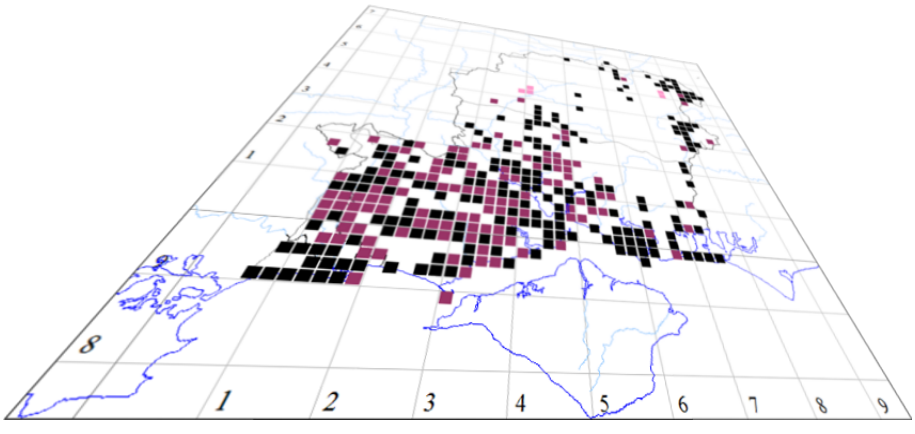
Chapter 3
Data Entry



The author of this handbook is pleased to have errors pointed out and to receive suggestions for improvement and other comments.

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CHAPTER 3 DATA ENTRY

Introduction

If you use MapMate for recording, then data entry is probably how you will spend a lot of your time, and certainly where you will expend most of your effort. This chapter will show you how to do it; it should also help you to do it quickly, efficiently, methodically and consistently.

Before we start, there are a couple of things worth reviewing: one practical, one more conceptual.

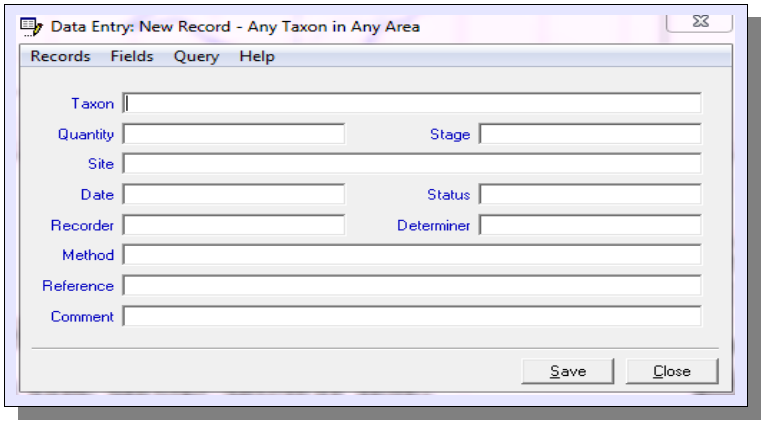
First, make sure that you have been through the configuration process described in Chapter 1 and set up the species groups and geographical areas you are interested in. This will let you narrow your interests down when entering data – something that will make the entry process smoother.

Then you might like to review what we said in Chapter 2 about how databases are organised. If you understand that when you have many Records with exactly the same Site details (for instance), then only one copy of those details is needed and all the Records can refer to it, you will be able to use a program like MapMate to best effect.

CHAPTER 3 DATA ENTRY

Getting Started

Select **Data Entry** from the MapMate main toolbar. This will bring up a form for editing.

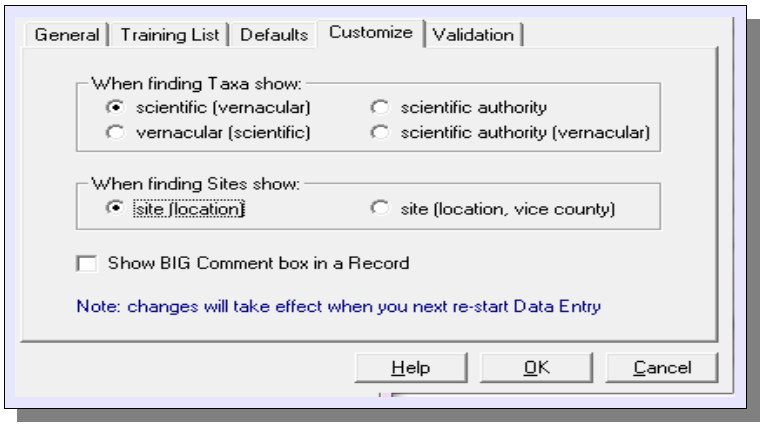


The first thing to notice here is the caption – **Any Taxon in Any Area**. That's the default, but it's not what we want for efficient data recording. Let's limit our scope to vascular plants in your own selected area. (We'll use Hampshire in the illustrations, as that's my area.) Select **Records** from the menu bar on the data entry box, and from the drop-down menu select **Change Defaults...**

What you are able to choose here is limited to the areas of interest you selected in setting up your MapMate configuration. Select your own recording area for the **Sites** entry from the drop-down list, and select **Vascular Plants (plus microspecies)** from the **Records** entry. If you can't find these options in your list, you'll need to modify your configuration so that they are listed. No need to close down your data entry box: just go back to the main MapMate screen, pick **View** from the menu bar, and **My Configuration...** from the drop-down menu. Then run through the selections again, ticking the ones that are missing.

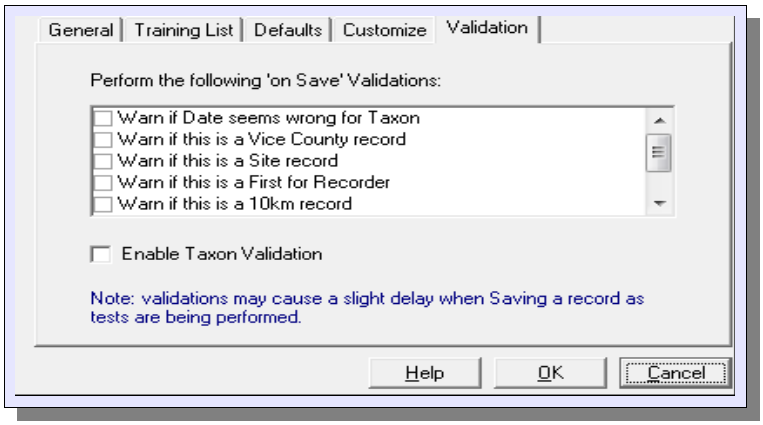
Now your data entry box should read **Vascular Plants (plus microspecies)** in (whatever your own area is) at the top.

While we're at this preparatory stage, there are some other things we can change to suit our requirements. Once again, select **Records** from the data entry box's menu bar; then select **Properties...** This brings up a new box with a lot of options; I'll talk about more of these later. For now, click on the tab marked **Customize**.

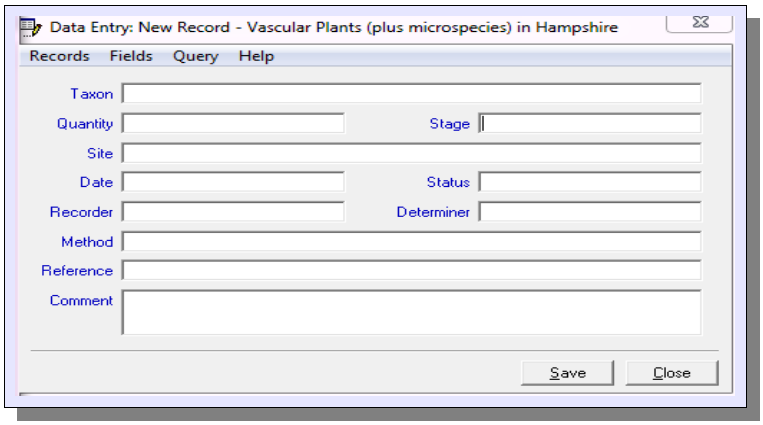


This tab controls what information will be displayed back to you after you make a choice of Taxon or Site. You can expect to find the default settings as shown in this illustration. You don't have to change them, but my personal preference is to leave the **Taxa** selection as it is (having the English name is sometimes a handy check that you didn't inadvertently select the wrong scientific name); select the **site (location, vice-county)** option for **Sites** (you'll see why shortly); and tick the box for **Show BIG Comment box in a Record**.

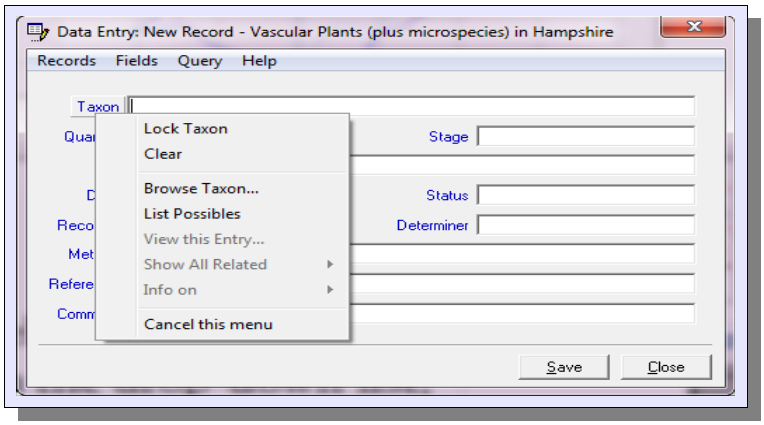
Next, select the **Validation** tab.



We shall come back to look at most of these options later on; some simply create a distraction if you're just beginning to accumulate data, but make more sense once you have reasonable coverage of your area of interest. For now, scroll down to the bottom of the list where you will find **Warn if this is a Duplicate record**, and tick it. Then click on **OK**. You will need to close the data entry box and re-open it for some of these changes to take effect.



Take a moment to look at the data entry screen. It's pretty obvious where you need to type in information. Some things aren't quite so obvious. Hover your pointing device over the actual caption word **Taxon** to the left of the box for entering the taxon, and click.



This is a 'pop-up' or 'context' menu, listing things you can do with this particular item of data. If there's something you can't do right now (like viewing the blank entry), the menu item for it will be disabled and shown in grey. Lots of programs have pop-up menus, but it's rather unusual to find captions being used as a place to find them. However MapMate uses captions a lot, and if you're not sure just what you can do with a particular item on the screen, either click on it or click on its caption.

Entering a Taxon

You'll see that one of the options in the pop-up menu is to **List Possibles**, and that would be one way to select a taxon. But you'll appreciate that there's rather a long list to work through in the case of plants, so it's best avoided in this context.

Using scientific names

The next option is to type the scientific name in full into the editing box. Try typing **Acer campestre**, then press the **Enter** key. You should then see the scientific name and vernacular name displayed back to you.

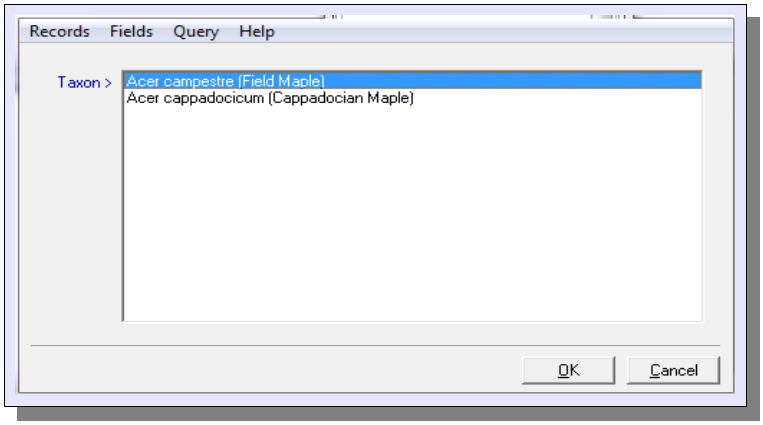
Using the 'Enter' key in MapMate

If you've done data entry in Windows programs before, you'll know that there are various ways to navigate your way between items on an entry form: **Tab** to go forwards, **Shift-Tab** to go backwards, or simply clicking with your mouse on a different item. When you press the **Enter** key, it usually performs a default action for the form, such as saving your data or closing the form.

In MapMate data entry, the **Enter** key performs a different role; it moves you on to the next item in the form, but first it *validates* and *interprets* what you have entered in the last item. The other ways of moving around still work, and if you use those instead, MapMate will simply check any unvalidated data when you click on the **Save** button.

