

VC55 Leicestershire and Rutland Moth Group

Recording Advice and Guidelines

The Leicestershire and Rutland Moth Group is an informal collective of like-minded individuals who share an interest in the moths of VC55. Whether you run light traps, dangle pheromones, sweep vegetation, rear larvae or search for leaf mines, all contributors are welcome.



It is hoped that underlying this shared interest is a keen willingness to help further our knowledge of these creatures and contribute to their conservation. One collaborative impact we can make is through carefully and methodically recording and submitting data for the moth species encountered. Whilst recording is a personal choice, all are encouraged to do so, especially where help and assistance from the group has been sought. Records are welcomed for all species; whilst it may seem that rarities and migrants often steal the limelight, there is more value in building detail of our commonest species as they may become the species of concern in the future. But that can only be determined through monitoring records over time both locally and across the UK.

Records created within VC55 contribute to National datasets and recording schemes and will be forwarded to the Leicestershire and Rutland Environmental Records Centre (LRERC). Inevitably with such a large group of species, and with an ever-increasing number of recorders, handling the amount of data created is no simple task. The key purpose of this document is to highlight ways in which you can assist the County Moth Recorder (CMR) and team to reduce the amount of data manipulation involved.

Finally, the quality and veracity of the records is of paramount importance. Please do not be offended if you are asked for supporting evidence, or if a record is deemed to be unacceptable for any reason. Separate documents will be updated and published detailing the species recorded in VC55, their status and in particular which species will need records to be fully supported by either a specimen, good photographs or Gen Det (genitalia determination via dissection).

Records

We are firmly in a digital age, and it is anticipated that all records will be created and submitted electronically. Whilst paper records are not refused, the additional time required to process these will mean that they will not be incorporated into the VC55 dataset until some time after the digital records.

It should be noted that records will generally only be incorporated if they have been directly submitted to the CMR team via any of the methods referenced. It is not practicable to routinely collate and create records from social media posts or from ID queries sent without the necessary data; this will only be done by exception.

Any record should provide the following details:

- **Species Name** : either the vernacular name or the scientific name
- **Site Name** : eg an address, the nearest village or recognisable area, a Nature Reserve or park etc
- **Grid Reference** : 4 digits minimum, preferably 6 digits especially for sites close to the VC borders
- **Date** : for light trapping use the date of the evening that the trap was set rather than the date of the morning
- **Recorder**
- **Determiner / Identified by** : especially where this is not the same person as the recorder
- **Life stage** : Adult, Larval, Pupal, Ova, Leaf Mine, Case, Gall
- **Quantity** : absolute numbers where possible, estimates are fine
- **Method** : eg MV Light trap, Light trap, Pheromone trap, Daytime Observation, Hand Searching, Sugar, Dusking etc
- **Comment** : any pertinent detail such as 'Gen Det', photographed, specimen retained, type of pheromone lure, type of light trap, foodplant, egg position on leaf mine etc. Where relevant, other recorders involved.

The vast majority of records will be from garden light traps, and in these cases much of the data is uniform and can be stated with the submission rather than for each individual record.

Online Systems

NatureSpot is an online recording system specifically for VC55, taking records across all orders and featuring a comprehensive library of images which is an excellent resource for local recorders. The site operates on the same platform as iRecord; all records entered to NatureSpot are automatically pulled into the same Biological Records Centre (BRC) database as iRecord and become immediately available to the National Biodiversity Network (NBN). The records are verified by local and National experts, and all records submitted to NatureSpot are annually exported to the LRERC.

Here is an example of the record submission page:

Project: ?

Overall comment: ?


Date: ? *

Site name: ? Remember site *

[Manage my sites](#)

Grid reference: ? *

Search map to find: ?



Species ? Abundance ? Confidence ? Identified By ? Sex ? Attribute ? Comment ? Add photos

Files

photo

Enter caption...

The record submission page is fairly easy to navigate, but a few pointers that would help to ensure that records are correctly handled include:

- Use the 'Overall Comment' box for relevant information that applies to all records being submitted from the same site and date (eg 125W MV trap), otherwise leave blank.
- Ensure that the site name is coherent and indicates the area, village, reserve etc – eg not 'My Garden'.
- If unsure, use the map to determine the grid reference. If entering the grid reference directly, then check the map to confirm. Ensure the digits are correctly prefixed by SP, SK or TF.
- Ensure that the 'Attribute' field correctly indicates the life-stage for the record, especially for larval and leaf mine records.
- Ensure relevant supporting information for each record is entered into the 'Comment' field.

