ZSL CAMERA TRAP ANALYSIS PACKAGE

SURVEY DATA IMPORT USER GUIDE

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February 2018

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User guide: Importing survey data to the ZSL Camera Trap Analysis Package

Introduction

This quick guide explains how to import data from a camera trapping grid or 'survey' into the ZSL camera trap data analysis package. It summarises the steps to import data from an Excel workbook or 'master file' containing camera trap survey data.

Preparing for data entry: It is strongly advised that before starting data entry for the first time you use the 'Lookup Table' menu in the camera-trap analysis package to open and review the tables. The values in these tables must be used when entering the corresponding data. For example, the 'tblPhototype' and 'tblAnimal' photo identification information in columns 'Photo type' and 'Species' of data entry Sheet 4. You can also add items to the standard list in the lookup tables as needed. However, it is important to make sure these added items are standardised and consistently used.

Species: If you have used the country template for your survey area you will find a complete list of mammals for your study site ready loaded in 'tblAnimal' which is also found from the 'Lookup Table' menu. It is important that in filling in the 'Species' column of Sheet 4, you use the exact spelling of either the Scientific or English names listed in 'tblAnimal'. You can also find options for partially identified images, e.g Murid sp. etc. if you wish to use them. If, as is likely, the cameras have returned images of birds or other non-mammal species, you will need, with 'tblAnimal' table open, to use the 'Add' button which will open a window allowing you to add all details of the additional species, if you wish these species to be included in the analyses. Similarly, you can add updated nomenclatures or additional categories if that suits your study.

If you have not used the country template, then you will have to open 'tblAnimal' from the 'Lookup Table' menu and add data for every species you have identified in the photographs one by one or import from a prepared 'csv' file.

At the end of each data sheet importing, the package will cross check all entries with the respective lookup table lists (tblPhotoType etc.) and data entered (Camera ID etc.), and highlight any rows where a match could not be found. The appropriate editing can then be done to ensure absolute consistency throughout the data importing before analysis proceeds.

Importing CT Survey data

1) Select 'import' from the bottom right of the camera trap survey page in the package, to open the 'Camera Trap Survey Import Wizard'.
2) Fill in the relevant 'Survey information' and 'General information' (**Steps 2 & 3**) as instructed by the import wizard.
3) You will be asked to import files containing information about various different survey parameters. There are five spreadsheets, four of which compulsory, which require completing in order to import data into the package:
   - **Sheet 1. CT Station (compulsory)**
   - **Sheet 2. CT Camera Configuration (compulsory)**
   - **Sheet 3. CT Setup-Service-Recovery (compulsory)**
   - **Sheet 4. CT Image (compulsory)**
   - **Sheet 5. CT Station Covariates**

   These sheets are uploaded in Steps 4 – 8.

Here is a brief guide on how to format the data so that the package can import it. Details are given on how to import each of the **compulsory** data sheets. Before importing each spreadsheet into the package, each must be

saved as a separate **.csv file** (listed as 'CSV (MS-DOS)'). This can be done from Excel, using the 'File' and 'Save as…' option.

1) Sheet 1. CT Station. *This is filled in during **Step 4** of the survey import wizard.*

Initially, CT station data is likely to look like this, in an Excel master workbook:

