

LEICESTERSHIRE ENTOMOLOGICAL SOCIETY

***A CHECKLIST OF THE MOTHS OF RUTLAND
WATER NATURE RESERVE 1991-2001***

by

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Occasional Publications Series

Number 19

January 2002

ISSN 0957 - 1019

**A CHECKLIST OF THE MOTHS OF RUTLAND WATER NATURE RESERVE
1991-2001**

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INTRODUCTION

Since 1991 Jean & Ron Harvey (Entomological Recorders for Rutland Natural History Society) have undertaken annual moth trapping at various locations around Rutland Water Nature Reserve. By the end of 1998 moth species recorded on the reserve stood at 198 macro moths plus 37 micro moths, a grand total of 235.

In the last few years the general interest in moths, and the number of people undertaking moth trapping in the area, has increased allowing extra effort to be targeted at the different habitats around the reserve. The number of nights that moth trapping has been undertaken has subsequently increased from an average level of five per annum during the 1990's to 15 in 1999 and then over 50 in both 2000 and 2001.

This increase in the annual number of nights moth trapping has also been accompanied by the adoption of multi trap sessions, with the traps operated from dusk through to dawn. Most trapping has utilised 125W mercury vapour lights mainly on Skinner and Robinson traps (plus with tripod and sheet) but actinic light traps have also been used. To help in the recording of this trapping effort, a term "trap night" has been used, the number of traps used multiplied by the number of nights trapped e.g. two nights moth trapping at the reed bed using 3 traps would be equivalent to six "trap nights". The annual level of these "trap nights" has increased from an average of eight during 1991-1998, to 29 in 1999, 70 in 2000 and over 100 in 2001.

This paper gives an overview of the activities of the last three years, 1999-2001, with brief details of the sites trapped and level of trapping per site plus the annual species totals and the number of new species added to the reserve list each year. A separate section then gives more details on some selected key species, their food plant/habitats (based on "*Moths of the British Isles*" by Bernard Skinner and "*British Pyralid Moths*" by Barry Goater) together with the trapping records from the reserve (RWNR) compared with the current status for each moth in vice-county 55 (VC55; Leicestershire & Rutland).

During 1971-1976 The Rutland Natural History Society undertook a survey of the flora and fauna of the area that was to become Rutland Water. A program of moth trapping resulted in 174 macro species being recorded, the majority of which have now been re-recorded during the period covered by this report. Brief details are given of the species not as yet re-recorded at RWNR.

There then follows a full checklist of the moths recorded at RWNR, listed in Bradley & Fletcher number order, plus additional information recorded against each species.

Finally a separate index is provided linking both English (in bold) and scientific names (in italics) of the moths to their B&F No and also indicating the classification of the moth i.e. macro (M) or micro (m) moth.

SITES TRAPPED

Figure 1 gives the locations of the regular trapping sites at Rutland Water NR during the period 1999-2001.

