Spider Recording Scheme News
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My thanks to those who have contributed to this issue. S.R.S. News No. 58 will be published in July 2007. Please send contributions by the end of May at the latest to Peter Harvey, 32 Lodge Lane, GRAYS, Essex, RM16 2YP; e-mail: grays@peterharvey.freeserve.co.uk

Editorial

A number of volunteers on BAS Council are helping in the preparation of a 'spider crib' to help in the identification of difficult species, so progress should be made on this now.

Unfortunately there has been little progress on the national status review due to a combination of enormous difficulties in reaching an understanding on how to sensibly apply the IUCN criteria to our spider data and delays in some of the data analysis needed.

I have now managed to import large amounts of Excel data into MapMate, although this has highlighted a number of difficulties discussed further in the section on SRS Phase 2 broad habitats etc. Other than the provisional atlas dataset all data submitted to the recording scheme are now in MapMate except for some paper data that could not be computerised in time for the updated maps.

Where particular care is needed in recording

Please record species found at an unusual time of year with great caution, and if in any doubt whatsoever get your specimens checked by the Area Organiser and if necessary a member of our Verification Panel. Use the adult season charts in the provisional atlas as a guide, e.g. *Linyphia triangularis* is exclusively adult as a late summer/autumn species, sometimes surviving into the winter—but if you believe you have this species from earlier in the summer, then you are almost certainly misidentifying the spider for *Neriene peltata*, which although a somewhat smaller spider has a rather similar epigyne.

Any species found in an unexpected part of the country or outside its normal range should be checked by the Area Organiser, and if there might be any doubt, also by our Verification Panel.

SRS Phase 2 broad habitats, structural vegetation layers, collecting methods or detail and MapMate

In phase 2 of the Spider Recording Scheme we are beginning to obtain considerable quantities of detailed data on our British spiders in a standardised computerised format. Since these data are potentially extremely valuable in providing us with considerable quantities of information about the detailed ecology of species, both generally and in different parts of the country and at different times of year, it seems very important to try and obtain consistent data. This article is an attempt to clarify these issues.

When validating card data against BRC computer entries and when I was entering data from new RA65 forms into MapMate I came across a numbers of cases where site descriptions did not match up at all with the broad habitats that had been completed by the surveyor. Using the Ordnance Survey on-line map service to check the grid references against the OS map often indicated that there seems to be confusion about the use the broad habitat, with some recorders thinking about the broad habitat at too much of a fine scale.

To this end I will try and set out my understanding of the use of broad and structural habitats in the scheme. I fully acknowledge that there will be cases where choices will be difficult, or even impossible, and in these cases the recorder should either make what they see as clearly the best choice or should leave it not recorded – there are definitely cases where it is better to have no data than data that would confuse. No habitat classification can ever be wholly satisfactory and there remain many problems with the one we are currently using, some of which we hope to address.

Broad habitats

The broad habitat is the basic overall habitat in which you have collected the spiders and to complete this you need to think at a larger scale than your immediate collecting area, e.g. in a mixed woodland you should include grassy paths, rides or clear felled areas as part of the mixed woodland, not as grassland. On the other hand a large grassland field between two woodland blocks should be classified as the relevant grassland broad habitat. Collecting off coniferous trees in a mixed woodland should not be classified as coniferous woodland, unless you can create a sizeable sub-site or compartment within the woodland that is wholly made up of coniferous trees. Collecting off coniferous trees in a mixed woodland is a matter of detail, and something that needs to be recorded in the comment field. A single tree or small number of trees do not in themselves constitute woodland or a woodland category.

The SRS is encouraging the use of MapMate biological recording and mapping software, for various reasons, but in particular for its ease of exchange of data over the internet, the software's ability to automatically keep track of records subsequently edited, added or deleted, the up to date checklists used and excellent support provided. In MapMate broad habitats, sub-habitats and associated substrate, hydrology and management features are site based, so that new sites need to be set up for each combination of these. This is not as time consuming or difficult as it seems, since it only has to be done once for any site/sub site. Good ways of naming these have been set out, e.g. by Ian Dawson in his article on MapMate in SRS News 46 (July 2003). As long as

your basic locality name is consistent, then you can create as many sub sites as you like without affecting the ease with which the data can be searched. Even if you are submitting records by recording cards, it is useful to realise that sites will be used in this way.

The broad habitats are a combination of the original phase 1 RA65 habitats with additional phase 2 habitats, to allow continuity in the data. Currently the broad habitats and sub habitats consist of the following:

Broad habitats	
Shingle	1
Saltmarsh	2
Sand dune	3
Machair	4
Heath/moor, heather	5
Heath/moor, other	6
Gorse (*record as sub-habitat if part of main habitat)	7
Wetland, open water	8
Wetland vegetation, acid	9
Wetland vegetation, other	10
Wetland, acid bog	24
Wetland, fen	25
Wetland, carr/swamp	26
Wetland, marsh	27
Wetland, reedbed	28
Wetland, edges of lakes, ponds, rivers and streams	29
Grassland, calcareous	11
Grassland, other	12
Grassland, neutral	30
Grassland, acid	31
Grassland, improved	32
Rock, scree, cliff or quarry	15
Post-industrial, mineral extraction sites/spoil heaps	33
Post-industrial, buildings/industrial infrastructure	34
Cultivated land, including gardens	13
Arable	35
Gardens, parks	36
Buildings, indoors	14
Cave, tunnel, well or culvert	16
Scrub (*record as sub-habitat if part of main habitat)	17
Woodland, deciduous	18
Woodland, conifer	19
Woodland, mixed	20
Woodland, young conifer plantation	21
Other (specify in notes)	23
Not Recorded	

Subhabitats

1. Ditch
2. Verge
3. Hedgerow
4. Gorse scrub
5. Scrub (other)
6. Scattered Trees

Not Recorded

Evident management features for a site or sub site are:

1. Unmanaged
2. Grazed
3. Cut
4. Coppiced
5. Clear-felled
6. Burning
7. Physical disturbance

Not Recorded

Hence for example a clear-felled area within a woodland would be classified as a broad woodland habitat and then as '5. Clear-felled'. Since clear-felled areas will be replanted or left to regrow, in a number of years time the habitat of this same area will have changed. To allow for this in MapMate the site name could be along the lines of e.g. 'Blakes Wood (clear-felled area)', so that if someone records the same place in 40 years time when it has returned to mature woodland, records from exactly the same area can still be related to the habitats present at the time of collection rather than just the grid reference.