	A	B	C	D	E	F	G	H	I	J	K
1	Camera Trap Station Label	Latitude / UTM Northing (planned)	Longitude / UTM Easting (planned)	Latitude / UTM Northing (actual)	Longitude / UTM Easting (actual)	Habitat	Habitat Remarks	Altitude	Aspect	Terrain	Slope
2	!(Text)	(Real number / Lo	(Real number / Lo	(Real numbr / Lo	(Real number / Long	(LU Table - tblHabitat)	(Text)	(Integer - meters)	(LU Table - tblAspect)	(LU Table - tblTerrain)	(Real number)
3	!Compulsory	Optional	Optional	Compulsory	Compulsory	Optional	Optional	Optional	Optional	Optional	Optional
4	B1	9635000	599000	9635001	599013	Cynometra forest					
5	B2	9635000	601000	9635059	601086	Brachystegia forest					
6	B3	9633000	599000	9632897	598965	Brachystegia forest					
7	B4	9633000	601000	9633008	601012	Mixed forest					
8	B5	9633000	603000	9632960	603025	Brachystegia forest					
9	B6	9631000	599000	9631068	599011	Brachystegia forest					
10	B7	9631000	601000	9630997	601002	Brachystegia forest					
11	B8	9629000	597000	9629000	597000	Brachystegia forest					
12	B9	9629000	599000	9629000	599000	Brachystegia forest					
13	B10	9627000	597000	9627040	597027	Cynometra forest					
14	B11	9627000	599000	9626977	599009	Brachystegia forest					
15	B12	9625000	597000	9625000	597000	Cynometra forest					
16	B13	9625000	599000	9624971	598990	Brachystegia forest					
17	B14	9625000	601000	9625022	600946	Brachystegia forest					
18	B15	9623000	597000	9622951	597042	Brachystegia forest					
19	B16	9623000	599000	9622971	599030	Brachystegia forest					
20	B17	9621000	597000	9621024	597090	Brachystegia forest					
21	B18	9621000	599000	9621002	599047	Brachystegia forest					
22	B19	9619000	595000	9618912	594966	Brachystegia forest					
23	B20	9619000	597000	9618931	597026	Brachystegia forest					

Data Import Summary | 1. CT Station | 2. CT Camera Config | 3. CT Setup-Service-Recovery | 4. CT Image | 5. CT Station Covariates

Ready 100%

The three compulsory columns which need to be filled in are labelled above (highlighted in green). They are:

A) **CT Trap Station Label** – This is unique to each CT site in the array. Each CT station will be represented by a row in the table.

D & E) **Latitude/UTM northing and Longitude/UTM easting –** The **actual** location of each CT site (in decimal lat/long or UTM).

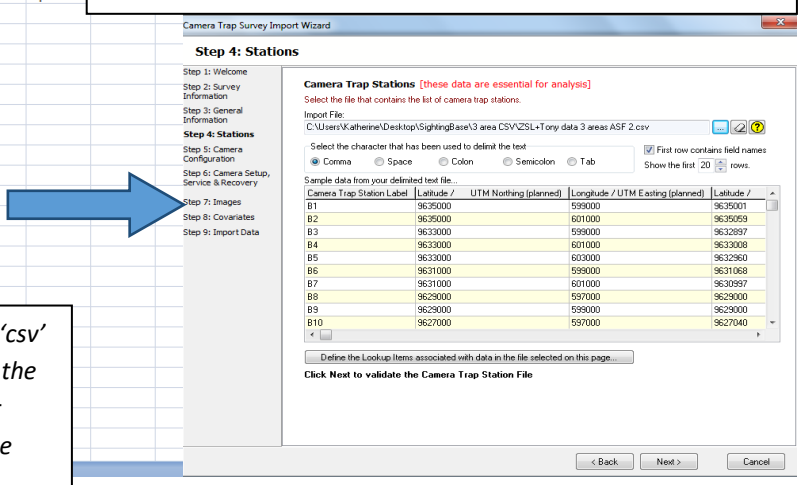
The other columns may be filled in if you have collected the data.
When saved as a .csv file, the data sheet should look like this:

	A	B	C	D	E	F	G	H	I	J
1	Camera Tr	Latitude /	Longitude	Latitude /	Longitude	Habitat	Habitat Re	Altitude	Aspect	Terrain
2	!(Text)	(Real num	(Real num	(Real num	(Real num	(LU Table	(Text)	(Integer -	(LU Table	(LU Table
3	!Compuls	Optional	Optional	Compulso	Compulso	Optional	Optional	Optional	Optional	Optional
4	B1	9635000	599000	9635001	599013	Cynometra forest				
5	B2	9635000	601000	9635059	601086	Brachystegia forest				
6	B3	9633000	599000	9632897	598965	Brachystegia forest				
7	B4	9633000	601000	9633008	601012	Mixed forest				
8	B5	9633000	603000	9632960	603025	Brachystegia forest				
9	B6	9631000	599000	9631068	599011	Brachystegia forest				
10	B7	9631000	601000	9630997	601002	Brachystegia forest				
11	B8	9629000	597000	9629000	597000	Brachystegia forest				
12	B9	9629000	599000	9629000	599000	Brachystegia forest				
13	B10	9627000	597000	9627040	597027	Cynometra forest				
14	B11	9627000	599000	9626977	599009	Brachystegia forest				
15	B12	9625000	597000	9625000	597000	Cynometra forest				
16	B13	9625000	599000	9624971	598990	Brachystegia forest				
17	B14	9625000	601000	9625022	600946	Brachystegia forest				
18	B15	9623000	597000	9622951	597042	Brachystegia forest				

