

Recorder 2002

**Recorder 2000 with Introduction
booklet**

Recorder 2000

Biological Recording Software for *Windows*

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Version 1

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1 Introduction

Thank you for purchasing your copy of *Recorder 2000* which we hope you will find a useful tool for managing and reporting on biodiversity information. This booklet forms part of the help and support resources that are available, either included on the CD-ROM or elsewhere. The full range of these resources is described briefly below.

1.1 Documentation on the *Recorder 2000* CD

- The *Recorder 2000* Introduction (this document)

This booklet provides details about installing the software and an overview of *Recorder 2000* and its features. It is intended as a quick guide to what you can do with the software. It also provides an introduction to some of the key concepts and is therefore essential reading for new users.

- The *Recorder 2000* Getting Started Guide

The Getting Started Guide is a tutorial on certain aspects of *Recorder 2000* and is included on the CD-ROM. It is an interactive resource which goes through, step by step, how to record new data, produce distribution maps and design reports. The tutorial includes a number of screen movies alongside the text that show in detail how to use the software. It is started by clicking on the icon in the *Recorder 2000* group of the *Windows* Start Menu. After using the tutorial (which should take 2-3 hours) you should be familiar enough with the software to start recording your own data.

- Online Help

Like most *Windows* software, *Recorder 2000* includes context sensitive Online Help. This comprehensive resource includes detailed descriptions of each part of the application and how to use it. If you need immediate help when using a particular feature in the application, press the [F1] key and the help relating to the screen you are using will appear. The Online Help is also included on the CD-ROM as a word processed document which you can print.

1.2 Recorder Internet Resources

- The *Recorder 2000* Website

This is part of the National Biodiversity Network (NBN) website and provides a wealth of information on all aspects of *Recorder 2000* for both users and developers. The website is the principal means of disseminating software updates and patches, additional documentation, examples and downloadable files. Its address is www.nbn.org.uk (click Projects- Standardising – *Recorder 2000*).

- The *Recorder 2000* Forum

This is also part of the National Biodiversity Network website and allows users of *Recorder 2000* to discuss any issue relating to the software. There are tips and other items of interest. The forum is located at: www.nbn.org.uk (click Forum – *Recorder 2000*).

2 Installing Recorder 2000

2.1 Requirements

- A 32 bit *Windows* operating system including *Windows 95, 98* or *NT*
- A machine suitable for running one of these operating systems. A Pentium 233 or better processor with 32Mb or more RAM is desirable.
- A CD-ROM drive for installation. If the user chooses not to install the whole Taxon Dictionary to their hard disk, the CD may also be required for operation.
- 800 x 600, 256 colour graphics card or better.
- A full installation occupies about 100Mb of hard disk space, about 85Mb of which is occupied by the Taxon Dictionary.

2.2 Installing on a single, standalone computer

- Insert the *Recorder 2000* CD into your CD-ROM drive. The CD will probably start automatically. In this case, click on 'Install on single computer'.
- If it does not start automatically, select Start – Run from the *Windows* menu. Click the Browse button and locate the file \standalone\Setup.exe on the CD-ROM. Click the Open button and then the OK button.
- In either case, follow the on-screen instructions to complete installation. When you are asked for your Site ID and Verification Key, you will find them on your license agreement form.

2.3 Installing on a network server

- Insert the *Recorder 2000* CD into the server's CD-ROM drive.
- The CD will probably start automatically. In this case, click on Install on a network server.
- If it does not start automatically, select Start – Run from the *Windows* menu. Click the browse button and locate the file \server\Setup.exe on the CD-ROM. Click the Open button and then the Ok button.
- In either case, follow the on-screen instructions to complete the installation. When you are asked for your Site ID and Verification Key, you will find them on your license agreement form.

NOTE: If you are installing on a Netware server with a long filename support, you are advised not to use a name longer than 8 characters and/or containing spaces for the directory path in which to install *Recorder 2000*. Long names can lead to *Recorder 2000* obtaining incorrect path names from the registry, and being unable to find some of its components.