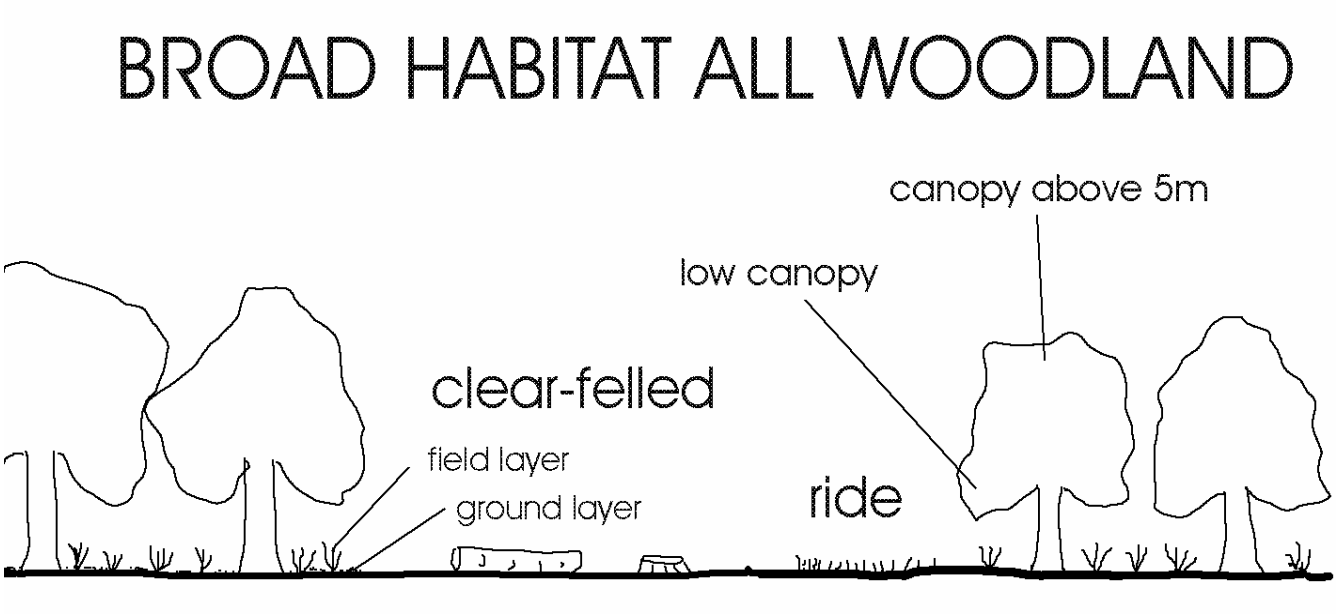
Habitat detail, method (MapMate Method) and structural vegetation layers (MapMate Status)

When looking through MapMate records sent to me by recorders there is sometimes an obvious mismatch between the collecting method and the structural vegetation layer that has been selected.

Nothing about ecology is ever simple, and the phase 2 structural classification (in MapMate the Status field when using 'Araneae: Spider Recording Scheme' in your configuration) was an attempt to record more detailed information of where spiders are found by using a system based on the vegetation layers in woodland. In a simplified form these can be seen as the ground layer, the field layer, the understory or shrub layer and the canopy. Non-woodland habitats can be seen in a similar way, but without the canopy.

Unlike with broad habitats this time we should be thinking on a small scale, the actual area around you when you are collecting or have set traps.

Structural habitats always refer to **where a spider is found**, not to the surrounding vegetation. For example, spiders collected by grubbing on the ground or at the bases of plants would be classified as in the ground layer.



The field layer refers to herbaceous vegetation . Spiders collected by sweeping are normally from the field layer which generally is <20cm or >20cm and <1-1.5m in height.

Shrub and low canopy refers to woody species, i.e. scrub or shrub species and low branches of trees, which are most easily sampled by beating - even if they are sampled by sweeping actions they are still considered as shrub or low canopy. Hence bramble would count as being in this layer unless it is prostrate or not woody.

To try and take some account of the vegetation cover (e.g. a good proportion of spiders appear to always be found in areas of sparsely vegetated habitat or small areas of bare ground, or always in tall dense vegetation etc) we subdivided these. You can use the general category where it is not feasible or sensible to subdivide.

The MapMate 'Method' field also allows you to record either your collecting method or detail about where in a habitat the spider was found (these had to be combined in order to be incorporated into the MapMate record entry). Whilst it is possible to create new Methods in MapMate, you must remember that if you do this, these will not then be within the SRS classification and will not be available for analyses.

Several habitat details are included because they provide microhabitats commonly used by various spiders, such as 'On tree trunk', 'On fence', 'On wall', 'In aerial litter, birds nests etc'. However these particular microhabitats cannot satisfactorily be associated with structural vegetation layers – e.g. on a tree trunk is not the same as the structural canopy layer that can be beaten to find spiders, so in cases like this the Status field should be left 'Not recorded'.

There has occasionally been some confusion over the meaning of the term 'grubbing'. 'Grubbing' refers to the time honoured technique used by arachnologists and other ground dwelling invertebrate specialists, where the field worker can be found on their hands and knees, backside in the air, using their hands to sort amongst the roots and ground layer of plants and litter. It therefore has a pretty close association with the ground layer (of course even this is not always easy to know for certain e.g. if you are grubbing amongst tall vegetation, you may disturb spiders that then drop un-noticed to the ground, where you then find them – nothing is perfect!).

