

## ESSEX FIELD CLUB MAPMATE INTRODUCTION

### SOME GENERAL ISSUES ABOUT BIOLOGICAL RECORDING

(This is a personal view as an invertebrate species specialist, County Recorder and national recording scheme organiser)

#### What is the purpose of recording?

Distribution – to enable us to map distribution at different levels of accuracy nationally and regionally.

Ecology – to record information that will help to understand the ecology and behaviour of organisms.

Phenology – to record information that can be used to study the phenology of species and how this might vary over latitude and longitude or alter with climate change.

Conservation status – to provide information on occurrence and abundance to help inform the assessment of conservation status, and use this to make priorities about habitat management, development, etc.

Change – to provide data that can be used to analyse change, e.g. in distribution and phenology, over time.

For this we need good coverage and plenty of data – this is what MapMate can help to achieve.

#### What is a biological record and what should we record?

A basic biological record consists of a taxon name, date, place, grid reference, recorder and determiner. It is also helpful to have broad and detailed habitat information, whether adult or juvenile, sex of individuals and any other observations in order to enable better understanding of ecology and phenology – **information not recorded is wasted information** e.g. many invertebrates are associated more with structural features of habitats than NVC types and it is very useful to record this (see SRS guidance in phase 2 booklet and status field in MapMate). If at all possible please use accurate dates or range of dates rather than vague months or even years.

#### The importance of accurate Identification and Verification

Records based on unreliable taxon identification are worse than useless. They are a positive menace. Once they get into biological databases and publications they are very difficult to correct or prevent continual re-appearance. For this reason in Essex we have County Recorders and natural history museums that centralise and accept records. County Recorders are especially important in making sure that recorders have the necessary skills to record reliably and in checking identifications, especially for species of note or outside their expected range. With many invertebrates, reliable identification cannot be done in the field, and voucher specimens are required. This should be noted in a biological record. In MapMate for example, this can be done in record entry by entering “!v” after the quantity in the quantity field. This automatically enters “Voucher retained” in the Comment field.

Verification by specialists will continue to be a crucial job even when Essex achieves its own Local Record Centre (BRIC). It is worth mentioning here that **Validation** (ensuring that data have been correctly entered) is also an important issue – data entry by non-specialists of other people’s data all too often results in errors such as the entry of inaccurate and wildly impossible taxa without the non-specialist being aware of the significance of what they have done. It is crucial that systems are in place to enable the checking of such data entry by specialists. It may be easy for them to spot gross errors, but much more difficult to eliminate other errors. A lot of effort is put into Validation e.g. by the national BRC at Monks Wood and this will be needed for an Essex LRC as well.

## GETTING STARTED

### Loading the software

When you load the software onto your computer you should accept the default directory (c:\program files\MapMate) so that MapMate updates run without problems.

You should register on the MapMate website [www.mapmate.co.uk/](http://www.mapmate.co.uk/) by going to the “User Zone” and “Register with us”. This will enable you to receive the regular newsletters from Technica Ltd and the free software updates and patches that regularly keep checklists etc up to date. I also strongly recommend you become part of the MapMate User group.

When you first run MapMate you will need to choose your recording preferences from the ‘Configuration Wizard’. You need to choose any taxonomic groups and counties or regions (e.g. Essex) that are your main areas of interest. This sets your configuration to those taxa and areas by the use of filters that exclude the other unnecessary groups. You can always change your configuration in the future.

You can also change your defaults for each session by going to Data Entry – Records – Change Defaults. This allows you to choose from the filters included in your configuration. **Note** that if you have records that

suddenly seem to disappear, or someone sends you records and you can't find them, then look at your filter settings (Your Configuration) – the most likely explanation is you have not got the taxonomic groups or areas selected.

## **RECORD ENTRY**

### **SPECIAL ISSUES**

Sites, Recorders and References are normally entered before entering records by going to the Record menu and 'Add New' > 'Sites', 'Add New' > 'Recorders', 'Add New' > 'References' (or in Data Entry by clicking on e.g. 'Site' and 'Add a New Site'). This only has to be done once for each Site, Recorder or Reference so is not as inconvenient as it might seem.

