ZSL CAMERA TRAP ANALYSIS PACKAGE (ZSL CTAP)

SOFTWARE INSTALLATION GUIDE

January 2018

Before you can start working with the Camera Trap Data Analysis Package (CTAP), you will need to install this and other supporting software. It is also useful to download, open and go through the provided demo database in CTAP as this will enable you to familiarise yourself with the tool and practise with real data. Instructions for doing the above are contained within this guide.

When you are ready to prepare and import your own data, refer to the *CTAP Guide to image metadata extraction and preparation* and the *CTAP Data Import Guide* in the User Guides subfolder of the ZSL CTAP Dropbox folder.

Note that your ZSL computer or laptop may not allow the installation or uninstallation of software without an administrator first logging in. If this is the case you will need to contact your IT support team for assistance.

1) Setting up Dropbox

Documents needed for setting up and using the CTAP have been saved into a folder on Dropbox.

Dropbox is a useful free online data storage system in which you can upload files to private folders and view and download them to any computer around the world. Dropbox also has the ability to share folders with other people via a link. Dropbox is a useful place to store your camera trap photographs while in the field as an additional place to back up your data. However, internet access is needed to use this.

If you do not yet have an account, follow the link (https://www.dropbox.com/). Click on the 'sign up' button and follow the instructions. Once you have logged in to Dropbox you will see a screen like the one shown in figure 1.

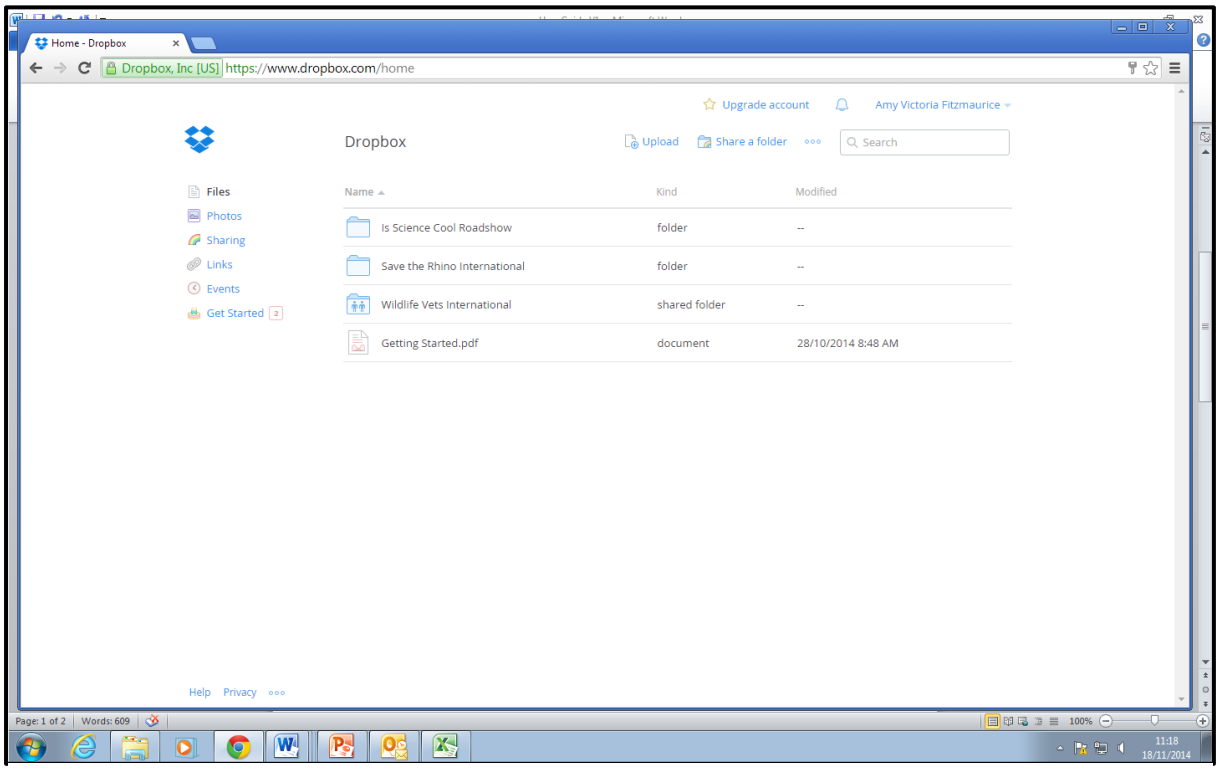

Figure 1: Dropbox website page

To make a new folder in your Dropbox, right click and select 'new folder'. You can create new folders within folders. If you want to upload documents or pictures, open the folder and then click the 'upload button' and follow the instructions. If you wish to share a folder with another person, open the folder you wish to share and then click the 'share folder' button and follow the instructions.