NatureSpot is the ideal platform for submitting casual and daytime records, larval records, and records of notable species – especially where this may broaden the image library. NatureSpot is perhaps less practicable for entering large lists of records from regular garden light trapping, but of course may be used for this and should certainly be considered where the trapping is infrequent.

A major advantage of NatureSpot is that records can be readily supported with photographs and comments and entered within days or hours of occurrence. The verification process means that there is a feedback loop for any queries, and any identification errors can be simply amended. The system shows records mapped alongside others submitted both to NatureSpot and already on the NBN system.

iRecord may be used directly if preferred (perhaps for those who already have accounts and submit records to other VCs). Records submitted via the Butterfly Conservation NMRS Online Portal are also pulled through to iRecord and verified in the same way, as are records submitted to the National Moth Night portal. iRecord provides the much the same advantages as NatureSpot and the same data flow to LRERC and NBN. The disadvantage from a VC55 recording aspect is that records and photos entered to iRecord do not flow back to NatureSpot.

Records from both NatureSpot and iRecord are exported in the ideal flat tabular format (one record per row) and are very easily processed for incorporation into the County dataset.

Otherwise there seems to be an ever-increasing choice of online recording systems, some of which are set-up and generally used as identification aids. None of these are recommended, including iSpot, iNaturalist and ObsIdentify. Recorders using these systems may not be fully aware of the fact that records are being created and shared. Some (not all) records from iSpot and iNaturalist will be pulled through to iRecord, where they may be verified, but there is no opportunity to feedback to recorders or make corrections. In particular, note that records from these systems that have no site or grid reference data, or a recorder name (just a nickname or random character string), will not be accepted.

One final but extremely important comment regarding online recording systems: to avoid duplication please ensure that you do not under any circumstances submit the same records to multiple online systems.

Personal Systems

For those who do not wish to use online recording at all, and for the majority of records from light trapping, then a personal recording system that allows records to be collated and subsequently submitted is necessary.

Perhaps the most flexible and powerful personal system is the recording software **MapMate**. This is currently £36 to purchase initially with a one-year licence and support, and a £12 one-year licence extension fee thereon for continued support. There are price breaks for groups of recorders. The software continues to work after the initial year, though you will be unable to download updates to the taxa libraries without a current licence. A major advantage of MapMate for personal use is that you can of course use this to record across all orders and areas, there are in-built and customisable queries that allow you to easily analyse your data across years, and you can map your own records and create phenology charts.

Records are easily exported in the ideal flat tabular format, which makes processing the records submitted from MapMate users very simple.

Data entry using MapMate is very quick and efficient once you have mastered the basics. Fields in the data entry windows can be set and locked, allowing a long list of records from light trapping to be entered quickly just as the taxon / quantity.