**Site names** – these are easier to sort out beforehand than later!

### **CONSISTENCY IS IMPORTANT**

e.g. I did some work for English Nature last August comparing the beetle and aculeate Hymenoptera fauna of one site with others in the Brecks, to clarify whether it justified SSSI status or not. This involved collating a very large number of records from all sorts of different sources. One of the major tasks turned out to be clarifying a multiplicity of site names and deciding which names referred to a single site.

I suggest there is a need for an agreed standardisation of Essex site names (or the use of standardised land parcels for the whole county), but until that is achieved the least we should do is use names from Ordnance Survey maps. A standardised method of creating subsites is also important e.g.

Colne Point (west)  
Colne Point (east)  
Colne Point: Area 1  
Colne Point: Area 2  
Colne Point (dune)  
Colne Point (saltmarsh)  
Colne Point (Cp A) etc

can all be combined in a query by using the wildcard character "\*" as in "Colne Point\*".

### **Recorder names**

Again consistency is useful! Enter names in a standard form. I use Surname followed by initials as in 'Harvey, P.R.' but a lot of other users seem to use initials then surname as in 'P.R. Harvey'.

### **References**

Every record has a reference, entered into the reference field. If the reference does not already exist, this needs to be entered separately first by 'Add New' > 'References' from the Records menu. It consists of 5 fields: Author – the author of this reference, Year – the published year (or in case of unpublished references, the final year of underlying data), Page Ref – a page reference (if applicable).

Title – short title for this reference and Comment – any comments relating to this reference. For normal everyday use you can use something along the lines of 'P.R. Harvey, 2005, fieldwork' or 'P.R. Harvey, 2005, Essex Field Club - Essex Spider Group', etc.

### **Dates**

Most widely accepted date formats are permitted. Whatever format you use, the date you enter is always resolved into dd mmm yyyy format (e.g. 01 Jan 1999). Dates may range from 100AD to 9999AD – so there is no problem with either historic or foreseeable future records!

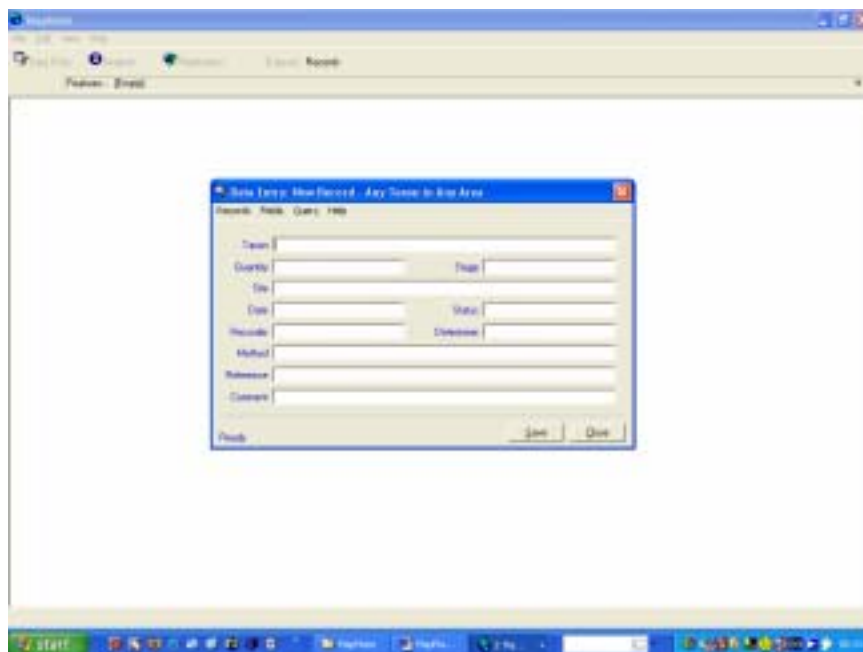
Examples of possible input formats are:

- 101000, 10/10/2000, 10-10-00, 10 Oct 00, 10 x 00, etc...

The following vague date styles are also permitted:

- Year only (e.g. 1893),
- Month and Year (e.g. May 1960),
- Date ranges (e.g. May 1990 to June 1990, 1 Apr 1990 to 14 Apr 1990), [Note that dates in ranges must be separated by the word to], and
- 'today' will enter today's date (assuming your computer clock is correct!)