2) CTAP Software Installation

1. If you have not done so already, set up Dropbox (see Section 1 above) and contact Tom Bruce (tjbruce42@gmail.com) or Rajan Amin (raj.amin@zsl.org) to request that the Dropbox folder, called 'ZSL CTAP', with all relevant information be shared with you.
2. Once in the ZSL CTAP Dropbox folder, click on the subfolder called '2 CTAP Software'.
3. Click on the three dots to the right of the 'Program initial setup files' subfolder and select 'Download' from the dropdown menu. This will download the files to your selected folder.
4. Once downloaded, navigate to the folder and double click on 'Setup' application file to install CTAP, and add your name and organisation. When prompted, accept the default install folder location. Click Finish and then in the next step for tool configuration select the preferred module as 'Camera Trap (ZSL-CTAP' (see figure 2). Press 'Okay'.

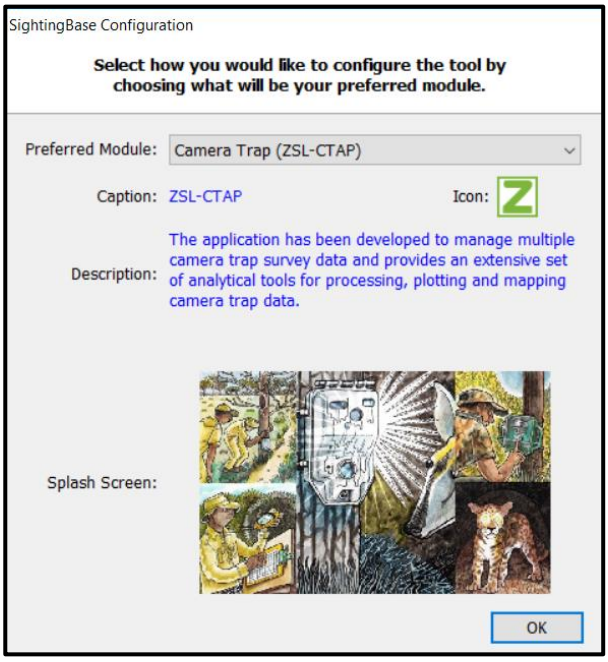

Figure 2: Configuring CTAP during installation.

5. The program setup will create a shortcut to the CTAP application on your Desktop and this will also be available in Program Files.

6. In the rare case if the shortcut is not created on the Desktop, navigate to and open the folder called 'SightingBase' in the install folder (default is c: Program Files (x86)\ZSL\SightingBase". Select file 'PatrolDB' and create a shortcut to your Desktop (see figure 3).