← *Any rows below the column heading or 'field name' which do not contain data should be deleted.*

***Note** include data field names as the first row in the 'csv' data file. Any additional non-data rows contained in the excel sheets must be removed in the 'csv' data file or indicated by"!" at the beginning of the line for it to be treated as a comment.*

CT station CSV file ready for import.



*Step 4 of survey import wizard. **Note** If first row contains data field names you must tick 'first row contains field names'.*

Once the CT station data sheet has been successfully uploaded, click next to import the next sheet.

2) Sheet 2. CT Camera Configuration. *This is filled in during **Step 5** of the survey import wizard. This information details the settings for each camera in the survey.*

	A	B	C	D	E	F	G	H	I	J	K	L
1	Camera Make	Camera Model	Purchase Date	Unique ID / Serial No.	Trigger Speed	Period Between Triggers	Images/ Trigger	Trigger Mode	Photo Interval	Image Resolution	Flash Mode	Camera Sensitivity
2	!			*User defined or from manufacturer (documentation/ sometimes in image meta data).*		*Length of quiet period after a trigger*	*Images per trigger*		*Length of time between pictures within a trigger event*			
3	!(LU Table - tblCar	(LU Table - tblCa	(Date)	(Alpha-numeric)	(Real number e.g. 0.2 secs	(Integer - secs)	(Integer)	(LU Table - tblTriggerMod	(Real number: secs)	(Long)	(LU Table - tblFlas	(LU Table - tblCame
4	!Optional	Optional	Optional	Compulsory	Optional	Optional	Optional	Optional	Optional	!Optional	Compulsory	Optional
5	Bushnell	Trophy		B001			3	Active			Infrared	High
6	Bushnell	Trophy		B002			3	Active			Infrared	High
7	Bushnell	Trophy		B003			3	Active			Infrared	High
8	Bushnell	Trophy		B004			3	Active			Infrared	High
9	Bushnell	Trophy		B005			3	Active			Infrared	High
10	Bushnell	Trophy		B006			3	Active			Infrared	High
11	Bushnell	Trophy		B007			3	Active			Infrared	High
12	Bushnell	Trophy		B008			3	Active			Infrared	High
13	Bushnell	Trophy		B009			3	Active			Infrared	High
14	Bushnell	Trophy		B010			3	Active			Infrared	High
15	Bushnell	Trophy		B011			3	Active			Infrared	High
16	Bushnell	Trophy		B012			3	Active			Infrared	High
17	Bushnell	Trophy		B013			3	Active			Infrared	High
18	Bushnell	Trophy		B014			3	Active			Infrared	High

Data Import Summary | 1. CT Station | 2. CT Camera Config | 3. CT Setup-Service-Recovery | 4. CT Image | 5. CT Station Covariates

Ready 95%

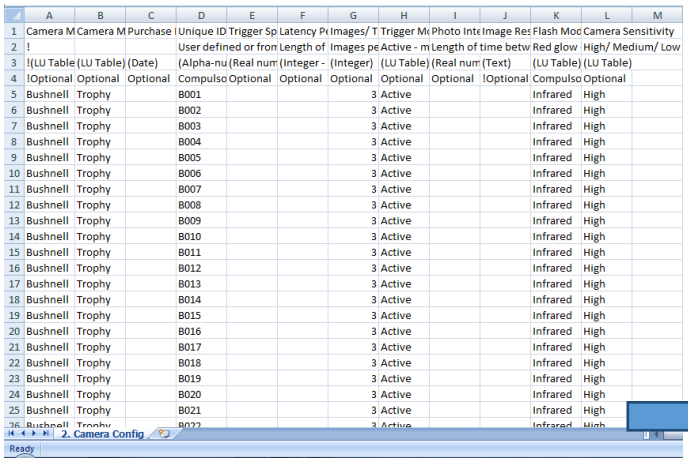
Compulsory data columns are highlighted in green above. They are:

D) **Unique ID/Serial No. –** The unique number given to each camera. Note this is individual to each camera- it is not the same as the **camera station site** label. You may use the manufacturers Serial Number, or a unique ID generated by yourself. The example above shows a case of the latter.