Habitat detail and Method

0. Not Recorded	T1. Pitfall trap
1. In litter	T2. Water trap
2. Under stones, logs, debris	T3. Malaise trap
3. Under bark	7. On wall
4. In aerial litter, birds nests etc	T5. Sweeping
5. On tree trunk	T6. Beating
6. On fence	T7. Grubbing
7. On wall	T8. Sieve and sort
8. On vegetation	
9. In plant roots	
A. Amongst herbage	

Of course these are not fixed associations, since it is possible to employ aerial pitfall or pan traps, and beating can be employed on tall herbaceous vegetation as well as scrub or canopy.

Analyses of these kinds of data can provide us with valuable information about whereabouts in a broad habitat different spiders are usually found, and also by looking at these data throughout the year and by longitude and latitude we can learn whether species move into different structural habitats during the year or behave differently in different parts of the country. Many field workers will already know that these things happen, but the availability of these data will enable us to quantify what happens and apply statistics to find out whether the data provide significant results.

On examining in detail some of the MapMate data that I have been sent, there is a proportion of records where the methods do not match the Status or structural vegetation. **Therefore can I please make a plea for MapMate users to check their records against the table on the following page**, edit them where necessary and then resync to me (cuk 2gv), so that we can begin to use the SRS Phase 2 data for analyses.

Method or habitat detail	Likely associated structural vegetation layer (MapMate Status)
5. On tree trunk 6. On fence 7. On wall	Not recorded
T1. Pitfall trap T2. Water trap T7. Grubbing T8. Sieve and sort 1. In litter 2. Under stones, logs, debris 9. In plant roots	1.0 - 1.5 Ground layer
8. On vegetation A. Amongst herbage T5. Sweeping	2.0 - 2.5 Low vegetation (<20cm)
8. On vegetation A. Amongst herbage T5. Sweeping	3.0 - 3.5 Field layer (>20cm)
8. On vegetation A. Amongst herbage T6. Beating	4.0 - 4.5 Shrub/low canopy to 5m
Tree fogging or aerial traps, or you have climbed up into a tree on a ladder or are using walkways in the tree canopy!	5.0 Canopy above 5m
T3. Malaise trap	Could be ground, low vegetation or field layer, or not applicable depending on its placement

An example of the results that we can start to obtain from the records currently in MapMate is summarised in the following table for *Clubiona terrestris*, a spider that probably tends to move from the ground layer into the vegetation and canopy during summer months, over-wintering in litter (including aerial litter.

Records for *Clubiona terrestris* by SRS Status (structural habitat) and month

	Month											
Status	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
1.0 Ground layer	5	7	13	25	39	21	17	14	38	44	23	14
1.2 Ground layer: sparse veg. cover		1		4	5	5	2	1	4	2		
1.3 Ground layer: moderate veg. cover		2	2		1	6	1	1	5			1
1.4 Ground layer: dense veg. cover				2	2	3		1	2			
Total ground layer	**5**	**10**	**15**	**31**	**47**	**35**	**20**	**17**	**49**	**46**	**23**	**15**
2.3 Low vegetation (<20cm): moderate						1						
2.4 Low vegetation (<20cm): dense				1			1					
Total low vegetation (<20cm)	**0**	**0**	**0**	**1**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**
3.0 Field layer (>20cm)					5	12	2	4	1			
3.3 Field layer (>20cm): moderate						5		1	1			
3.4 Field layer (>20cm): dense				1	2							
3.5 Field layer (>20cm): varied mosaic					2							
Total field layer (>20cm)	**0**	**0**	**0**	**1**	**9**	**17**	**2**	**5**	**2**	**0**	**0**	**0**
4.0 Shrub/low canopy to 5m				1	4	16	6	1	3	3	1	
4.3 Shrub/low canopy to 5m: moderate				1	1				1			
4.4 Shrub/low canopy to 5m: dense					1	1						
Total shrub/low canopy	**0**	**0**	**0**	**2**	**6**	**17**	**6**	**1**	**4**	**3**	**1**	**0**
5.0 Canopy above 5m									**1**			

There are at least 32 fields of information in the MapMate SRS Phase 2 structure, with several of these effectively hidden from the user (such as BRC number). Whilst this all might seem too time consuming and tiresome to record, quite a few fields are associated with a site, so only have to be completed once for any site or sub-site. In addition where a casual fieldwork visit is made to a site it may well not be possible to complete the fields relating to management, substrate etc – **if in doubt don't complete**. Structural habitat features are related to each separate species record, but if you keep all the spiders from one structural habitat separate from those collected from another structural habitat (e.g. you keep those collected by grubbing in one tube of alcohol, those swept in another tube and those beaten into another tube and so on) then it is not difficult to enter these quickly into MapMate from your lists of identifications by locking the fields that remain the same and entering only the taxon and quantity/sex for all those species recorded from the same Status and by the same Method.

I am only too aware that no habitat classification is ever going to be satisfactory or accommodate for all circumstances. The NVC system is not only beyond many naturalists (if for no other reason than the price of the volumes) but is also not particularly relevant from an invertebrate point of view, where spiders for example are rarely bothered by the plants present other than from a structural point of view. I am in the process of thinking about whether to update the current classification in a way that can reasonably easily accommodate existing data. In particular there is the problem over how to allow broad habitats within habitats or habitat systems to be recorded, e.g. large areas of grasslands within woodlands, dune systems supporting pine plantations, calcareous grasslands, marshes, fens and so on, as well as the dunes themselves. I would welcome ideas and opinions from members of the BAS.

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Habitat-Site associations and how to define site names in Mapmate

by Peter Harvey

Validation of data computerised by BRC from RA65 cards in autumn 2005 raised a number of issues about lack of consistency in the use of site names generated by paper data, and inconsistencies between site descriptions and broad habitats. I have recently managed to find the time to import these and various other Excel data into MapMate. This has raised an important question over how to deal with site names in MapMate, so that broad habitat information is not lost, and I have had to make unilateral decisions over site names and associated habitats in order to make the data consistent with the overall aims of the recording scheme.

In MapMate every site consists of a unique site name-grid reference combination. SRS broad habitats and other SRS site-related information (SRS Site Details) are uniquely related to each site, whereas numbers, sex of specimens, structural habitat, collecting methods, etc are associated with individual species records. Many parent sites will contain a number of different broad habitats, and hence it will be necessary to set up a sub site for each SRS Site Detail combination. This is not as onerous as it might seem, since it only has to be done once for any one sub site. However it becomes essential to ensure that sites and sub sites are named in a way that clarifies the broad habitat that is associated with it, so that confusion does not arise when it is used, both by the creator of the site name, but also perhaps by other MapMate users.