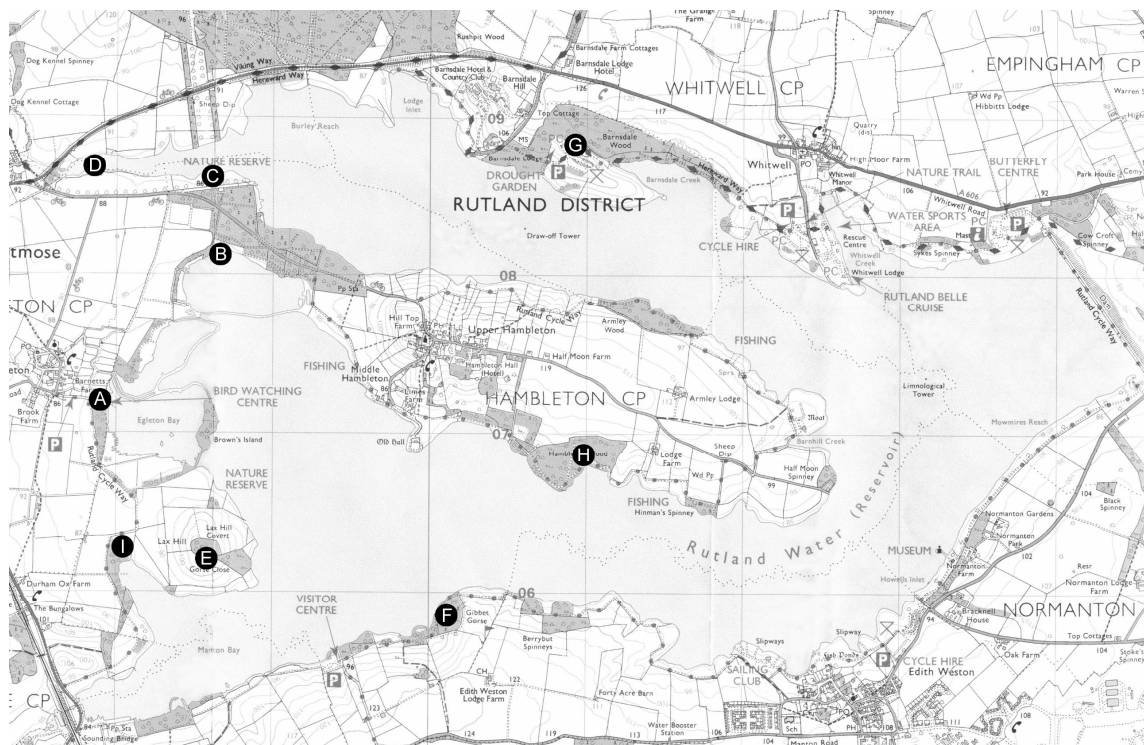


Figure 1: Location of moth trapping sites at Rutland Water NR 1999-2001

Table 1: Trapping record 1991-2001 at Rutland Water

	-	-	4	4	3	3	5	7
	-	-	-	-	36	36	27	31
	8	10	6	19	11	29	10	41
	21	41	3	4	2	2	6	7
	4	4	1	1	-	-	1	2
	8	8	1	1	-	-	9	25
	41	63	15	29	52	70	58	113

During 1999 the reed bed at the northern end of lagoon 3 (site B; SK886081) was targeted for increased coverage and in the period 2 July—3 September six visits were made, a total of 19 “trap nights”. The cover was again increased in 2000 and, in the period 1 April—8 September, 11 visits and 29 “trap nights” were achieved; this level of activity was 10 and 41 respectively in 2001. By using the boardwalk and roof of the bird ringing station, it was possible to locate traps actually in, or adjacent to, the reed beds (*Phragmites australis* and *Typha latifolia*) which resulted in the trapping of some of the specialized reed bed species.

A new location added to the list in 1999 (used at an average of 4 sessions per year 1999-2001) was the North Arm Marsh (site D; SK878086). This is an area of wet habitat believed to originate from before the formation of the main reservoir. Another new site trapped regularly throughout 2000 and again in 2001 was the work yard, also based in the North Arm (site C; SK887086). Trapping, which was undertaken throughout the year, was able to provide both the early and late flying species. During 1991 to 1999 the areas of mature woodland trapped consisted of Gibbet Gorse at Lyndon (site F; SK900058) and Lax Hill (site E; SK886063). In 2001 this was expanded and included Hambleton Wood (site H; SK911068) which was trapped five times (17 “trap nights”).

Various sites based around the Egleton centre were trapped approximately three times each year (five “trap nights” p.a.) during 1991 to 1998. These consisted of (a) the meadows and car park and (b) the western edges of lagoons 1 & 2; this trapping continued at similar rates during 1999-2001. The Bird Watching Centre at Egleton (site A) was also the site for the Rothamstead trap, installed at the end of October 1999 and operated each night of the year from then on. The details of trapping frequency (excluding Rothamstead trap) are shown in Table 1.