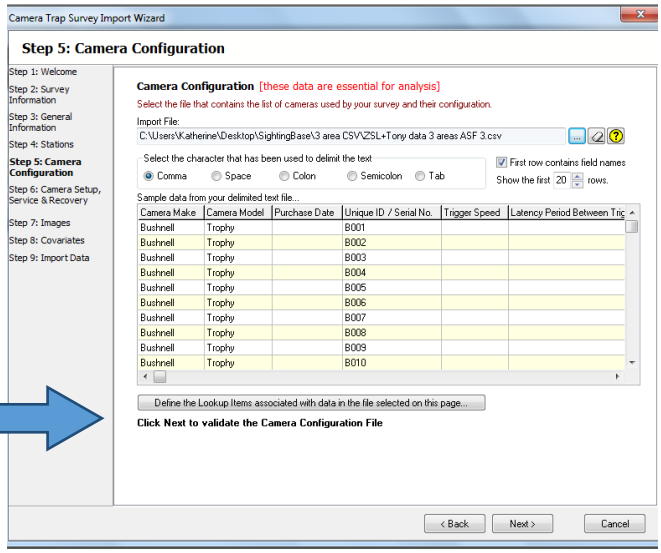
K) **Flash mode –** The camera setting; either **infrared**, **no flash (day time)** or **white flash.**

Again, the other columns may be filled in if data is available. Camera make and model in particular may be useful in order to compare how well different cameras function.

As above for the CT station data sheet, this sheet should be saved as a .csv file. Rows which do not contain data and are not 'field names' (headings) should be deleted in the 'csv' file or indicated at the beginning of the line with an exclamation mark "!" for the package to ignore the line.



CT station camera configuration CSV file ready for import.



*Step 5 of survey import wizard. **Note** it is important to tick 'first row contains field names' if this is the case.*

As before, once the camera configuration data sheet has successfully uploaded, click next to import the next sheet.

3) Sheet 3. CT Setup-Service-Recovery. This is filled in during **Step 6** of the survey import wizard. This provides a record of survey effort for each camera, calculated from the time the camera was set up to the time it was recovered, and also stores information that can be used to exclude days when the camera wasn't functioning correctly. Note: it is generally helpful to fill this sheet in after Sheet 4 has been completed, from where setup, service and recovery dates and times can be rapidly isolated along with cases of evident camera failure.

Below is an example CSV data sheet recording **camera setup, service and recovery**. Each row represents either a **camera setup/installation, camera service/maintenance** or **camera recovery** action. Information about setup, service and recovery must be entered on consecutive rows for each station. Again, compulsory columns are highlighted green. Columns A and B are the camera trap station label and camera identification number respectively.

The other compulsory columns are:

C & D) **Setup/Service/Recovery Date, Setup/Service/Recovery Time –** This is the date and time when the camera was physically serviced. This information may be written in field notes, or if not can be assumed from image records of camera team arriving or departing.

E) **Service type –** Whether this was the initial camera installation **(setup),** maintenance **(service)** or removal **(recovery).** Each individual camera **must** have a recorded setup and recovery. Only the first set of triggered 'recovery' photos need to be entered when recording camera recovery; it is unnecessary to have more than this and will affect results when analysing camera function.

I & J) **Date Camera Stopped Operating, Time Camera Stopped Operating –** The date and time the last photo was taken **whilst the camera was functioning** (date and time of the last functioning photo before the service/recovery). Only filled in for Service type = "service" or "recovery". This will be identical to Camera service /recovery date and time if the camera was known/proven to be working when the service/recovery team arrives. It will equal setup time if the camera is believed to have failed entirely. At the user's discretion it can also be set equal the date and time of the last recorded photo if this occurred significantly prior to recovery date and the camera is believed to have failed/ batteries are found to be flat etc. The date and time entered must be equal to or before the date and time entered in the C & D fields of the same row.