## THE RECORD ENTRY SCREEN



### Taxon entry

This field is checked against a standard dictionary of species (called the Taxa Table) and the program will try to match your entry to one of these. Irrespective of the way you enter a species name, this will be resolved to a standard definition. When the field is accepted it will show the full scientific name plus the common name (if one exists). The program will try to match from partial information with or without wild card characters and you can restrict the taxa available to your data entry by choosing a Default Taxa. If the chosen taxon is a synonym then it will be shown with an = sign at the front.

You can enter Scientific names, Common or vernacular names, Codes applicable to a taxonomic group (e.g. Bradley and Fletcher log book numbers in the Lepidoptera), but one of the easiest and standardised ways is to enter a **5-letter alphabetic code** (without spaces) consisting of the first two letters of the generic name and the first three from the specific name. So, for example, *Araneus diadematus* (the Garden Spider) would be coded as 'ardia'. These codes are (almost) unique within a taxonomic Order and are used in many recording schemes to quickly identify a species.

However you can also enter any number of letters including a single one that it will match to any part of a taxon name e.g. on my system if my defaults are spiders 'z' gets everything with z (as it happens all at the start of genus names). 'zim' gets *Lepthyphantes zimmermanni*, 'ele' gets *Antistea elegans*, *Dismodicus elevatus*, *Silometopus elegans* and *Zelotes electus*.

You can enter a taxon that is not within your particular recording interests (i.e not selected in your configuration or current defaults) but is in the main species library by pre-fixing the name with a ~ character (shift+# on your keyboard). For example, ~*peris napi*, or ~winter wren would find these species even if you are not set up to record the Lepidoptera or Birds. This is useful when you have a record for odd species and don't wish to re-configure you're checklists or recording defaults. Note: If you can't find a particular taxon you may have a Default or 'My configuration' preventing it being found or the taxon may not be in the MapMate Taxon Library (which is generally very up to date).

## **TEXT IMPORT**

One of the first things you may want to do is to import data into MapMate from other databases, spreadsheets etc. Text import is essentially very easy, but the process can turn out to be surprisingly fraught with problems due to need for data to be in absolutely precise formats. The MapMate help sets this out very clearly, but it is up to you to make sure your names match those in the MapMate taxon dictionary – they are almost always up to date. Are yours? The first time I tried a text import on my own purpose-built dBase-compatible database I had taxon and date errors for several thousand records (out of something over 100,000). You will be able to try out a text import later if you want.

After Text Import you may choose first to put the records into ‘quarantine’ so that you can use them with all your other data and try them out until you are happy with them.

Two sample text import files are available for you to try out later if you wish. One has two deliberate errors!

## **EXPORT AND SYNCHRONISATION**

One of the most powerful features of MapMate is the ability for seamless data exchange across the internet to other MapMate users. The program keeps track of what records it has sent, and will only send new and edited records in the future. This process is called ‘Syncing’ and MapMate has a ‘Replicator’ which does all the work. A sync file may either be sent as an email attachment or the software can place it on the MapMate website and send a message to the recipient that it is there for them.

## **BACKUP**

Once you have data in MapMate and maps, custom queries, normal settings, etc you do not want to lose all that information and effort through computer failure. There is a built-in backup facility, but this backs up your records and not all your maps, queries, software updates, patches and settings.

By far the easiest and best way to make sure everything is backed up and easily restorable is to make regular copies of the whole MapMate directory and subdirectories.

This can easily be done if you have a second hard drive, a CD Writer, a removable backup medium, etc.

I simply drag and drop to a second (removeable) hard drive every time I have added records to MapMate, as well as periodically writing the whole directory to CD. This is also the way to move MapMate to a new computer – install MapMate on the new computer with the original installation disk and then copy your whole MapMate directory over the one that has been installed.

## **MAPS**

Making maps from your data is one of the key features of the package.

It is very easy to build simple distribution maps, and easy to add date bands although not well documented. There are also many much more sophisticated features that can be added to maps, but this is beyond the scope of this introduction. If you want to do something (with maps or queries) and can’t work out how to do it, there will be a way – use the User Group support and someone will respond.