2.4 Installing on a network workstation

You must first install *Recorder 2000* on the network server.

To install *Recorder 2000* on a network workstation

- Select Start – Run from the *Windows* menu.
- Click on the Browse button and locate the Setup.exe file in the *Recorder 2000* directory on the network server. Click the Open button and then the Run button.
- Follow the on-screen instructions to complete the installation.

2.5 Location of Files

- The program file (Recorder2000.exe), database (nbndata.mdb), and digitised site boundaries (the four files in the Object sheet directory) are located on the server.
- Rucksacks, recording cards, saved queries, Addins and background maps are all located in directories on the workstation.

3 Overview of Recorder 2000

3.1 What is Recorder 2000?

Recorder 2000 is designed so that a wide range of users in the recording community can use a single standard system to manage their data. This facilitates the exchange of data from different users and thereby increases the available information about the natural world (a fundamental aim of the National Biodiversity Network). *Recorder 2000* can:

- Collect and collate a wide range of environmental information
- Facilitate rapid data entry
- Permit the exchange of information between copies
- Establish a set of standard names for species and biotopes (the species and biotope dictionaries)
- Allow customisation to meet additional requirements
- Produce some simple reports and distribution maps
- Link easily to other *Windows* software, such as word processors, spreadsheets and Geographical Information Systems (GIS)

4 Features at a glance

This section provides a brief description for some of the features in *Recorder 2000*. A more detailed description is available in the Online Help.

4.1 Interface

There are consistent ways of entering data, selecting items, finding, searching, navigating etc.

- The main Windows have a list of available items displayed on the left and details of the currently selected items displayed on the right.

- The list of available items is often a hierarchical tree-view which makes relationships like taxonomic hierarchies or sites and sub-sites very clear.
- Commands are available via a dynamic menu with keyboard shortcuts, configurable tool bars, and right click menus.
- Extensive use is made of 'Drag and Drop', but alternative mechanisms are available via Copy and Paste and keyboard shortcuts.

4.2 Edit and Browse Modes

Recorder 2000 makes a distinction between “Browse” mode, during which you are navigating around viewing data, but not changing anything; and “Edit” mode, during which you are adding a new record or editing an existing one.

This is an important feature for a new user to get to grips with, and remains a source of annoyance for experienced users! It is very easy to start typing some change to your data, only to find it is not accepted because you are not in Edit mode! However, it was designed in this way to protect your data. The underlying database, Access 97, is normally in Edit mode, and saves changes when you move to another record. If this behaviour was allowed, unmodified, in *Recorder 2000*, it would be very easy to change something unintentionally (by hitting the wrong key while moving from one record to another, for example). Once you moved to the next record, the change would be committed and the original data lost for good, probably without you even being aware it happened. Consequently, in *Recorder 2000* you are forced to make an explicit decision to make a change – even though it can be irritating at times to have to remember to do so!

- To enter Edit mode, press the Add button to add a new record, or Edit button to make changes to the currently selected record (or alternatively select Add or Edit from the Edit menu).
- You can tell you are in Edit mode because the Add and Edit buttons become inactive (the caption goes grey), but the Save and Cancel buttons become active instead. Also, required fields may show a coloured background (see “Use of Colour” below).
- Once in Edit mode, you can enter new data or make changes to existing entries. When you have finished editing, press the Save button to save your changes to disk, or the Cancel button to abandon changes. In the latter case, the screen is restored to its state before you started editing and nothing is saved to disk. The window then returns to Browse mode.

4.3 Use of Colour

- **Mandatory Field Background Colour**

Certain fields are required – i.e. you have to enter valid data before *Recorder 2000* will allow you to save the record. These are indicated by colouring their background. Yellow is used by default, but you can change this colour in the Tools – Options – Appearance window. If you set this colour to be the same as the “window text” background colour (set in *Windows* Control Panel – Display – Appearance) you can effectively turn this feature off.