I strongly recommend that when you are entering a sequence of data entry items, you use the **Enter** key rather than one of the alternatives. Why? Because valid data is not necessarily correct data. Since MapMate displays back an *interpreted* version of what you entered, it provides a useful check that you got what you intended, especially when using some of the shortcuts described below in this chapter. If you leave the checks until you click the **Save** button, you will never see this feedback.

However, you don't have to enter the full name. Overtype everything that is now in the box with **Acer cam** and press **Enter**. That works too, demonstrating that you can type just the first part of a name. What happens if you shorten the name to a point where it becomes ambiguous? MapMate can cope with that, too. This time overtype with **Acer c** (I'll assume from now on that you know you need to press **Enter** each time you fill in a data item.)



MapMate shows all the matching options and lets you choose the one that is appropriate.

Actually, you don't have to limit your abbreviation to the start of a name; you can type something from the middle of a name, too, provided your first character is part of the genus name. Try this out by overtyping the entry with **cer c**, for instance.

Nor are you limited to typing just one fragment of a name. This is very handy for cutting down typing if you want to target a subspecies, for instance. In this case you have to put a '*' character in between the two fragments. This is often referred to as a 'wildcard' character; it stands in for any number of unspecified characters (including none) in between the first fragment of text and the second. Try entering **Caly*ros**. That should give you **Calystegia sepium subsp. roseata**.

I said that when using a fragment from the middle of the name, it must start somewhere in the genus name; in fact this restriction can be overcome by putting an asterisk in front of your first required text character. Try entering ***persici**, for instance.

But if you're using scientific names, MapMate has a way to cut down your typing even further. This is the '2+3' method: the first two characters of the generic name, followed by the first three characters of the specific name or the subspecies name. Try this using **Accam** or **Caros** – but notice that in some cases, these included, this entry can be ambiguous when compared with typing a few more characters, and you will have to go through the extra stage of selecting from the offered list.

Using vernacular names

You don't have to use scientific names; vernacular ones will generally work too, with a few caveats. One is that you must stick pretty strictly to the English names that appear in Stace's *New Flora of the British Isles*. That said, there are some curious divergences at times, and you can be left scratching your head. Also you will find that many hybrids and infraspecific taxa don't have English names associated with them. All the methods of abbreviated entry described for scientific names also work, except for '2+3'. You might like to try entering **Fen P** or ***Bindw**.

Using BRC codes

19	Adoxa mos	1860	Bolbo mar	514	Cirsi aca	7
20	Aegop pod	250	Brach syl	515	arv	7
2241	Aescu hip	251	Brass nap	516	dis	7
21	Aethu cyn	256	Briza med	520	pal	7
22	Agrim eup	263	Bromo ere	522	vul	7
35.2	Agros can	272	ram	528	Clema vital	7
35	*can	269	Bromu hor	530	Clino vul	2
40	cap	276	Bryon dio	533	Cochl dan	8
38	cur	277	Buddl dav	540	Coniu mac	1
36	gig	2249	Calli*agg	541	Conop maj	1
39	sto	307	*sta	544	Convo arv	8
41	Aira car	309	Callu vul	735	Conyz can	8
42	pra	310	Calth pal	548	Cornu san	8
46	Ajuga rep	311	Calys sep	557	Coryl ave	8
63	Alism pla	311.2	sep sep	563	Coton sim	1
64	Allia pet	313	sil	4526	*agg	1
75	Alliu urs	322	Campa rot	2423	Crass hel	8
76	vin	323	tra	569	Crata mon	8

And finally, if you are using the checklists printed on the back of many recording cards (especially those used for national distribution mapping) you'll know that they come with a numeric code (the Biological Records Centre, or 'BRC', code) against each abbreviated scientific name. You can type this into MapMate, too. Watch out for the decimal point in some numbers. In some incarnations of the cards, it isn't always clearly printed, but if the last digit sticks out to the right of the normal alignment on the list, it should be preceded by a '.' when you type the code in. The downloadable vice-county cards available from the BSBI web site have the last digit of ordinary 4-digit codes sticking out to the right too, but these very clearly display the decimal point where needed.

In case you were wondering, you can't directly use the '5+3' abbreviation style for scientific names exactly as printed on these cards. But because of the abbreviation options described above, you can get close by substituting an asterisk for a space between the two parts of the abbreviation; for instance **Allia*pet**.

That exhausts all the options for getting a plant name into MapMate. The variety may seem confusing at first, but you will soon find the easiest to suit your circumstances.

One other thing to be aware of is that unlike some of the other items, you can't add a new **Taxon** name to the database if you happen to be recording something that isn't currently listed. If it's a vascular plant taxon, speak to the BSBI Coordinator or Volunteers Officer about getting it added, and they will take it up with Teknica.

Entering Quantities

Don't forget that if you want to try out the options presented here, you will need to press **Enter** each time you make a change, to get MapMate to interpret and validate what you've just typed.

Actual counts / numeric estimates

If you are dealing with a count of individuals, this is easy: just type in the number. Of course, many plants don't present themselves as individuals in any simple way, and simply entering the bare number is not very informative. For these, when you come to the **Comment** item, it's helpful to add a note on what was counted: flowering spikes, rosettes, tufts and so on. There's a neat way to do this without leaving the **Quantity** box: type the number, followed by a '!' character, followed by some text: for instance, **5!Rosettes**. MapMate will separate off the text and put it into the **Comment** box for you, in front of any text that is already there.

There are also some built-in abbreviations for standard comments using the '!' convention. Not all apply to plants; those that do are:

- **!e** Quantity estimated
- **!n** No quantity recorded
- **!p** Photograph taken
- **!v** Voucher retained
- **!y** First record of the year.

If you have a list of counts jotted down in the field and want to enter a total, you can get Mapmate to do the sum for you. Simply enter the numbers separated by '+' signs, for instance **43+66+3+18**. Don't expect it to do any other arithmetic, though!

It's sometimes useful to record the lower limit of an estimated population, and you will find that MapMate accepts an entry of the form **50+**. Unfortunately, it just throws the '+' information away and records a bare 50; so you need to add a qualifying comment in the Comment box.

Recording separate sexes

Since most plants are not dioiceous, entering totals for each sex is not usually relevant, and most recorders don't do it even for dioiceous plants. But should you want to, you can use various forms of shorthand for recording numbers of males and females separately. If you only have one or the other, simply type, for instance, **43m** or **66f**. If you want to enter both in one go, there are various notations but they all expect you to enter the number of males first. The most explicit takes the form **14m23f**. The most succinct just puts a colon between the two numbers, for example **3:27**.

Abundance / cover indicators

If a precise number isn't appropriate, then you can just indicate 'Present' by typing **P**. Confusingly, typing **0** (zero) has the same effect, rather than meaning 'Absent'. If you want to indicate that you didn't find a taxon during a given recording incident, you should type **N**. This will be replayed by MapMate as **Not Present**. I find that rather grating: a more rigorous interpretation would be 'Not Found'.

Or you may wish to use the DAFOR notation for abundance, which comes with a few embellishments in MapMate. Here's the full list of letter codes.

• P	Present
• D	Dominant
• A	Abundant
• F	Frequent
• O	Occasional
• R	Rare
• V	Very Rare
• N	Not Found
• LD	Locally Dominant
• LA	Locally Abundant
• LF	Locally Frequent

Of course, most of these terms are meaningless unless you give some indication of the extent over which the term applies. You can use the same convention of a ! followed by text to enter an explanatory comment, for instance **LD!Over 70m of hedgerow**.

If you are recording from quadrats or other relevés, the Domin scale is also available to you. Type D followed by a + or a number 1 to 10. (If you are using the Braun-Blanquet scale, stop at 5; but there is no way to get MapMate to use a Braun-Blanquet interpretation when it displays text back to you.)

Things you need to know about MapMate Quantities

Internally, MapMate uses numbers to codify the non-numeric quantities, as follows. Indeed, you can get the same result by typing these numeric codes into the Data Entry form directly.

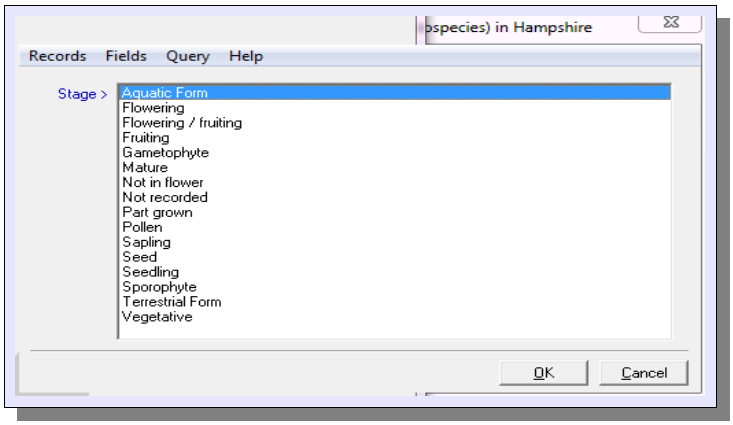
0	Present	-7	Not Present		
-1 to -6	Dominant to Very Rare	-11 to -20	Domin 1 to 10	-21 to -23	Locally Dominant to Locally Frequent

That has some interesting implications for later analysis and retrieval of the data. For instance, you can't just calculate total or average population counts based on the numbers recorded in the Quantity for each Record – they will be skewed by these negative numbers. We shall look at this properly when we cover reporting in Chapter 4.

When we come to making atlases (Chapter 7), you also need to be aware that a basic atlas that MapMate builds for you is not intelligent about the 'Not Present' entries. Even if the only Record in a location is a 'Not Present', MapMate will still display a dot for it on the map. This is something that can be fixed, but it needs to be done for each atlas you construct and is a slightly tricky operation. We shall deal with this in Chapter 7.

Defining a Stage

Now for something a little more straightforward. If you're not familiar with the stage definitions available, put your cursor over the **Stage** caption and press **Enter**. Then select **List Possibles**. I didn't mention it earlier, but there is also a keyboard shortcut for this. Place your cursor in the actual editing box for **Stage**, then press the **F2** function key. This works wherever **List Possibles** is available.



This is where setting your recording defaults to vascular plants begins to pay off. The items in this list will be limited to those that are pertinent. If we had left our Taxa defaults as 'All', this would be a very long unwieldy list including many things of relevance only to other species groups. As it is, it's a simple matter to pick off one to select.

Once you are familiar with what's on offer, you can simply type the first few characters of a Status phrase and press **Enter**, or use the other abbreviation tricks we've met with **Taxa**. **n*f**, for instance, will work quite nicely for **Not in flower**.

If you don't want to record a Stage at all, simply leave the editing box blank and press **Enter**. This will automatically give you **Not recorded**.

Entering Site

Here things start to get complicated again. It's worth giving some thought to how you want Site definition to work for you before you start entering data in earnest. For that reason we'll begin with a chunk of background reading, which I recommend you not to skip.

We'll start with the assumption that you are just setting out to enter data on your system, and will need to define new Sites for your Records as you go along. Click on the **Sites** caption to display the pop-up menu, and select **Add a New Site...**

Sites in MapMate

There is nothing particularly sophisticated about the way sites are defined in MapMate: in essence, a Site is just a means to link a meaningful name to an Ordnance Survey grid reference. You can have many Site names all pointing to exactly the same grid reference; you can also re-use exactly the same Site name to refer to many different grid references.

MapMate has no built-in concept of a hierarchy of sites; there is no formal way to tell it that, for instance, a particular Site is a compartment of a sub-area of another Site that defines, say, an SSSI or nature reserve. If you want such a hierarchy, the best you can do is to have a very strict and consistently applied naming convention for your Sites, which includes all the desired levels in the name. For instance: **Bishops Poors Fen NNR: Warden Meadows: Cpt 3A**. That will let you generate reports on species at any level within the site, as I shall explain in the next chapter.

Unlike some other recording software, MapMate has no way of distinguishing a 'conventional' location of a site (such as the centroid of the site area) from the location where a population is actually recorded. You will have to make a choice of the convention that is best for you. I am chiefly interested in the precise locations of plant populations, or else the correct grid reference for distribution mapping, so I will always favour a reference that accurately reflects where the species was found.

