

FIELDWORK FOR ATLAS 2020 A BEGINNERS GUIDE TO RECORDING

The first edition of this guide was produced in 1996 for the Atlas 2000 project. Technology has moved on a bit since then and some plant names have changed, but the objective of the guide hasn't really altered and Trevor's delightfully informal style and much of his text is retained (Dines, 1996).

This guide is aimed at those with absolutely no previous experience of "recording", a strange behaviour that botanists are often talking and writing about. If you've never been "recording", it may seem a complex and ritualistic activity, only undertaken by experts in plant taxonomy - those who know the difference between, and botanical name of, every species, subspecies and hybrid in the British and Irish flora. Many people consider recording to be a highly scientific business which is far beyond the scope of the average person. This is not so. Indeed, you don't even have to consider yourself a real 'botanist' to undertake recording! Once you have been out recording a few times, you'll realise how easy it is, how rewarding it is, and even how addictive it can be!

What Is Recording?

Let's start at the very beginning by asking instead the question "What is a *record*?" Well, according to The Collins *Concise Dictionary*, a record is "... an account in permanent form, esp. in writing, preserving knowledge or information..." In essence therefore, *recording* is simply the act of collecting these accounts. The "... permanent form..." of the record can be a scrap of paper, a specially designed recording card, a field notebook, a spreadsheet, or even a dictaphone.

When recording, you should bear in mind that the quality of any record depends on two factors:

1. What pieces of information make up the record
2. The accuracy of the information

First, let's look at the information that can be used to make up a plant record. For our purposes, the "information" preserved in the record relates to the *location of a particular plant*. It is very important to note here that *location* refers to both space and time - in other words, we should record *where* the plant grew and *when* it was seen. Our plant record already consists of three bits of information: the species in question, a location and a date. There - it's easy, we have a record! These three bits of information are essential for a record to be at all useful. However, there is a long list of additional information that can make a record, and this additional information varies in its usefulness. We could categorise them as follows:

<u>Category</u>	<u>Example</u>
Essential	Species Name, Grid Reference, Date.
Important	Location, Recorder's name, Vice-county, Determiner (if not recorder)
Useful	Stage (e.g. flowering), Habitat, Abundance, Associated species, Route taken, Time spent recording
Superfluous	Weather conditions, Time of day, Pub in which you had lunch (although some would put this in the essential category).

What information you collect depends largely on what it will be used for. A record from a detailed survey of a local nature reserve, for example, may include a very precise description of a species' location, an estimate of the population size, the other species growing around it and perhaps an NVC (National Vegetation Classification) type. When collecting the same record for Atlas 2020, much less information may be included (even just the 2km grid reference and date). In general, however, when recording any species, it's best to include as much information in the record as possible because it's easier to 'discard' excess information than to return and collect more!

The accuracy of the information collected is vital to the usefulness of the record, and this accuracy is entirely in the hands of the recorder. It's up to everyone involved in recording to ensure that their records are clear, concise and accurate. Remember that an illegible record is as useless as an incorrect one and is very frustrating to deal with. The same applies to a vague record with no grid reference - 'in a field near Whitchurch', for example, may apply to at least nine places called Whitchurch in England and Wales!

When recording a species, you must be certain of your identification. More errors are made in plant recording through misidentification than anything else. The golden rule is **If In Doubt, Don't Record**. If you think a particular plant is significant but are unsure of your identification, consult the vice-county recorder, come back later with an experienced person, collect a voucher specimen (see Chater, 1996), or make a note on the recording card for it to be checked out later. It's very tempting to make new and interesting records, but only do so if you are **certain** you're correct.

If recording a site, such as a nature reserve, be aware of the boundaries and don't be tempted to stray beyond (if it's irresistible, record what you find outside on a separate card). If recording a 1km or 2km square, be aware of your position when you are close to the edge of the square. Be quite sure of your grid references. Ideally you should carry a GPS device or a mobile phone that has a GPS receiver and an app that will show the grid reference. Be sure to allow your device time to get a good signal and check the reported accuracy. You should regularly check your GPS reading when you are at a known position (e.g. your garden gate) to make sure the settings are OK. If you don't have a GPS device (or you are in the middle of dense woodland with no signal!), you can estimate a grid reference from an Ordnance Survey map and check it later using one of several mapping and grid-finding applications on the internet. (See *Appendix A: Grid references*). Unless it is already clear from your recording

card (see below), add a sensible location name taken from an Ordnance Survey map to go with the GPS reading. This introduces an element of cross-referencing as the location can be checked against the grid reference at a later date. Please give a full, 6-figure or 8-figure grid reference for any rare, scarce or otherwise notable species.

