

The Garden Moth Scheme 2014 Heather Young

The Garden Moth Scheme (GMS) runs from the beginning of March to early November, with people recording the numbers of around 300 species of the more common moths in their gardens once a week throughout this period. Further information on the findings of the GMS for the whole of the UK and Ireland, both current and historical, is available in the form of annual reports and quarterly newsletters, which can be found in the Downloads section of the web-site: <<http://www.gardenmoths.org.uk>>

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The Garden Moth Scheme (GMS) welcomes participants from all parts of the United Kingdom and Ireland, and in 2014 received 354 completed recording forms, a slight decrease on 2013. Recorder numbers were stable in Scotland, with 22 complete sets of results returned, including two new participants. GMS members across Scotland counted 20,975 individual moths of 232 species at an average of 948.6 per garden, a decrease of 19.6% on 2013 (1180.1), and 17.8% down on the 4-year average of 1153.9 for 2010-13.

Large Yellow Underwing was once again the commonest moth overall, with numbers down 15.6% on last year, but still 15.8% above the average for the previous 4 years. Its relatives the Lesser and Lesser Broad-bordered Yellow Underwings do not seem to be doing as well, with numbers well below average.

The Scottish top 20 are shown below, with the ranking for the previous 4-year period shown in brackets, the percentage change in average numbers per garden across Scotland year on year (2013-14), and the percentage difference between 2014 numbers and the average per garden for 2010-13.

Rank 2014 (2010-13)	Species	Average per garden	Percentage change 2013-14	Percentage difference to 4-year average (2010-13)
1 (1)	Large Yellow Underwing	170.6	-15.6	+15.8
2 (6)	Bird-cherry Ermine	61.4	+192.2	+50.5
3 (2)	Dark Arches	55.2	+21.8	-28.0
4 (3)	Hebrew Character	37.4	+57.6	-28.4
5 (4)	Lesser Broad-bordered Yellow Underwing	34.9	-49.2	-32.5
6 (7)	Common Rustic aggregate	30.9	-1.8	-22.0
7 (8)	Common Quaker	25.6	+62.4	-30.3
8 (10)	Dotted Clay	19.4	-49.9	-35.7
9 (9)	Lesser Yellow Underwing	16.9	-54.4	-47.4
10 (19)	Double Square-spot	16.6	-5.8	+41.6
11 (22)	Heart & Dart	14.6	+103.4	+41.3
12 (16)	Beautiful Golden Y	14.4	-25.0	+2.6
13 (24)	Silver-ground Carpet	12.1	+1.1	+26.4
14 (29)	Clouded-bordered Brindle	11.1	+6.7	+34.8
15 (33)	Brimstone Moth	10.9	+28.8	+62.4
16 (12)	Rosy Rustic	10.8	-58.7	-40.0
17 (17)	<i>Agriphila tristella</i>	10.3	-11.1	-23.4
18 (46)	Riband Wave	10.3	+40.6	+99.4
19 (37)	Garden Carpet	10.0	+24.3	+58.5
20 (21)	Common Marbled Carpet	9.5	-24.4	-10.7

Overall, 95 species were present in greater numbers in 2014 than their average per garden over the previous 4 years, with 155 species 'in arrears'. 16 moths on the list of target species have not been seen in any of our GMS gardens at all over the last five years, and 2 were recorded for the first time this year – Common Emerald and Dingy Footman. 20 species that had been recorded at some point over the previous 4 years did not make an appearance in 2014. The one species ranked in the top ten over the 2010-13 period that did not make the Scottish top ten in 2014 is True Lover's Knot, but that is a reflection of a change in geographical composition of the participating gardens rather than a crash in numbers - figures for some locally abundant species can be a little misleading.

Looking at the three Butterfly Conservation regions in Scotland, it seems those in the Glasgow & South-west branch area had a much better year than the others, but with small numbers of gardens involved, particularly in the Highland region, figures can sometimes be misleading. The table below shows the change in the average number of moths per

garden from 2013-14 using figures from all participating members, and also the change year on year for those gardens returning records for both years. It still reflects a poor season for those in the East branch area!