The means to do this has already been explained extremely well in Ian Dawson's article "MapMate and the Spider Recording Scheme" (July 2003 SRS News **46**: 12-14).

The purpose of the current article is to remind MapMate users of its importance and the value in using a standardised method to assign site and sub site names. Hopefully it will also be useful for non-MapMate recorders to be aware of the implications their site names might have when their records are imported into MapMate, since these will have to be adapted to ensure that site name-SRS broad habitat/SRS Site Detail combinations are unique.

The recommended method to use when naming sites is **MainSite, SubSite: Compartment** followed by a descriptive identifier for the **SRS broad habitat/SRS Site Detail** in parentheses, so that you and other users can identify the habitat associated with a particular site name. Hence examples of sites named in this way might be as follows:

Savernake Forest, Grey Road (decid)
Savernake Forest, Braydon Oak (mixed)
Savernake Forest, Birch Copse (conifer)
Savernake Forest, Cp 12 (clear felled)

Or

East Head (saltmarsh)
East Head (shingle)
East Head, West (fore dune)
East Head, Northwest (fixed dune)
East Head, Central (dune slack)
East Head (scrub)

This method can also be used to differentiate areas of land where management changes take place and associated changes in species are being monitored:

Bellrope Meadow (ungrazed)
Bellrope Meadow (grazed)
Savernake Forest, Cp 12 (prior to clear fell)
Savernake Forest, Cp 12 (clear felled, 1 year re-growth)
Savernake Forest, Cp 12 (clear felled, 2 year re-growth)
Savernake Forest, Cp 12 (clear felled, 3 year re-growth)

The whole site name is limited to 64 characters. Although sites are also identified by their grid reference, unless any associated habitat is identified in the name you or another MapMate user would be able to use the site without easily realising that the habitat associated with it might not be applicable to the records you are about to enter (although

this can be checked in the data entry window by clicking on **Site** and selecting from the drop down list **Show all related** > **Site Details**).

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What is a spider habitat?

by Tony Russell-Smith

We have probably all had the experience from time to time of finding a species of spider in the "wrong" habitat. For example, all the books say that a species is strictly confined to, say salt marshes, and it turns up in a pitfall trap on heathland. In some cases this will doubtless be a consequence of the dispersal of spiders by ballooning on the end of silk strands. While spiders can, to some extent, control where and when they take to the air during ballooning, as far as we know they have very little control over where they eventually come down. However, when a species persistently turns up in an unexpected habitat, other factors may well be involved, including our own ability to define exactly what constitutes that habitat. Here I give a couple of examples from my own experience but would be interested to hear of others that readers have encountered themselves.

The first example is the distinctive jumping spider *Marpissa nivoyi* (Lucas, 1846) which all the literature tells us is an inhabitant of the field layer of sand dunes. Sand dunes are indeed where a majority of the specimens I have collected here in Britain have come from. However, in the south-west of France, near the Côte Sauvage in Charente Maritime, I have taken it on several occasions from dry grassland on limestone, as far as 5 km from the nearest coast. It was interesting therefore when in 2005 I collected the species in two quite unexpected habitats in Kent. The first was in a very sparse dried up patch of reeds (*Phragmites australis*) at Samphire Hoe, near Dover. This is an artificial platform jutting out from the coast and made up of the millions of tons of chalk marl spoil from the drilling of the channel tunnel. While much of the area has re-vegetated in the 16 years since its creation, there are still large areas with only very sparse dry grassland and to that extent it might be considered to somewhat resemble sand dunes. The second was a little further along the same coast at Folkestone Warren. Here, several *M. nivoyi* were taken in clumps of grass on vertical chalk cliffs along the coast. The nearest sand dunes to either of these sites are roughly 15 km to the West at Greatstone-on-Sea near Dungeness. The only features that these two habitats appear to share is that they were both very hot and dry and they both had vertical surfaces; reed stems in one case and vertical chalk faces in the other.

The second example is the little erigonid, *Maso gallicus* Simon, 1894. Up until about 1990 this had been found in calcareous grassland in Kent, Leicestershire and Northamptonshire on the one hand and in several fenlands in East Anglia on the other hand. It was, therefore, an example of what Duffey (1968) termed "diplostenoecious" species, those that appear to be confined to two, contrasting, habitat types. However,

Marpissa nivoyi
photograph © Peter Harvey

during a field trip to Brittany in 1992, this species was found in a range of habitats. It was taken, as expected, by sweeping mixed fen in the Briére marshes as well as in reedbeds but was also swept from dry grassland in open pine woods and from *Agropyron* grassland on sea walls around the Loire estuary. Clearly, in this part of its range it has a relatively wide habitat amplitude. Interestingly, in Britain, it has been collected more recently by sweeping sparse *Arrhenatherum* grassland on shingle at Dungeness and at Sandwich Bay in Kent.

These examples prompt two lines of thought. The first relates to the way we see and describe habitats. Human senses are dominated by vision and we therefore tend to describe habitats in terms of their broad visual characteristics. Thus we speak, for example, of "woodland", "heathland", "fenland" or "sand dune" habitats – all defined by fairly simple visual characteristics related to the morphology of the dominant plants and/or the substrate on which they grow. Invertebrates the size of spiders however, almost certainly perceive habitats in quite different ways. We know that there are two factors that are of outstanding importance in habitat choice by spiders. The first is habitat structure, be it the structure of the vegetation (particularly for web-builders) or of the non-living substrate such as the litter layer in woodlands. The second is the particular micro-climate they require, as demonstrated in the classic paper by Nørgaard (1951) on lycosids in Danish peat bogs. Unfortunately, neither of these factors are accurately reflected in the broad habitat descriptors we customarily use. Thus, if *M. nivoyi* were asked to describe its preferred habitat (and could speak!) it would quite probably not mention sand dunes at all but might well say something like "hot, dry and sunny places with vertical surfaces on which to hunt prey". How precisely *M. gallicus* would describe its preferred habitat is less easy to discern but it seems unlikely that it would use the term diplostenoecious! None of this is to suggest that broad habitat descriptors are of no value, since a large proportion of spider species are most frequently found in particular habitats. It is though, important to bear in mind their limitations and it is for this reason that the descriptors used in phase 2 of the SRS include much more detailed sub-divisions of habitats as well as their structural characteristics.

