

Recorder 6

Exporting data from Recorder 6 to the NBN Gateway

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1 Introduction

This tutorial is suitable for all skill levels.

The NBN Gateway is the primary route within the NBN to publish data to a wide variety of users. This includes both the actual providers of data to allow things like integration of maps within websites or distributing data validation across a wide number of individuals as well as allowing the use of the data within other users such as local planning authorities and the Country Agencies.

Data must be supplied for loading onto the Gateway in a standard format known as the “NBN Exchange Format (v2.1)”. This tutorial explains how to generate data in this format from Recorder 6 using a Recorder extension (addin).

The overall approach is to install an addin to Recorder that specifies an additional export filter. This then allows data to be exported in the NBN Exchange format anywhere that “Export data” is found in Recorder. This includes individual surveys, report wizard outputs and export filters.

2 Installing the addin

If you are upgrading from an earlier version and already have a copy of this addin installed, you must uninstall it first before installing the new version. Start Recorder 6 (if it is not already running) and select Tools - Install - Add-in Module from main menus. Select the addin name in the list and click the [Remove] button. You should then exit from Recorder 6 and restart it before attempting to install the same addin again. **Note that you should**

properly uninstall it and not just delete the old file as a variety of other updates to the database also need to be removed.

To install the addin:

Step 1. Unpack the files from the supplied .zip file to some convenient directory accessible by the computer running Recorder 6 (but NOT to the Recorder\Addins directory!).

Step 2. Start Recorder 6 and select Tools - Install - Add-in Module from main menus.

Step 3. Press the Install button and then use the standard Windows "Open" dialog to find the .OCX file in the directory to which you unpacked the files in step 1.

Step 4. When you have found the file, press [**Open**]. You will be prompted to login to the SQL Server database as an administrator. This is necessary to allow this addin to install the stored procedures and user defined functions it needs. You can use a "Trusted connection" associated with your Windows user account (provided this has administrator privileges to the database), or supply the username and password for a SQL Server account.

Step 5. You should see messages reporting that the add-in has been installed and it should appear in the list of addins in the "Addins Configuration" window.

Step 6. If you are re-installing the add-in you may see messages saying the add-in has been previously installed. Just press [**OK**] to replace it with the newer version.

3 Running initial checks on the data

Before actually exporting the data to the NBN Gateway you should run some basic checks on the data.

3.1 Checking for non-system supplied species names

Where there are species names missing from the NBN dictionary, Recorder allows the user to actually add these names. This is really intended as a temporary fix so that the missing names should also be supplied to the Natural History Museum so they can be verified and later shipped with the main dictionary. Any records that have been made against these temporary names (i.e. before they are included within the main NBN dictionary) will not be exported. This may not be too much of a problem to the data owner but it is still worth checking the extent of the problem before exporting data. An XML report is available which lists any species names which will not be exported along with the number of records that have been made against each.

To run the XML report:

- Select Reports -> Run
- Open the "Record validation" directory
- Click on "Non-system species names"
- Click "OK"

If the report is not available it can be downloaded from the Recorder website (www.recordersoftware.org) which also includes instructions on how to install it.

A separate tutorial will provide further information on re-determining records made against temporary names to permanent ones (i.e. after the names have been officially published as part of the NBN dictionary).

3.2 Basic checks on the geographical positions of the records

Particularly when records have been imported from a range of sources, it is possible that the occasional rogue position may have crept in. This can be caused by, for example, the position being wrongly keyed when entered or the user simply getting coordinate systems confused. Work to allow more complex checks to be run is currently under development but as an interim a very basic XML report has been created to identify records that are beyond what would normally be considered the UK and Ireland.

To run the XML report:

- Select Reports -> Run
- Open the “Record validation” directory
- Click on “Geographic Validation”
- Click “OK”

The report returns a list of records that fall beyond the following bounding box (latitude 48 to 62 degrees longitude -11 to 4 degrees).