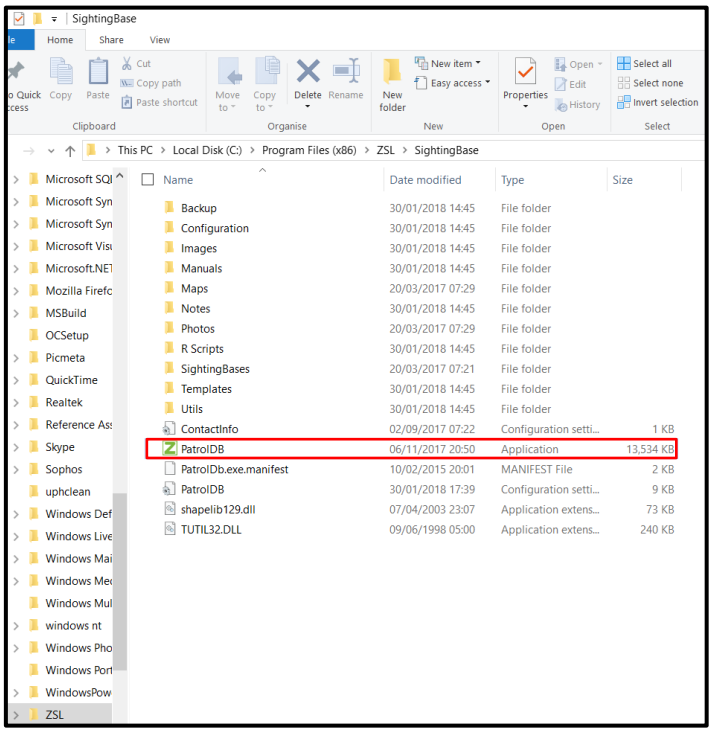

Figure 3: Opening the CTAP from the programme file location.

7. Next, go to the dropbox folder 'Program update files' and download the files to a selected folder.
8. Once downloaded, navigate to the folder and double click on 'PatrolDBUpdater.exe' application file to update CTAP with the latest version.
9. Open the Camera Trap Data Analysis Package (CTAP) by double clicking on the shortcut icon

on your Desktop.
10. Once the CTAP is open, the tool's main operating window should be visible (see figure 4). Click 'Close' to remove the smaller information window. You will see that the Surveys list is currently blank as there is no data in the tool yet.

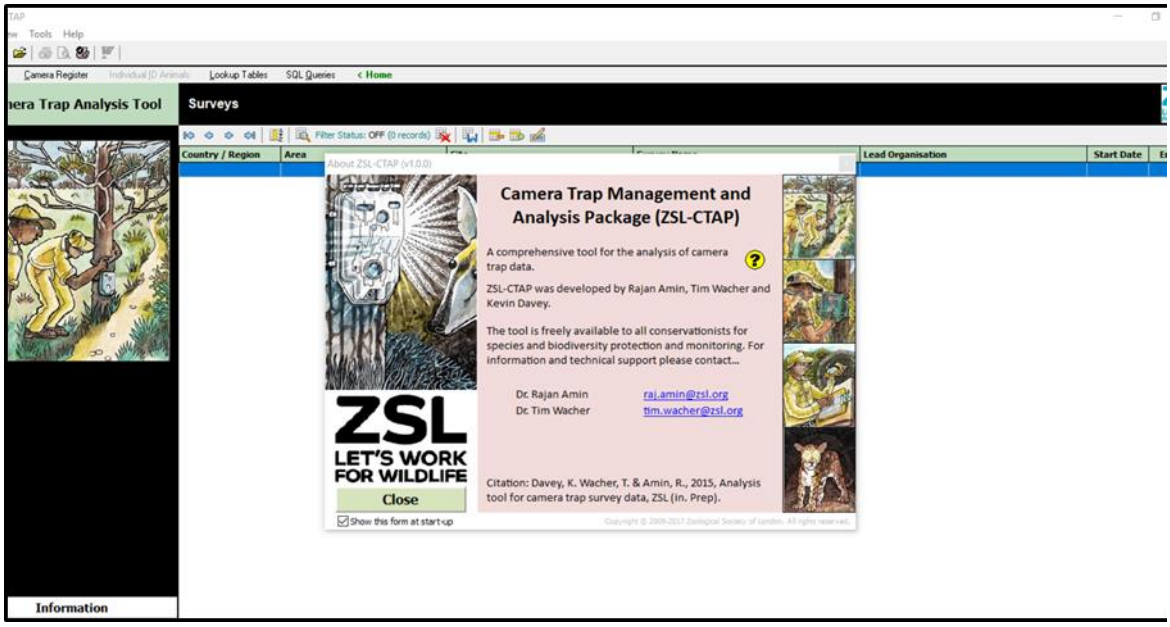

Figure 4: CTAP's main operating window

11. If you have not done so already, you will now need to download R software in order to be able to statistically analyse data in the tool, as well as QGIS, ArcReader and Google Earth.

3) Installing R and RStudio

You will need R statistical software (and RStudio to install the R packages) to be able to do some of the analyses in the program.

Installing R for windows

Follow the link (http://cran.r-project.org/bin/windows/base/) and click the 'Download R x.x.x for Windows' to start the download. Once the download is complete double click on the file and follow the instructions to install it.