The second issue that comes to mind is habitat choice by spiders on the edge and nearer the centre of their geographical ranges. It has been known for many years that invertebrate habitat choice can change in different parts of the species' geographical range. Duffey, in the paper on sand dune spiders mentioned above, cites examples given by Richards & Waloff (1954) for two grasshopper species that reach their northern limit in Britain. *Gomphocercus rufus* (L.) is a woodland species on the continent but in Britain is only found on chalk grassland in southern England. *Stenobothrus lineatus* (Panz.) is found in fenland in France but only occurs in open grassland in this country. In each case it is suggested that the cooler climate in Britain limits these species to open ground areas where insolation is greatest. A good example of a potential similar case in spiders is that of the salticids that are either exclusively or principally limited to maritime shingle in this country. These include *Heliophanus auratus, Pseudeuophrys obsoleta, Sitticus inexpectus, Phlegra fasciata* (also on sand dunes) and *Pellenes tripunctatus*. None of these species is confined to shingle on the continent. For example, in Greece I have found *H. auratus, P. obsoleta* and *P. fasciata* to be widespread in maquis and garrigue habitats. Many of these species are also recorded from land-locked countries of central Europe including Switzerland, Austria, the Czech and Slovak republics which have no marine shingle habitats. Indeed, both *Phlegra fasciata* and *Pellenes tripunctatus* are widespread inland in both France and Germany.

While it is tempting to assume that it is indeed the microclimate of shingle sites in southern Britain that allow these species to survive, it is possible that habitat structure also plays a role. The numerous voids between the individual pebbles on shingle beaches are certainly used by these species as a retreat from predators (as anyone who has tried to collect salticids on shingle beaches will know!) but may also be used as shelter in adverse weather conditions. The surface of shingle is a very inhospitable place during the winter months even in southern Britain and the spaces deeper in the shingle bank are likely to be significantly warmer and less windy at that time of year.

All of this tends to suggest that when trying to describe a spider habitat, it is the micro-climate and the physical structure that we should be trying to define, as these are the features that directly influence spiders' choices. Unfortunately, neither of these characteristics are necessarily easy to quantify, at least for the amateur arachnologist. Nevertheless, in my experience some of the best field arachnologists appear to have an innate understanding of the importance of such factors and are able to find interesting spiders where the rest of us only collect widespread and common species. Perhaps a case of a little bit of forethought and planning yielding dividends !

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Uloborus plumipes reaches new latitudes

by Mike Davidson

I regularly irritate the staff at the local supermarkets by taking my fruit and veg loose to the check-out for weighing - thankfully the owners finally seem to be getting the message about excess packaging. But that is just an interesting aside. What of course I am really there for is to search amongst the produce for evidence of *Uloborus plumipes* - but with no success. I had seen the beast before in the University Botanic Garden greenhouses in Amsterdam, so felt I had got the jiz and would be able to spot it easily as soon as one arrived.

In August 2006, on a regular lunch-time trip to the Duthie Park Winter Garden greenhouses (and tea-room!) in Aberdeen (NJ937045), I was surprised to see the display trellises, in the plant sales section, festooned with *U. plumipes* webs. Most webs had a spider and many of them had egg sacs. The spiders had also made webs between some emergent aquatic plants to the bridge over their artificial indoor stream. How had I missed the initial infection? So far they don't seem to have spread much further through the greenhouses and the staff seem to be "dusting" the plant stalls more regularly so there are fewer webs. A more thorough investigation of the invertebrate fauna is called for.

This appears to be the most northerly record so far but there are loads of garden centres and greenhouses in the north of Scotland worth checking. Anyone going to Unst?

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Timed hand collecting and repeating the East Anglia Fenland Surveys of 1969-1974

by Richard Price

In the SRS news (Duffey, 2006) Eric Duffey wrote about his surveys of the East Anglian Fens and the timed hand collecting method that he first used in 1967 (Duffey, 1968). Eric Duffey seems to be the only person who has ever scientifically applied timed hand collecting for spiders**.** For this reason, I decided to write about timed hand collecting and drum up some support for a repeat of the East Anglian Fenland Surveys of 1969 – 1974.

When recording spiders properly, we are collecting scientific data. If we use standardised collection techniques then we improve upon these data by enabling comparable studies to be carried out. If you are thinking of surveying a site that at a future date might be

resurveyed, or compared against another, then this article might contain some useful ideas.

Let us initially investigate the other method for surveying epigeal invertebrates, pitfall trapping. Pitfall trapping is the method that is most frequently used to collect epigeal invertebrates and has the advantage of being both cheap and quick (Holland and Reynolds, 2005). It is considered to be the technique best suited to the purpose (Sutherland, 2006). However, there are problems and concerns that have led to pitfall trapping often being discussed in the literature.

Timed hand collecting for spiders was first documented by Eric Duffey in his paper on the ecological analysis of the spider fauna of sand dunes. He correlated the time spent against the number of species collected and compared families and species found in 7 habitats. These habitats were drift-line, fore-dune, yellow dune, marram transition zone, dune heath, dune slack, and dune meadow (Duffey, 1968).

During transpiration experiments spiders were found to exhibit different behaviour patterns when conditions became harsher, some moved around less (Baehr and Eisenbeis, 1985). This behaviour could affect search techniques, in particular that of pitfall trapping.

During a 1992 study C. J. Topping and K.D. Sunderland (Topping & Sunderland, 1992) found that pitfall trapping is ineffective and its limitations are often overlooked.

D-vac and pitfalls are problematic and cannot easily be used to sample in the full range of habitat variation found on sand dunes. Continuous pitfall trapping over a period of a year yielded less information than four days of timed hand collecting. Studies that used pitfalls tended not to use the type of habitat classification that is so important in the SRS phase two data set (Duffey, 2003).