4 Exporting data in NBN Exchange format

4.1 The first time you export data from Recorder 6

The first time you export records from Recorder 6 you will be prompted to provide some metadata about your particular database (figure 1). This metadata information is required in order to proceed with the export. However you only need to enter this information the first time you export data from Recorder, after which it is stored in the Recorder 6 database and reused on subsequent exports. To access and edit the metadata information stored, start Recorder 6 and go to **Tools – Export Management – Edit metadata...** For a brief explanation of all of these fields please see Recorder 6 Help.

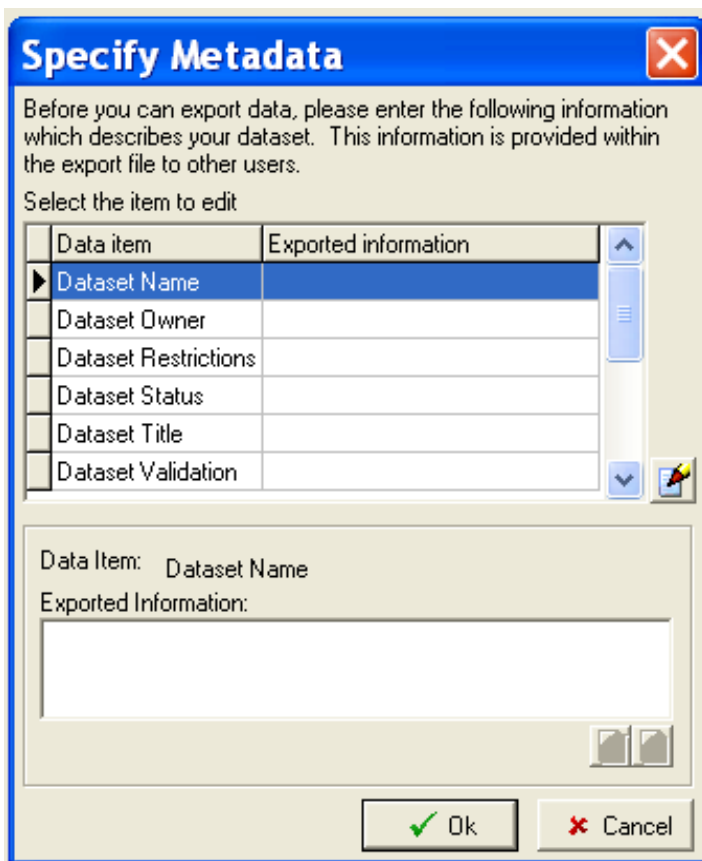


Figure 1: Metadata form for exporting from the Recorder 6 database.

4.2 NBN export options

Once installed the option to export data in the ‘NBN Exchange format’ is available in the ‘Data Export’ screen (figure 2). Data export is available from the Observation Hierarchy, Export Filter, XML report and Report Wizard within Recorder 6 (see section 5).

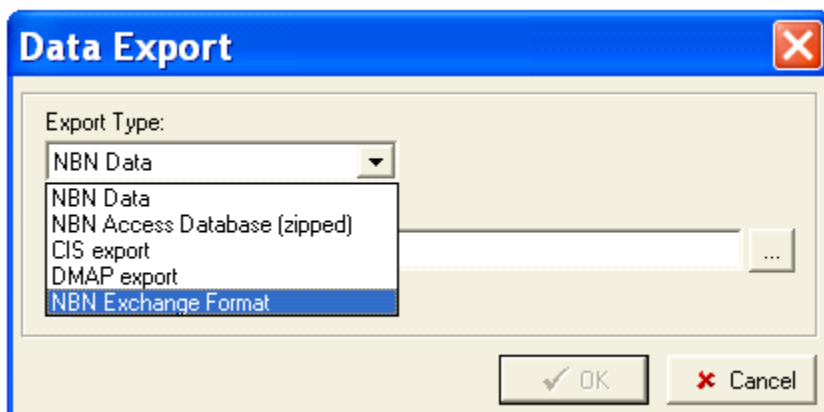


Figure 2: Data Export screen showing NBN Exchange format export option.