SPECIES NUMBERS

The total numbers of species recorded in 1991—2001 are given in Table 2. It should be noted that the results from the Rothamstead trap only covered the period 26 October 1999 - 31 December 2000.

Table 2: Number of species recorded at Rutland Water NR 1991-2001

	1991-1998	1999-2000	2001	Total
Number of species	198	170	255	248
Number of trap nights	37	46	65	97
Number of individuals	235	216	320	345

The number of species recorded annually, not unsurprisingly, increased with the level of trapping effort i.e. the number of “trap nights”. However it should be noted that the significant increase in numbers of micros recorded in 2001 was also a result of the increased focus on these moths by members of the Leicestershire Lepidoptera Recording Group.

As reported earlier, the total number of species recorded during 1991-1998 was 235. A further 192 species were added to the reserve species list during 1999—2001 (Table 3). The data do not include additions resulting from the Rothamstead trap in 2001 as these were not yet available.

Table 3: Occurrence of additional species

	198	38	50	24	310
	37	27	23	30	117
	235	65	73	54	427

SELECTED KEY SPECIES

The following list gives the national status of each species and, where known, the local status. The following key is used for each of the species reported.

RWNR = Rutland Water Nature Reserve records 1991-2001.

VC55 = Vice-county 55 (Leicestershire and Rutland) status 1990-2000

LRDB = Leicestershire Red Data Book

- B&F 1292 *Calamotropha paludella*

National Status: Notable Nb

Local Status:

Food plant/habitat: larva can be found inside leaf of reedmace (*Typha latifolia*). It hibernates over winter then continues to feed on the dead leaves or stems before pupating in the larval mine in early summer.

RWNR: caught each year in July/August at both the reed bed and at Egleton but has also been recorded at the North Arm marsh and at Field 16, both in 1999.

VC55: excluding Rutland Water, there are just three other records for the 1990's: Market Harborough 1994; Braunston (Rutland) 1997; Ketton Quarry 1998.

- B&F 1647 *Drepana cultraria* (Barred Hook-tip)

National Status: Local

Local Status: Uncertain

Food plant/habitat: imago inhabits beechwoods, double brooded flying in May/June and August. The larva is found on beech (*Fagus sylvatica*) before over-wintering as a pupa.

RWNR: only two specimens recorded: North Arm marsh 3.ix.1999; reed bed 26.v.2001.

VC55: records are mainly from the west of the county but in Rutland it has also been recorded from Ketton Quarry. Since 1990 there have been 15 records for VC55.

- B&F 1680 *Cyclophora punctaria* (Maiden's Blush)

National Status: Local

Local Status: Uncertain

Food plant/habitat: double brooded, flying May/June and August, inhabiting oak woodland with the larva on oak (*Quercus* spp.), and occasionally birch (*Betula* spp.), and then over-wintering as a pupa.
RWNR: one record only in May 2000 from the work yard
VC55: recorded 19 times, mainly in the west of the vice-county, more regularly reported in the last 3-4 years.

- B&F 1705 ***Idaea fuscovenosa*** (Dwarf Cream Wave)

National Status: Local

Local Status: LRDB

Food plant/habitat: flying in June/July it can be found in a variety of weedy places, the larva feeding (in captivity) on bramble (*Rubus fruticosus*) and dandelion (*Taraxacum officinale*). Over-winters as a pupa.

RWNR: recorded 2.vii.1999 at the reed bed (lagoon 3), two specimens.

VC55:- A total of 15 records for the period, the majority from the east of the county.

- B&F 1716 ***Rhometra sacraia*** (The Vestal)

National Status: Migrant

Local Status: Occasional migrant

Food plant/habitat: an immigrant but known to have bred on knotgrass (*Polygonum aviculare*) in the wild and also on dock (*Rumex* spp.) in captivity.