Thomas (2006) found that casual collecting carried out for a few minutes with a sweep net could produce more numbers than pitfall trapping and concluded that pitfall trapping might not be as effective as other techniques

Pitfall trapping is selective. If the survey is specifically for spider fauna pitfall traps will still collect from other groups such as beetles. Unless effort is made to curate and record these groups, invertebrates are killed for no purpose.

Perhaps it is time to look at an alternative to pitfall trapping. The timed hand collecting outlined by Eric Duffey is an alternative method for surveying epigeal invertebrates. It has been explored for fenland habitats and perhaps it can work for others.

Timed hand collecting

The methodology proposed by Eric Duffey involves timed hand collecting, in and on the ground level vegetation. During the collection every spider seen is taken without selection. This is done to reduce recorder bias whereby less experienced recorders collect the larger and more visible species. All sub-adult and immature spiders are excluded from the analysis although their total is recorded. During the 1969 to 1974 surveys Eric Duffey and his team spent an hour on each site in the morning and an hour on each site in the afternoon. Members of Duffey's team averaged 9 per survey. Each hourly collection was bottled separately. After each hour they moved to a new place even if it was only a few metres away (pers. comm., Duffey 2006). By sampling for periods of one hour it is possible to calculate how long is needed to collect in each area before no new species are found (Duffey, 2003). This type of data would be very valuable for the BAS and future studies. Therefore, this technique really is worthy of further investigation.

Timed hand collecting can work as a standardised survey method if timed counts are used. This means that species can be monitored and semi-quantitative data collected enabling comparisons across years, or sites. Indices of abundance or relative abundance can also be produced (Hill *et al.*, 2005).

Timed hand collecting in East Anglia

The use of timed hand collecting to repeat the 1969-1974 surveys could result in data being available that could be used for surveillance. When interpreted these data could detect if desiccation is occurring and determine if it is affecting spider assemblages. These data would be valid for scientific studies, and because the survey method is repeatable, it could be incorporated into future site monitoring schemes.

Eric Duffey has kindly corresponded with me and I have collated a table (see table 1) listing the site names, grid references, survey dates.

Each species list would be collated and incorporated into the BAS Phase 2 data. Because the results of the 1969-1974 surveys have not been published the data could also be sent to Eric Duffey so that he could incorporate it in future publications. He is preparing work that would examine changes in the fauna at the sites.

A new survey period could start in 2007, participants would be responsible for identifying their own spiders and if necessary submitting them to a determiner for confirmation. Timed hand collecting is a very convenient method for gathering scientific data. Members could arrange trips with family and friends who might not necessarily be experienced, pick a site and devote the odd hour to surveying. If carried out over a number of years, valuable data sets would be created.

Timed hand collecting combined with habitat classification for the BAS phase 2 data set yields good information that can be used to compare sites (Duffey, 2003). Because many of the sites are in close proximity to each other much could be achieved by a car full of people, only one or two of which would need to be experienced. In a day, several sites could be visited. Site access has already been obtained for Caldecote Fen and East Ruston Common. Other site owners could be approached, if enough interest from within the BAS is shown.

Perhaps we could plan some fenland surveys for next year? For each site I have a list of the contact details of whom to approach for access.

Further notes on timed hand collecting

We have to consider any flaws in the timed hand collecting methodology. Perhaps bias could be caused by different techniques being utilized as hand collecting techniques. For example, if during a survey two people used d-vacuum suction sampling for half an hour each and this was not noted and therefore not repeated in consecutive surveys, bias would be introduced into the data sets. Therefore any surveyors should carefully note the techniques used within the timed hand collecting.

The method outlined in this article becomes

Table 1. Eric Duffey and others - Surveys 1969 - 1974

Site Name	Grid Ref	Date	Ownership
East Winch Common	TF702158	9 June 1974	NWT
Stoke Ferry Fen (denotified)	TL683978	14 June 1974	
East Walton Fen is now East Walton and Adcock's Common SSSI	TF734165 OS236 Kings Lyn, Downham Market & Swaffham	9 June 1974 12 June 1974	Private
Foulden Common	TF761001	14 June 1969 15 June 1969 16 June 1969 17 June 1969 18 June 1969 19 June 1969 20 June 1969 21 June 1969 7 Sept 1970 8 Sept 1970 9 Sept 1970 10 Sept 1970 11 Sept 1970 12 Sept 1970 13 Sept 1970 14 Sept 1970 15 Sept 1970 16 Sept 1970 17 Sept 1970 18 Sept 1970 19 Sept 1970 20 Sept 1970 21 Sept 1970 22 Sept 1970 23 Sept 1970 24 Sept 1970 25 Sept 1970 26 Sept 1970 12 June 1974	Private
Caldecote Fen (denotified). Have Duffey's original map.	TF741035	13 June 1974	Private (ECA)
Pashford Poors' Fen	TL 735836	18 June 1969	SWT
Thompson Common Fen is now called Thompson Water, Carr and Common SSSI	TL935958	14 June 1969 15 June 1969 16 June 1969 17 June 1969 18 June 1969 19 June 1969 20 June 1969 21 June 1969 19 Sept 1970 20 Sept 1970 21 Sept 1970 22 Sept 1970 23 Sept 1970 24 Sept 1970 25 Sept 1970 26 Sept 1970	Part NWT
East Ruston Common	TG340280 OS 252 Norfolk East Coast	13 June 1974	East Poors' Allotment Trust

particularly powerful in we consider that a BAS member acting alone in expert capacity could drag inexperienced family and friends along for collecting trips that would be fun and yield excellent scientific data. Timed hand collecting methodology should not be used exclusively, as non-selective searching would reduce the enjoyment that many of us feel when partaking in field trips. However, some might like to include an hour of it in field trips as appropriate.

Funding and finding an organiser

I have enough information to be able to organise surveys over a period of a few years. The aim would be to re-visit the sites and provide the BAS and Eric Duffey with scientific data. The visits would be fun. Timed hand collecting would need to be part of the agenda for the first half an hour to an hour but would not constitute the whole visit.