Recording Cards

In general then, you should make your records as detailed and precise as possible. To help you achieve this, and to standardise everyone's recording, specially designed recording cards are almost always used to record plants.

Two basic styles of recording cards are commonly used, the 'species list' and the 'individual record'. The 'species list' is the most common type and is used when you are recording many species from one particular site (be it a wood, a Nature Reserve or a 2km square). This type of card consists of an area in which you enter details about the recording session (date, location, grid reference, recorders' names, etc.) and then a list of the all species you are likely to encounter. These names are often abbreviated to save space. When recording plants, you simply fill in the details about the session, and then put a line through (or 'cross off') the names of the species you see (see Stroh, 2015; section 6). Each species crossed off then constitutes a record, and the session details apply to each record. Space is usually given on the card to write in the names of any species you see that aren't listed.

The Atlas 2020 customised recording cards are of this type and are available at www.bsbi.org.uk/resources.html#Cards. There are other recording cards of this type - many local Flora Groups have their own; others exist for specific habitats, and some have full (rather than abbreviated) botanical names, or even English names. All these cards are very easy to use and large numbers of records can be collected efficiently.

The second type of card, the Individual Record Card, is used to give more details of a particular sighting (e.g. an *ad hoc* sighting of a rare or unusual species). When you fill in any type of recording card, it is very good practise to photocopy it before sending it to the vice-county recorder. Not only will you then have your own personal copy, but a spare will be available should the one in the post go astray!

How to Record Plants

Now for the nitty-gritty part - how do you actually go about recording plants? Well, that obviously depends on many factors, including personal preferences, but there are general guidelines that will help you get the best from a recording session.

First is good preparation. Let's assume that you have adopted a tetrad (2km square) to record for Atlas 2020 and woke up thinking "I'm going to record in my square today". Before going, there are several things to do. Study an Ordnance Survey map of your square carefully. This will indicate which habitats may be found in the square (deciduous or coniferous woods, rivers, cliffs, fields, marshes, towns, etc.) and therefore allow you to plan

a route taking in as many of these as possible. If access to the square on public footpaths and roads is not sufficient you will need to check and obtain permission to enter private land (e.g. farms, estates, MOD reserves, etc.). Explain what you want to do and why, and observe the landowners decision (no entry means just that!). You should have also contacted the vice-county recorder in advance, who may have knowledge of the square and may be able to point you in the direction of good areas, old records that need updating, etc.

Decide where you want to go first and then collect together the things you'll need. The 'essentials' include a notebook or recording cards, a map, several pencils and/or pens (these can easily be lost throughout the day!), a clipboard to hold the recording cards (many cards can be folded in half for convenience), a flora (preferably Stace, 2010), your GPS device if you have one, a hand lens or lenses (preferably with x10 and x20 magnifications), plastic bags for collecting specimens or a Polish Press (see Chater, 1996), suitable clothing for the area you'll be in, and food and drink to keep you going!

Before you go, check the weather forecast to make sure that you're not going to get caught in the middle of a blizzard, thunderstorm or hurricane!

<http://bsbi.org.uk/SafetyInTheField.pdf> has more detailed information on this subject.

Congratulations! You are now in the field at your first location, armed and raring to go. Fill in the details on the front of the first recording card, paying careful attention to the grid reference¹, and then turn the card over to reveal the species list. Walk to the first patch of vegetation and have a good look around. Before moving again, simply begin crossing off all those species you see around you. This initial burst of crossing off will enable you to 'get the common species'. Remember to look up, as well as down, to record trees and shrubs. Once you've crossed off all the species you can see, move in closer and record any more. Sit or kneel down and look carefully in short turf, look in shade under shrubs, on the path itself and at recently disturbed soil - anywhere that you may get a few more species popping up. The most interesting species often occur in the most unlikely places!

