being 44 in one trap in Northern Ireland.

An abundance of December Moths in County Fermanagh (J. Young).

The migrants Diamond-back Moth and Rusty-dot Pearl showed the largest percentage increases over the previous winter season, reflecting the favourable weather conditions that brought many exotic moths to our shores in the autumn of 2014, with Light Brown Apple Moth also having a good year. Resident autumn species generally had a poorer time than those emerging in the early spring.

Light Brown Apple Moth *Epiphyas postvittana* (D. Barnard).

Annual Conference

The GMS Annual Conference, again kindly sponsored by MapMate, was held at the beginning of March in the Chiltern Woodland Burial Park near Beaconsfield, and was well attended as usual. Peter Hugo introduced the speakers and Norman Lowe again presented a round-up of the GMS in 2014 and a look forward to the 2015 season; Chris Shortall gave a talk on the Rothamsted Insect Survey; Joseph Burman enlightened delegates on the use of insect pheromones as a sampling tool; John Wilson provided more conclusions from the GMS database (slide presentation available to download from our website) and David Gardner explained how moths see.

Stalls were again provided by Atropos Books and Izumi Segawa with her beautiful moth badges and jewellery, this time joined by WildGuides Publishing.

The 2016 GMS conference has yet to be arranged, but hopefully someone will volunteer to organise the event, preferably from the northern end of the midlands this time. Thanks go to Janet Cheney for organising the 2015 conference, and the Chiltern Woodland Burial Park for their hospitality.

Regional coordinator changes

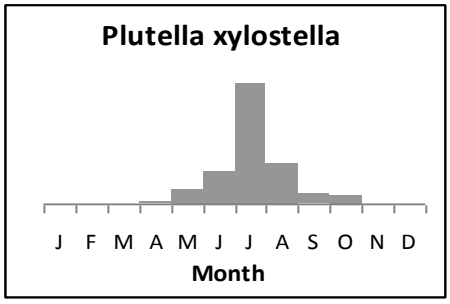
We now have a full complement of regional coordinators, with Audrey Turner and Graham Geen joining the team and taking over Scotland and East England respectively. Many thanks to them both for volunteering and also to the Scotland and East England members for their valued contributions and support over the last few years, as well as their kind words on handover! Contact details for Audrey, Graham and all of the other regional coordinators are on the website under ‘Communications’.

Micro-moth identification guides

Following the expansion of the core species list and some of the regional lists to include more micro-moths, we decided to prepare a series of identification guides to help our less experienced recorders. These can be found in the Downloads section of our website and the Files section of both the Yahoo Group and Facebook Group (see below for links).

Below is an example of the information provided on each species in the identification guides (Fig. 4); there are guides covering the core species as well as regional guides for the other species of micro-moth on each regional list.

0464 Diamond-back Moth ***Plutella xylostella***



Forewing length:
6 to 8.5 mm

Main features: Pale head, thorax & dorsal band with wavy edges – 'diamond-shaped' markings. Antennae point forwards.

Fig. 4. Extract from the core species micro-moth identification guide (Image: C. Knott).

Links

GMS Website - http://www.gardenmoths.org.uk/

Facebook Page - https://www.facebook.com/GardenMothScheme - we now have more than 400 'Likes'!

Facebook Group - https://www.facebook.com/groups/438806469608527/ - currently with more than 300 Members (not all active GMS participants) – open membership.

Yahoo Group - https://groups.yahoo.com/neo/groups/Gardenmoths/info - closed membership; request an invitation to join.

Acknowledgements

Thanks as ever are due to the GMS members themselves who put their traps out week in, week out, all season long, often with disappointing results (especially the winter trappers). Thanks also to all the Regional Coordinators and other volunteers who keep things running smoothly across the country, especially Mike Cook for his technical expertise and assistance with the micro-moth identification guides. My gratitude goes to Derek Cawthorne for a very thorough review of the core species list, and Evan Lynn for extracting the facts and figures used in this report from the GMS database. The support of our sponsors is also very gratefully received – please check out their websites for all their latest offerings (see below).

GMS Sponsors

We were very thankful for the financial assistance from the following organisations during 2014; please consider using our sponsors for any purchases you need to make!

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