RWNR: three specimens recorded during 2000 from the Rothamstead trap.

VC55: an uncommon migrant to the vice-county with four records 1990-1999. However, there were eight records August-September 2000; October 2001 also appeared to have been a period of migration with a minimum of nine specimens recorded.

- B&F 1720 ***Orthonama obstipata*** (The Gem)

National Status: Migrant

Local Status: Occasional migrant

Food plant/habitat: another immigrant, it has been continuously brooded in captivity feeding on a variety of garden weeds such as knotgrass (*Polygonum aviculare*) and groundsel (*Senecio vulgaris*).

RWNR: recorded once from the Rothamstead trap in 2000.

VC55: another uncommon migrant to the vice-county with just seven records between 1990-2000.

- B&F 1735 ***Catarhoe rubidata*** (Ruddy Carpet)

National Status: Notable Nb

Local Status: LRDB

Food plant/habitat: larva found on hedge (*Galium mollugo*) and lady's (*Galium verum*) bedstraws in July/August before over-wintering as a pupa.

RWNR: single record 6.vii.2001 from the work yard.

VC55: just two other records from VC55 since 1990, the most recent being Ketton Quarry 24.vi.2000.

- B&F 1760 ***Chloroclysta siterata*** (Red-green Carpet)

National Status: Common

Local Status: Uncertain

Food plant/habitat: single-brooded flying in September/October but then hibernating before it is again found on the wing in April/May. A woodland species, the larva is found on oak (*Quercus* spp.), rowan (*Sorbus aucuparia*) and probably other deciduous trees.

RWNR: recorded on 1.iv.2000 at the reed bed and again on 10.v.2001 from the work yard; also at the Rothamsted trap in 2000.

VC55: 44 records for the period but with the majority in the last four years.

- B&F 1789 ***Rheumaptera undulata*** (Scallop Shell)

National Status: Common

Local Status: LRDB

Food plant/habitat: single-brooded flying in June/July, larva on willow (*Salix caprea*), aspen (*Populus tremula*), and bilberry (*Vaccinium myrtillus*) before over-wintering as a pupa.

RWNR: recorded once on 27.vii.2001 from the North Arm Marsh.

VC55: all other seven records since 1990 are recent and have come from the west of the county. The Rutland Water record is probably the first for Rutland since the turn of the 19th century.

- B&F 1790 ***Triphosa dubitata*** (The Tissue)

National Status: Local

Local Status:

Food plant/habitat: imago on wing August-September and again after hibernation in April/May. Larva found on buckthorn (*Rhamnus catharticus*) and alder buckthorn (*Frangula alnus*).

RWNR: one record on 14.viii.2001 at Barnsdale Wood.

VC55: total of 18 records for the vice-county since 1990, the majority from the east. Half of these records are from Ketton Quarry.

- B&F 1804 ***Perizoma bifaciata*** (Barred Rivulet)

National Status: Local

Local Status:

Food plant/habitat: single-brooded flying July/August inhabiting rough pasture and waste ground. Larva feeds on the ripening seeds of red bartsia (*Odontites verna*) and over-winters as pupa, sometimes remaining as such for up to five years.

RWNR: recorded once on 13.viii.2001 at the reed bed lagoon 3.

VC55: 19 records for the vice-county since 1990, the majority from Rutland.

- B&F 1807 ***Perizoma albulata*** (Grass Rivulet)

National Status: Local

Local Status: Uncertain

Food plant/habitat: larva found on the ripening seeds of yellow rattle (*Rhinanthus minor*) in July/August. Over-winters as pupa.

RWNR: one record from Egleton on 31.v.1997.

VC55: one other record since 1990, from Kirby Muxloe.