There are cases where required fields do not have a coloured background. Sometimes it is necessary to enter a particular sort of information, but it could be provided in different ways in alternative fields. For example, a *Survey event* needs some sort of location, but it could be provided by giving a grid reference and/or linking to a *Location*. In such cases the mandatory colour is NOT used for any of the alternative fields (because you can leave all but one of them empty), but you will get an error message if you try to save the record without providing the necessary information in at least one.

- Information Source and Destination Coloured Borders

Recorder 2000 also makes extensive use of the Drag & Drop (see below). Coloured borders around fields are used to indicate places from which you can drag an item (the “Information Source”) and places which it can be dragged (the “Information Destination”). Some fields act as both source and destination and have dashed borders of both colours. The default colours are blue and red respectively, but you can change them or turn this feature off in the Tools – Options – Appearance window.

4.4 Finding things

One of the most frequent tasks during data entry is to find an item in another table. For example, when you are prompted for the name of a species, you must find the one you need from the taxon dictionary. *Recorder 2000* provides a number of ways to do this.

- **Drag and drop**

Arrange your screen so that both the taxon dictionary and the data entry *Windows* are visible. Click on the name you need in the taxon dictionary using your mouse so that it is highlighted, and hold down the primary mouse button. Now move the mouse pointer, continuing to hold down the button (“drag” the item), until the pointer is over the field where you need the name. Then release the mouse button (“drop” the item) and the name should appear.

NOTE: Destination fields will only accept information of the correct type. You can’t drop (or paste) a species name into a prompt for a *Location*!

- **Copy and paste**

Highlight the name you need in the taxon dictionary. “Copy” the item to the *Windows* clipboard by selecting Edit – Copy from the menu or by pressing the keyboard shortcut [Ctrl-C]. Now click in the field where you need to use the name and select Edit – Paste from the menu or press the keyboard shortcut [Ctrl – V].

Copy and paste is particularly useful for moving items to and from other *Windows* software. For example, you could use exactly the same technique to copy a site description from a Site Management Plan you already have as a word processor document, to the Description field in a Location window, or to copy text from *Recorder 2000* when writing such a document.

- **Find and return**

Prompts that need data from elsewhere in *Recorder 2000* have a Find button. If you click this button, the window from which the item can be obtained will be displayed. Choose the item you need to use and return it to the window you started from by choosing Edit – Return data from the menu, pressing the shortcut [F9], or clicking the button in the toolbar.

- **Search for matching word**

Perhaps the easiest and quickest way of finding the item you need is to type part of its name into the prompt and then press [Enter]. *Recorder 2000* will search the appropriate table for matches. If only one is found, the prompt will be filled in immediately. If several matches are found, a “Find” dialog box will appear with the text typed shown at the top, and a list of matching items.

Once in the Find Dialog, you can continue to type in the “Search Text” prompt. As you type, the list is updated to show the current set of matching items.

To retrieve the item you need, select it from the list (you can use the arrow keys on the keyboard), and press [Enter] or click the OK button. You can also just double-click an item. If you press [Esc], or click the Cancel button, the dialog box will close without returning anything.

Recorder 2000 looks for items “starting with” your text, but ignores the case of the letters. For example, if you are at a prompt for a *Location* and type “wood”, you might see “wood near Yaxley”, “Wood End” and “Woodland Grove” in the list. You can also prefix the word with an asterisk e.g. “*wood”. This searches for items “containing” your text and would find additional matches like “West Wood” and “Alderwood Common”.

When you are searching for species names you can type words from the scientific name, including synonyms or common names of the species you need. You can also type a five letter abbreviation formed from the first two letters of the generic name and the first three letters of the specific name. For example, *Phylloscopus sibilatrix* could be found by typing “*phsib”.

NOTE: You must use the “*” prefix for this type of search to work.