This first stage is where you'll cross off most species at once and it can take quite a while – avoid the urge to rush off to the riverbank, marsh or rubbish tip to get the more interesting species as you should pay attention to the 'common' ones first. As the number of species you cross off decreases, move along the route and record more. As you continue, you'll find yourself crossing off fewer and fewer species and you'll begin to move more rapidly. When the habitat changes (e.g. you reach a riverbank), you'll have to stop again to record on the card a new suite of species.

You may find that you encounter unknown species initially. What you do with them is a matter of preference. You could get out your flora to identify and record them there and then, or you may prefer to take a specimen back in a plastic bag, or place a specimen in a

¹ The grid reference on the front or header of a recording card refers to the grid square you are recording in. If you are recording in a site, enter the monad or tetrad that encompasses the site – **never use a 'centroid' grid reference**. If the site covers more than one tetrad (or monad if that is the way you are recording), record a separate card for each within the site.

Polish press. Remember to label the specimen with a 6-figure (or better) grid reference in case it turns out to be of particular interest. If it is not appropriate to take a specimen (e.g. there are very few plants) you might take a photograph or photographs, being careful to show all the features of the plant that might be used for identification and remember to make a note of where you took the photograph.

If you are dealing with a subspecies (a division of a species) or an aggregate (a group of very similar species), record these only if you are confident of your identification. For example, the *Juncus bufonius* agg. includes three very similar species (or segregates, i.e., *J. ranarius*, *J. bufonius* and *J. foliosus*). When faced with a plant in this group, try to record one of the segregates. If you can't be sure of your identification to segregate level, record your plant as *Juncus bufonius* agg., as this is much better than no record at all. Similarly, you may come across two subspecies marked on the recording card for a species you find. The fact that the subspecies are marked on the card indicates that they are relatively easy to separate, and you should attempt to identify your plant to subspecies level if you can - it's often surprisingly simple! If you cannot identify a segregate or subspecies, you should collect a piece and get someone else (e.g., vice-county recorder, BSBI referee, more experienced person at a field meeting or recording workshop) to identify later. You can always alter the original record, adding in the name of the person who identified it correctly (i.e., the 'Determiner').

Always pay attention to where you are in relation to the tetrad (2km square) or boundary. If you cross this, you must stop recording on the current card and begin a new one. This is especially important if you are recording a particular site (such as a nature reserve) as the records from separate tetrads should be kept apart.

You'll eventually decide that you've made a good stab at recording the square. It's impossible to say when you should finish recording or when you have crossed off enough species, although tired recorders do tend to make more mistakes. All you can do is record as many as possible on one particular day. If you were to come back the next day or get other people to do some recording, many unrecorded species would crop up. Depending on your ability and the area you're in, you could record between 100 and 250 species in a good recording session. Aim to do as much as you can in one visit, and then come back another day, preferably after a few weeks or months, or, if you come back in a new year, then try and come back in a different season.

When you get back home, don't forget any specimens you've collected. Either identify them straight away or put them in a press. It's also a good idea to check your record cards while everything is fresh in your head. If it rained when you were in the field (which it invariably will have done) or your cards became soiled, carefully copy them onto clean cards. Finally, when all is finished, relax and have a well-earned drink!

You should send the completed cards to the vice-county recorder. Alternatively you could scan them and attach them to an email or carefully enter the records into a spreadsheet and

email that. The vice-county recorder may prefer to receive the records as soon as possible or may be happy to receive a batch at the end of the season.

As I said originally, this is meant to be a guide to recording. Opinions will differ and there are many ways to do things, but I hope I have illustrated how to go about recording, what is involved, and shown how straightforward it is. Don't be afraid to get out and have a go. If you make any mistakes, your vice-county recorder should spot them and most will be happy to advise and encourage you. Remember that in many cases, it's the common species that have not been recorded for many years, so you can begin on these and then embark on a voyage of discovery as your plant identification skills improve.

If you would like experience with recording before going it alone, simply come along to one of the BSBI's field meetings. These are friendly and informal, and keen people are always made welcome even if they are inexperienced.

I hope this season you'll feel inspired to get out and join in. You'll be contributing not only to the Atlas 2020 project but also to the long and splendid history of botanical recording in Britain and Ireland.

References

- Dines, T. (1996) *Fieldwork for Atlas 2000, 4. A Beginners Guide to Recording*. B.S.B.I.
Chater, A. (1996) *Fieldwork for Atlas 2000, 2. Collecting and Pressing Specimens*. B.S.B.I.
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Stace, C. A. (2010) *New Flora of the British Isles* ed. 3. Cambridge University Press, Cambridge.