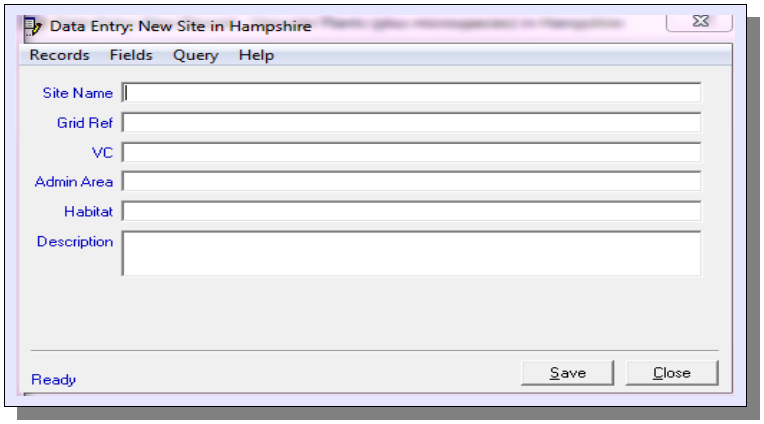
Although it lacks a site hierarchy, MapMate can and does record a few other details about a site's position: specifically, which hectad and (if it's recorded to 2km precision or better) which tetrad a site is in; which Watsonian vice-county; and which local government administrative area.

When you make a grid-based atlas in MapMate, it will always include any Records that have *more* precise site references in a *less* precise mapped dot. For instance, a Record at a site reference **SU203117** will put a dot in tetrad **SU21A** if you are mapping at tetrad scale, or in square **SU2011** if you are mapping at 1km scale.

As a general rule it makes good sense to use the same Site definition wherever it applies to individual Records; this is part of the general benefit of using a database, as discussed in Chapter 2. But if you are sharing data with other people, then you might want to be cautious about re-using their Site definitions. If they subsequently decide that something in their definition is wrong for them and they correct it, this will affect (and possibly invalidate) your Records, too.

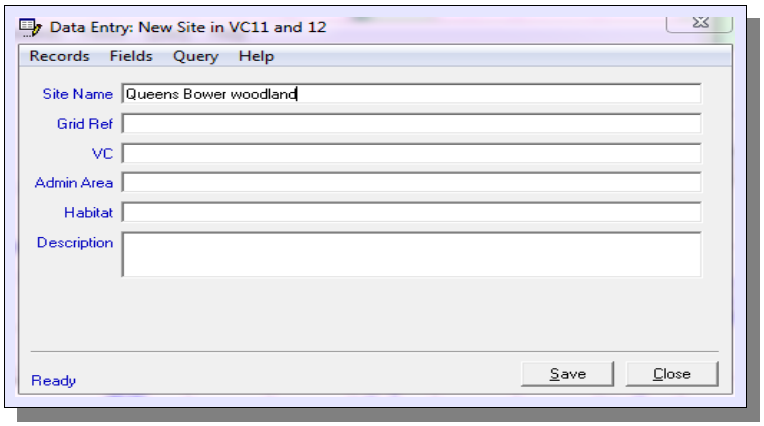
Finally, if you are in the position of taking on legacy or third-party data, these caveats may be just a counsel of perfection: you may have to live with whatever you can get in the way of site definitions, and not be able to guarantee consistent treatment. Just be aware that this can affect the accuracy of your Records.

Site Name



Using whatever standards you have chosen to adopt for your site naming, you can enter a name in Site Name. Although it stops you from using a few punctuation marks, MapMate is pretty tolerant of weird characters in names, so make sure you don't unintentionally type any. For instance, if you start a Site name with a question mark, you will come to regret it!

Grid Ref



A Grid Reference must be given for a Site, and it needs to be given in the format: two-letter 100km grid square reference, followed by the detailed eastings / northings reference; for instance, **SU483277**. If it helps you when entering the data, you can insert a space between the eastings and northings, but MapMate will discard the space when it validates the entry.

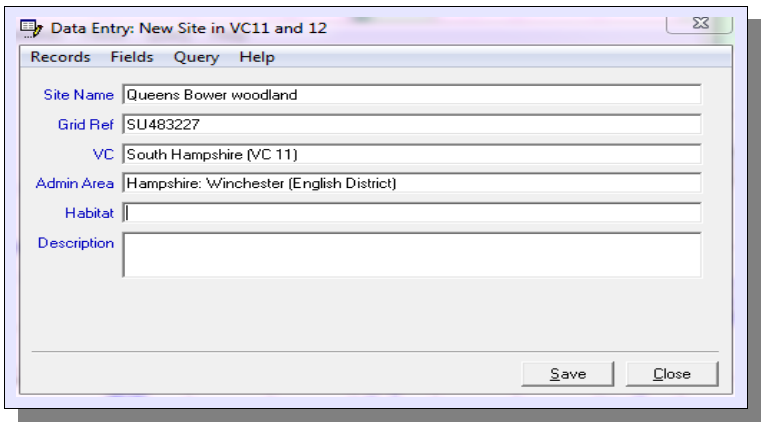
You can enter a reference at any of the following resolutions:

• **Hectad**	For example, **SU42**
• **Tetrad**	For example, **SU42Y**
• **1km square**	For example, **SU4827**
• **100m reference**	For example, **SU483227**
• **10m reference**	For example, **SU4834 2271**
• **1m reference**	For example, **SU48345 22718**

In practice, proliferating huge number of sites to 1-metre precision is not a good idea, and in most cases will lend a spurious precision that can't be justified by the actual accuracy of the data. (There is also a technical issue with importing 1-metre grid references from text import files, which we'll come to in Chapter 5.) With the GPS systems and satellite land imagery that is now available, a good case can be made for 10-metre references, although you should consult the error estimate given by your GPS before blindly accepting what it gives you, especially in wooded or rugged terrain. Many people settle for no more than a

100-metre precision in site locations. If you are recording common plant distributions for a sizeable area, you will probably opt for a tetrad or monad (1km square) as the basic mapping unit. But it may still make sense for you to record to a more detailed site within that unit, as it will allow you to break down to different habitats, land ownerships. management regimes or other factors. And of course, notable species deserve more precise detail than this.

Vice-county and Admin Area



The easy thing to do here is simply to press **Enter** on the next two items, leaving the content blank. MapMate will then try to complete these details automatically (as shown), using the information that it holds about regional boundaries.

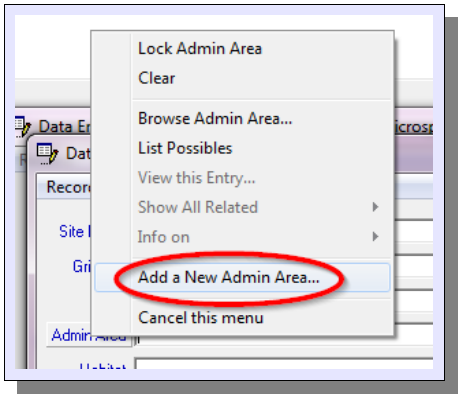
This will work fine in most cases, but you need to exercise a little caution whenever you are near a region boundary.

- A grid reference always represents a square, not a geometric point. The limits of the square are determined by the precision of the grid reference, with your stated position assumed to be the south-west corner. MapMate will use that south-west corner to determine what region your Site is in. If you are using a fairly coarse precision, you might need to make adjustments where a border goes through the square.
- The boundary data that MapMate uses does have a few discrepancies and inaccuracies that you need to watch out for. You may need to override MapMate's decision, on the basis of your local knowledge. If you are in doubt about which vice-county your site is in and you have a reasonably fast Internet connection, try the "Where's the path?" web site at http://wtp2.appspot.com/wheresthepath.htm to give you a judgement based on the National Biodiversity Network's vice-county boundary information. There is more about this in Chapter 9.

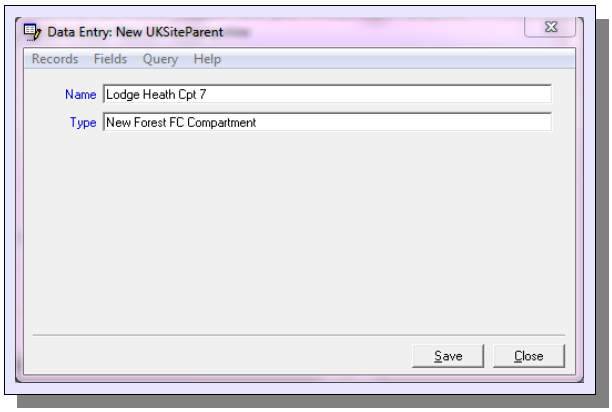
Sometimes MapMate will not be able to determine the vice-county or administrative area from the grid reference you give it. It will then display a list for you to choose from. If this happens anywhere other than on a coastline, take it as a warning sign that you may have entered the grid reference incorrectly.

If you are working near a coast or other area boundary, you may find it easier to enter regional details directly. For vice-county you need only type the number, if you know it: Irish vice-counties have 'H' in front of their number. Or you can use any of the partial text entry methods we have already seen to look up candidate names; for instance, **South H** will get you straight to South Hampshire. A similar approach will get you administrative county / unitary authority names.

Admin Areas don't have to be Admin Areas!

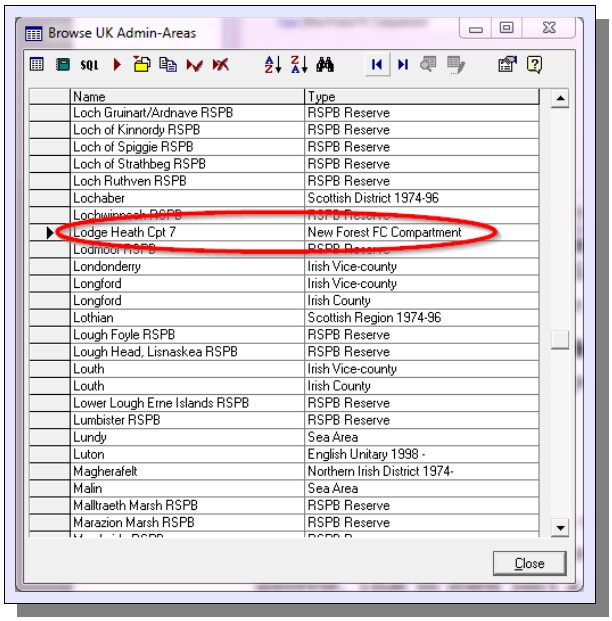


If you're prepared to sacrifice a reference to the real Admin Area of your Site, you will find that you can define a limited one-level hierarchy using your own criteria, by abusing the system. To start the ball rolling, when you come to the **Admin Area** field in the Site form, click on the **Admin Area** caption and choose **Add a New Admin Area...** from the pop-up menu.



At this point, you can enter a **Name** and a **Type** for your area. Once you've saved this new 'Admin Area', it will be available to look up as an Admin Area for other Sites you define.

For consistency's sake you will also want to use the Type definition again for any other Admin Area you create under the same scheme. Unfortunately, MapMate doesn't provide a means to 'List Possibles' for the Type field; it's just a piece of text entered independently for every new Admin area. You therefore have to be careful to get the spelling and orthography exactly the same each time.



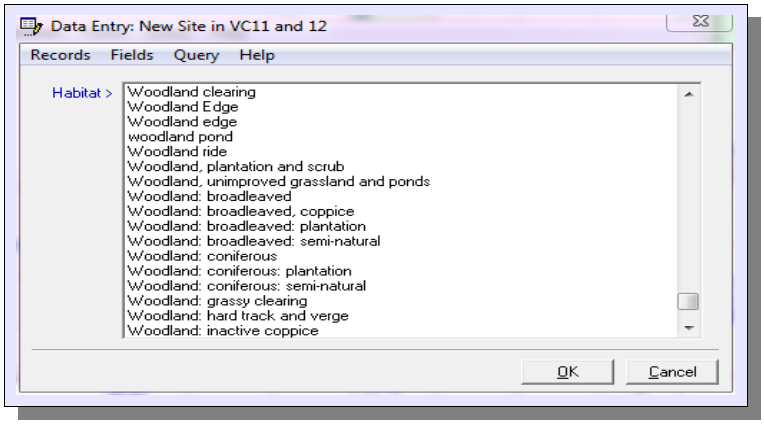
However what you can do is **Browse Type** in this form, by clicking on the **Type** caption. Rather than just showing you the types, this form shows you all Admin Areas; but you can scan the list for your previous ones, and copy and paste the text from the **Type** column to put into your new Admin Area.