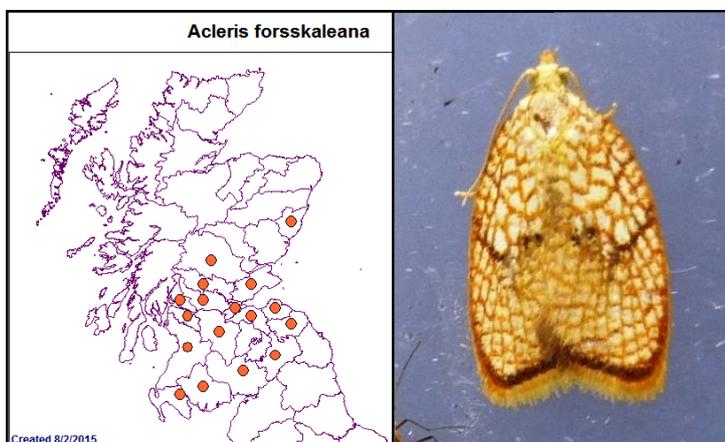
	Average per garden 2013 all gardens (n=23)	Average per garden 2014 all gardens (n=22)	Percentage change all gardens	Percentage change gardens common to both years (n=19)
Scotland	1180.1	948.6	-19.6	-2.2
G&SW	912.3	1092.4	+19.7	+2.5
East	1195.6	836.3	-30.1	-10.3
Highland	1926.3	1062.3	-44.9	+37.8

The top 10 for the Highland branch region is shown below, along with their 2014 rank in Scotland, average numbers per garden, and because the small sample makes the percentage change year on year a little unreliable, the percentage difference between the average number per garden in Highland and the Scotland average per garden for 2010-13.

Rank Highland 2014	Rank Scotland 2014	Species	Average per garden (Highland) 2014	Percentage difference to Scotland 4-year average (2010-13)
1	1	Large Yellow Underwing	137.7	-6.5
2	3	Dark Arches	90.7	+18.2
3	5	Lesser Broad-bordered Yellow Underwing	69.0	+33.5
4=	7	Common Quaker	33.7	-8.5
4=	12	Beautiful Golden Y	33.7	+138.8
6	4	Hebrew Character	33.0	-36.9
7	13	Silver-ground Carpet	24.0	+152.6
8	10	Double Square-spot	23.7	+100.6
9	6	Common Rustic aggregate	23.3	-41.1
10	8	Dotted Clay	19.7	-34.7

During the 'off season' we have conducted a review of the GMS species lists, taking into account the non-GMS species recorded in reasonable numbers in each region, and expanding the 'core species' list (those species recorded in every region across the UK & Ireland). This has resulted in the addition of a further 35 species (or aggregates in the case of the Uncertain and Rustic), some of which we are very unlikely to see in Scotland, but the 'zero' count is still of value to the scheme and the new core list of around 230 species will provide a solid foundation for future research.

To compensate, we have also added several species to the Scottish list (taking it to just over 300 species) that were seen in good numbers in our gardens last year, including several micros (all relatively easy to identify) such as the pretty little tortrix, *Acleris forsskaleana*. This moth was quite numerous in gardens across the central belt in 2014, but does not yet occur in the highlands, so it will be interesting to see if it is a species 'on the move'. The larvae feed on Field Maple and Sycamore, and the adult measures 6-8 mm and has a distinctive net-like wing pattern with a dark cross-line, and sometimes a dark dorsal blotch. The present distribution, as portrayed on the micro-moth distribution maps on the East Scotland branch website (http://eastscotland-butterflies.org.uk/sm_Tortricidae.html#49.062) is shown below, along with one of my own garden visitors.



The new GMS 2015 season begins on Friday 6th March, and new participants can begin trapping any time up to Monday 30th March to stay within the protocol for taking part (at least 27/36 weeks, with no gaps of more than 3 weeks in a row).

The role of coordinator for Scotland for 2015 has been taken over by Audrey Turner, so please contact Audrey on unicorn64@btinternet.com for further information if you would like to take part. We have a Yahoo group, Facebook Group & Facebook Page as well as an annual conference and quarterly newsletters (let Audrey know if you would like to be added to the mailing list, even if you don't want to take part in the scheme). The vast majority of our members also send their records to the Butterfly Conservation county moth recorders (something we actively encourage); everyone is welcome from beginner to seasoned expert, and help is always available.