I am in the process of applying for the funding that would provide an incentive for helpers by paying for their travelling and accommodation expenses. I have been advised to try Natural England, the JNCC, the Norfolk and Suffolk Wildlife Trusts, and the Ted Locket Fund. I know of some grants available via the BEHNS, BES, and the BAS. The BAS Ted Locket fund contains £1000 that is specifically to help with field studies; this seems very relevant to the repeats of Eric's East Anglian surveys.

Conclusion

Currently, a lot of literature focuses on pitfall trapping and the pros and cons of it, timed hand collecting appears to be overlooked. Comparative studies of the best techniques that are specific to collecting spiders in different habitats also seem to be sparse.

The level of re-survey effort is probably dependant upon the funding obtained. This type of study could answer many important questions. What are the best techniques for surveying each habitat for spiders? When are the best times for surveying different habitat? What is the level of desiccation at the sites that were originally surveyed? How does desiccation on the fens affect the spider assemblies? Perhaps someone within the BAS can devise a study that could lead to the best techniques for each habitat being identified. As a start we have timed hand collecting for fenlands to work on.

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[1]Surveillance is repeated surveying to detect change(s) (Sutherland, 2006).

[2]Permission has been gained for East Ruston Common from the 8th to the 10th of June and for Caldecote Fen in May/June (date to be confirmed).

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The Friston Forest Project

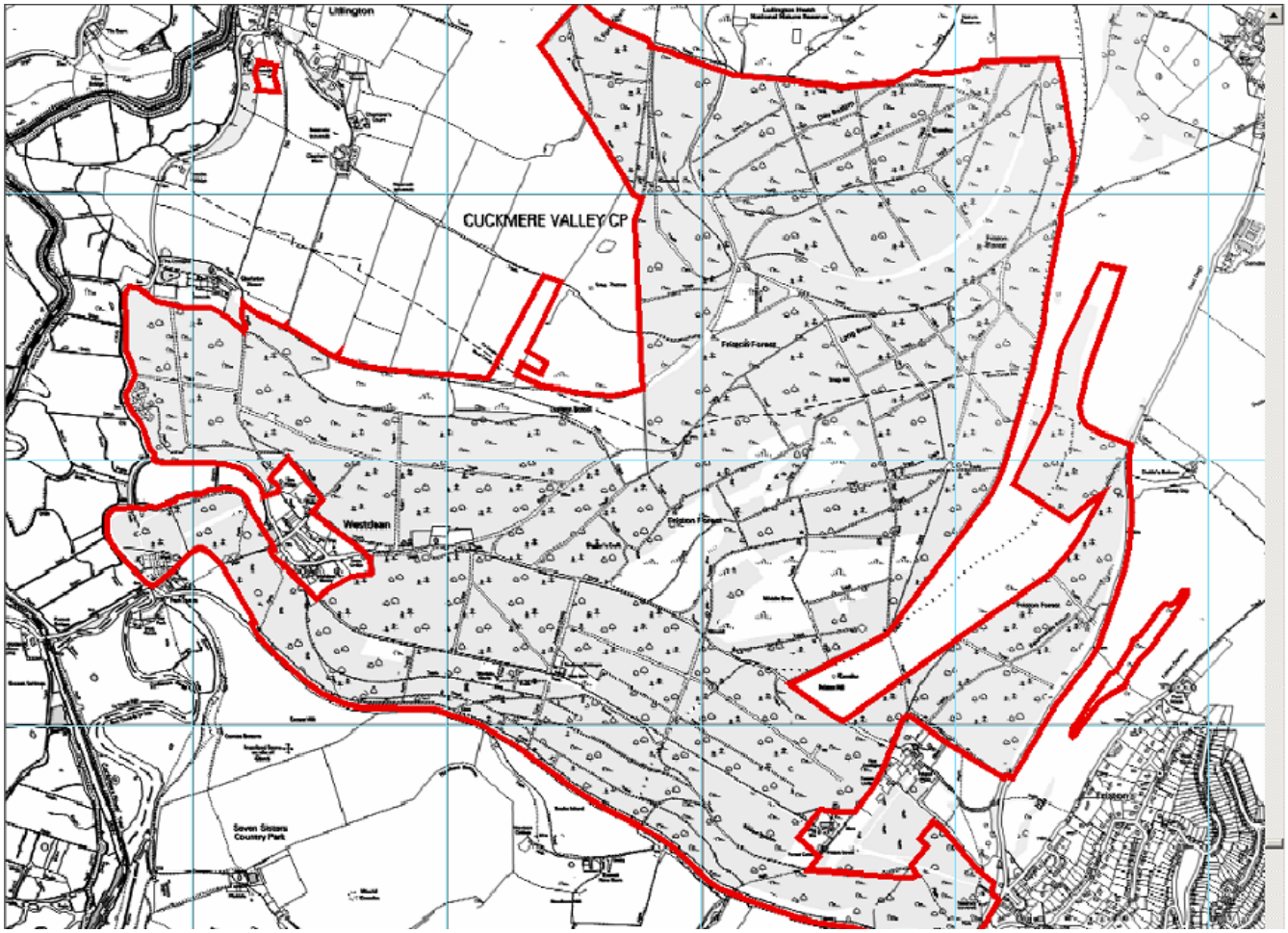
by Richard Price

Friston Forest has been plantation woodland and is managed via conventional forestry management; it is not ancient woodland or an SSSI. The site has some good habitats such as species-rich grassland (chalky and neutral), and small fragments of chalk heath vegetation and scrub. The Friston Forest Project partners have decided to change the management of the site by introducing British white cattle to the project area to reduce the uniformity of the plantation, encourage the growth of more scrub, and expand the grassland areas. As part of this process, the site managers decided to obtain baseline data for the site.