4.5 Data Items

Recorder 2000 stores a wide range of information in its modular database. This is organised into *Surveys*, *Survey Events*, *Samples*, *Taxon occurrences*, *Biotop occurrences*, *Locations*, *Features*, *Documents*, and *Names and addresses*. Each of these types of data has an entry screen associated with it where the user can view and manage their data. These are described in detail below.

4.5.1 Surveys, Survey events and Samples

Recorder 2000 has a modular database that allows users to record virtually any information about the natural world in a standard way. As a user, you don't need to know anything about the database, but to use it effectively you do need to understand some of the concepts behind it.

Recorder 2000 uses *Surveys*, *Survey events* and *Samples* to organise biological observations. These concepts are at the core of the software and it is essential to understand how they relate to real biological surveys.

In the context of the NBN, all observations form part of a *Survey*. This documents why recording was carried out, who organised it, and over what time period and geographic area. The survey to which particular records belong will be obvious when your recording activity contributes to an organised scheme, but many people also make records that are not part of an organised scheme (e.g. recording plants or butterflies in the garden). In this case you may need to set up one or more surveys of your own (e.g. "My garden records").

A *Survey event* is best thought of as a site visit. It documents which recorders visited a particular place at a particular time.

A *Sample* documents the activity that results in observations. One or more of the recorders involved in a *Survey event* do some recording. They might go to a particular point and count all the birds they see, or walk a butterfly transect route or throw down a quadrat and record the plant species within it. The *Sample* documents who did the particular piece of recording, which method they used and exactly when it was done. The "where" and the "when" can be recorded in more detail. For example, a *Survey event* might record the general site and date when it was visited, whilst the *Sample* can provide more precise details of from where exactly the birds were counted, the time at which the count started and how long it took.

A *Sample* may result in any number of *Taxon occurrences* and/or *Biotope occurrences* recording the species and habitats that were observed.

4.5.2 Locations

Locations document particular places which can be created and edited by any user and used throughout the software. In this respect they differ from *Administrative areas* (see Administrative Areas dictionary) which are not user-defined, but are system-supplied names which represent agreed names for places, such as county or town names.

Locations are designed to store information about well defined sites such as nature reserves, designated sites etc., but can be used for any "site". A wide range of information can be stored, including names(s), description, location, designations and ownership. Any measurements relating to the location (e.g. area, altitude, soil pH) can also be stored. *Locations* can be associated with digitised boundaries or lines (e.g. transect routes) on the map.

Locations support sites and sub-sites to an unlimited level of nesting. The site – sub-site hierarchy is viewed and managed graphically, making it very easy to rearrange.

Features

Features are significant aspects of *Locations* that are managed or monitored:

- They are associated with a *Location*
- They document important features of a *Location* and store information about management, threats and damage

They could, for example, be the reasons for which a designated site was notified or the items for which specific provisions are made in a management plan. *Features* are most likely to be used by organisations responsible for the management of sites.

4.5.3 Documents

Documents are references to published or unpublished work, and the *Documents* screen can be used to add references to books, journals, etc. These can be referenced as the source for any other information in the system.

4.5.4 Names and Addresses

This stores information about the name, address(es) and contact details for organisations and individuals mentioned elsewhere as the recorders and determiners of observations, or participants in surveys, owners of sites, etc. Information can also be stored about communications that have been received and associate organisations and individuals, e.g. record that an individual is a member of an organisation.

4.5.5 Measurements

This *measurements* page is used in a number of data entry screens in *Recorder 2000* to hold any type of measurement (for example, the air temperature when a particular sample was made). In this case, the *Measurements* screen is used because there is no specific box to record the temperature.

Measurements have 5 fields:

- *Measurement*. This refers to which type of measurement you are making, e.g. temperature.
- *Qualifier*. This describes what is being measured, e.g. air or soil surface temperature.
- *Data*. The actual value measured, e.g. 24.
- *Unit*. The unit of measurement, e.g. degrees Celsius.
- *Accuracy*. This can be chosen from the list or typed directly, e.g. $\pm 2\%$.