G & H) **Date Camera Started Operating, Time Camera Started Operating –** This is the date and time the camera setup/service was completed and the camera was reset, or more reliably the **first photo in the setup/service image sequence.** For setup, this will usually be the same as C & D. It must also be equal to or after the date and time entered in the C & D fields of the same row. Only filled in for Service type "set-up" or "service".

*Each camera undergoes the same pattern- with a **setup, service** and **recovery.***

*Each camera station undergoes a **continuous chain of camera servicing events**- starting with setup, finishing with recovery.*

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Camera Trap Station Label	Unique ID / Serial No	Setup/Service /Recovery Date	Setup/Service /Recovery Time	Service Type	Status	Date Camera Starting Operating	Time Camera Starting Operating	Date Camera Stopped Operating	Time Camera Stopped Operating	Direction	Bait Type	Paired	Mounting
2	!Compulsory	Compulsory	Compulsory	Compulsory	Compulsory	Optional	Use these fields if you wish to directly control the exact start time of sample period following set up (or a post service set up) of a camera; Leaving blank will result in automatic selection of the first picture at or following set up date in column C & D.		Use these fields if you wish to directly control the exact finish time of sample period in relation to camera recovery (or service time); Leaving blank will result in automatic selection of the last image at or prior to recovery date time in C & D.		Optional	Optional	Compulsory	Optional
3	B1	B001	29/05/2015	17:36:38	Setup	Working	29/05/2015	17:36:38					No	
4	B1	B001	07/12/2015	13:27:52	Service	Not Working	07/12/2015	13:27:52	15/09/2015	12:14:43			No	
5	B1	B001	26/04/2016	13:10:44	Recovery	Working			26/04/2016	13:10:44			No	
6	B2	B002	26/05/2015	06:08:20	Setup	Working	26/05/2015	06:12:57					No	
7	B2	B002	07/12/2015	11:50:19	Service	Working	07/12/2015	13:02:50	07/12/2015	11:50:19			No	
8	B2	B002	26/04/2016	12:49:27	Recovery	Working			26/04/2016	12:49:27			No	
9	B3	B003	26/05/2015	09:50:13	Setup	Working	26/05/2015	09:50:13					No	
10	B3	B003	07/12/2015	11:26:54	Service	Working	07/12/2015	12:44:51	07/12/2015	11:26:54			No	
11	B3	B003	26/04/2016	12:21:01	Recovery	Working			26/04/2016	12:21:01			No	
12	B4	B004	26/05/2015	07:36:41	Setup	Working	31/05/2015	13:10:09					No	
13	B4	B004	07/12/2015	12:22:00	Service	Working	07/12/2015	12:26:38	07/12/2015	12:22:00			No	
14	B4	B004	26/04/2016	12:04:05	Recovery	Working			26/04/2016	12:04:05			No	
15	B5	B005	26/05/2015	17:23:04	Setup	Working	26/05/2015	17:23:04					No	
16	B5	B005	07/12/2015	10:48:47	Service	Working	07/12/2015	12:01:51	07/12/2015	10:48:47			No	
17	B5	B005	26/04/2016	11:42:12	Recovery	Working			26/04/2016	11:42:12			No	
18	B6	B006	26/05/2015	16:52:38	Setup	Working	26/05/2015	16:54:34					No	
19	B6	B006	07/12/2015	11:43:22	Service	Working	07/12/2015	11:43:22	07/12/2015	11:43:22			No	
20	B6	B006	25/04/2016	10:03:46	Recovery	Working			25/04/2016	10:03:46			No	
21	B7	B007	23/05/2015	18:06:55	Setup	Working	23/05/2015	18:06:55					No	
22	B7	B007	06/12/2015	07:51:06	Service	Working	06/12/2015	09:10:26	06/12/2015	07:51:06			No	
23	B7	B007	24/04/2016	05:44:00	Recovery	Not Working			23/02/2016	06:43:36			No	
24	B8	B008	26/05/2015	08:25:13	Setup	Working	26/05/2015	08:33:16					No	
25	B8	B008	06/12/2015	11:26:20	Service	Working	06/12/2015	12:55:09	06/12/2015	11:26:20			No	
26	B8	B008	24/04/2016	12:04:42	Recovery	Working			24/04/2016	12:04:42			No	
27	B9	B009	23/05/2015	16:31:06	Setup	Working	23/05/2015	16:32:26					No	
28	B9	B009	07/12/2015	12:54:38	Service	Working	07/12/2015	14:36:26	07/12/2015	12:54:38			No	