You can see from the list that RSPB has already decided to use this facility to define sites within its own reserves.

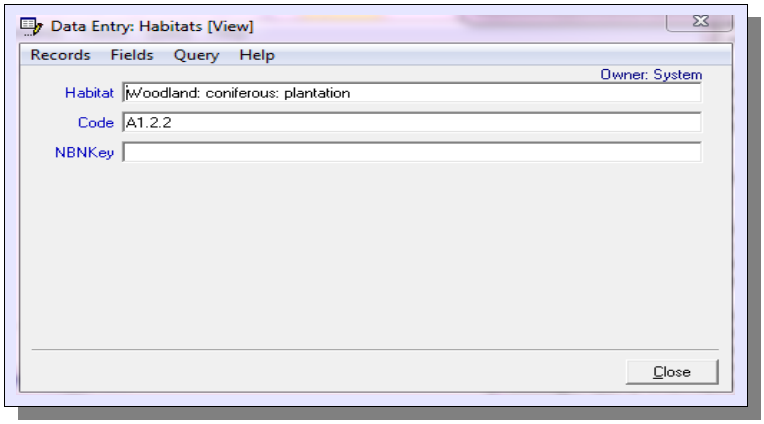
If you use Admin Areas in this way, you will use the associated local or regional authority that is usually associated with Sites, but you will still have the vice-county reference; this is a separate piece of information for the Site.

Habitat

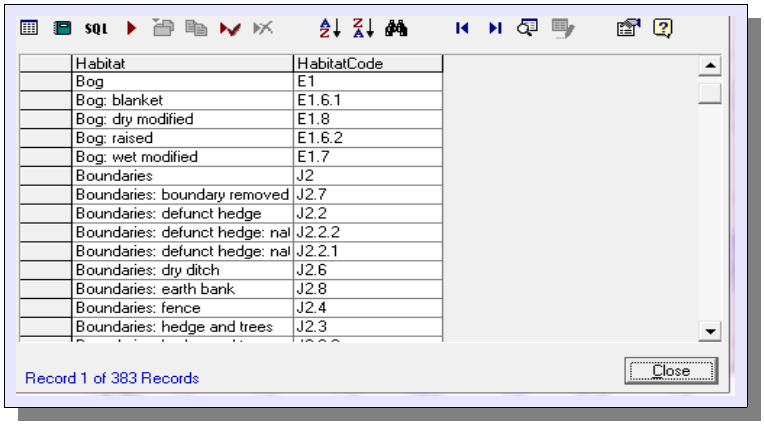
The first thing to consider is whether you want to record a habitat at all. If more than one habitat is present at a site, you will have to create separate Site records for each habitat of interest. That in itself isn't a problem, but when you come to look up previously defined Sites with your Records, as we shall see shortly, the habitat information won't be on display. You will need to make a detailed check that you pick the Site record that fits – otherwise you could end up with Pondweeds on top of brick walls and Eyebrights in ponds. Of course, one way round this is to incorporate a habitat designation in the Site name, so that different habitats at the same location have names distinguished on habitat. But then, you may wonder what is the point of having a separate habitat entry?



However, if you do decide to use a habitat designation for your Site, you can use the usual methods to look up what's available, including the **F2** function key. For vascular plants, the list will be quite long, and it includes the designations for the JNCC Phase 1 habitat survey. These have an associated habitat code, although it's not displayed in this list.



To find out whether a chosen entry is one of the Phase 1 designations, highlight it with your cursor and either right-click with your mouse, then choose **Look this up...**, or press the **F3** function key. You can use this technique generally to see the full detail of an item in a picking list.



Wouldn't it be convenient to see all the available Phase 1 designations in one list? Well, you can do this from the Site entry form by clicking on the **Habitat** caption. Then choose the **Browse Habitat...** option from the pop-up menu. This is an example of a 'Browse List'; we shall see many more of these in the next chapter, where I shall explain the tools on the toolbar.

If you decide that you don't want to specify the habitat for a Site, you can't just leave the entry blank. You can, however, choose **Unknown**. I've also added an extra one, **Unclassified.** See the section below entitled "Using your own Habitat definitions" for how to do this. I use this for one of my own Records, when I deliberately omit the habitat, and I use **Unknown** for Records where the originator didn't specify it.

Description

Finally, you can enter a text description for the site. You can use this for any purpose you like; you might want to give a fuller account of the extent of the site, for instance. Remember that if you use the same site name more than once with different descriptions, you have the same problem of choosing the right one when you re-use it for another Record.

When you have included all the Site information, click on **Save**. MapMate assumes you might want to enter another Site at this point, so it leaves the same editing box on display. Notice that MapMate displays a summary of the last data you entered at the bottom of the box; this is useful if you are called away during an editing session, and it crops up in several circumstances. To return to entering your Record, click on **Close**.

Using your own Habitat definitions

You are not limited to the habitat categories supplied by MapMate. Just as you can define your own Sites, you can define your own Habitats. Click on the **Habitat** caption while in the Site definition form, and select **Add a New Habitat...** from the popup menu.

If you do plan to use your own Habitat categories, especially if you are going to share data with other MapMate users, it's best to design a set in advance and make sure that all your colleagues conform to them. You can install a set on your copy of MapMate and then transfer them to your partners along with your Records; we'll come to the mechanics of that in Chapter 5.

Another thing worth mentioning is that you aren't actually bound by any set of semantic rules when defining what a Habitat is. Some database applications allow you to extend the database by defining your own items of information and including them in your records. That isn't really feasible in MapMate, because it would make its scheme for sharing and synchronising data very difficult to implement – transferring data in a generalised way between two databases with a different structure is extremely tricky and can jeopardise the consistency and integrity of your information. There *are* ways to extend MapMate's data capabilities, but they require some insider knowledge and an ability to undertake development work outside the MapMate program itself.

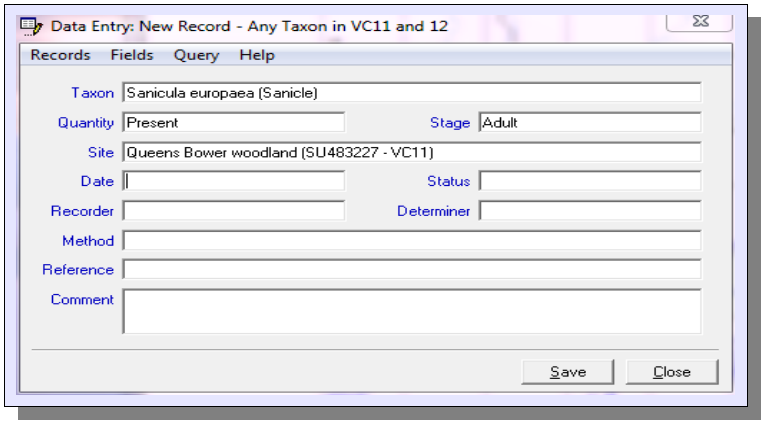
What you can do, however, is reinterpret some of the existing data items to give them a meaning more suited to your own purposes. For instance, the RSPB uses just two Habitat definitions for its recording schemes: 'Grid reference is a site centroid' and 'Grid reference is an actual sighting location'. This is their solution to the problem of having only one grid reference available for a Site.

Using an existing Site in your Record

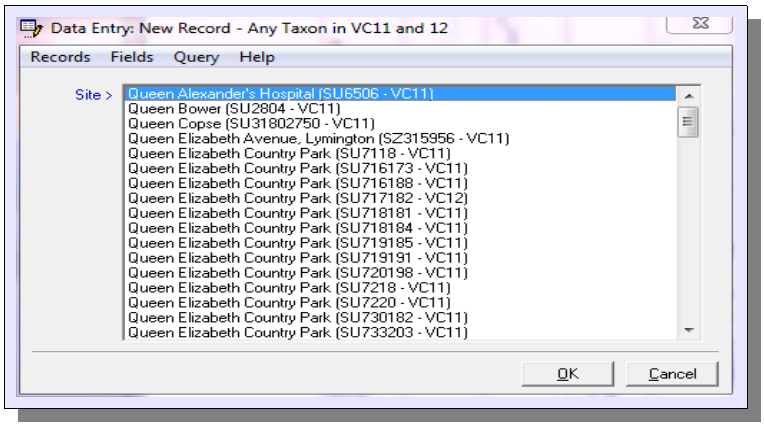
Once you have saved your newly defined site and returned to editing your Record, you may be surprised to find that MapMate has not actually added the Site reference to your Record editing form. You now need to look it up again to make use of it; so your situation is the same as if you had wanted to use a Site defined on a previous session, or one defined by someone else and shared with you.

Lookup by name

The most obvious way to look up an appropriate Site is by entering all or part of its name, and this works very much like partial names for Taxa. You can type the first few characters of the name, and you can use the '*' wild card to stand in for characters at the front, middle or end of the name.



Let's assume that you actually entered a Site with the name 'Queens Bower woodland' with the details as shown on page 14. If you type enough of the name to make it unambiguous (for instance, **Queens B**), MapMate simply inserts the Site reference straight into your Record. The extra detail shown lets you check you've made the right choice.

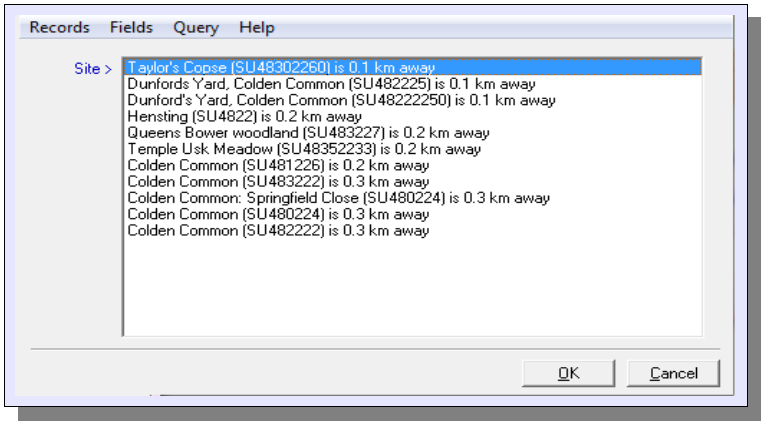


If you type an ambiguous name (and that includes a complete name that has been used for more than one Site), MapMate will display a list of all the candidates, and allow you to select one. This is the result on my system of typing **Quee***. If I type **Quee**, I get an even longer list including any site with 'Quee' anywhere in the name.

Lookup by grid reference

Most of the time, however, I'd be hard put to remember site names for the tens of thousands of sites defined for Hampshire; what I really want to know is whether there is an appropriate Site already for the *grid reference* of my new Record. To look this up, I can type the grid reference into the Site box rather than a Site name. With my example, by entering **SU483227** I can recall Queens Bower woodland directly, as it is the only Site with that grid reference. If I type a less precise grid reference, for instance **SU4822**, in the box, I will get just a Site defined at that precision, provided there is one.

If I actually want all the Sites within the extent of a given reference, including those of a higher precision, I can put a question mark in front of the reference; for example, **?SU4822** or **?SU42**. That will display a list of candidates, like that shown below .



If the grid reference is either ambiguous (because there is more than one site at that reference) or not an exact match for any existing site, MapMate will instead display a list of candidates, starting with exact matches and then showing Sites at increasing distance from the target. Here is the result of my entering **SU483225**. Notice that when you get this selection, it includes Sites with less precise grid references, too. If you are satisfied with one of the options on offer, you can select it and use it in your Record. Otherwise you will have to go back and add a new Site.

Once back in the Record entry form, you will be able to check that the Vice-county and Admin Area details fit the bill. (This is why you set up the option to display these details at the beginning of this chapter.) If Habitat is also an issue for you, you will need to look at the full record by pressing the **F3** function key while in the Site editing box, or by clicking on the Site caption and choosing **View this Entry...**

Wild card characters and partial entries for grid references don't work as a way of selecting Sites; you will get some very strange results if you try to use them.

A Quick Way to Enter Sites

If you know you want to create a new Site for your Record, there is a shorthand way to do it directly from the Record entry screen. In the Site entry box, type the site name followed by '@' (no intervening space) followed by the grid reference (again, no intervening space): for example, **Teg Down@SU515307**.