Installing RStudio for windows

Follow the link (http://www.rstudio.com/products/rstudio/download/) and download RStudio Desktop (Free Licence). Once the download is complete double click on the file and follow the instructions to install it.

Note: If you have not installed R correctly, RStudio will not open.

Next, you will need to install some R packages. Open RStudio from your windows start menu. When RStudio opens, you will see the screen as shown in figure 5.

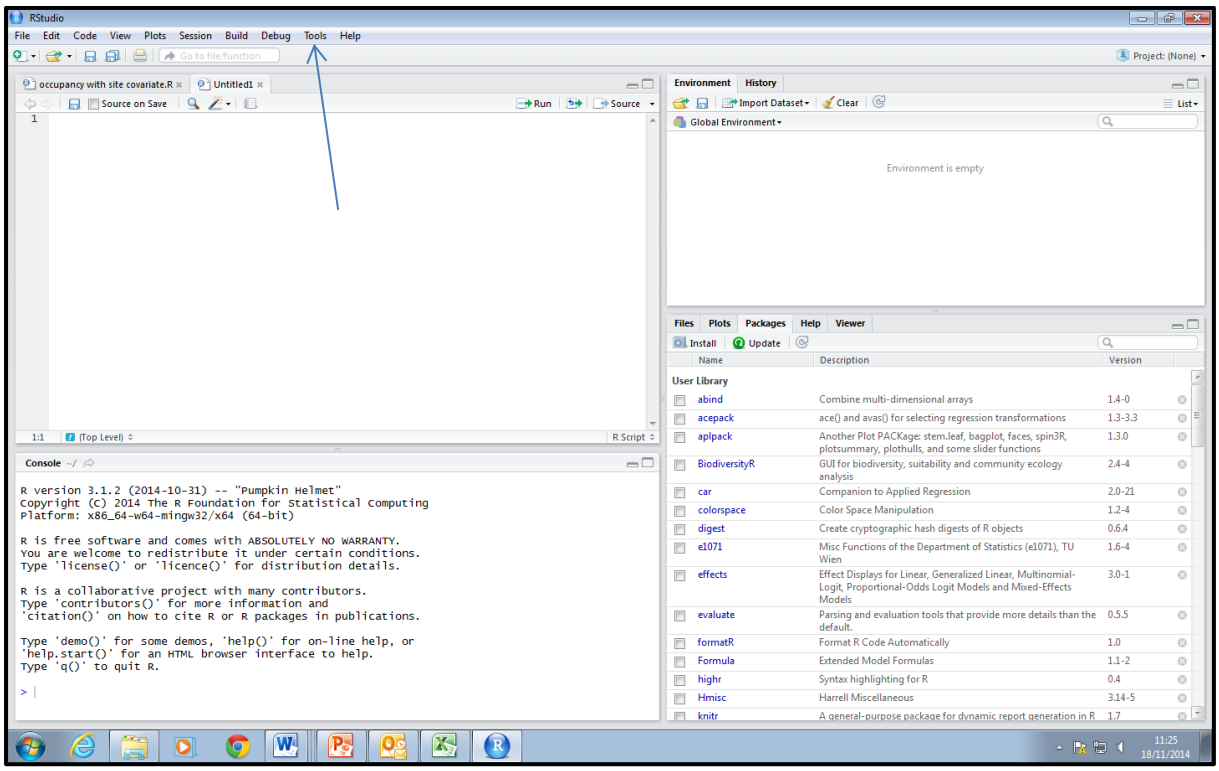

Figure 5: RStudio window.

Select the 'Tools' tab on the top menu bar (indicated by arrow above). Then select 'Install packages' from the drop down menu.

A window will appear as shown in figure 6. In the 'Install Packages' window, install each of the following packages: BiodiversityR, unmarked, vegan, MASS, and wiqid (note names are case sensitive), enter one by one into the 'Packages' box (indicated by an arrow).