Data Import Summary | 1. CT Station | 2. CT Camera Config | 3. CT Setup-Service-Recovery | 4. CT Image | 5. CT Station Covariates

Ready 70%

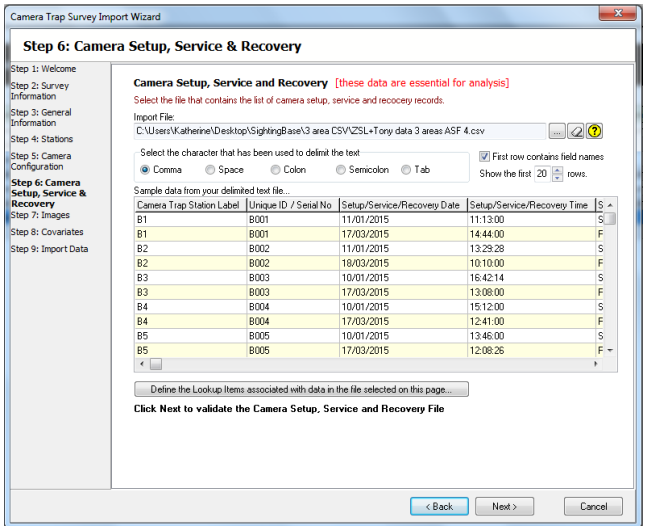
M) **Paired –** Indicates whether cameras were paired (2 or more cameras operating at the same time at a camera trap station site- configuration used for mark-recapture population estimation studies where animals are individually identified).

Again, there are additional optional columns that may be completed before importing if further information is available. Once this data sheet uploaded, click next to continue with the survey import wizard.

In situations where cameras are replaced at a station, a separate setup-service-recovery history must be provided for each camera as shown in the example below.

When a camera is replaced at a station, the station label remains the same, but the Unique ID changes.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Camera Trap Station Label	Unique ID / Serial No	Setup/Service /Recovery Date	Setup/Service /Recovery Time	Service Type	Status	Date Camera Starting Operating	Time Camera Starting Operating	Date Camera Stopped Operating	Time Camera Stopped Operating	Direction	Bait Type	Paired
2	!Compulsory	Compulsory	Compulsory	Compulsory	Compulsory	Optional	Use these fields if you wish to directly control the exact start time of sample period following set up (or a post service set up) of a camera; Leaving blank will result in automatic selection of the first picture at or following set up date in column C & D.		Use these fields if you wish to directly control the exact finish time of sample period in relation to camera recovery (or service time); Leaving blank will result in automatic selection of the last image at or prior to recovery date time in C & D.		Optional	Optional	Compulsory
3	B1	B001	15/05/2014	07:49:24	Setup	Normal	15/05/2014	07:49:24					No
4	B1	B001	13/06/2014	06:20:22	Service	Normal	13/06/2014	06:21:10	22/05/2014	19:26:52			No
5	B1	B001	01/08/2014	13:29:07	Recovery	Damaged - Replaced	01/08/2014	13:29:14	21/06/2014	12:23:16			No
6	B1	B001A	01/08/2014	13:29:07	Setup	Normal	01/08/2014	13:29:14	21/06/2014	12:23:16			No
7	B1	B001A	15/11/2014	15:14:43	Service	Normal	15/11/2014	15:24:07	15/11/2014	15:14:43			No
8	B1	B001A	21/02/2015	09:34:23	Recovery	Normal			21/02/2015	09:34:23			No
9	B2	B002	15/05/2014	11:31:00	Setup	Normal	15/05/2014	11:31:00					No
10	B2	B002	13/06/2014	11:11:01	Service	Normal	13/06/2014	11:17:04	13/06/2014	10:22:35			No
11	B2	B002	01/08/2014	13:01:32	Service	Normal	01/08/2014	13:07:11	01/08/2014	09:25:50			No
12	B2	B002	31/08/2014	16:42:42	Service	Damaged - Repaired	15/11/2014	15:12:24	31/08/2014	05:06:10			No
13	B2	B002	21/02/2015	10:44:38	Recovery	Normal			21/02/2015	10:44:38			No