### **Basic maps**

Go to File > New Map > Atlas Wizard.

Select your taxon group e.g. ‘Araneae: Spider Recording Scheme’

Select your map area e.g. if you are using the sample Norfolk spider dataset choose ‘VC 27 and 28’

Choose your base map e.g. ‘VC 27 and 28 Base Map’

Choose your feature title style e.g. ‘Scientific name only’

Choose Precision, Symbol, Size (m) and Colour e.g. ‘2km’, ‘dot’, 1600 (default) and black (default)

Enter a name for your new atlas (or use the default).

Click on OK, and then you will be asked to select whether to include all taxa or just those with records.

The basic atlas is now generated.

### **Adding Date Bands**

Click on the tick to the left of the feature list. It will darken.

Go to Edit > Insert > Data object

Select a date band e.g. ‘>1990’ and choose Precision, Symbol, Size (m) and Colour e.g. Black.

Select a date band e.g. ‘<1990’ and choose Precision, Symbol, Size (m) and Colour e.g. Red.

Now go to the feature list and find 'All records'. This needs to be deleted so that only the two new date bands will show. Right-click and select delete.

Now click on the feature tick to go back to normal atlas view.

There is a file "MM demo atlas data banding.exe" which runs a demonstration on date banding produced by Ian Thirlwell for the User Group. This is provided on the disks if you want to try it out.

## **SOME USEFUL TIPS**

### **Loading the software**

When you load the software onto your computer you should accept the default directory (c:\program files\MapMate) so that MapMate updates run without problems.

If you already have an old copy of MapMate installed on your computer, but you are now installing a new MapMate CD with a new centre number (CUK), then you will need to do the following to delete your original registration first:

1. Click Windows Start button
2. Choose Run
3. Enter: regedit
4. Double click HKEY\_CURRENT\_USER
5. Double click Software
6. Double click VB and VBA Program Settings
7. Click Mapmate and Edit > Delete to remove the registration

Close the regedit program and then run MapMate. It will ask for your new CUK and Serial Number. If you have already got records in the old centre number MapMate, you will not have edit rights to the records since they are allocated to a different centre – you would need to import them into the new MapMate by text import, or ask MapMate Support if you can be given edit rights over the old CUK.

### **Backup**

In terms of backup I strongly recommend regularly backing up the whole MapMate directory – this will make sure if you ever have a computer disaster all your data, maps, custom queries, software updates, patches, settings etc can be replaced without any problem by reinstalling MapMate and then copying across the whole directory.

### **Help**

Don't forget the built-in Help. I recommend you print off and read the Quick Start Guide before you start using the software for data entry. The first procedure you will need to undertake when starting to use MapMate is to set "Your configuration" (which can always be reset in the future). In this you choose the taxonomic groups and county areas that you will regularly use. These can also be changed temporarily in Data entry – Records – Change defaults. These are filters that show records for only those species and areas you currently have set – this is the first place to look if you seem to have lost a whole set of records!

You should register on the **MapMate website** [www.mapmate.co.uk/](http://www.mapmate.co.uk/) by going to the "User Zone" and "Register with us". This will enable you to receive the regular newsletters from Technica Ltd and the free software updates and patches that regularly keep checklists etc up to date.

I also strongly recommend you become part of the **MapMate User group**. This is now by invitation only, due to problems with spam in the original unregistered group, and you should contact Ian Thirlwell [ian1945@ntlworld.com](mailto:ian1945@ntlworld.com) to register. Not only is there ready access to rapid help from experienced users, but there is an file area where a range of useful stuff is available for download.

### **Common settings**

If you commonly record using one set of settings you can enter these in the Data Entry screen e.g. your garden as the site, you as Recorder and Determiner and your Method and Reference and then save these by going to Records – Save Common Settings

In future when you open the Data Entry screen Ctrl+G or Records – Get Common Settings will automatically fill in these same values for you.

## MapMate Text Import – details from the MapMate Help

This topic takes you through import of tab text files. You must have a file in the correct format first – see Tab Text Specification. There are three steps to import: Capture, Resolving Content and finally the Import itself. The Importer gives you the option – once you have completed an import – to keep, reject or just try out your data. This ability to 'try it out' in MapMate allows you to see your data working before you commit the import.