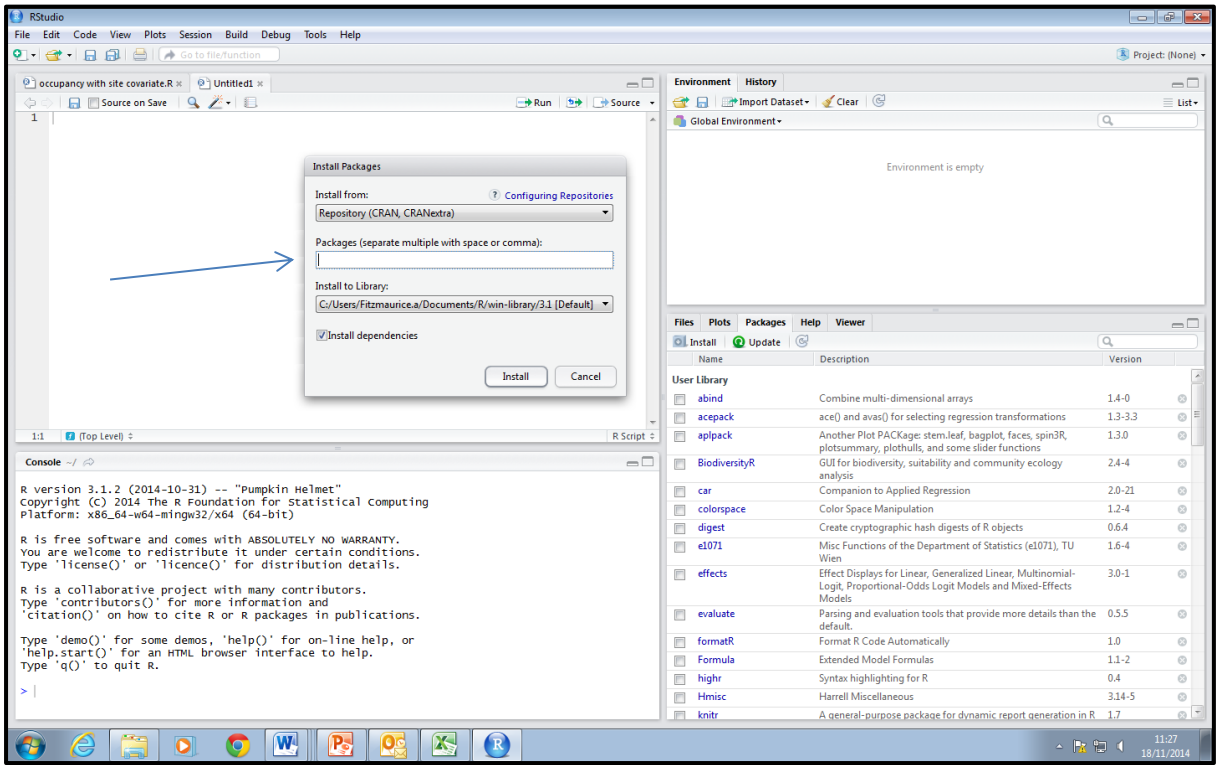

Figure 6: RStudio page with Install Package additional window.

Start by typing 'BiodiversityR' in the 'Packages' box and then click install (see figure 6).

In the RStudio programme (as below), you will see in the 'console' window the package being installed as shown in figure 7 (indicated by the red arrow). You will know that it has finished installing the package when it outputs the symbol '>' (indicated by the blue arrow). Repeat this process to install 'unmarked', 'vegan', 'MASS' and 'wiqid' packages (these package titles are case sensitive).