On exporting, select the export type of ‘NBN Exchange format’ and click on the [...] button to specify the name of the export files and where they should be saved. After clicking on the [Save] button and the [OK] button on the Data Export form a range of export options are

provided (figure 3 and table 1). Note that record custodianship is not transferred in the NBN Exchange Format. The Reassign Data Custody box should therefore be ignored and left unchecked.

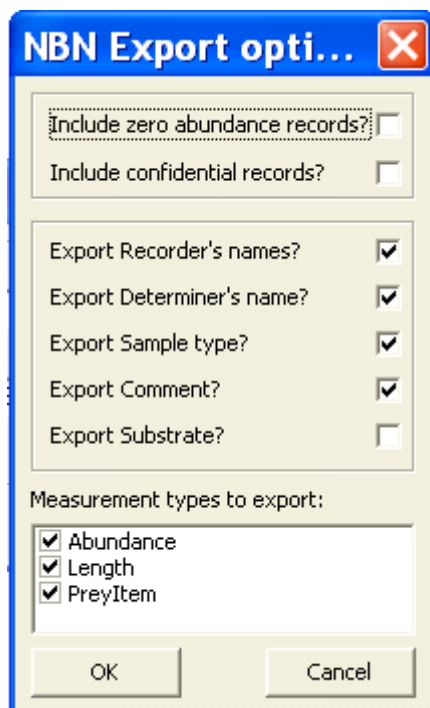


Figure 3: Options provided when exporting with the NBN Exchange addin.

Table 1: Explanation of options provided when exporting with the NBN Exchange addin.

Option	Explanation
Include zero abundance records	<p>If selected includes any records which have a count of 0 for an abundance measurement (e.g. 0 adult, 0 juvenile, 0 droppings) - where the Zero_Abundance field in the Taxon_Occurrence table has been set to true (1).</p> <p>See section 5 for details on how to export zero abundance records when using the Report Output – Export data function (available after running an XML report or via the Report Wizard).</p>
Include confidential records	<p>This option will be greyed out if in Recorder 6 - Tools – Options the ‘Enable export of confidential occurrences’ option in the General tab has not been checked. This option can only be checked by system managers (e.g. default user) and Recorder must be restarted for this to take effect.</p> <p>Note: Even if the ‘Enable export of confidential occurrences’ has been checked, only users with Full Edit (own data only) and above privileges are able to export confidential records.</p> <p>See section 5 for details on how to export confidential</p>

	records when using the Report Output – Export data function (available when running an XML report or via the Report Wizard).
Export Recorder's names	If selected the export will include recorder's names associated with a record (stored at the Sample level in Recorder 6) in a concatenated list, separated by commas.
Export Determiner's name	If selected the export will include the determiner's name (of the <i>preferred</i> determination only) for each record.
Export Sample Type	If selected includes the Sample Type (e.g. Field Observation or Pitfall Trap) stored at the sample level for each record.
Export Comment	If selected the export will include any comments (stored at the Taxon Occurrence level) associated with the records exported.
Export Substrate	If selected includes the Substrate (e.g. Clay or Leaf Litter) stored at the taxon occurrence level of each record.
Measurement Types to be exported: E.g. Abundance	<p>The addin checks what measurement types may be available for export at the <i>taxon occurrence level only</i> and lists them here (e.g. Abundance, Length). In Recorder 6 see Tools – Term Lists and select list 'Measurement Type' for details or press F1 for Recorder 6 help.</p> <p>If checked a field is created in the export file for each measurement type (e.g. abundance) and for each record all measurements of this type are concatenated into this field, separated by a semi-colon.</p> <p>Each measurement is formatted as follows: [Data] [Qualifier] (Accuracy) E.g. 2 Female (Exact)</p>

Finally, at the end of the export process the following screen displays the number of taxon occurrences that have been exported and details of the export files created. You are given the option to keep the tab-delimited .txt file (containing the records in NBN Exchange format) and .xml file (containing some metadata information) that have been created, as well as a .zip file containing both files (figure 4).