- B&F 1851 ***Eupithecia virgaureata*** (Golden-rod Pug)

National Status: Local

Local Status: Uncertain

Food plant/habitat: double-brooded; larva of first brood have been fed on hawthorn (*Crataegus* spp.) in captivity while the second brood have been found on the flowers of golden-rod (*Solidago virgaurea*) and ragwort (*Senecio* spp.). The species over-winters as a pupa.

RWNR: once from the Rothamstead trap in 2000.

VC55: uncommon in the vice-county with just 12 records between 1990-2000.

- B&F 1888 ***Ligdia adustata*** (Scorched Carpet)

National Status: Local

Local Status: Uncertain

Food plant/habitat: double-brooded flying in May/June and August, the larva can be found on spindle (*Euonymus europaeus*), over-wintering a pupa.

RWNR: recorded from the Rothamstead trap in 2000 and on 5.vi.2001 from Hambleton Wood.

VC55: 30 records since 1990, the majority from Rutland.

- B&F 1978 ***Hyloicus pinastri*** (Pine Hawk-moth)

National Status: Local

Local Status:

Food plant/habitat: single-brooded, flying in May/June. Larva feeds on Scots pine (*Pinus sylvestris*) and Norway spruce (*Picea abies*) and over-winters as a pupa.

RWNR: one record on 7.vii.2001 from the work yard.

VC55: this species was first recorded in the vice-county in 1995. Since then there have been a further seven records, mainly in the East.

- B&F 1992 ***Deilephila porcellus***(Small Elephant Hawk-moth)

National Status: Local

Local Status:

Food plant/habitat: flying May-July visiting flowers of honeysuckle (*Lonicera* spp.) and *Rhododendron*; the larva feeds mainly on bedstraws (*Galium* spp.) and over-winters as a pupa.

RWNR: recorded once from the North Arm marsh on 8.vii.2001

VC55: although regularly recorded from Charnwood Forest area in 1990's, the North Arm marsh record was one of only two for Rutland in that period.

- B&F 2009 ***Ptilodontella cucullina*** (Maple Prominent)

National Status: Local

Local Status: LRDB

Food plant/habitat: single-brooded flying May-July; larva found on field maple (*Acer campestre*) and occasionally sycamore (*Acer pseudoplatanus*); over-winters as pupa.

RWNR: recorded from Hambleton Woods on 5.vi.2001 and again on 3.vii.2001 but also from the work yard on 8.vii.2001.

VC55: a species local to Rutland. Of the 15 records from the 1990's, approximately half were in 2001 and were recorded from four locations new for this species.

- B&F 2035 ***Thumatha senex*** (Round-winged Muslin)

National Status: Local

Local Status: LRDB

Food plant/habitat: inhabiting fens and marshy places, the larva feeds on various lichens and mosses before over-wintering as a larva.

RWNR: recorded from the Rothamstead trap on 18/7/2000 and at the work yard (6/7/2001 and 7/7/2001) as well as the reed bed (8/7/2001).

VC55: local in damp habitats. Of the 15 records since 1990, six are from Narborough Bog and four from Rutland Water.

- B&F 2040 ***Cybosia mesomella***(Four-dotted Footman)

National Status: Local

Local Status: Uncertain

Food plant/habitat: single-brooded flying June-August; larva feeds on lichens and algae and also over-winters as a larva.

RWNR: recorded regularly each year at the reed bed (end June/July) but also trapped at the North Arm marsh in 2000 and the work yard in 2000 and 2001. Recorded from the Rothamstead trap in 2000.

VC55: another species found in the east of the vice-county with the records since 1990 indicating its stronghold to be around the Rutland Water area.

- B&F 2197 ***Mythimna straminea*** (Southern Wainscot)

National Status: Local

Local Status: LRDB

Food plant/habitat: inhabits fenland, marshes and wet ditches. The larva feeds on common reed (*Phragmites australis*) and canary-grass (*Phalaris arundinacea*) and over-winters as a small larva.