4.5.6 Sources

The *Sources* page occurs in most of the main data entry screens. It allows documentary sources of information to be indicated by referring to an entry in the *Documents* window. It also allows external files to be linked to the record. These could include word-processed files, pictures, sounds or any other type of file supported by your computer.

4.6 Special Data Types

4.6.1 Dates

It is common, when dealing with biological information, to state a range of dates (e.g. the period for which a trap was set), or that dates are not precise. The latter is especially likely when dealing with material from older collections or extracting information from literature. To cope with these situations, *Recorder 2000* allows users to specify dates in a flexible way, including a precise date (25/03/1998), a range of precise dates (17/25/03/1998), a month (Mar 1998), a month range (Mar-May 1998), a year (1998), and a year range (1996-1998).

4.6.2 Grid Reference Systems

The geographical co-ordinates for a position on the Earth's surface can be specified in a wide variety of different systems. Some (like Latitude and Longitude, and UTM) are global, whilst others are local in scope (like National Grid systems). *Recorder 2000* supports multiple spatial reference systems, and four are supplied:

- Ordnance Survey National Grid for Great Britain
- Ordnance Survey National Grid for Ireland
- Latitude and Longitude
- Universal Transverse Mercator (UTM)

You can select the spatial reference system you wish to use to use to display and report positions, by using Tools – Options – Spatial References. Spatial references can be entered using any supported system and are stored as latitude and longitude co-ordinates internally.

4.7 Dictionaries and Terms Lists

The *Recorder 2000* Dictionaries are included in the software to promote a standard system for naming various items, notably species or biotopes. The Dictionaries are NBN standards that are in use in other pieces of software, so that there is no confusion in terminology or nomenclature when using data within the NBN.

4.7.1 Taxon Dictionary

This dictionary was designed to manage multiple checklists and the relationships between the names that appear on them. *Taxon occurrences* should record the name reported by the observer (including which checklist it was derived from) and this

information should not change. The dictionary can report the “correct” name for the taxon from the checklist that is preferred at the time. The dictionary is maintained by an NBN project led by the Natural History Museum. Updates are made available via the NBN website.

The dictionary also contains a variety of related information, including designated statuses of taxa and “facts” (species accounts) about taxa from a variety of sources. Users can add their own statuses and “facts”.

Users can add new taxa, although observations associated with such user-added taxa are not exported. Facilities are available to reconcile these entries with a main dictionary update.

4.7.2 Biotope Dictionary

Designed as a means of managing multiple biotope classifications, this dictionary will be maintained by an NBN project led by the JNCC. Updates will be made available via the NBN website.

The dictionary also contains a variety of related information, including “facts” (biotope accounts) about biotopes from a variety of sources. Users can also add their own “facts”. Users can add new biotopes, although observations associated with such user-added biotope categories are not exported. Facilities are available to reconcile these entries with a main dictionary update.

4.7.3 Administrative Areas Dictionary

This contains lists of the names of administrative areas (e.g. pre-1974 counties, 1974-1996 counties and districts, current unitary authorities, Watsonian vice-counties). These lists can be hierarchical when appropriate (e.g. county, district, and parish). Updates are made available via the NBN website.

4.8 Terms lists

A wide variety of terms are used throughout the system (e.g. sample methods, designation types, measurement units). These are managed in terms lists which users can make additions if necessary.

4.9 Rapid Data Entry

Many species observations are initially recorded via “recording cards” which include a section where basic information (date, place, observer’s name) are entered and a list of the species that were observed. A facility to capture this sort of data rapidly is provided which has a header section and a list of species which can be “ticked off”. The species list and associated information presented on this screen are configurable. The configuration details are saved in a text file which can easily be distributed to others.

A mechanism is also provided to allow rapid entry of individual records. This permits rapid entry, for example of a list of locations for a species.