Data Entry: New Record - Moths in Any Area

Records Fields Query Help

Taxon

Quantity Stage

Site

Date Status

Recorder Determiner

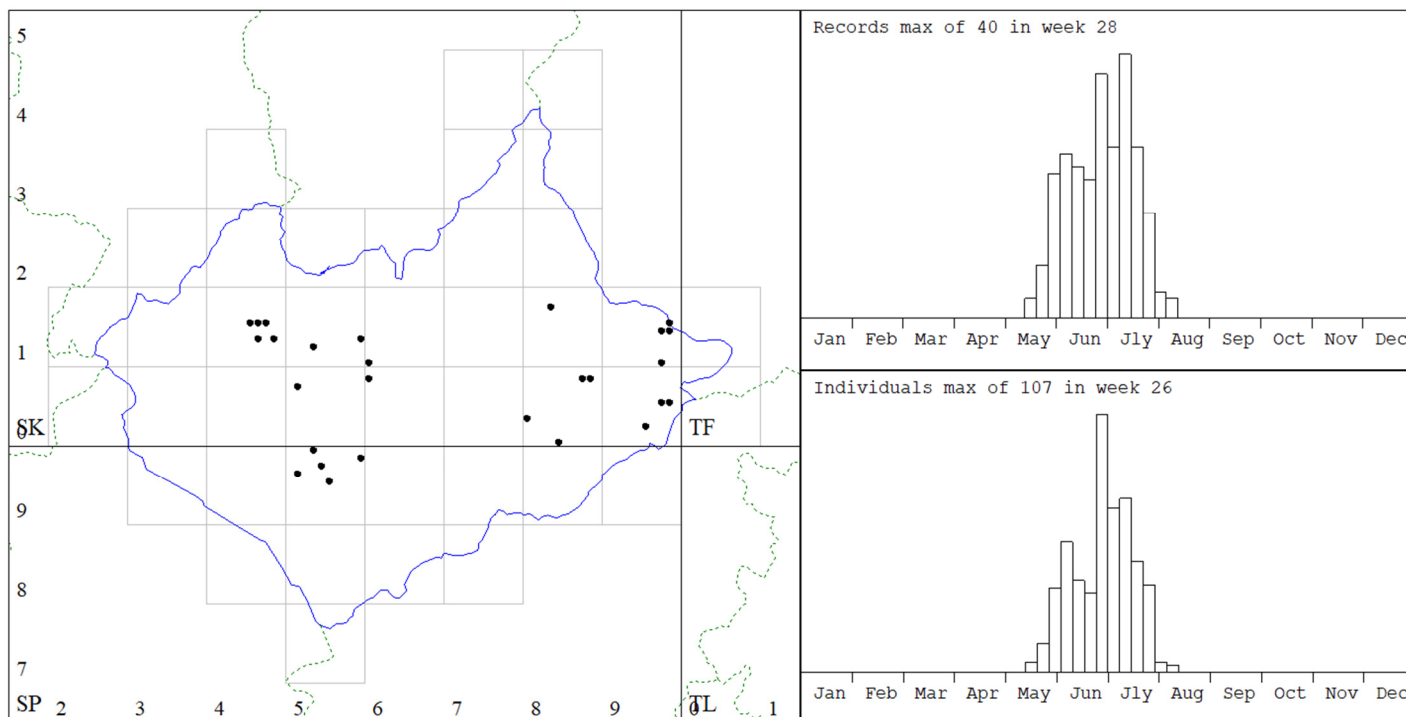
Method

Reference

Comment

An example of mapping using MapMate:

70.252 *Biston betularia* (Peppered Moth)



The most accessible way of collating your personal records is via Excel, and the most likely means of achieving this is with a cross-tab format, eg:

	01-Sep	02-Sep	03-Sep	04-Sep	05-Sep	06-Sep	07-Sep	08-Sep	09-Sep	10-Sep
Species 1	3	2			1					1
Species 2	2	1		4				3		2
Species 3	5	2		3	2					1
Species 4	1	6		2	3			7		
Species 5		1		2						

However, this then needs manipulating to convert the data into a flat tabular format, eg:

Species	Date	Qty
Species 1	01/09/2022	3
Species 2	01/09/2022	2
Species 3	01/09/2022	5
Species 4	01/09/2022	1
Species 6	01/09/2022	7
Species 8	01/09/2022	1
Species 10	01/09/2022	1

Records supplied in cross-tab format take the most time to process and introduce the highest risk of data error due to date formats or quantities having been entered in the wrong cell. It is extremely important that records supplied in this format are clearly segregated: ensure that any casual, pheromone trapping, day-flying or larval/leaf mine records from the same site are not included in the same table as light trapped adults – these should be maintained on a separate tab in flat tabular format. Please also ensure that records from additional sites are separated onto different worksheets. All records supplied in cross-tab format will be manipulated and returned for checking prior to incorporation into the County dataset.

A disadvantage of maintaining records in a cross-tab format is the inability to clearly annotate individual records with key data, such as gen det confirmed, hindwing checked, photographed etc. To ensure such data is not lost, a separate table in flat tabular format should be compiled with the relevant detail by species/date.

Taxonomy

Records held in the County dataset follow the sequence and scientific nomenclature of the Checklist of the Lepidoptera of the British Isles by Agassiz, Beavan & Heckford (ABH), as updated via amendments published in the Entomological Record and Journal of Variation. As with all biological orders, there are regular changes to the checklist with species added to the British list, new species created from taxonomic splits and cryptic species discovered through DNA studies.