***Step 6** of survey import wizard.*

***Note** it is important to tick 'first row contains field names' to ensure the package computes the title row with column headings.*

4) Sheet 4. CT Image. This is entered in **Step 7** of the survey import wizard. It contains the details of each photo taken during the survey. As there is only space to record one species on each row, for images which contain more than one species, the data row should be duplicated. All data (image name, date and time taken etc.) will be exactly the same on both rows except for the species name and further species information. Note: it is helpful to fill in this sheet before completing Sheet 3. Filtering on Camera station and Photo type (Camera set-up, Camera service, Camera recovery) allows rapid isolation of date and time information for copy and paste to Sheet 3. Cases where cameras failed (e.g. possibly indicated by absence of camera recovery images), are also more easily detected.

Here is an example CT Image data sheet, saved as a CSV file.

***Note** all data has been repeated for a series of images which contain two species, apart from the species name and further information.*

	A	B	C	D	E	F	G	H			
1	Camera Trap Station Label	Unique ID / Serial No.	Image Name	Date	Time	Moon Phase	Temperature	Photo Type			
19	B1	B001	Part 1\EK000016.JPG	11/01/2015	11:33:12		30	Camera setup			
20	B1	B001	Part 1\EK000017.JPG	11/01/2015	11:33:13		30	Camera setup			
21	B1	B001	Part 1\EK000018.JPG	11/01/2015	11:33:14		30	Camera setup			
22	B1	B001	Part 1\EK000019.JPG	11/01/2015	11:33:49		30	Camera setup			
23	B1	B001	Part 1\EK000020.JPG	11/01/2015	11:33:50		30	Camera setup			
24	B1	B001	Part 1\EK000021.JPG	11/01/2015	11:33:51		30	Camera setup			
25	**B1**	**B001**	**Part 1\EK000022.J**	**11/01/2015**	**17:56:03**		**25**	**Wildlife**	**Petrodromus tetradactylus**	**1**	**1**
26	**B1**	**B001**	**Part 1\EK000022.J**	**11/01/2015**	**17:56:03**		**25**	**Wildlife**	**Guttera pucherani**	**2**	**2**
27	**B1**	**B001**	**Part 1\EK000023.J**	**11/01/2015**	**17:56:04**		**25**	**Wildlife**	**Petrodromus tetradactylus**	**1**	
28	**B1**	**B001**	**Part 1\EK000023.J**	**11/01/2015**	**17:56:04**		**25**	**Wildlife**	**Guttera pucherani**	**2**	
29	**B1**	**B001**	**Part 1\EK000024.J**	**11/01/2015**	**17:56:04**		**25**	**Wildlife**	**Petrodromus tetradactylus**	**1**	
30	**B1**	**B001**	**Part 1\EK000024.J**	**11/01/2015**	**17:56:04**		**25**	**Wildlife**	**Guttera pucherani**	**1**	
31	B1	B001	Part 1\EK000025.JPG	11/01/2015	17:56:11		26	Wildlife	Petrodromus tetradactylus	1	
32	B1	B001	Part 1\EK000026.JPG	11/01/2015	17:56:12		26	Wildlife	Petrodromus tetradactylus	1	
33	B1	B001	Part 1\EK000027.JPG	11/01/2015	17:56:13		26	Wildlife	Petrodromus tetradactylus	1	
34	B1	B001	Part 1\EK000028.JPG	11/01/2015	21:50:57		21	Wildlife	Genetta maculata	1	1
35	B1	B001	Part 1\EK000029.JPG	11/01/2015	21:50:58		21	Wildlife	Genetta maculata	1	
36	B1	B001	Part 1\EK000030.JPG	11/01/2015	21:50:59		21	Wildlife	Genetta maculata	1	
37	B1	B001	Part 1\EK000031.JPG	11/01/2015	21:51:06		21	Wildlife	Genetta maculata	1	
38	B1	B001	Part 1\EK000032.JPG	11/01/2015	21:51:07		21	Wildlife	Genetta maculata	1	
39	B1	B001	Part 1\EK000033.JPG	11/01/2015	21:51:07		21	Wildlife	Genetta maculata	1	
40	B1	B001	Part 1\EK000034.JPG	11/01/2015	21:59:50		21	Wildlife	Genetta maculata	1	
41	B1	B001	Part 1\EK000035.JPG	11/01/2015	21:59:51		21	Wildlife	Genetta maculata	1	
42	B1	B001	Part 1\EK000036.JPG	11/01/2015	21:59:52		21	Wildlife	Genetta maculata	1	
43	B1	B001	Part 1\EK000037.JPG	11/01/2015	21:59:57		21	Wildlife	Genetta maculata	1	
44	B1	B001	Part 1\EK000038.JPG	11/01/2015	21:59:58		21	Wildlife	Genetta maculata	1	