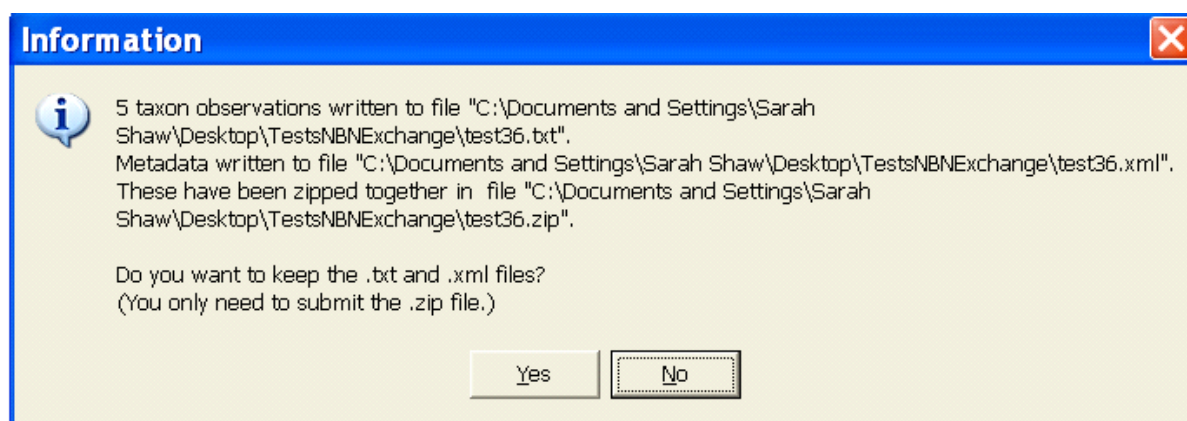


Figure 4: Dialogue box with option to keep the .txt and .xml files.

5 Routes for selecting data for export

The Data Export screen (see section 4.2) can be accessed from a number of places in Recorder 6:

- The Observation Hierarchy

Select a survey in the observation hierarchy and go to **Tools – Export data**

- Via an Export Filter

Go to **Tools – Export Management – Export Using Filter – (Filter Name)**

Records included in the NBN Exchange export file created will take into account the conditions of the selected filter, conditions specified in the 'Export Filter Settings section' (e.g. export all records for filter or all those modified after a certain date), and the options selected in the NBN Export options screen (see section 4.2).

For more information on how to create export filters please refer to Recorder 6 Help.

- In the results screen of an XML report or report wizard

In the screen displayed after a report has been run (titled 'Filter result') click on the [**Report Output**] button in the bottom left-hand corner of the screen and select 'Export Data'. The NBN Exchange format export file will include all the records selected by the report. However, note the selected constraints in the Additional Filters screen (accessed via the [**Additional Filters**] button in the 'Layout Selection' screen) of the Report Wizard. By default the following constraints are checked (figure 5):