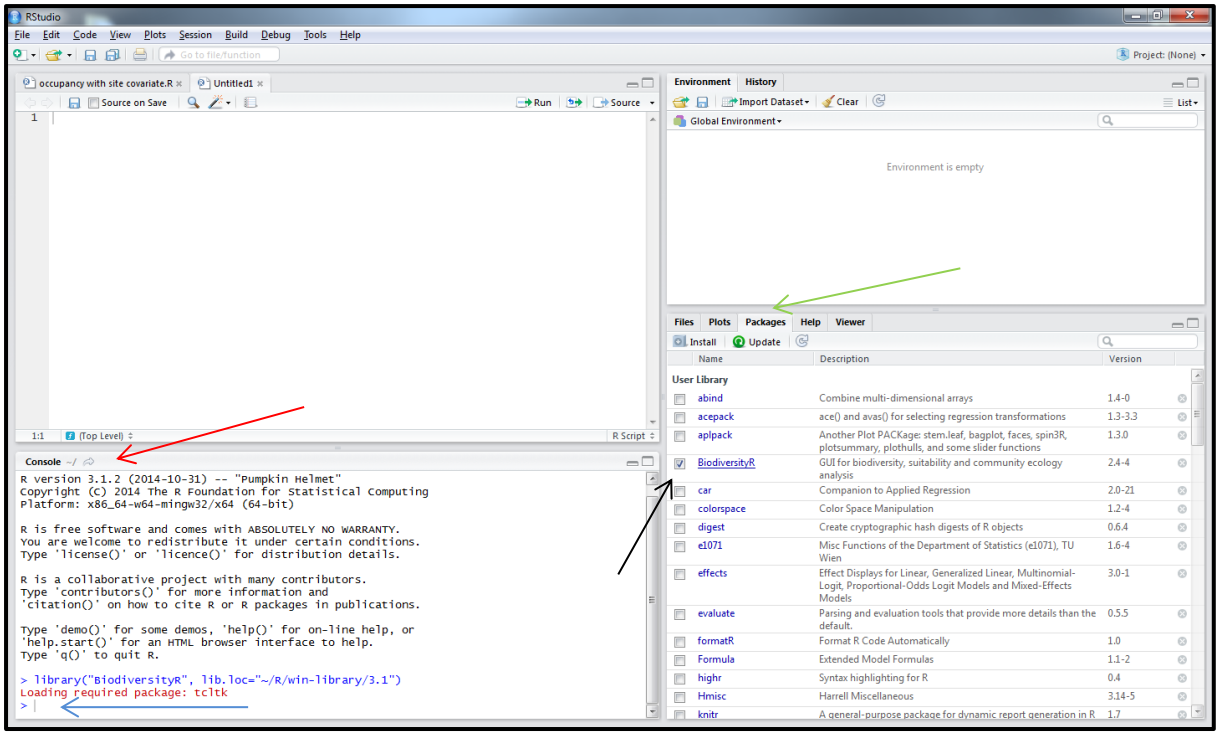

Figure 7: RStudio page with console window.

4) Installing Google Earth

You can map camera locations and spatial outputs on Google Earth from within the CTAP. Google Earth is free download and easy to use.

Follow the link (www.google.co.uk/earth/explore/products/desktop.html) and download Google Earth. Open the download once complete, and follow the instructions to complete the installation.

5) Installing QGIS and ArcReader

The CTAP provides an interface to high-quality interactive maps that have been prepared in QGIS or authored by one of ESRI's high-level ArcGIS Desktop products and published with the ArcGIS Publisher extension. The resulting maps are then visualised in QGIS or using one of ESRI's ArcGIS desktop authoring products or their free ArcGIS desktop viewer, ArcReader. If you wish to produce GIS map reports you will need to have QGIS or one of ESRI's ArcGIS Desktop authoring products or ArcReader installed on your PC.

QGIS can be downloaded freely from www.qgis.org

ArcReader can be downloaded freely from www.esri.com/software/arcgis/arcreader

Refer to the *CTAP-QGIS Map Guide* and *CTAP QGIS-ArcReader Interface Specification* in the Manuals sub folder of the Dropbox ZSL CTAP folder for more information on using this function.

6) Demo Data Download

1. You can now download demo data to practise using the tool. To do this, navigate to the 'Demo database' subfolder within the CTAP Dropbox folder. Click on the three dots to the right of the zip file called 'Demo_Database.zip' within the Demo database subfolder and select 'Download' from the dropdown menu.
2. Once downloaded, open the zip folder. Click on 'Extract All' and, when prompted, choose a suitable location in which to save the extracted folder or use the default.
3. To open the demo database, navigate to the extracted Demo database folder and double click on the 'Demo_database' file (see figure 8). You can also open the demo data base from within the CTAP program from 'File' and then 'Open' in the program window.