To Import your file:

Open MapMate

Choose File > Import > 'Data from Tab Text Files'

Step 1 – Capturing your file

MapMate captures your tab text file by reading it into a temporary database. During this stage it will be checked for errors and any violations against the specification.

1. Select your file by clicking on the [...] button to the right of the file name box
2. Click on the 'Test File' button

Your file will be tested. If your file has a 'serious' error –

like the file format is incorrect – then you can't proceed. If there are 'minor' errors the 'View Errors' button will be enabled – click on this to review them. Each row in error is indicated (this is the record position in your file) with an error message. If you have errors you should try to resolve them before importing. Copy and keep the error report – resolve the errors and then re-create your file.

- If you wish, you can proceed with errors and capture all of your file less the rows in error and add these in later manually – to do this make sure you leave the 'Reject Records in Error' option ticked.
- If you have no errors, or wish to proceed anyway, then continue...

3. Click on the Read File button.

Your file will be read into a temporary database. When complete you can click on the 'Browse' button to see your captured data. If you have any records with errors they will be included in this browse so you can check them out. When you are happy continue to Step 2...

Step 2 – Resolving file content

MapMate needs to create new entries for each unique Site, Recorder and Method you have used - plus it needs to know that every taxonomic name used has a corresponding entry in the Taxa Library. Note: The program will not add in new Taxa – any records with unresolved species will not be imported. This step gives you the opportunity to check that all of these definitions are OK.

1. Choose each of the options in turn – Taxa, Sites, Recorders (which include Determiners), Methods, Sex, Stage and Status – for each >

2. Click on the 'Check' button

- If the program reports 'All the ... are already in your database' then you have nothing to resolve.
- If the program produces a list – then these are new entries that will be created on import (except Taxa, Sex, Stage and Status which are fixed). You have the opportunity now to manually 'Add' these entries or just continue. Adding manually gives you the advantage of more control over data entry and permits you to include other information now – like recorder locations or site habitats.

- If you see that you have made mistakes or could rationalise some definitions then you will have to go back, edit your original file and start again. You can continue and edit things later from MapMate if you wish. You need to ask yourself: would it be easier to correct this in my original data or later in MapMate?
- Click on the 'List Used' button to see exactly what entries you have used for each selected option.
- Click on the 'Any dups?' button to see if any Taxa, Sites, Recorders or Methods have duplicate entries in your existing MapMate dataset. Duplicates are where say you have more than one Site with identical Name, Gridref and VC. MapMate will choose the 'first' one it finds and use this for import, as it cannot resolve this further. This may, or may not, be an issue.

When you are happy continue to Step 3...

Step 3 – Import

1. To import, simply click on the Import button.

You can't stop the importer once it's started. [If your PC fails or some other disaster strikes while the importer is running, then MapMate will recover – when you next run the program, open the Importer and choose 'no' to keep your data]. Import is 'fairly' fast – about 1000 records a minute on a typical PC – so if you have thousands go put the kettle on!

- The importer will create definitions for all new Sites, Recorders (plus Determiners) and Methods.
- The importer will create a new Reference for all your data – this is automatically entered with the Author as 'Centre <your CUK>' and a Title constructed from your file name. You can edit this to reflect your import content once you have accepted the import. [Tip: To edit this Reference: Browse > 'Browse Tables' > 'Browse References', find your reference and then 'Edit']

2. When complete click on 'Done'.

- You will be asked if you wish to keep, remove or 'try out' your data.

All records and other definitions all held in a temporary layer of your dataset until you decide to keep or reject them. Generally choose 'Cancel' = try out. You can then use your data with all of MapMate's

functionality to see that it works. To accept or reject the data simply open the Importer again. If you choose 'No' then all of the import (including associated Sites, Recorders etc) will be removed. [Tip: The 'temporary layer' of your dataset is generation=0. You can use the 'Database Info' queries to explore this layer further.]