MapMate will immediately create a Site for you with its own assessment of Vice-County and Admin Area, and a Habitat of 'Unknown'. Unfortunately, when it displays this back to you in the Site entry box the Vice-county is not shown, even if you have opted for that as we did earlier. However you can check that you got what you wanted by viewing the full entry in the way we've already described.

Sometimes (near the coast, or right on a boundary) MapMate will not be able to assign a Vice-county or Admin Area. It will then display a prompt asking whether you want to fill them in yourself. If you **OK** this, you will be presented with the part-completed editing form for the Site.

Entering Dates

If you are entering dates in the 21st century, MapMate can handle quite a wide range of date formats, provided they follow the English (day first) rather than the US (month first) convention. All the following (including all variations for a 4-digit year, and for leading zeros) are accepted.

- **5/7/11**
- **05/07/2011**
- **5-7-11**
- **5.7.11**
- **5 Jul 11**
- **5 July 2011**

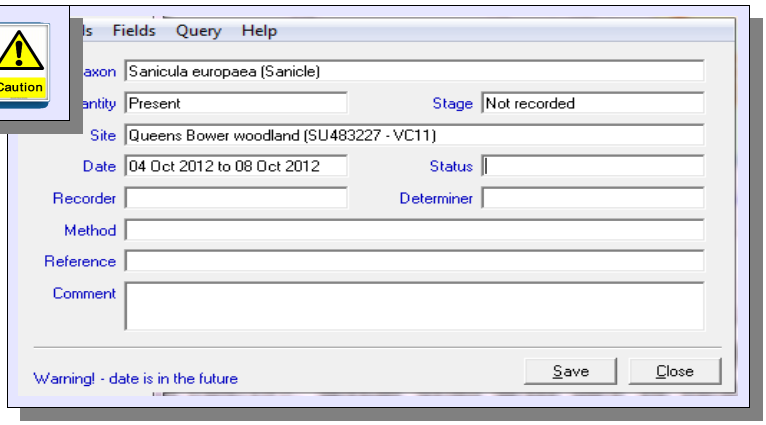
If you are entering a date earlier than the year 2000, you will need to enter the full 4-digit year. MapMate will interpret a year of '95' as 2095.

If you are entering dates for the current year, you *can* leave the year part off. For instance, at the time when I'm writing, a date of **05/07** will be interpreted and displayed as **07 May 2012**.

Date Ranges

If you don't have a precise date, you can enter a date range in one of several ways.

- For a year, just enter the 2-digit or 4-digit year number: for example, **11** or **1998**.
- For a month, enter the date without the day part: for instance, **07/2011**, **July 2011**.
- For a range that doesn't fit so neatly into one calendar period, you can use two dates separated by the word **to**. This works for all levels of precision, so all the following are valid: **3/7/11 to 19/7/11**; **April 2011 to Sep 2012**; **1874 to 1895**.



Because of the way MapMate interprets 2-digit year codes, and because of the feature that allows you to leave off the year specifier for the current year, the results may run counter to your intuition when you enter an abbreviated date range. If you want a date range of April to August 2010, for instance, and enter **04/10 to 08/10**, what you will get is not what you wanted!

Since I don't like surprises when entering dates, I try to use the 4-digit year format at all times.

How MapMate handles date ranges

You will notice that when you enter any date that states or implies a date *range*, MapMate always interprets it as two specific dates and displays them back to you in the format illustrated above.

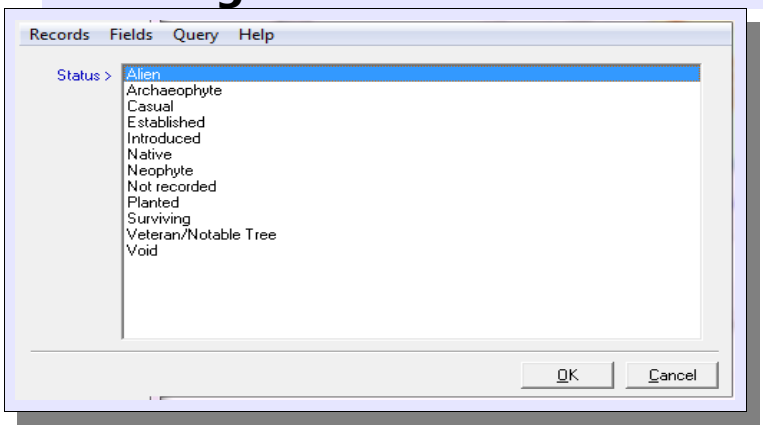
In fact, whenever MapMate stores dates, it *always* stores a pair – a 'Date From' and a 'Date To'. In the case of a single entered date, these two are the same.

When the program displays dates back to you in editing boxes, it applies a limited amount of intelligence to interpreting the date range. If the dates are the same, it just displays the single date. For anything else it shows the very specific 'start date to end date' format shown in the illustration above.

Things are a bit different when it comes to reporting data, as we shall see in the next chapter. Most of the built-in reports only list one date, so they have to be a bit cleverer when interpreting it. If they see a date range '1st January' to '31st December', they will turn it into a simple year. If they see a date range 'first of month' to 'last of month', they will turn it into a month and year. But date ranges that don't start or end on a convenient boundary can't be interpreted in this way. This can mislead you into thinking that a date range was actually entered as a single date.

There are ways around this, by customising reports; but this requires some more advanced techniques. For now, just be aware that dates aren't always exactly what they seem.

Defining Status



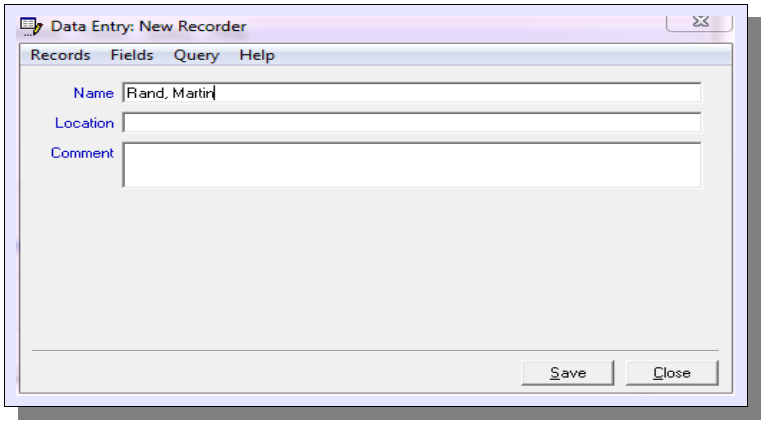
This is another case, like Stage, where you have a predetermined list of options to choose from. It's not a list you can add to. Use the **F2** key or the **List Possibles...** pop-up menu for **Status** to show what's available. the options will be limited to the terms appropriate to vascular plants, since you have set your preferences that way.

If you don't want to record a Status, you can leave the box empty on your Record form and just press **Enter**. This will automatically insert **Not recorded**.

Recorder and Determiner

If you are starting from a clean slate, you will need to add new Recorder details to the database.

Adding a Recorder



Use the **Add a New Recorder...** option from the pop-up menu for **Recorder** on your Record form.

The **Name** entry is free text. However, it's worth giving some prior thought as to how you would like names laid out, and achieving some consistency in this (and in your colleagues' naming habits, if you share data). It's very easy to end up with a host of slightly different names for the same person, which makes it more difficult to report on their Records at a later date.

What MapMate is expecting for **Location** is actually a Site reference, just like the Site for your Record. That's a neat trick for the MapMate developers, as it allows them to store Recorder Locations in the same format, and the same place, as Sites for Records. It may not be so convenient for you, as it more or less requires that you add a lot of detail for the Recorder's whereabouts, and can't be too vague about it.

If you share data with other people, or send it to the BSBI Hub, I suggest that you don't include Recorders' full residential details in this entry, as you will be raising issues over data protection unless you formally obtain the permission of each individual. Also, people move, and it's not always easy to keep track of this and remember to set up a new record for their new place of residence. Lepidoperists like to make full use of these details, as recorders often run traps in their own gardens; but remember that the Location of a Recorder doesn't explicitly say anything about the Site of a Record.

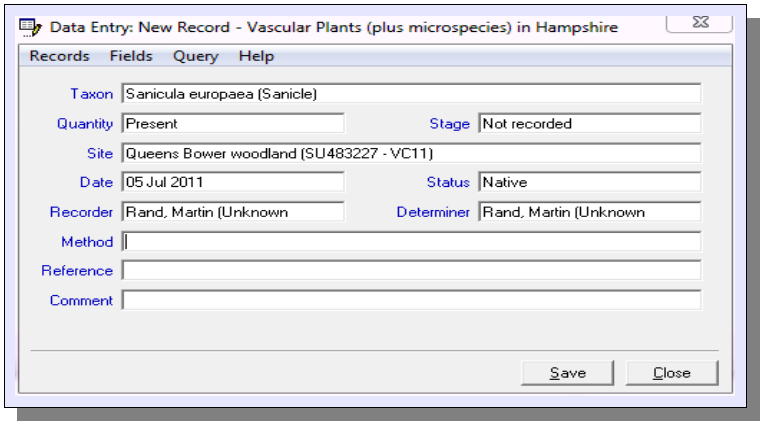
The MapMate documentation suggests that the Location details are handy for distinguishing people with the same name, but I prefer to use the Comment item for this purpose.

There are various ways to obscure the details of a Recorder Location, the simplest being to give it the county name and a hectad grid reference. But I prefer simply to select a non-location that is built into the system – 'Unknown location'. Typing **U*** or **Unk*** into the Location box will bring up this entry – along with any other Sites that you've defined starting with the same letters, of course.

Once you've completed your entry, click on **Save** in the usual way and return to your Record entry form.

The Determiner

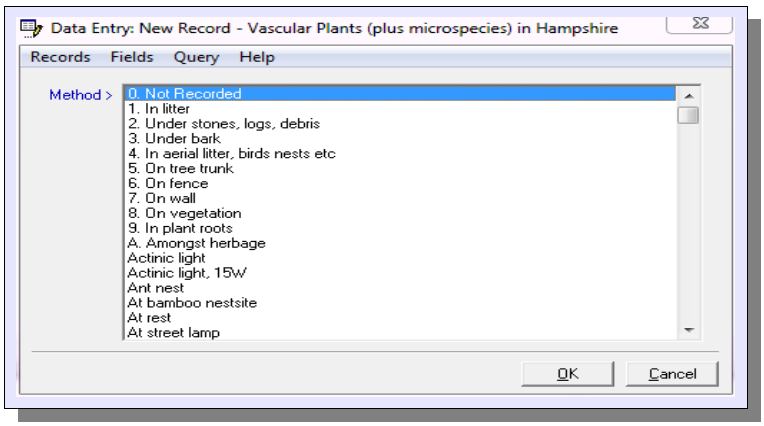
If an independent expert has been involved in determining the Taxon for the record, this is where their name should go. If that entails adding yet another person's details to the database, this is done in exactly the same way as for the Recorder. Both Recorder details and Determiner details are stored together in MapMate, so you can have the same person's details serving as Recorder and Determiner in different Records.



In fact, if you don't need to record an independent Determiner, leave the entry box blank and press **Enter**. That will fill in the Recorder's name as default.

Selecting a Method

Method signifies the means by which the record was obtained (or a specimen collected) and its details confirmed. To see what's available, use one of the methods to 'List Possibles' that you should now be getting familiar with.



This list is annoying in several respects. First, you'll see that it doesn't limit itself to terms that apply only to your selected species group. I doubt that anyone has managed to record even a Moth Mullein by luring it to actinic light. The number of Method terms that are appropriate for plant recording are rather few, and buried in amongst all the irrelevant ones.

Next, the list seems to include a lot of things that look like category errors. Isn't 'Ant nest' a habitat? Or has some ingenious naturalist devised a way of persuading ants to collect his specimens with the aid of their nests? But I have certainly made some good plant records when 'At rest', usually sitting down on a nice patch of turf for a lunchtime sandwich.

So I shall try to point out what's worth having from this list for a botanist. My guiding principle is that a Method should indicate the *primary means* by which information for the record was gathered, enabling a determination to be made and all the other details to be completed. So, if I observe and determine a plant in the field, but incidentally take a photograph for my collection, the method is **Field record / observation** and not **Photographic record**. But if someone sends me a picture of a plant that they can't identify, and I can confidently do so, then **Photographic record** seems more appropriate.