Data Import Summary | 1. CT Station | 2. CT Camera Config | 3. CT Setup-Service-Recovery | 4. CT Image | 5. CT Station Covariates

Ready 80%

Compulsory columns are highlighted in green:

B) **Unique ID/Serial No. –** The unique number given to each camera. This will be the same as on previous data sheets.

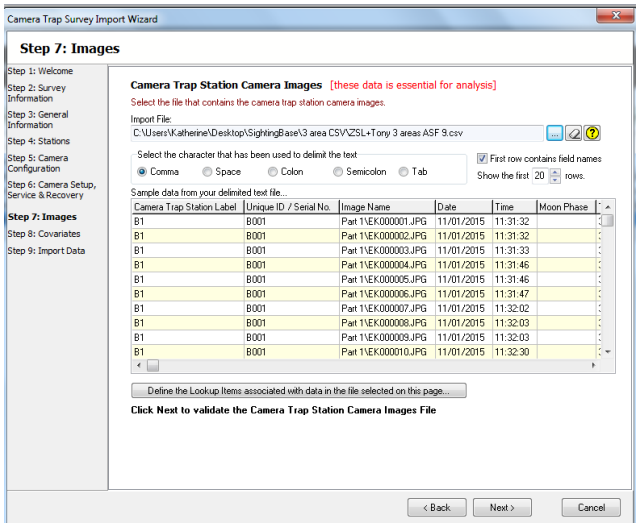
C) **Image Name –** The unique name given to each image by the camera software. It is useful when this is the same as the image file location, and this may be partly derived during image metadata extraction.

D & E) **Date** and **time –** The date and time the photo was taken, usually derived from the image EXIF information using a tool such as Exiv2 (http://www.exiv2.org/index.html).

H) **Photo Type –** Describes the content of each photo (options listed in the look-up table in the package).

I) **Species –** Compulsory when the '**Photo Type'** in column H is listed as **'Wildlife' or 'Livestock'.**

Optional columns with additional data about the animal(s) may also be filled in. Once the file has uploaded, click next to proceed.



Step 7 *of survey import wizard.*

Note *it is important to tick 'first row contains field names' to ensure the package computes the title row with column headings.*

Step 8 of the survey import wizard is optional, but allows for camera station covariates to be imported. After all the relevant data sheets have been uploaded, the data can be imported (**Step 9**).

Once imported, this survey should be listed with the survey name and site. It is now ready for analysis.

Common errors encountered

If one or more of the data sheets cannot be uploaded, the survey wizard will not function and a dialog box will appear listing the problem(s). The following errors may be encountered during import:

- **CSV files will not upload whilst open elsewhere.** Once the CSV document is closed, it should be able to upload successfully.
- **The data does not match the defined options for that specified column.** For instance, an image file (Sheet 4) may contain a species which has not been defined in the look-up table (list of species) within the package. This may be due to a spelling mistake either in the lookup table (or more likely in the import file) which should be corrected, or you may need to add new options to the look-up table, if a required option is not listed. New items may need to be added to the look-up table as required. If this is the case, use the button '*Define the Lookup Items associated with data in the file selected on this page…*' in the import wizard window. This will lead you to the lookup table editing facilities, where you follow the options to add the new item. During data importing, the package will also display all the data rows where problems have been encountered. Double clicking on a row will open the data import 'csv' file at the selected data row for the user to correct, save and re-import.
- **Date and time irregularities.** These often occur if the setup/service/recovery dates have been entered incorrectly. For instance, data import will not work if an image has a time and date listed which is later than the recovery date for that camera.