On the 23rd of September I attended the Adastra Recording Day that was organised by the Sussex Biodiversity Record Centre (SBRC) and spent the day recording spiders from the site. Prior to the recording day the SBRC had no spider records from the site. The SRS had two records from the site, in 1981 *Pardosa nigriceps* and in 2001 *Argiope bruennichi.*

Ideally, to obtain baseline data for the spiders on the site it would need to be surveyed at least four or more times in the year, using a variety of techniques to record different species (pers. comm. Peter Harvey, 2006). However, a worthwhile list of spiders was obtained on the day, including two Notable B spiders. Many of the records were found by walking around with the expert Peter Hodge who kindly let me have specimens from his sweep net. It was quite a revelation to see how he used a stick to tap invertebrates from the shrubs into the net.

Friston Forest Project Area



Species list from Friston Forest (recorded 23rd September 2006)

Cyclosa conica
Drapetisca socialis
Misumena vatia
Paidiscura pallens
Metellina segmentata sens. str.
Enoplognatha ovata sens. str.
Trachyzelotes pedestris (Nationally Notable B)
Agalenatea redii
Linyphia triangularis
Araneus angulatus (Nationally Notable B)
Araneus diadematus
Pisaura mirabilis

The *Araneus angulatus* was collected by Dave Monk and handed to me. I recorded the details and sent it to Peter Harvey who confirmed it. This species is local and infrequent in woods usually within the coastal corridor. It is associated with broad-leaved woodland and found in or at the edge. The webs are sometimes spun high up in trees. The management recommendation is to maintain woodland edges within existing woodland glades and rides (in Harvey *et al*., 2002). The spider was found on the ground and halfway down a narrow grass covered sloped pathway at TQ545011. Brambles were present on both sides within a yard or so of the path. The tree cover was not dense. A number of webs were seen about 20ft up stretched out between the trees on large frame threads. It seems probable that these are *A. angulatus* webs. The SRBC holds 7 records for this species in Sussex. In the UK, the distribution maps have been updated and national statuses are being reviewed. There are only 12 post 1992 UK 10km square records for *A. angulatus*, together with 9 for between 1950-1991, 1 between 1900-1949, and 2 before 1900. Therefore, *Araneus angulatus* is a scarce spider, and one that will probably be classified be classified as Near Threatened in the next review (pers. comm. Peter Harvey, 2006).

Conclusion

Comments from the BAS were passed to a co-ordinator of the Friston Forest Project who replied that the cattle would be going in during March at the earliest, thus giving time to carry out a more thorough survey. Please can anyone who wants to assist contact me.

Acknowledgements

Penny Green of the Sussex, Biodiversity Records Officer, Sussex Biodiversity Record Centre for letting me use information from the Adastra recording day flyer; Peter Harvey for information provided and for reviewing this article; Peter Hodge for his sweep net skills; Dave Monk for collecting the *A. angulatus* and providing details.

[1]The Friston Forest Project partners are Sussex Wildlife Trust, South East Water, Forestry Commission, Sussex Biodiversity Record Centre (SBRC), English Nature and University of Brighton.

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Pseudeuophrys lanigera (Simon, 1871) from Northumberland

by Ian Wallace

On 27.12.2004 a specimen of this spider was collected from a bedroom wall in a house at Fenham, Newcastle upon Tyne. It went into a batch of assorted material and has just been dealt with. Chris Felton has confirmed the identification and the specimen is now in the World Museum Liverpool collections. Dr. Peter Merrett confirmed that he knew of no other VC 67 records.

For the past 30 years we have used the particular room about 3 times a year when visiting my mother-in-law. The species is found occasionally both at our home on the Wirral and at the museum. It would seem possible that we have inadvertently introduced it with luggage from our loft, however, on the particular day in question we noticed the spider before we had unpacked anything, so it had at the very least been living there for several months.

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Araniella inconspicua in Leicestershire (VC55)

by Jon Daws

This spider was first found in the county at Burbage Common (SP446950) on the 12th May 2004, when a single male was swept from rough grass adjacent to scrubby oaks (SRS newsletter no.50). Since then there have been a further two records for the county;

13/05/05	1 female	Alter Stones	SK484108
23/05/06	2 gravid females	Luffenham Heath Golf Course	SK959027

On both occasions *A. inconspicua* was beaten from oak trees which had just opened their leaves. At Altar Stones the oaks were growing on the poor, acid, peaty soils of the Charnwood Forest amongst patches of gorse. At Luffenham Heath the oaks on the golf course were growing on limestone along the edge of the eighteenth fairway.

These records are some of this species' most northerly in Britain, but are not evidence of its range expansion. It is rather evidence of greater field work targeting this species and its habitat during its peak season. With this in mind, it is quite probable that *A. inconspicua* may well be present in many of the English counties north of Leicestershire, maybe as far as the Scottish borders, since both of the common species of *Araniella* - which it is often found with - are fairly well recorded in Scotland.

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Holocnemus pluchei - a second British population

by Jon Daws

H. pluchei was recorded from an Asda distribution centre in south Leicestershire in September 2004 (SRS newsletter no.51). Since this time the population has been monitored on an irregular basis, with the species being present on all occasions, although no males have yet been seen. After the initial specimen had been collected, a concentration of similar looking webs were noted along a thirty metre length of wall, with the webs being constructed across the corners created by the wall and roof balustrades. The webs were present from close to ground level to eight metres above, with a concentration of webs between three and six metres. Many of these old webs - above the annual three metre reach of the cleaning team - are still present, although a little derelict.

The *H. pluchei* population within the warehouse fluctuates from month to month, with females and occasionally immatures noted throughout the year. These spiders with their sheet webs live in fairly close proximity to *Pholcus phalangioides*, a spider that is more common within the warehouse as well as more evenly distributed. There is also some evidence that the population numbers of *H. pluchei* are occasionally swelled by more spiders arriving at the warehouse usually on pallets of wine from either France or Spain.

The discovery of a further population of *H. pluchei* (SRS newsletter no.55) in a glass house close to Stratford upon Avon (just forty kilometres from Lutterworth, Leicestershire) begs the question, how many more undetected populations lie in southern Britain waiting to be discovered. Also the range of indoor habitats this species will tolerate seems to be quite wide: with the Leicestershire warehouse being a dry habitat, hot during the summer and cold during the winter; whereas the glasshouse would be more humid and perhaps have a better temperature control system, more so than the warehouse, where the bay doors are left open all year round.

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