RWNR: regularly recorded at the reed bed (end June/July) each year but also at the North Arm marsh in 1999 and at Egleton and the work yard in 2001.

VC55: excluding the Rutland Water records, which indicate a breeding colony on the reserve, there are only three other records for this species in VC55 since 1990.

- B&F 2237 ***Lithophane ornitopus lactipennis*** (Grey Shoulder-knot)

National Status: Common

Local Status: Uncertain

Food plant/habitat: single-brooded flying in September/October and again after hibernation February-April. The larva is found on oak (*Quercus* spp.).

RWNR: recorded once from the Rothamstead trap in 2000.

VC55: uncommon in VC55 but with the majority (>10) of records since 1990 coming from Rutland.

- B&F 2313 ***Enargia paleacea*** (Angle-striped Sallow)

National Status: Notable Nb

Local Status: LRDB

Food plant/habitat: single-brooded flying July to September, inhabiting mature birch woodland. Larva in spun leaves of silver birch (*Betula pendula*) and downy birch (*Betula pubescens*). Over-winters as an egg.

RWNR: one unconfirmed record from Lagoon 3 on 4.ix.1993.

VC55: excluding this one Rutland Water record, this species has only been found in the Charnwood Forest area and the extreme NW of the vice-county.

- B&F 2349 ***Photedes fluxa*** (Mere Wainscot)

National Status: Notable Nb

Local Status: LRDB

Food plant/habitat: flies July-August, inhabiting damp open woodland, marginal fenland and other marshy places. The larva can be found in the stems of wood small-reed (*Calamagrostis epigeios*). Over-winters probably as a larva.

RWNR: recorded only in 1999 at Egleton (specimen on 16.vii.1999 and again on 17.vii.1999).

VC55: another species found mainly in the east of the vice-county with 25 of the 27 records since 1990 coming from Rutland.

- B&F 2370 ***Archanara geminipuncta*** (Twin-spotted Wainscot)

National Status: Local

Local Status: LRDB

Food plant/habitat: single-brooded, flying in August/September. Inhabits reed beds where larva can be found in the stems of common reed (*Phragmites australis*) May-July where it also pupates. Over-winters as an egg.

RWNR: recorded in low numbers each year August/September from the reed bed but also recorded at the work yard and Egleton in August 2001.

VC55: in the vice-county it is only recorded from Rutland Water, where the species is known to breed in the main reed bed.

- B&F 2371 *Archonara dissoluta* (Brown-veined Wainscot)

National Status: Local

Local Status: Uncertain

Food plant/habitat: single-brooded, flying July-September in reed beds. Larva can be found in the stems of common reed (*Phragmites australis*) where it also pupates. Over-winters as an egg.

RWNR: recorded regularly in low numbers each year at the reed bed August/September but also from the North Arm marsh and Field 16 in 1999. Recorded once from the Rothamstead trap in 2000.

VC55: another reed bed species recorded from only two other sites in the vice-county.

- B&F 2391 *Chilodes maritimus* (Silky Wainscot)

National Status: Local

Local Status:

Food plant/habitat: inhabits reed beds and flying June-August. Larva forages in old reed stems feeding on animal and vegetable matter. Over-winters as a larva.

RWNR: recorded at the reed bed each year end (June/July) at times in good numbers e.g. 50 on 25.vi.2001

VC55: currently only recorded at Rutland Water where the numbers trapped indicate a successful breeding colony.

- B&F 2418 *Earias clorana* (Cream-bordered Green Pea)

National Status: Notable Nb

Local Status: LRDB

Food plant/habitat: inhabits damp woodland, fenland, river valleys and marshy places, the larva being found on osier (*Salix viminalis*), creeping willow (*Salix repens*) and other species of willow (*Salix* spp.). Over-winters as a pupa

RWNR: single specimens caught 5 or 6 times each year at a variety of locations e.g. reed bed, Egleton, Field 16, North Arm marsh and the work yard and recorded once from the Rothamstead trap in 2000.

