

TransektCount 1.2.7

1. Introduction

TransektCount is an Android app that supports transect counters in nature preserving projects according to the Butterfly Monitoring Scheme methodology (Fig. 1). It allows a species-specific counting per transect section. It can substitute your field book and pencil, and with a modern smartphone you carry a camera for pictures of interesting species anyway.

The integrated database is organized according to a transect inspection. That means, there will be used a new database instance per inspection.

Databases can be individually created and adapted regarding transect sections and expected butterfly species. The recorded data (meta data, counts and remarks) may either be read on the smartphone or transferred to a PC for your own processing.

The app is open source, has no tracking or advertising functions, demands only for storage access permits which are needed for im-/exporting the data and is published on <https://github.com/wistein/TransektCount>.



Fig. 1: Starting page

2. Set up

Before initial use you must set up an empty basic database (Basic DB). Therefore, you first enter the meta data of the transect. Tap on "Prepare Inspection" and enter at least the transect-No. and the inspectors name (Fig. 2). Then create a species list for the first transect section. Use the (+)-Button or the function "New Section" from the "List of Transect Sections" menu for that (Fig. 3).

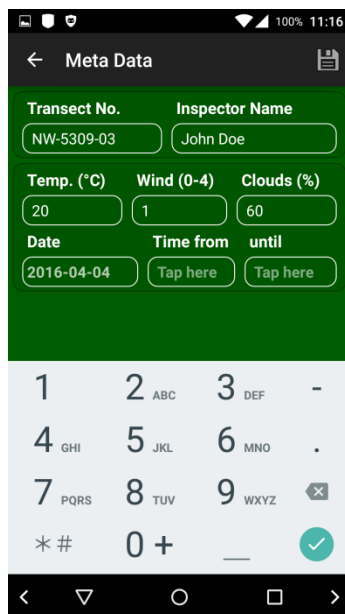


Fig. 2: Create new section list



Fig. 3: Edit new section list

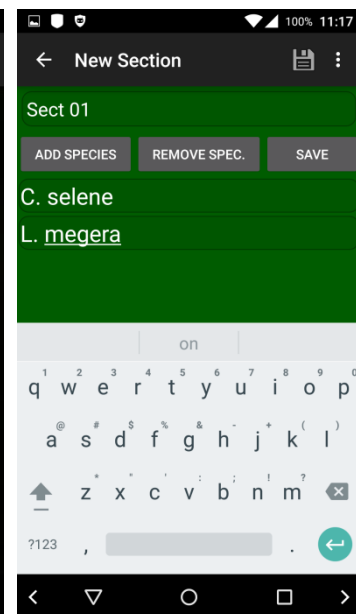


Fig. 4: Enter new section

Then this list gets a name (e.g.: Sect 01) and subsequently an entry for each expected species, e.g.:

```
Sect 01
-----
Pieris napi
Pieris rapae
Pieris na./ra.-compl.
...
```

This list can be changed or supplemented afterwards. With "Save List" you get it stored into the database.

Once this list is complete, you can copy it for all remaining transect sections (section counting page menu: "Duplicate Section List", Fig. 5) and name each accordingly (e.g.: Sect 02, Sect 03,...).

When you have created the section lists for all transect sections, the database is ready for export as a "Basic Database". Therefore you find the function "Export as Basic DB" in the menu of the starting page. After that you have a copy of the empty database saved as "Basic Database" (transektcount0.db) within the home directory /sdcard (or /sdcard0, or /storage/emulated/0, it differs between smartphone models).

The Basic DB will be used as a template for further transect inspections in future. The Basic DB may be modified any time later, e.g. for changes in species lists and exported. All inspection related data will be ignored for an export as Basic DB.

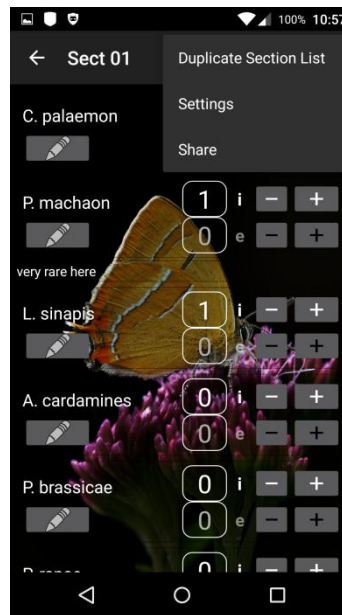


Fig. 5: Counting page



Fig. 6: Section list

3. Usage

Start with the "List of Transect Sections" (Fig. 6). Select the relevant transect section. The counting page appears (Fig. 5).