It can be frustrating to try and keep up with the changes, however all are encouraged to ensure that personal records are maintained in line with the latest Checklist as far as possible. In particular, could those maintaining personal records using Excel please take the time to cross-check their species lists to the Taxon List supplied by the CMR, paying particular attention to spelling errors and mis-placed or missing hyphens. All records are checked through a Taxon lookup tool prior to incorporation, but again the fewer errors to address then the quicker to process the records.

Records of aggregates are accepted for widespread and common species pairs/groups that cannot be separated on visual characters, or where separation of every individual is not practicable. Recognised aggregates for VC55 are:

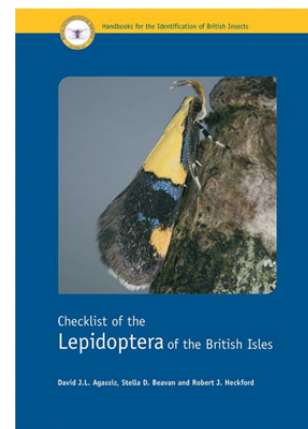
ABH	Taxa Aggregated	Vernacular
16.002x	<i>Yponomeuta padella/malinellus/cagnagella</i>	Yponomeuta agg.
27.001x	<i>Oegoconia quadripuncta/deauratella/caradjai</i>	Oegoconia agg. (G)
32.018x	<i>Agonopterix heracliiana/ciliella</i>	Agonopterix heracliiana agg. (H)
49.066x	<i>Acleris laterana/comariana</i>	Acleris laterana/comariana (G)
49.083x	<i>Acleris ferrugana/notana</i>	Acleris ferrugana/notana (G)
70.107x	<i>Epirrita dilutata/christyi/autumnata/filigrammaria</i>	November Moth agg. (G)
73.037x	<i>Acronicta tridens/psi</i>	Dark Dagger / Grey Dagger (G)
73.062x	<i>Amphipyra pyramidea/berbera</i>	Copper Underwing agg. (H)
73.169x	<i>Mesapamea secalis/didyma</i>	Common Rustic agg. (G)
73.173x	<i>Oligia strigilis/latruncula</i>	Marbled Minor agg. (G)

Records of adults of the taxa in the above aggregations submitted at species level must be supported by either Gen Det (G) or confirmation that hindwing characteristics were checked (H). Unless it is clearly indicated otherwise, records submitted for any of these at species level will be interpreted as meaning the relevant aggregate.

Note that the *Yponomeuta* sp. referenced cannot be reliably separated as adults in any way, and therefore all records to species level must be of the larval stage. However, from 2022 please submit records of adult Willow Ermine (*Yponomeuta rorella*) as such, taking care to ensure that they are carefully assessed. These records may be subsequently aggregated, but this species appears to be sufficiently distinct and separable when fresh at least. If not sure, include as an aggregate.

There is no benefit in recording to genus level only, or in aggregating large groups of species or rare/scarcely species where specific identification would be beneficial: eg 'Coleophora sp.' or 'Cnephasia sp.'. Records submitted as such will effectively be disregarded.

Species pairs that may be difficult to separate, or where there may be a future need to aggregate, should continue to be submitted as the species most closely matching the specimen, or be disregarded if the specimen is too worn or there is low confidence in the ID. Key examples are:



ABH	Taxon	Vernacular
70.051	<i>Xanthorhoe spadicearia</i>	Red Twin-spot Carpet
70.052	<i>Xanthorhoe ferrugata</i>	Dark-barred Twin-spot Carpet
70.079	<i>Thera britannica</i>	Spruce Carpet
70.081	<i>Thera obeliscata</i>	Grey Pine Carpet
70.097	<i>Dysstroma russata</i>	Common Marbled Carpet
70.098	<i>Dysstroma citrata</i>	Dark Marbled Carpet
73.096	<i>Hoplodrina octogenaria</i>	Uncertain
73.097	<i>Hoplodrina blanda</i>	Rustic

And for reference, trinomials are only used where VC55 records certainly refer to a recognised subspecies. All other species are assumed to be either the nominate subspecies, or the subspecies/form status is unclear, and binomials only are used. Valid trinomials for VC55 are:

