7.3 Geotagging

7.3.1 Metadata in image files

Image files contain more information than just the image, various extra data (metadata) is added, for example the file name during its creation in the camera. Other metadata automatically added in the camera includes the camera name, lens details and so on. Settings in the camera allow additional data to be added at the time of shooting, for copyright reasons, the author's name is a good practise.

> *The metadata attached to an image file is an entirely different concept to a database that records species-occurrences. This can be seen when one attempts to make changes; in a database, changes are recorded instantly, in metadata one has to wait a little for the changes to be written back to the image file. Work on several image files at once and this can amount to quite a long wait. The unfortunate consequence is that data recorded in the metadata of digital images cannot be easily transferred to the database of a biological recording application. Data has to be transferred by copying and pasting, perhaps using a spreadsheet as an intermediary.*
>
> *There are applications capable of extracting the data from a digital image's metadata and inserting it into an SQL database (the database type that underpins Recorder 6) but nothing like this has been integrated into Recorder 6. Take a look at Kalimages (http://www.kalimages.net/EN/Index.html) if this kind of work appeals to you.*

📖 Bungartz F. Using IDimager to catalog photographs of Natural History Collections with the Darwin Core XMP metadata standard . .

Geospatial data

Geospatial information may be added too, if the camera has a GPS chip or a GPS gadget is attached, these write geospatial coordinates directly to the metadata of the recorded image file.

Geospatial details may be added afterwards by either entering coordinates manually or selecting the coordinates from the map. This can be performed through the use of a Digital Asset Management application (GeoSetter or iMatch).

A separate GPS recording device (hand-held GPS or certain kinds of "smart" devices) can record track-logs, a series of recorded coordinates, written at a specific intervals. This track-log can then be used afterwards, matching the photo's time stamp with the times recorded on the track log. This facility is built into the software that supports the hand-held GPS. In the case of Garmin it is to be found in their Basecamp software.

7.3.2 GeoSetter

Geosetter

⬇️ **GeoSetter**
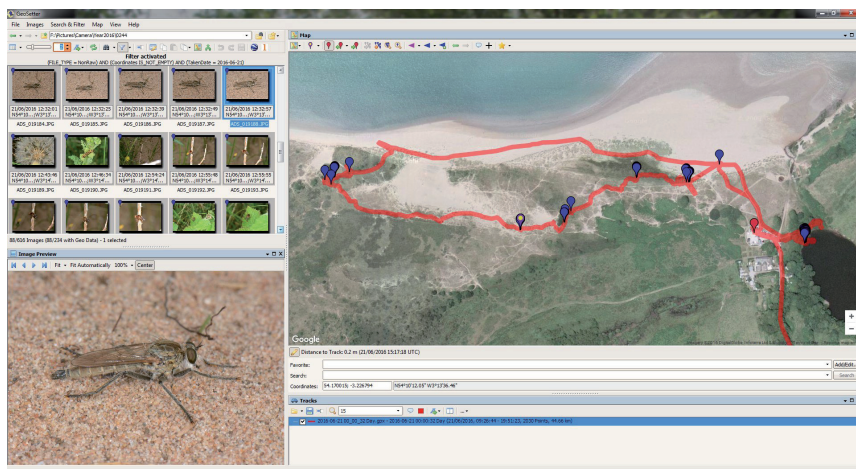Obtainable from www.geosetter.de/en/ GeoSetter is one of several free geotagging utilities.

Figure 4. The GeoSetter GUI. Top left are thumbnails of digital photographs within a single folder, filtered by file type (to exclude RAW files), presence of a geotag and date; the highlighted image is shown at bottom left. Top right is a Google Earth satellite image (Sandscale Haws sand dunes), the red track is part of a full day's track collected using a Garmin Montana GPS. The track was processed using Garmin's Basecamp, exported to a .gpx file which was then imported into GeoSetter (bottom right.) Flags are the positions of each photograph in the folder, the highlighted image having an open circle in its flag.

Species data

Further reading

📔 Goldwasser D. 2004. A Brief Introduction to GPS Photo Linking Available at: http://www.macdevcenter.com/pub/a/mac/2004/06/15/gps_photo.html.