

iRecord for botanists – entering records online and using smartphones

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• iRecord is an online system for biological recording designed and maintained by the Biological Records Centre (BRC) at the Centre for Ecology and Hydrology (www.brc.ac.uk/irecord). It is increasingly being used as a way of submitting, managing and sharing records, and now contains more than 1.08 million records for 3,227 plant taxa, together with over 150,000 associated photos. This total includes all ‘plant’ data and is the figure of records potentially available to BSBI, including plot records from the National Plant Monitoring Scheme (NPMS) and other Indicia-based surveys. Last year we briefly described the submission and verification of plant records via iRecord (Walker *et al.*, 2017). Here we provide a more detailed overview of its main features that are particularly relevant when recording vascular plants. In particular, we describe two new features that allow recorders to enter plant records more efficiently, and explain how records are verified and shared with vice-county recorders (VCRs) via iRecord, and why botanists might consider using it.

How do I use iRecord?

Before using iRecord you need to register for a user account. This is easy to do by clicking on the ‘Create new account’ button on the iRecord homepage (www.brc.ac.uk/irecord). You are then free to submit, comment on and share records for any taxonomic group. Individual sightings are entered using a simple ‘recording form’ that captures the species name, locality, grid reference and recorder with the option to add identification certainty, quantity, stage and photographs (Fig. 1). Unlike MapMate, iRecord allows you to enter a grid reference by clicking on a map or satellite image. Individual plant records can also be submitted using the iRecord smartphone app (irecord.org.uk/app). This largely mimics the website recording form, capturing species name, location, grid reference (calculated automatically using the phone’s GPS), date, comments, abundance, stage and photographs. The app can be used in the field without a network connection. Records are stored on

the phone until they are saved, after which they are available on the main iRecord website.

The records submitted via iRecord are stored centrally by BRC and are available to view (but not download) by all other iRecord users via the main iRecord webpage. These can be searched using filters for any attribute (e.g. taxon, date, grid reference, recorder, etc.) including within a defined geographic area of interest (e.g. site, vice-county). Personal records can also be downloaded, viewed, queried or edited at any time under ‘My records’ on the website.

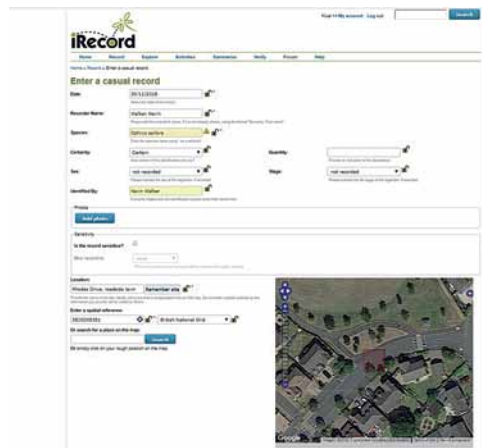


Figure 1. View of the ‘casual’ recording mode in iRecord.

Two new features for botanists

Plant Recording Form

iRecord worked with BSBI to recently introduce a ‘vascular plant recording form’ to the website, to allow entering of lists of species for grid squares (Fig. 2).

This iRecord form aims to mimic recording visits akin to completing a record (RP) card. Indeed, this can be a rapid and efficient way of capturing records from a card once returning from the field. In this mode each record is automatically assigned to the selected grid square with the option to add a more precise grid reference if available. Initially, details for the grid-square are entered (date, recorder name,

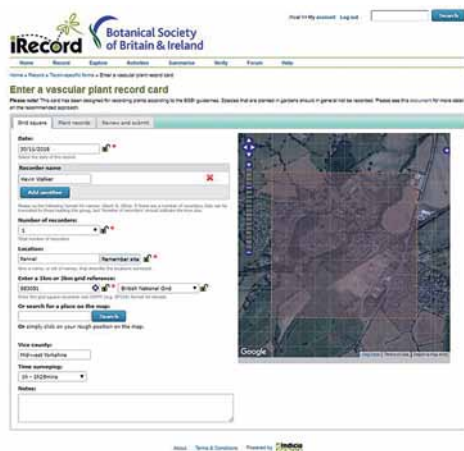


Figure 2. View of the vascular plant record card mode in iRecord used for entering lists of species for a grid-square.

number of recorders, location name, grid reference for the 1km or 2km square, vice county, time spent recording and any other information you want to capture about the square/recording event). Species are then added to this form along with any additional record-level information such as native status, stage (flowering, fruiting, etc.), finer grid reference where appropriate (the default is the grid square), and any comments. Photos can also be added using the 'Add images' tab.