ABH	Taxon	Vernacular
65.010	<i>Tethea ocularis octogesimea</i>	Figure of Eighty
70.119	<i>Philereme transversata britannica</i>	Dark Umber
70.176	<i>Eupithecia intricata arceuthata</i>	Freyer's Pug
70.187	<i>Eupithecia icterata subfulvata</i>	Tawny Speckled Pug
73.202	<i>Lithophane ornitopus lactipennis</i>	Grey Shoulder-knot
73.206	<i>Lithophane leautieri hesperica</i>	Blair's Shoulder-knot
73.346	<i>Noctua interjecta caliginosa</i>	Least Yellow Underwing
74.008	<i>Pseudoips prasinana britannica</i>	Green Silver-lines

Gen Det Guidelines

Whilst there are many species that cannot be reliably identified as adults without Gen Det, this does not mean that it is desirable or necessary to routinely submit large numbers of specimens for dissection. The following guidelines are intended to assist in deciding when Gen Det should be considered or avoided. This is primarily in recognition the 'Code of Conduct for Collecting Insects and Other Invertebrates' (published by the Invertebrate Link), but will also ensure the best utilisation of time and expertise of the small number of local recorders undertaking dissections.

1. No species that are considered to be readily identifiable as adults should be submitted for dissection. It is recognised that recorders have differing levels of identification skill and experience, which will clearly mean that the term 'readily identifiable' may be subjective. Making efforts to capture and share digital photographs to the Group will in most cases lead to an identification.
2. Individual moths that are very worn will, in the vast majority of instances, be very common species. This is especially true for the Pugs and Noctuids taken at light in gardens. Unless there is a very compelling belief that any worn individual is something unusual, they are best left unidentified and unrecorded.
3. For those species included within the recognised aggregates, then dissection may be beneficial if recording from a new site, or where there have been no dissections from a site within a reasonable period of time (suggest 5+ years). There is no value, for example, in dissecting numbers of Marbled Minor agg. every year from the same site. With these species, dissection should still be selective and minimal: whilst they cannot be reliably identified on external characters it is certainly possible to pick out strong candidates for Marbled Minor, Tawny Marbled Minor, Rufous Minor, Common Rustic, Lesser Common Rustic, and plain versus strongly variegated forms of November Moth agg.
4. For species in large groups that cannot be identified but are also not aggregated (eg *Cnephasia* spp. and *Coleophora* spp.) then dissection through moderate and selective sampling will reveal a range of species. Again, continual sampling from the same site is not desirable: consider selecting a small sample during different months over a five-year cycle.

5. Species that are unidentifiable as adults, but more easily recorded in the larval form – especially leaf-mining species – are not suitable for dissection. These are generally very small and difficult to dissect, such as *Stigmella* spp., *Etainia* spp., *Parornix* spp. and some *Phyllonorycter* spp. There are a small number of exceptions within these groups where rearing through to the adult for dissection is necessary.
6. For all other species where Gen Det is stated as a requirement to safely record the adult, then obtain a representative photo of the live moth and retain for dissection.

Following these Gen Det guidelines should ensure that the number of specimens being collected and submitted each year is proportionate.

Recorders retaining specimens for Gen Det should seek advice from whoever will be dissecting their specimens as soon as possible to ensure that they are in good condition when submitted. The CMR team can help put recorders in touch with volunteers who may be able to help, but please be aware that there may be a charge to cover the cost of consumables.

When and How to Submit Records

Records from personal systems should be submitted as follows via e-mail to vc55cmr@gmail.com:

Casual, larval, day-flying, pheromones etc	Submit periodically (eg quarterly), or if preferred at the end of the year.
Records from non-garden light trapping	Submit at the earliest opportunity after finalising the records.
Records from garden light-trapping	Submit at the end of year, or as soon as records finalised.

Whilst I have tried to be comprehensive within these guidelines, please feel free to refer any queries to me.

Many thanks,

Mark Skevington
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NatureSpot
<https://www.NatureSpot.org.uk/>

iRecord
<https://irecord.org.uk/>

MapMate
<https://www.mapmate.co.uk/>

National Biodiversity Network
<https://nbn.org.uk/>

Biological Records Centre
<https://www.brc.ac.uk/home>

Butterfly Conservation NMRS
<https://mothrecording.org/>

A Code of Conduct for Collecting Insects and Other Invertebrates
<https://www.benhs.org.uk/resources/collecting/>

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