The “rucksack” is an innovation which allows users to store named lists of frequently used items (names of species and habitats, locations, observers, etc.) which can be saved and loaded at any time. These are then quickly to hand during data entry, avoiding the necessity to look them up each time from the main tables – which may be time consuming. The list which appears on a “recording card” can be obtained from a rucksack, so it is very easy to make your own customised data entry card.

4.10 Reporting Facilities

The built-in reporting facilities are designed to provide quick and easy answers to the questions:

- Which taxa and biotopes occur at a given place?
- Which occurrences of given taxa or biotopes are available?

The resulting report can be printed, mapped or saved in a variety of file formats including plain text, comma separated text (CSV), RTF, HTML and Excel spreadsheet files (XLS). Reports are generated using a Report Wizard, which leads the user through the process in simple steps. Therefore, more complex reporting and analysis should rely on other software (word-processors, spreadsheets, statistical packages, Geographical Information Systems).

4.11 Mapping

Recorder 2000 can display a background map over which distribution data can be displayed. Background maps can be imported in a variety of common raster and vector formats, including BMP, TIF, SHP, MIF, DXR. Distribution maps of observations, sampling stations and *Survey events* can be displayed and printed. Observations can also be exported in a suitable format for the *DMAP* package which is widely used in the biological recording community.

Locations can be associated with digitised boundaries. Boundaries can be drawn using the mouse, or imported in a variety of common vector formats.

The on-screen map can be used to obtain spatial references and identify the location of observations by clicking on a point on the map. The accuracy of the co-ordinates which are returned depends on the scale of the map which is being displayed. If the point that is clicked is within a digitised boundary associated with a *Location*, then both the co-ordinates and *Location* name are returned. This allows users to locate their observations precisely at the same time as associating them with large geographical areas such as “sites”.

Using a map to get an accurate grid reference and location for a sample

- Starting from the recording card, the find button next to the “spatial ref” prompt was pressed to display the Map Browser window.
- The map in the Map Browser window is an OS 1:50,000 map tile for the Swansea area with digitised site boundaries for SSSI’s that were obtained from CCW.
- The sampling point was indicated by clicking on the map. This was within the digitised boundary for Crymlyn Bog SSSI as shown by the red hatched area.
- The grid reference and the Location names were filled in on the recording card by pressing the keyboard shortcut [F9] (or clicking on the return data button on the toolbar).

4.12 Data Transfer

Recorder 2000 facilitates data exchange between users. This means that you can easily transfer data to your peers or scheme organiser and *Recorder 2000* will take care of any duplicate or invalid data during the import process. However, if you import data from another copy of *Recorder 2000* you will not be able to edit this data – if changes are required, you will need to go back to the person who originally entered the data and ask them to edit it, and then re-import. This avoids problems of data corruption in an information network where any user can edit any record.

The application can read and write data in “NBN transfer format” using eXtensible Markup Language (XML). The Document Type Definition for NBN transfer format is published and freely available via the NBN website.

4.13 Users, security and networking

Each copy of the application is given a unique identifier which forms part of all record keys. This allows information to be moved from one copy to another without conflict or over-writing. A user must be registered for a particular copy to use it, and must enter their user name and password at log-on. All records are stamped with the identifier of the user who added and last changed them.

The application supports multiple concurrent use in a network environment. It was specified to cope with up to 10 concurrent users of a database containing up to one million observations. Five levels of user access are supported, from “system manager” – who can create users, to “read only”.

4.14 Customisation

Recorder 2000 allows the user to customise many parts of the application, from changing the appearance to creating their own list of regularly used species names and locations. However, there may be some circumstances where the user needs to extend the features of *Recorder 2000* to meet their own specific needs, and they are unable to do this with *Recorder 2000* as supplied. In these cases, *Recorder 2000* can be extended through the use of *Addin* modules which can be developed and integrated into the software. These are implemented as COM objects. Documentation of the COM interfaces supported by the application is available via the NBN website.

5 Acknowledgements

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