These are the built-in Methods that I consider most useful, with the interpretation I give them.

• **Documented record**	For records extracted from books, journals, and publications of all kinds
• **Field record / observation**	For records made in the field
• **Floral ID**	I like to consider this a sub-set of the above, where flowering / fruiting material enables a determination
• **Vegetative ID**	Likewise, but where the determination is made from vegetative material
• **Photographic record**	Where a determination is made from photographs
• **Reported to recorder**	Where other people pass on records to me for entry, which I accept without further substantiation
• **Voucher specimen**	Where plant material has been preserved and retained, or passed on to a public collection, as corroboration

One can define one's own Methods, and these are extra ones I would consider useful.

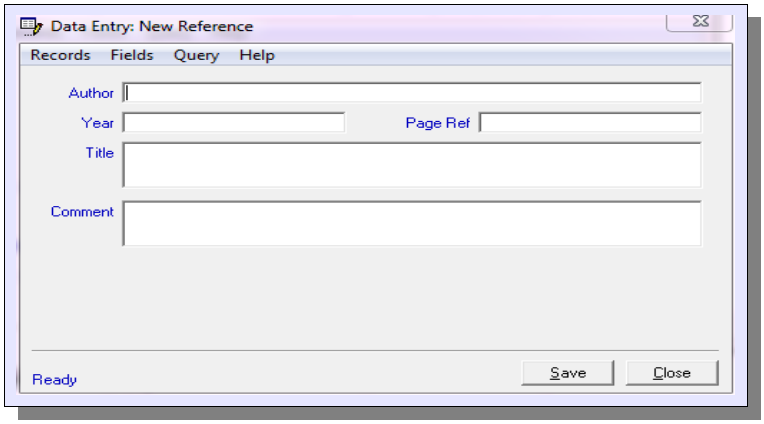
• **Bench determination**	Where the plant has been identified at the desk with microscopic or other laboratory aids
• **DNA determination**	Where the identification is based on molecular analysis
• **Grown on**	Where living material has been retained and propagated away from its wild site for determination
• **Unpreserved specimen**	Where a specimen was provided for determination but has not been retained

As you see, I like to use Method definitions that describe how a determination was made and to what extent it is corroborated. You are free to take a different approach. With invertebrates, use of a trapping or collection method may provide valuable implicit information about the effectiveness of a technique, or possible biases in population profiles or species composition arising from the technique.

Finally, note that there is an option for 'Unknown', which you can recall by typing **unk**. It's worth memorising the first few letters of the Methods you most frequently use, as it saves a lot of scrolling through a long list.

Entering a Reference

A Reference is a means of identifying more precisely where your information for the Record comes from. There are no built-in References in MapMate; you will have to define them as the need arises, using the now familiar technique to add a new one (**Add a New Reference...**). Every Record requires a Reference, so even for informal documentation you must provide one. As it can help you relocate your source material, view it as a benefit rather than a necessary evil.



You can see that this is set up particularly to record information from publications. But that's not to say you have to use it only for that.

Author

This is a free-form textual entry, and doesn't require a formal definition of the person, in the way that Recorder or Determiner did. For that reason, you can't look up names on the Recorders list. However you can look up Author names that you've previously used in References, with the usual techniques.

Year

Year is a required item, but it allows free-form text entry. That means that you will need to type the full 4-digit year number if you use it to signify the year; but you can also happily make entries like **1874-1888**. Or you can subvert it to some quite different purpose if you like. Where the reference is a publication, I use the publication date; where it isn't, I use the date of the informal communication, or the date of the recording episode.

Page Ref

This can be left blank if it's irrelevant. As the entry doesn't have to be numeric, you can use it for any other value that will help you categorise your source.

Title

For a published document, this doesn't require much thought. For anything else, it's up to you, but the general principle I apply is that it should help me find the paper or electronic documentation in my filing system. So here are some of the titles I use.

• **BAP recording card**	Biodiversity Action Plan card
• **TPP recording card**	BSBI Threatened Plants Project recording card

• **AUP recording card**	BSBI national distribution atlas updating sheet
• **LC recording card**	BSBI Local Change recording card
• **Correspondence**	Written correspondence
• **Email**	Electronic communications
• **Unpublished field record**	Contents of field notebooks, fag packets and any other informal written notes
• **Hb xxxx yyyy**	Herbarium specimen in xxxx's collection held at institution yyyy (I then use the Page Ref for the accession number)

Selecting a Reference

Once you have saved one or more Reference entries, you will need to recall one for use in your Record entry form. This requires that you use at least a part of the Author name, for instance **Rand**. If this returns a long list, then you can narrow it down further by typing all or part of the author name, followed by a space and the Year entry; for instance, **Rand 2011**. And of course the usual methods are available for looking up 'possibles'.

Entering a Comment

The Comment box is where you can add any further detail to support your Record. Earlier versions of MapMate rather severely limited the amount of text you could enter here, but recent versions allow huge Comments. Precisely what you put in here is very much up to you (and you can leave the Comment blank), but typical uses include supporting ID notes, detailed locality descriptions, fuller notes on the extent and distribution of the population, habitat or community descriptions, site conditions or threats that relate to the species.

It's obviously rather tempting, especially if your comment is long, to format the text for the sake of readability. There isn't a lot that you can do in this respect, and pressing the **Tab** or **Enter** keys won't allow you to put tabs or new lines into the Comment box. If you are a clever Windows user, you may know that there are other ways to force these into text, using combinations of letters with the Control key. MapMate will allow you to do this, but all I can say is – *don't do it*. It will improve your text layout when viewed in this viewing / editing form for the individual record; but it won't help at all when generating reports (Chapter 4). And, when it comes to exporting data to other software - something that you *will* want to do, even if you don't know it yet - these layout characters can play havoc with the process of converting data into a different format.

MapMate allows most normal punctuation characters in the Comment field, but it has one or two odd embargos. For instance, you can enter a colon (**:**) but not a semi-colon (**;**) - something I've never understood the rationale for.

Structuring Comments

We've already remarked on the fact that MapMate doesn't allow you to extend the structure of the database it provides, in order to serve your special needs. One way around this that we've already seen is to subvert a data item that you don't need to your own purposes. But this only works in a limited number of circumstances, and could be confusing for someone not “in the know” trying to interpret your data.

An alternative is to use the Comment field to hold information in a highly structured format, so that you can look for data in your database using a standard search pattern to match text in the Comment item. If that last statement didn't mean a lot in the abstract, think back to the various ways in which we were able to search for a Taxon, using partial names and 'wild card' characters. These all relied on finding a data element which *contained* the text that we typed. We'll see further applications of this technique in Chapter 3.

There are many different ways in which we could structure our Comments, but one tried and tested technique is the 'key/value pair'. This follows a standard pattern of the kind: <key>=<value>.

The <key> part is a standard word or phrase that specifies a *category* of information we want to record. The <value> part is the value that we want to assign to that category in this Record.

For example, suppose that we wanted to record (at least some of the time) the NVC community in which the species was found. We don't want to do this as part of the Habitat

information on the Site record, because we don't want to split Sites in that way, and in any case, a vegetation community really isn't a habitat. Also, we would like in some circumstances to record a perceived threat or threats to the population.

For the first of these we might decide to use **NVC Community** as the <key> element. So part of our Comment for a record of *Viola lactea* might read **NVC Community=H3c**. If the population is under threat, we might also record **Threat=Undergrazing**. Perhaps there is more than one threat; in that case our full comment might read **NVC Community=H3c, Threat=Undergrazing, Threat=Invasive species**. For legibility we need some way to separate the key/value pairs, and here I've used a comma followed by a space. It doesn't really matter what separator you use, but it's best to be consistent. (And don't use '**=**' !)

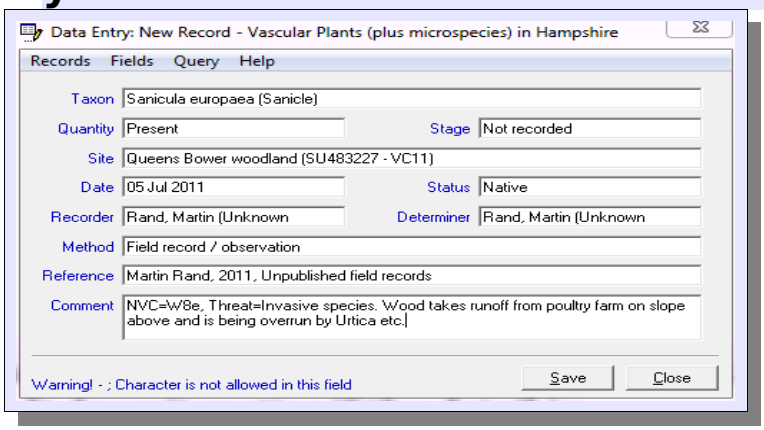
What does this do for us? Well, it doesn't actually let us look up standard Comments that we've used before, for re-use in our Record entry. There is no 'list possibles' option for Comments. But when we come to reporting on existing information in the next chapter, you'll see how this approach gives us useful new ways to retrieve data. For instance, to report on all Records where an NVC community has been noted, we can search for Comments where the text matches ***NVC Community=***. To find all Records for populations recorded as under threat from invasive species, we can look for ***Threat=Invasive species***.

For this to work, one has to be utterly meticulous about using the same formatting, spelling and phrasing wherever one uses a key/value pair. It would be no good using **NVC Community=H3c** in one instance and **NVC=M16b** in another. In the case of the threats, we need to decide on a list of standard threats and the term used to represent each of them. (Of course we can always extend the list at a later date.)

Keep in mind that what goes into a Comment is text – just that. You might decide to have a key/value pair like **Percentage viability=70**. Subsequently, you could look for all records with exactly 70% viability, because you can match the text of '70'. What you couldn't do is retrieve records with, say, less than 75% viability, because you can't do number comparisons in this instance.

Key/value pairs in this format are only one of an infinite number of possible ways to formalise your comments. A much more powerful one would be to use an XML schema, where the 'key' forms part of an enclosing pair of tags, the value is what is enclosed, and other qualifiers on the data can also be added to the tags. That really would be a means of extending the MapMate database, as the Comment data could then be processed and analysed in all sorts of ways by external software once it had been extracted from MapMate, including full handling of numeric data. But the tools and techniques for this are well into the Advanced category, and we won't discuss them further at this stage.

Minimise your typing effort; or, don't click Save yet!

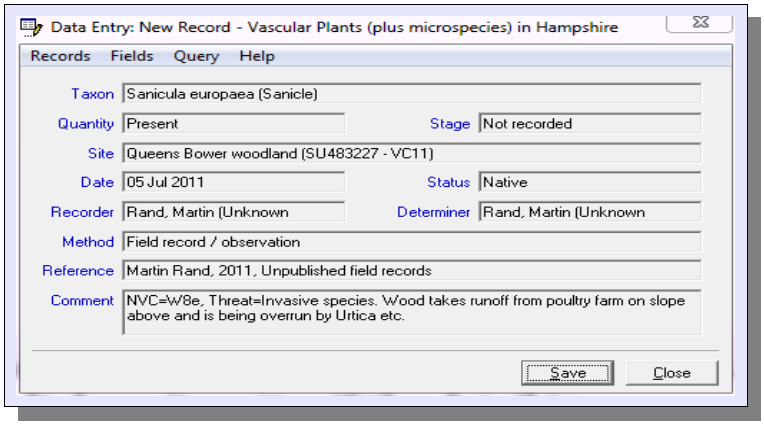


If you've been following through the little examples I've provided so far, you will probably have something like this on your Record form at this stage. It doesn't matter if the detail is the same, as long as all the items are filled in. If you haven't done this, do it now – perhaps with a record that is useful to you in your own area.

At this point it would be tempting to click on the **Save** button and save your record. If you do, MapMate will indeed save your record – but then, it will immediately clear all the details down and leave you with a blank form.

That's fine if you are entering just one record. But the chances are that you are putting in a whole succession of records from a recording incident like a field trip or site survey. Much of the detail will be the same for all the records – the Date, the Recorder, the Method, the Reference, maybe the Site. The following sections show you how to avoid typing all this in again.