BOB ELLIS, 11 Havelock Road, Norwich, NR2 3HQ
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APPENDIX A: GRID REFERENCES

Reading a grid reference from an Ordnance Survey map

If you are unfamiliar with taking grid references, the following may help.

On an Ordnance Survey map, there are grid lines that help you take a grid reference. These lines identify squares of various scales. There is a 100km grid (giving squares with sides 100km long) which is sub-divided into a 10km grid (giving squares with sides 10km long), and finally a 1km grid (giving squares with sides 1km long).

A grid-reference is made up of three parts:

1. The 100km square reference (two characters)
2. The Eastings (one, two or three figures)
3. The Northings (one, two or three figures)

The first of these (the 100km square) always consists of two characters. It can be in either numeric or alphabetical format but the alphabetical format is most often used. In the 1:50,000 Landranger maps and 1:25,000 Explorer maps, the 100km grid letters are given in each corner of the map.

The Eastings and the Northings identify where you are within the 100km grid square. The number of figures you give determines the scale of accuracy and which grid square you're dealing with. If you give 1 figure for East and 1 for North you get a '2-figure grid reference' and this will identify a 10km square within the 100km square. If you give 2 figures for East and 2 for North, you get a '4-figure grid reference' and this will identify a 1km square within the 10km square.

<u>Type of grid reference</u>	<u>No. of figures</u>	<u>Example</u>
100km square		SH
10km square	2	SH67
1km square (monad)	4	SH6873
100m square (hectare)	6	SH695739
10m square	8	SH69517392

To find the 10km and 1km grid reference, look at the margins of the map. The 10km grid lines are usually slightly darker than the 1km lines. In the 1:50,000 Landranger maps, the margins of the map will contain 2-figure numbers (e.g. 52) identifying each 1km square. The first of these figures (5) is the 10km grid reference and the second (2) is the 1km reference. Remember to give the 'Eastings' first (the number in the top or bottom margin of the map) and then the 'Northings' (the number in the left or right hand margin).

To take a six figure grid reference, look at the 1 km square you are in and divide each side (East and North) into 10. Work out how many tenths you are East (e.g. 5), and then how many you are North (e.g. 9). Try to identify the square that includes your position – don't think of it as the nearest 'point'. Add these figures on to the end of the each part of the four figure (1 km square) grid reference.

Another common type of grid reference is a 2km square (a tetrad). To take a 2km square reference, simply look at the 1km grid lines and completely ignore the odd-numbered ones (i.e., 1, 3, 5, 7 and 9). The remaining lines will be even-numbered and form squares with 2km long sides (tetrads). Give the 10km square reference and add a character to the end identifying the tetrad using the 'DINTY' table (fig.1).

8	E	J	P	U	Z
6	D	I	N	T	Y
4	C	H	M	S	X
2	B	G	L	R	W
0	A	F	K	Q	V
	0	2	4	6	8

Fig.1 'DINTY' table for labelling tetrads

Checking grid references on-line

There are now several on-line utilities for checking grid references

These include:

The BSBI's own utility <http://bsbidb.org.uk/gridref.php> (you don't need to be registered to use the tool)

Where's the path app <http://wtp2.appspot.com/wheresthepath.htm>

Cucaera Grid Reference plotter <http://www.cucaera.co.uk/grp/>

All of these will allow you to enter a grid reference and show the square that it represents against either a map or a satellite image. If you have noted grid references in the field without using a GPS device, you can enter each grid reference into one of these utilities and check that location of your plant falls within the square displayed (it's best to do this while the day's recording is fresh in your mind).

When taking grid references, please give as much detail as possible. The coarsest resolution used in botanical recording these days is the tetrad. If you come across a Red List, rare, scarce or otherwise notable species, please give a minimum of a six figure grid reference. The customised recording cards for this project list the commoner species so anything that isn't on the list should be given a detailed grid reference. There is also space on the cards to give other information about a record, e.g. population size, and this will be welcomed.

Finally, please get in touch with the vice-county recorder when working in any area. They will be able to advise you which level of recording would be most helpful (they may be surveying their county in monads and would appreciate monad recording). They will also try to answer any questions you may have about recording in their vice-county.