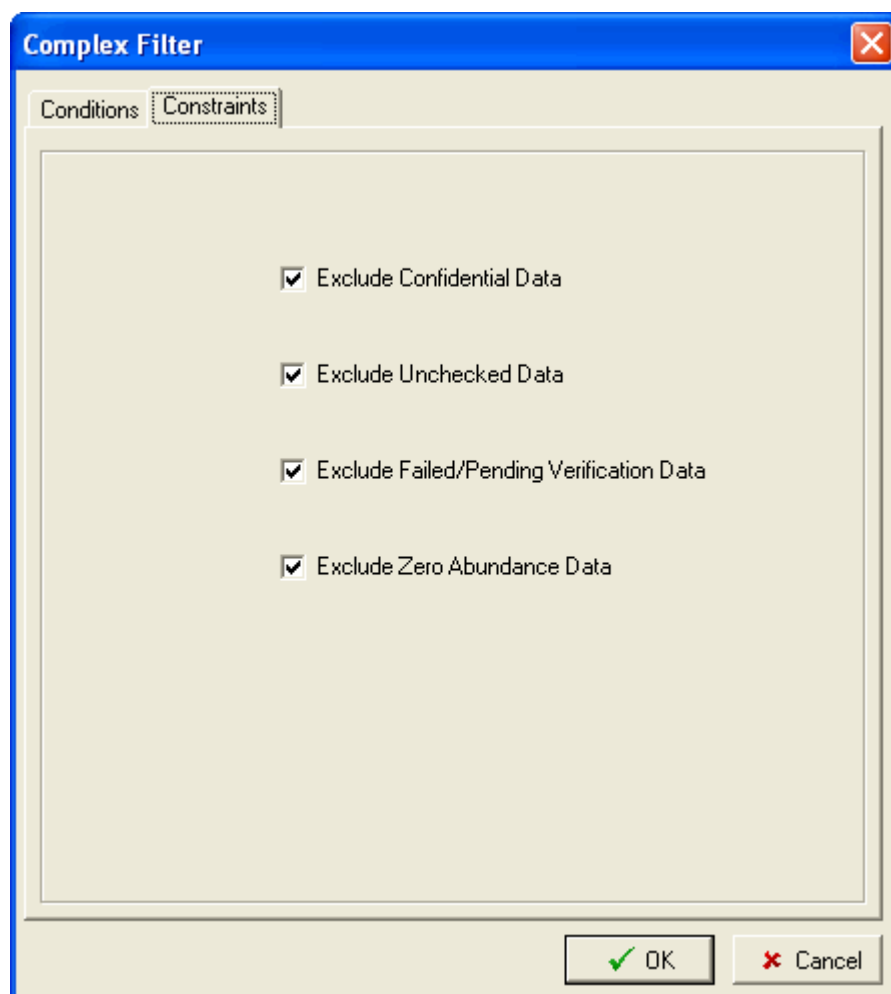


Figure 5: Constraints that are included by default.

In the above default case, the report will not contain any confidential, unchecked, failing verification or zero abundance records. If you want to include any of these records then uncheck the appropriate box(es) and click [OK].

If you wish to export confidential or records of zero abundance you will also need to ensure you have sufficient permission for exporting confidential records (Full Edit (own data only) or above) and that the 'Enable export of confidential records' option (in **Tools – Options**) has been checked by a system manager (Recorder 6 will need to have been restarted after checking this option).

The zero abundance and confidential options in the 'NBN export options' screen will still need to be checked to include confidential or zero abundance records in the NBN Exchange export file.

6 Getting the data onto the Gateway

Once the data is prepared there are a few final steps to getting the data onto the Gateway.

6.1 Prepare metadata for the dataset

Before each submission to the Gateway you need to complete a [metadata form](#) for the dataset which will accompany the data when it is loaded. This form includes:

- Details of the organisation you represent
- Who will actually administer the dataset once it is available (they will need to have a registered account on the NBN Gateway)
- The level of access that will be granted to public users
- An overall summary of the data within the dataset

Further information is available from the Data Provider Pack on the NBN Website (available from the GuideBooks/Data Guides section at <http://www.nbn.org.uk/Guidebooks/Data/How-to-start-sharing-data-through-the-NBN.aspx>).

6.2 Send the data to the NBN

If the dataset file is less than 10Mb in size, when zipped, then you can email it to data@nbn.org.uk. If your dataset is very large or email isn't convenient for you, you can contact the NBN for a suitable postal address.

The NBN Trust endeavour to keep you informed of progress loading the dataset including notification of when it is actually available.

7 Technical details – what is being exported?

7.1 What records are exported by default?

Checked records, records that are 'not validated' or have 'passed validation' are included in the export. Zero abundance and confidential records may be selected during export (see section 4). Unchecked records (Checked field in the Taxon_Occurrence table is set to 0) and records that have 'failed validation' (Verified field in the Taxon_Occurrence table is set to 1) are not included in the export file.