Keeping default entries for your current editing session



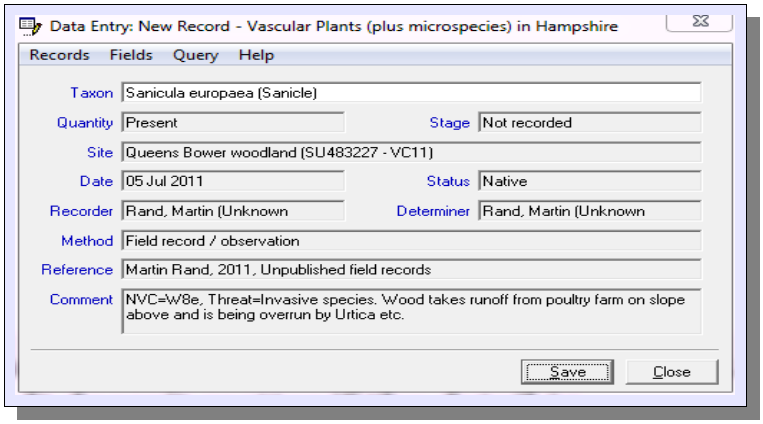
Select **Fields** from the form's menu bar, then **Lock All Valid Fields** – or use the shortcut key combination, **Control-L**. Your form should then look like this, with all the data entry items in grey, indicating that you can no longer edit them.

Or possibly not. I've found that sometimes all the fields are greyed out, and sometimes (usually after I've made some further changes to the data), **Taxon** and **Quantity** stay open for editing.

If anything else has failed to lock, it probably means that you didn't validate the item as you entered it. Go back and do that now by putting your cursor back in any such entry field and pressing **Enter**, then try the global lock again.

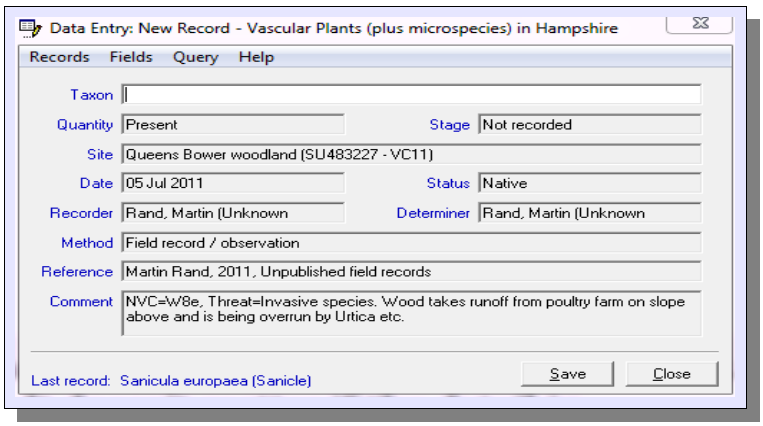
If the first two items didn't lock, this doesn't matter too much, as we can now adjust our selection of things to keep and not to keep. For instance, if you are recording several species at the same location, you won't want to keep the Taxon for the next Record; so, if it *is* locked, get the pop-up menu from the **Taxon** caption and select **Unlock Taxon**.

Similarly, if you are just going to record **Present** as the Quantity for any Record, and it's currently not locked, you can click on the **Quantity** caption and choose **Lock Quantity**.



Now your form should look like this on the screen. At this point you can click on **Save**.

By the way, I continue to talk about clicking on **Save**, but if you work your way through the data entry items, MapMate will take you to the **Save** button after the last entry item. Then, you only have to press **Enter** once more to do the job. Since any locked items are skipped, this makes for rapid data entry of a record batch without the need to remove your hands from the keyboard. If you had to go back in the form, say to correct something, **Alt-S** will also get you straight to the Save facility without the need for touching your mouse.



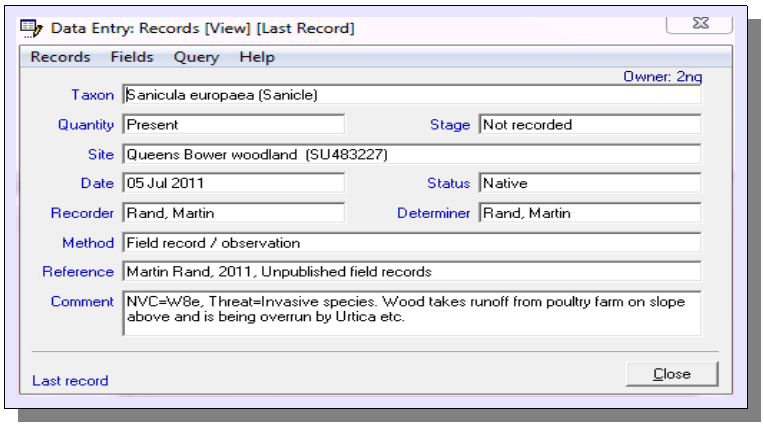
Once your Record is saved, this is what you should see. All the items that were locked for editing have been preserved for your next data entry. If you are entering data in a standardised format from a recording card, this makes for very rapid entry. Of course you can vary what's preserved and what isn't to suit the circumstances; for instance, if you want to record the same Taxon at a succession of Sites, lock the Taxon field and unlock the Site field.

What if you find that there are one or two details that you need to change just for one Record? You can unlock those items, replacing the default entry with the special one. To make this more efficient, there's an option **Clear** on the caption menus that both unlocks the item and blanks it out ready for a new entry.

Using this strategy, to get back to the default for the item on the following Record, you will need to re-enter it and lock it again. Also, anything you have locked and preserved will only stay that way until you close the Data Entry form. After that, you're back to the empty screen, even in the same session of running MapMate. If you want a more permanent way of holding onto default values, see the section below: “Keeping default entries for permanent use”.

Oops! I really didn't mean to do that...

There comes a point in all our lives, when entering data from the eleventh record card of the evening after a long day out in the hills, that we click on the **Save** button and, at that very moment, as the record disappears, realise that we made a howling mistake. As we've previously seen, MapMate displays the bare facts about the last data entry we saved at the bottom of the form. Even better, the **Records** menu includes an option **Show Last Record...** Select this now to display the record you just entered.

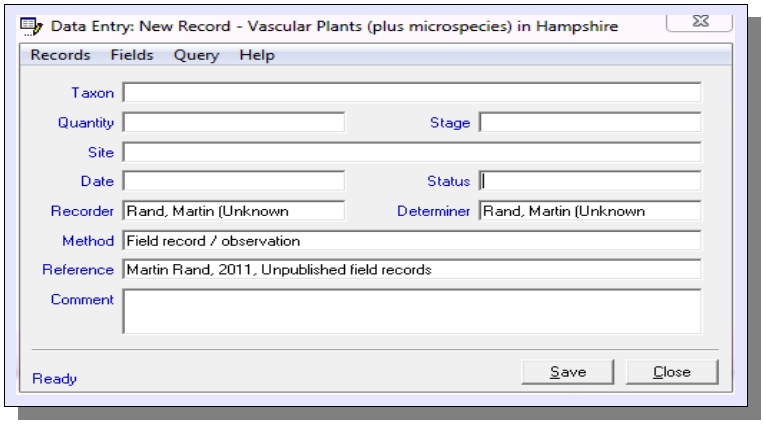


You'll notice that the form says **[View]** at the top. At this point you can contemplate the error of your ways, but you can't make amends. If you select **Records** again, then the option **Edit Record**, you will be able to make changes. You'll see that there is also an option **Delete Record**. If that last one you saved was just a practice shot, not real data, it's a good idea to get rid of it now using this option.

Retrieving the last Record like this continues to work even after you've closed the Data Entry form and re-opened it. Better still, it continues to work after you've closed the MapMate program and re-opened it. Clearly it stops being useful for one Record as soon as you save another one. If you need to go back to change or correct earlier records, don't worry – there are easy ways to retrieve them from the Data Entry screen or from reports. But we shall cover that in Chapter 4.

Keeping default entries for permanent use

We saw above that there is a statute of limitations on preserving items for data entry using the 'lock fields' technique, and it comes into force as soon as you close the Data Entry form. You probably have items that are standard for all or most of the data you want to enter. If you only enter your own records, for instance, the Recorder name is always going to be the same. You can get MapMate to store a permanent set of these defaults.



This exercise is best carried out with a blank Data Entry form. Enter the items you want to store as defaults; the illustration provides an example that you can modify as you see fit. Make sure that you validated them by pressing **Enter** as you went along; only validated entries are saved. They can be locked or unlocked.

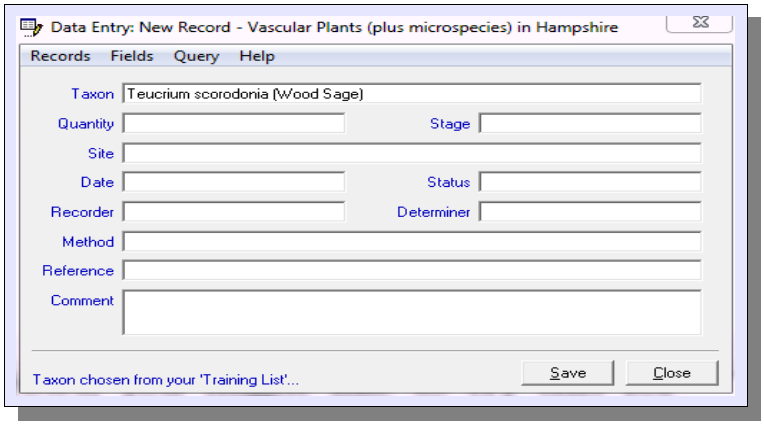
Now select the **Records** menu and choose **Save Common Settings**. This preserves the values you entered. To check on this, you can close the Data Entry form, re-open it (so that it's blank), and then select **Records** and **Get Common Settings**.

As you will have realised by this point, there is only one set of defaults. It would be very convenient if MapMate allowed you to have multiple named sets, but it doesn't. If you have to interrupt a long data entry session for a specific recording episode, then it's useful to be able to save all your locked items as Common Settings and know that they can be retrieved when you continue, even if your computer was powered down in the meanwhile. But if you normally operate with a more restricted set of defaults, you'll have to put these back as your Common Settings again afterwards.

Setting up your own shortcuts

I have a lot of Wood Sage in parts of my main recording area. On the other hand, nobody has yet found Water Germander in Hampshire. So it's rather irksome that when I type **Tesco** into the **Taxon** entry box of my Record and press **Enter**, the one that pops up first (and by default, selected) on the selection list is *Teucrium scordium*.

However I can fix this little problem when I get to the selection list. I click on the *Teucrium scorodonia* item so that it is highlighted instead. I then press **Ctrl-R**, or if I can't remember that, select the **Fields** menu and choose **Remember this**. This will close the selection list and put my selection into the **Taxon** box. But in the background, it also links **Tesco** uniquely with this Taxon, or as MapMate rather quaintly puts it, adding it to my 'Training List'.



Assuming you're not the warden of Braunton Burrows, you might like to try this for yourself. Go through the steps I've described. Then blank the Taxon entry, type **Tesco** and press **Enter** again, and you should see this display.

Of course the day may come when someone finds Water Germander on my patch. But I can still get that Taxon by typing **Teucrium scord** or even just **scord**.

There are some severe restrictions on what is usable as a shortcut. It has to be something that will already select the target item into the list of candidates, without the use of wildcard characters. So I can't just put **Asda** into the Taxon box, not bother to press **Enter**, bring up the full 'List of Possibles' and select **Teucrium scorodonia**. Nor can I try and make **Te*s** a shortcut for it. Very short ones, and those that bring up a long 'possibles' list, also fail. For Taxon, the members of the 'possibles' list must all belong to the same genus. I fancied making **um pa** my shortcut for *Equisetum palustre*, but sadly it is not to be.

You will no doubt find instances for your own area of annoying priorities in the 'possibles' lists which expose you to making wrong choices easily. If you have calcareous lowland woodland and no coast, you won't be pleased that with **Saeur**, *Salicornia* beats *Sanicula* past the post. But I would caution against creating too many shortcuts that have very marginal benefit. The '2+3' notation and the BRC code numbers already provide short-entry forms that are efficient and, most importantly, systematic; you don't have to remember individual instances in order to use them.