VC55: only recorded from the east of the vice-county with the majority of these records being from Rutland Water.

- B&F 2423 *Nycteola revayana* (Oak Nycteoline)

National Status: Local

Local Status: Uncertain

Food plant/habitat: single-brooded flying September-November and again, after hibernation, in March-May. The larva feeds on oak (*Quercus* spp.).

RWNR: one record from Hambleton woods 5.vi.2001.

VC55: mainly recorded from the west of the vice-county, 17 records since 1990 but two records from Rutland (Hambleton Woods and Luffenham Heath).

MOTHS RECORDED BY THE RNHS DURING THE SURVEYS OF 1971-1976

A total of 19 species from the original RNHS surveys have not, as yet, been re-recorded at Rutland Water NR (Table 4).

Table 4: Species not re-recorded at Rutland Water NR since the 1971-1976 surveys by the Rutland NHS

Six-spot Burnet	Day flyer, uncommon/under-recorded
Narrow-bordered 5-spot Burnet	Day flyer, uncommon/under-recorded
Lappet	Only odd records, mainly from east of VC55
Grass Emerald	Rutland records from Luffenham Heath (common)
Lead Belle	Not recorded in VC55 since 1979
Water Carpet	Fairly common (mainly a woodland species)
Cloaked Carpet	One unconfirmed record in last 100 years
Toadflax Pug	Fairly common
Currant Pug	Fairly common, mainly in gardens
Plain Pug	No common, 14 records from the 1990s
Common Heath	Day flyer but declining (Ketton Quarry in the 1990s)
Figure of Eight	Fairly common (but flies late in season)
White-line Dart	Only one post-1990 record for VC55
Broad-barred White	Fairly common in gardens
Shark	Moderately common
Mullein	Most records are of larvae, not common at light
Deep Brown Dart	Increasingly being recorded in recent years
Gold Spangle	Only four since 1990 (one from Luffenham Heath)
Mother Shipton	Day flyer, fairly common

CHECKLIST OF THE MOTHS OF RUTLAND WATER NATURE RESERVE

The following appendix gives a detailed listing of moth species at Rutland Water NR. The layout of each page is as follows:

- the columns on the left of the checklist indicate the years when the moth has been recorded on the reserve i.e. 1991-1998, 1999, 2000 and 2001
- the columns on the right show the locations where these moths were recorded in the three years 1999, 2000 and 2001.
- the column marked RIT on the far right provides a summary of the results from the Rothamsted trap for the year 2000 only.

For the macro moths both the National and Local Status are also given using the following designations:

- Common - Common in Britain (known from more than 300x10km squares)
- Local - Localised in Britain (known from less than 300x10km squares)
- Notable/Nb - Nationally Scarce (known from less than 100x10km squares)
- Notable/Na - Nationally Scarce (known from less than 30x10km squares)

LRDB - Leicestershire Red Data Book Species (rare, endangered or declining in Leicestershire and Rutland)
Uncertain - a supplementary list of species for which lack of information does not as yet allow full inclusion in LRDB.

ACKNOWLEDGEMENTS

Several people have been involved in the trapping effort over the last three years and I would like to thank the following in particular for their contributions:

GW Follows, JM Follows, R Follows, RP Fray, J Harvey, R Harvey, AJ Mackay, O Orridge, M Rossell, AP Russell, B Russell, K Smithers and J Wright.

A special thanks to Adrian Russell, not only for his help with the survey work and moth identification, but also in supplying much of the historical and comparative information given in this report.

Full details of all species trapped and recorded are held by the Leicestershire Lepidoptera Recording Scheme. Details can be obtained from:

- Adrian Russell (adrian@waincot.demon.co.uk) or
- c/o Holly Hayes Environmental Resources Centre, 216 Birstall Road, Birstall, Leicester, LE4 4DG (Tel: 0116-267-1950).

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