Grid square recording mode on the iRecord smartphone app

Records can be submitted via the iRecord smartphone app in two ways: individually or using the 'grid-square' recording mode (Fig. 3). The latter mirrors the iRecord website form described above and allows you to select a tetrad or monad and add species sequentially as you wander through the square. For each species entered, the grid reference, recorder and date are added by default, but you can also add additional information to each record such as quantity, habitat, native status, stage (fruiting, flowering, etc.), determiner, comments, and whether the record should be marked as sensitive or not. The grid-square mode also has a very useful 'grid alert' which tells you when you have left the square. Once you have finished recording in a square the list is then submitted to iRecord in the usual way.

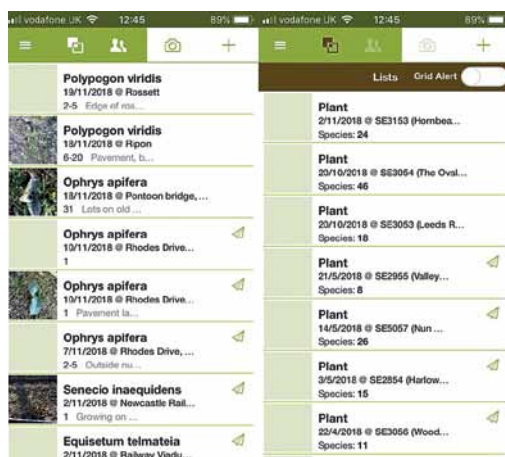


Figure 3. Recording modes on the iRecord smartphone app: left – single species entry, and right – grid-recording entry mode with lists for seven monads shown. Note that the 'green paper aeroplanes' indicate that species records/monad lists have been synced with the main iRecord website.

Validation and verification

Plant records submitted via iRecord are automatically checked for accuracy using a number of rule-sets. These include the level of expertise needed to identify a species (beginner, competent, expert) and whether a species has been recorded within the hectad before. Records of species requiring checking by an expert are flagged as needing verification before they can be accepted. Those that are out of range are simply flagged as such. Currently, plant records are verified at the vice-county or regional level by recorders appointed by the BSBI in consultation with the vice-county recorders, although many counties do not currently have verifiers. Verifiers access these records via the 'Verify' tab on the main iRecord webpage (Fig. 4), where there are options to flag a record as 'accepted correct', 'assumed correct', 'plausible', 'unable to verify' and 'incorrect'. At this stage verifiers have the option to contact the recorder and ask for clarification/further information, if required.

Where do iRecord records end up?

From early 2019, all iRecord plant records will be automatically synchronised with the BSBI Distribution Database (DDb) on an ongoing basis. The records will be kept separate and not imported to the main BSBI database until the VCR reviews



Figure 4. An example of records of non-native species requiring verification on iRecord. The details of the highlighted record for *Hydrocotyle ranunculooides* (Floating Pennywort) is shown on the map and table on the right.

them. Once incorporated within the DDb, VCRs will verify records in the same way as other datasets. Any changes to record status following verification will be exported back to iRecord so that recorders are kept informed about the status of their records. Once fully incorporated into the DDb iRecord records will be exported to the NBN Atlases alongside other data from the BSBI DDb. In the interim, all iRecord records of easy to identify species within their known range and verified plant records of more difficult to identify species will be sent directly to the NBN Atlas on a regular basis on behalf of the BSBI.

Why should I use iRecord?

iRecord provides an efficient way of entering records to the DDb and has a number of advantages over locally installed packages such as MapMate. First, because the data infrastructure is maintained centrally, records are very secure and users do not need to install updates or bug fixes, for example, as a result of new versions/software updates or when operating systems change. Second, iRecord receives considerable support from a range of organisations, including national schemes and societies, and is therefore likely to provide a stable platform for many years to come. iRecord is also a key part of the work of BRC which has been supporting biological recording for over 50 years,

with a focus of working in partnership with national recording schemes and societies. Finally, and most importantly, many active plant recorders (including one of us), are already routinely using iRecord because it removes the need for digitisation of records during the winter months, thereby significantly freeing up time and reducing transcription error rates.

References

Walker, K.J., Humphrey, T. & Roy, D. 2017. Submitting and verifying plant records using iRecord. *BSBI News* 135: 83–84.

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Asplenium marinum in Bath

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A*splenium marinum* (Sea Spleenwort) is a small native fern of coastal cliffs and walls, usually growing within the spray zone of the sea. It has a markedly Atlantic distribution, rarely grows at

altitudes above 20-30m, and requires a cool, moist situation, sheltered from full sun and frost-free in winter (Page, 1982).

On a visit to Bath (v.c.6) in July 2018, Mark and