Shortcuts are not just for Taxa

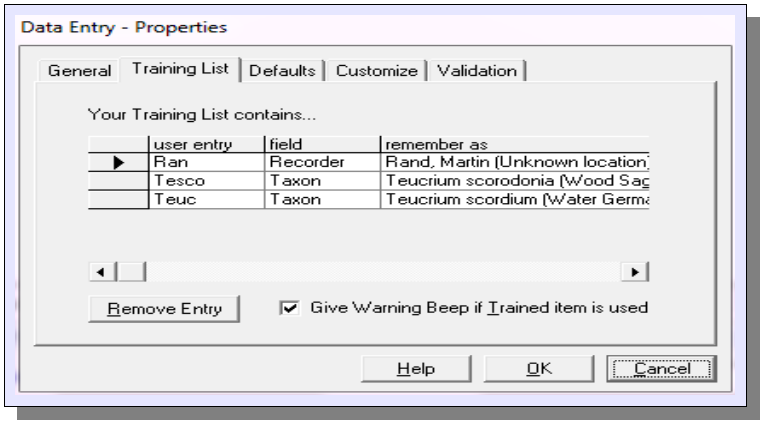
Within the restrictions on names mentioned above, shortcuts can be used with sets of data other than Taxa. They are particularly useful with potentially long and expanding lists such as Sites and Recorders, and their value diminishes with the short, standardised pick lists such as Stage. Since each shortcut is defined specifically for the category of data that it is selecting, one can use the same combination of letters in two different contexts. **Tesco**, for instance, could be used to select **Teucrium scorodonia** in Taxa and **Tesco car park, Lymington** in Sites.

There is a built-in shortcut you may like to use, if the name to which your MapMate copy is licensed is in a suitable format for use as a Recorder name. If so, create a Recorder with exactly the same format and spelling as the licensee name. You can then type **me** in the **Recorder** or **Determiner** box to bring up your own name.

Also, **now** (as a shortcut for today's date) is available wherever dates are to be entered.

Getting rid of Training List entries

Come the day that Wood Sage begins to fade away from our woods and heaths, and Water Germander starts to make massive inroads into ditches and ponds, I might regret making **Tesco** into a Taxon shortcut. In any case, with the onset of old age I might need to remind myself rather often of just what shortcuts I have set up.



From the Data Entry form select the **Records** menu, **Change Defaults...** option. Then click on the tab labelled **Training List**.

This will show all the shortcuts currently set up, which category of data they operate in, and what they select.

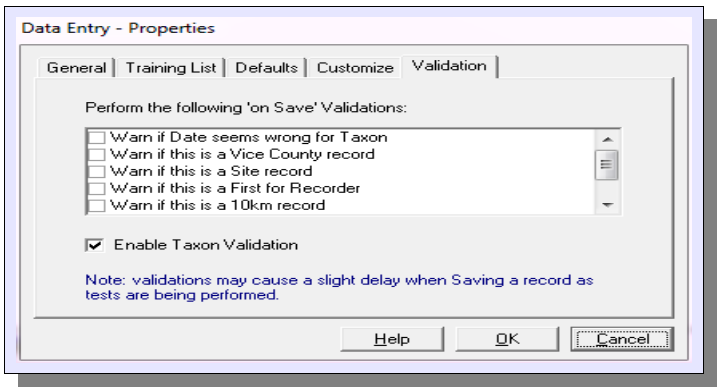
Click in the grey box to the left of the entry to select it. By clicking on **Remove Entry** (or pressing **Alt-R**) you can remove that entry from the list. It looks as if you can make multiple selections by holding the Control key down while clicking on several entries, as is common practice in Windows, because each one becomes highlighted; but actually this doesn't work. Only the last selected entry is removed. Nor are there any facilities for editing entries from this form.

General validation checks

We took a brief look at validation earlier, when I recommended turning on a check for duplicate records. Let's now go back and consider some of the other options.

Validation slows down data entry, because it imposes a delay each time a Record is saved. On a new fast computer this may not matter, but on older machines with large archives, a delay of many seconds is not unusual and can seriously disrupt the flow of work – especially as things go awry if you type ahead in the 'dead time' before the last record has finished saving. So, although you may be tempted to turn on all the options, it's worth making a judicious selection.

If you receive electronic data from other people, another consideration is that validations operate when you use **Save** from the Data Entry screen – but not when you acquire records from other people. Validation in these circumstances doesn't give you a guarantee that all the data you hold has been vetted.

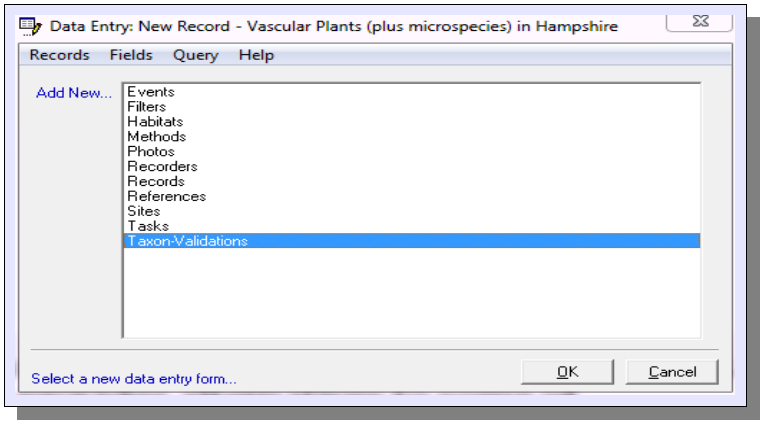


From the Data Entry screen, choose **Change Defaults...** from the **Records** drop-down menu. Then click on the **Validation** tab.

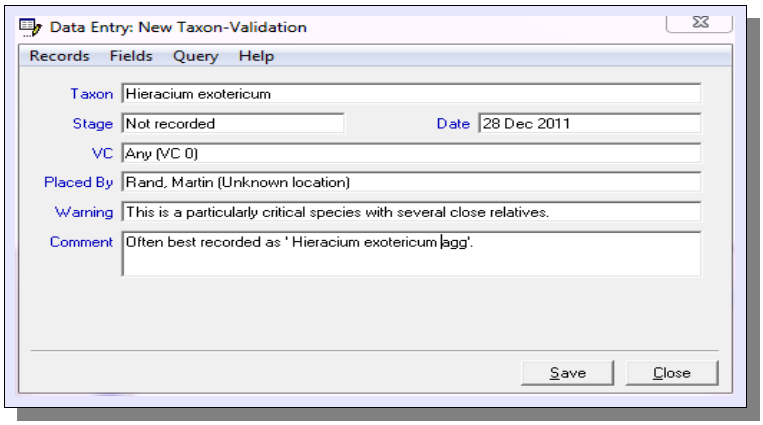
- **Warn if date seems wrong for Taxon**
  This is not one I would use. Many Taxa can be recorded vegetatively out of season; and anything entered with a 'year only' date will register as '1st January' and probably generate a spurious warning.
- **Warn if this is a Vice County record**
  This is certainly one to use. It often suggests that you chose the wrong Taxon. Initially you may want to leave it switched off until you have built up a typical profile of Records for your area. As a means of identifying new vice-county records, though, it has its drawbacks (unless you already have a complete historical record for your area in your archive).
- **Warn if this is a Site record**
  Since I'm dealing with an archive for a county from many sources, and new Sites are always being defined, I have no use for this. But your situation may be different.
- **Warn if this is a First for Recorder**
  Probably also a good idea if you are the sole Recorder on your system. Otherwise – well, maybe.
- **Warn if this is a 10km record**
  This can generate a lot of 'noise' when you start entering data. Once you have a sizeable archive set up, it may be worth turning it on.
- **Warn if this is a Tetrad (2km) record**
  This has the same issue as 10km records, but taken to a new order of magnitude. Unless you are working on a very small area of interest, probably not worth having.

Taxon validations

The problem with the general validations that we've seen so far is that they are very 'broad brush'. Their usefulness can be compromised by the interruptions they bring to the flow of rapid data entry. The next type of validation serves slightly different purposes but is more nuanced, and provides alternatives to some of the above as well as extra refinements.



First make sure to tick the **Enable Taxon Validation** box on the **Validation** tab of the Defaults form. Close this form (using **OK**), and select the **Add New...** option from the **Records** menu of the Data Entry form. The option to choose from here is **Taxon-Validations**, as highlighted here.



This form gives you the opportunity to set up very targeted validations, relating to one Taxon at a time and controlling the conditions under which it will be applied.

Taxon

This can be selected using any of the means we've seen for entering Records.

Stage

This is a matter of selecting from the predefined list, as for entering Records. Use this if you want only to check on Records made for a particular growth stage, such as 'Seedling' or 'Vegetative'. If you want the validation applied at all stages, choose **Not recorded**.

If you want to specify a number of Stages at which to apply validation, you will need to make several entries for the same Taxon, each specifying a different required Stage.

Date

Date is simply the date you established this validation rule. If you want to enter today's date quickly, enter **now**.

VC

VC is the vice-county in which you want the rule applied. For instance, entering records chiefly in central southern England as I do, it would be appropriate for me to define a rule for the montane species *Gnaphalium supinum* in vice-counties 7, 8, 9, 11 and 12 where I habitually record. Or I could be lazy and say that the rule will apply anywhere, by entering **any**. After all, I can remove the validation if and when I start collecting records for the Grampians.

Placed by

This identifies the definer of the rule, and it needs to be someone who has already been defined on the system as a Recorder or Determiner. The usual facilities are available for searching and selecting names.

Warning

This is the actual text you want displayed when the warning is raised. MapMate ships with just one item already installed, **This species is found only in the Channel Islands**. So if you use one of the 'List Possibles' techniques on a new Mapmate installation, this is what you will get inserted automatically into your **Warning** box.

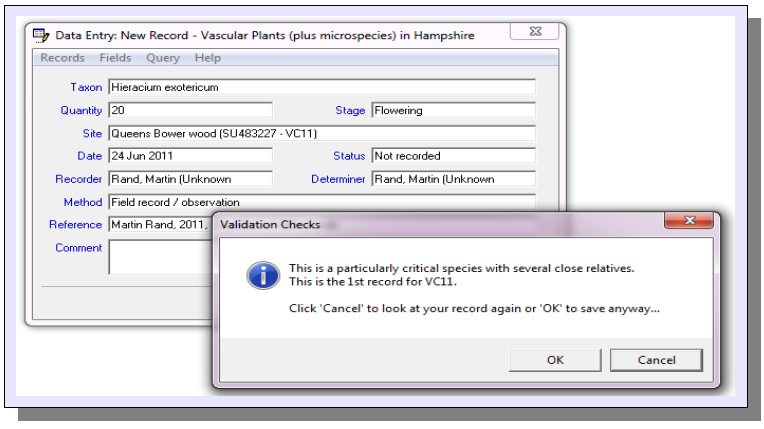
To add a new entry, simply type the text into the box. Once you've saved a validation rule, that text will become an item in the 'possibles list' and so can be selected for re-use. But please note that you can't search for existing Warning items by typing part of the warning text and pressing **Enter**, as we've seen in many other contexts for Record entry. Text typed here is always treated as a new free-format entry.

Comment

This is the usual placeholder for any additional description or explanation that you would like to include with your rule.

Taxon validation in action

Once you've set up a rule and saved it, you can try it out by returning to the Data Entry form for a Record. Set up a Record for the Taxon in question that matches your rule criteria, and then attempt to save it.



Amending Taxon validations

At times you may want to change or remove validations you've set up. How do you do this? There is no way back to a list of existing rules, or to editing facilities for an individual rule, from the Data Entry form.

Don't worry: it is possible to retrieve and change the rule set. But to see how, you will have to wait until the next chapter to learn about querying and reporting on existing data.

In conclusion...

This has been a long chapter and a rather dense one. My aim has been not just to introduce you to the mechanics of data entry in MapMate, for which you will find good coverage (and some extra topics) in the MapMate help files. I hope also that issues I have raised will help you to think about what your data is for, and consequently how you want to embellish it, codify it and categorise it.

If you are just starting out on creating a MapMate data archive you are in a fortunate position, as you can plan ahead to make your data as useful, systematic and consistent as possible; and hopefully, if you are collecting data from others, you can encourage them to come along with you. As the inheritor of a legacy database of nearly quarter of a million records that did not have these principles applied, I can tell you what the alternative is like.

You may be wondering at this point how you change an erroneous record you created on a previous data entry session, or remove it entirely. To do this, you need to learn how to retrieve the information you already have, and we shall cover this in Chapter 4.