### **Tab Text Specification - Text Import Field Names**

- The following are the required fields and their names in order (as they would appear left to right):

Taxon – the full scientific name of the species recorded e.g. *Pieris napi*. The Taxon is always required and must exactly match an existing entry in the MapMate Taxa Library.

Site – the name of the recorded site e.g. Stoke Sub Hamdon. The Site is always required.

Gridref – the OS Grid-reference of the Site e.g. ST123456 (use can use 10km, 2km, 1km or 6 to 8 figure references as you wish). Avoid spaces. If your reference contains dashes for unknown entities (like ST12-45-) then these are resolved to the correct 'short' format. The Gridref is always required.

VC – the Vice County number for the Site (1..113 or H1..H40 for Ireland). The VC is always required. If you can't resolve a Site to a VC use 0.

Recorder – the name of the recorder e.g. Mark Yeates. The Recorder is always required.

Determiner – the name of the determiner e.g. Mark Yeates (if this field is left blank then the Recorder will be assumed Determiner). The Determiner is the person (or authority) who formally identified the species (if applicable).

Date – the date on which the Taxon was recorded – this must be in dd/mm/yyyy format e.g. 12/07/1998.

Two digit years are not allowed! If the Date is a month only you can use 00/mm/yyyy. If the Date is a year only you can use 00/00/yyyy. If your date is a year range use yyyy->yyyy (i.e. with a dash followed by a greater than sign between). If your date is a date range use dd/mm/yyyy-dd/mm/yyyy (i.e. two dates with a dash between). A Date is always required.

Quantity – the number of individuals recorded e.g. 2. Quantity must be a number or 0, which is equivalent to 'Present'. If the quantity is left blank then 0=Present will be assumed.

Method – is the recording method used e.g. Netted, Field Record etc. Methods should be consistent with, or use, existing MapMate methods. If the method is left blank then the default 'Unknown' will be used. If a Method is unknown – then a new method will be created for you.

Sex – is the sex of the recorded taxon. If this is left blank then the default 'not recorded' is assumed. You can use the following single letter codes: Male=m, Female=f, Queen=q, Worker=w, Asexual=a, Mixed sex group=g, Intersex=i, Pair=p, Not recorded=u.

Stage – is the life stage of the recorded taxon. This must be one of the pre-defined values in the MapMate TaxonStage table. Browse Taxon Stage to see possible values. If this field is left blank then 'not recorded' is assumed.

Status – is the record status for this particular taxon in context of this record. This must be one of the pre-defined values in the MapMate RecordStatus table. Browse Record Status to see possible values. If this field is left blank then 'not recorded' is assumed.

Comment – is for any additional information, or any comments about this record. Comment is not required and may be left blank. Comments can be any length.

#### **Notes**

- When you import, any new Sites, Recorders, Determiners and Methods you have identified will be created for you.

- All fields are 'text' fields and you can use any alphabetic or numeric characters.

- Taxa, Site, Recorder, Determiner, Method, Stage and Status fields are all limited to 64 characters maximum. Gridref and Quantity are limited to 10 character maximum. VC is limited to 3 characters maximum. Sex must be a single character code and Comment can be any length. Dates are restricted by required formats and not size.

- When exporting tab-text from spreadsheets like Excel, we suggest that ALL 'not required' fields are present and filled with "" (i.e. two double quotes with nothing between) – or with a literal default value applicable to the field, like 'not recorded' etc. This is to make sure they are exported correctly!

- Note that a Quantity of 0 (zero) is interpreted by MapMate as 'present, quantity unknown' and NOT as 'not recorded'.

- Import will reject records with Taxa that it can't find in the Taxa Library – it will not create new entries from these. The Importer has tools built in to check these for you (see note below).

- When importing from other recording programs (like R3.3., R2000, etc.) make sure you run the 'Check' button test on Taxa prior to import and correct any species names in your original import file. MapMate has very up to date checklists and there may be some differences with naming here! If you find any names that are in error on MapMate please let us know at support@mapmate.co.uk. If you do find a name in error then you can miss-spell it for now (to import) and when it is globally corrected your record will be corrected too!

- You can use the Analysis > Browse > 'Browse Tables' queries to see currently available terms for Sex, Stage, Status, Methods etc.

- Take care with dates – formatting requirements are quite strict here!