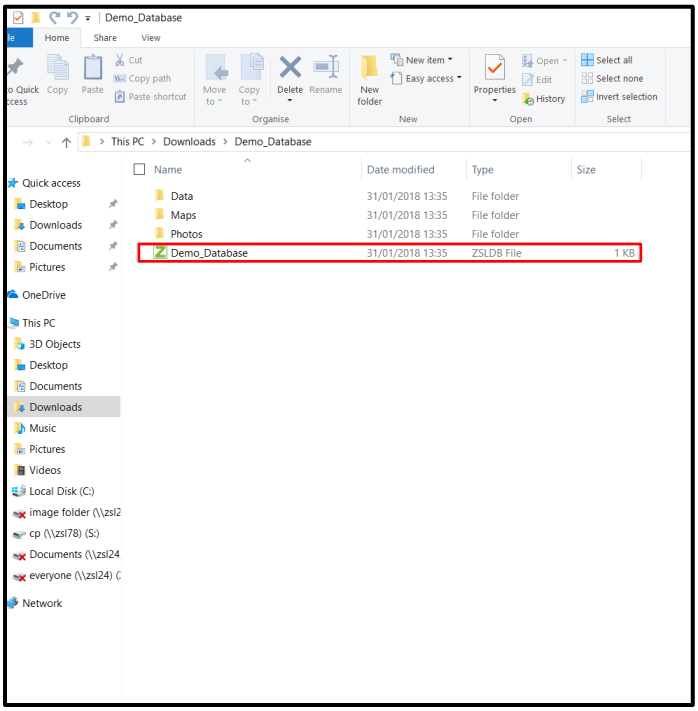

Figure 8: Opening the demo data in the CTAP.

4. Once the demo survey is opened, the survey names should appear listed under 'Surveys' in the CTAP program window (see figure 9).

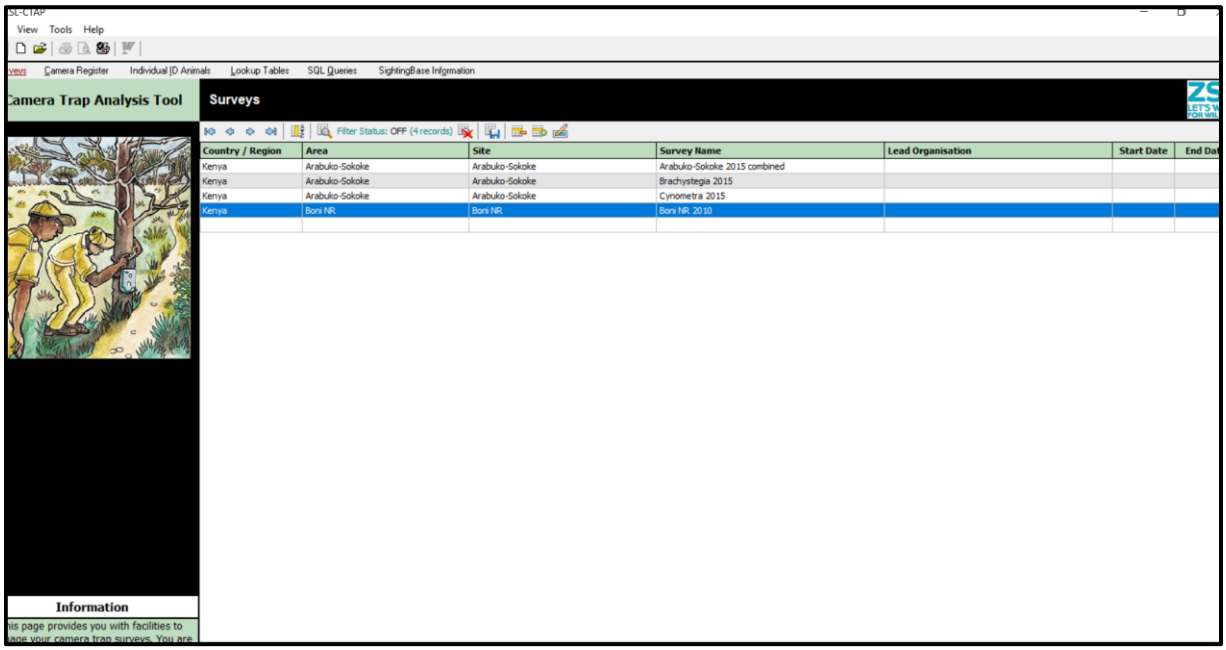

Figure 9: Viewing the demo data sets in the CTAP.

5. Now you are ready to explore the tool! Refer to the *CTAP Data Analysis User Guide* in the User Guides subfolder of the ZSL CTAP Dropbox folder, which will explain how to run analyses on, and visualise, the data.