7.2 Location and spatial information

The location information associated with a record is contained within the 'SiteName' field of the NBN Exchange export file created. The 'SiteName' is the name in the location field in the sample table (eg 'somewhere' in this example). If there is no location name the name in the location table is used along with the location key and the location name in the sample table is ignored (eg North-east Yorkshire in this example).

Figure 6: Example SiteName.

Note: If the location associated with a record forms part of hierarchy (i.e. is a sub-site in Recorder 6) any parent location information is not exported.

Records using latitude and longitude or UTM co-ordinates are exported in the East and North fields, whereas those using OSGB or OSNI system are exported as a Grid Reference.

7.3 Source of data included in the export file

The following table indicates the Recorder 6 fields and tables used to populate the fields in the NBN Exchange format file:

Field in export (.txt) file	Source in Recorder 6 database (table.field)
RecordKey	TAXON_OCCURRENCE.TAXON_OCCURRENCE_KEY
SurveyKey	SURVEY.SURVEY_KEY
SampleKey	SAMPLE.SAMPLE_KEY
TaxonVersionKey	TAXON_VERSION.TAXON_VERSION_KEY derived from TAXON_DETERMINATION.DETERMINER where TAXON_DETERMINATION.PREFERRED = 1.
SiteKey	SAMPLE.LOCATION_KEY
SiteName	SAMPLE.LOCATION_NAME if this is null use LOCATION_NAME.ITEM_NAME (SiteKey = SAMPLE.LOCATION_KEY) and if this is null use LOCATION_NAME.ITEM_NAME (SiteKey =

	SURVEY_EVENT.LOCATION_KEY)
GridReference	SAMPLE.SPATIAL_REF
Precision	An estimate of the precision of the spatial reference in metres
Projection	SAMPLE.SPATIAL_REF_SYSTEM
East	A grid reference easting in metres
North	A grid reference northing in metres
StartDate	SAMPLE.VAGUE_DATE_START (dd/mm/yyyy)
EndDate	SAMPLE.VAGUE_DATE_END (dd/mm/yyyy)
DateType	SAMPLE.VAGUE_DATE_TYPE
ZeroAbundance	TAXON_OCCURRENCE.ZERO_ABUNDANCE
Sensitive	TAXON_OCCURRENCE.CONFIDENTIAL
Recorder	INDIVIDUAL/S from SURVEY_EVENT_RECORDER.SE_RECORDER_KEY via the SAMPLE_RECORDER table. Multiple recorder names are separated by commas.
Determiner	INDIVIDUAL from TAXON_DETERMINATION.DETERMINER where TAXON_DETERMINATION.PREFERRED = 1.
SampleType	SAMPLE_TYPE.SHORT_NAME derived from SAMPLE.SAMPLE_TYPE_KEY
Measurement Data	Derived from TAXON_OCCURRENCE_DATA.DATA, TAXON_OCCURRENCE_DATA.ACCURACY, TAXON_OCCURRENCE_DATA.MEASUREMENT_QUALIFIER_KEY (MEASUREMENT_QUALIFIER.SHORT_NAME) and TAXON_OCCURRENCE_DATA.MEASUREMENT_UNIT_KEY (MEASUREMENT_UNIT.SHORT_NAME).

8 Trouble shooting

If you encounter any problems running the add-in a good general first step is to completely uninstall the add-in and reinstall it, see section 2.

Execute permission was denied

Typical error message:

```
An internal exception occurred in the NBN Exchange addin in Stored
procedure: nbn_exchange_create_tables

The exception message is:
The EXECUTE permission was denied on the object
'nbn_exchange_create_tables', database 'NBNDData', scheme 'dbo'
```

This error message indicates that the add-in was not installed by a user with database system administrator (sa) privileges. While everything appears to have installed the system was unable to assign the appropriate privileges to the internal stored procedures. This problem typically occurs when you install the add-in using “Windows authentication” but the user does not have admin rights to the database.

To rectify: uninstall the add-in and reinstall but select System administrator on the initial screen.