As it ought to be distinguished between counts of butterflies within the imaginary count area and butterflies outside this area you have 2 separate counters ("i" for internal and "e" for external).

To count just tap on either the internal or external "+"-Button of the corresponding species. The "-"-Buttons allows for corrections.

While storing the counting results of a section the current date and time of the inspection will be stored either. The date and a possible section remark will then be shown in the list of sections.

The Pencil-Button in the app bar of the counting page opens the section editing page (Fig. 7) for adding remarks for the section and editing the names of section and species. The section related remarks will be shown on top of the species list and within the section list.

The Pencil-Button in each species row of the counting page opens the species editing page (Fig. 8) that lets you add remarks for each species and set its intern counter to any value. Here you may also set pop-up alarms which show up while reaching a set value on the corresponding internal counter (e.g. to realize already on site if a certain species is more abundant than on a previous inspection).

If you enter a species related remark this will be shown on the counting page in an extra line beneath the species row.

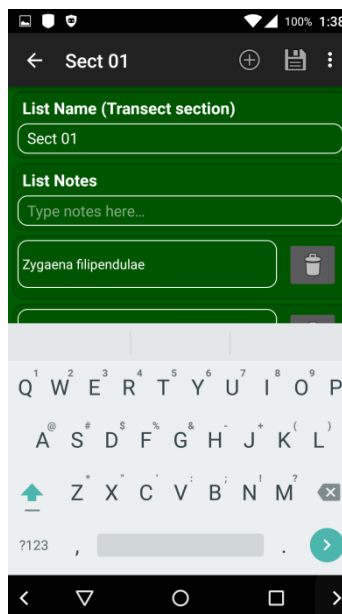


Fig. 7: Edit section

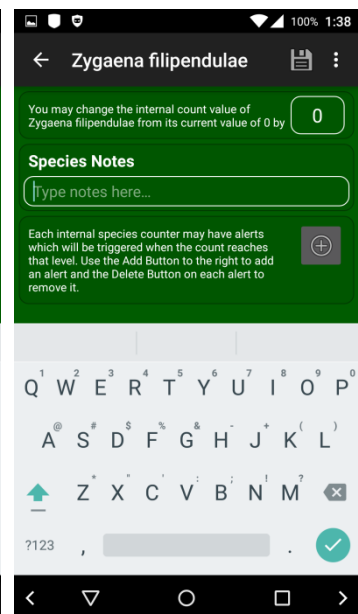


Fig. 8: Edit species

To move back one page you can use the arrow in the left upper corner. You should leave TransektCount always from its starting page, as in this state the database is safely closed.

Nearly each app page has its specific context menu. You can activate it with the 3-point-symbol in the upper right corner.

When you have large lists or have collected big amounts of data the app may delay the start of pages, especially when entering a transect section list (the counting page) or the result page, as those need heavy calculations.

Finally, there is a page showing your results (Fig. 9). Here you see beneath the meta data of the inspection the species which got counts. You open this page from the Starting page with the "Show Result"-Button or the Eye-symbol in the app-bar. It may take a few seconds to show up.

4. Further functions

The "Settings" page (Fig. 10) can be reached from most pages of the app. Here you may adapt the look and feel in some aspects to your wishes, e.g. sounds and alerts.

Selecting an own background picture can be achieved by the Gallery App, accessible in the left side menu of the background option (if applicable wipe from the left edge)..

The menu on the starting page (Fig. 11) has Reset, Import, Export, Help, Info and Settings functions.

For preparing a new inspection you may use "Reset Data" to reset the inspection-specific meta data and count data. Alternatively you may import the Basic DB from /sdcard/transektcount0.db

Internally, TransektCount stores the data always in a single, equally named SQLite-DB file in the app's own storage area. As this file cannot be read or changed directly by the user, exporting the data to files in a user reachable storage area is necessary.

By "Export Basic DB" you may export the DB as empty "Basic DB" which is reasonable, when to take into account changes of the transect structure or new species you may have entered (see "2. Settings"). "Import Basic DB" just reads the file transektcount0.db.

You may import any previously exported TransektCount-DB (Fig. 12). This supports monitoring of different transects. To achieve this you may create transect-specific Basic DBs which may be renamed by a file manager into e.g. transektcount1.db, transektcount2.db, etc. (Mind: The db file name must start with the string "transektcount", otherwise it cannot be imported).

Exporting the current database (Export DB) writes a copy of the complete DB to /sdcard/transektcount_YYYY-MM-DD_hhmmss.db. (The file naming scheme is transektcount_date_time.db). For your own purpose you can rename the exported TransektCount DB files within the previously mentioned conventions.

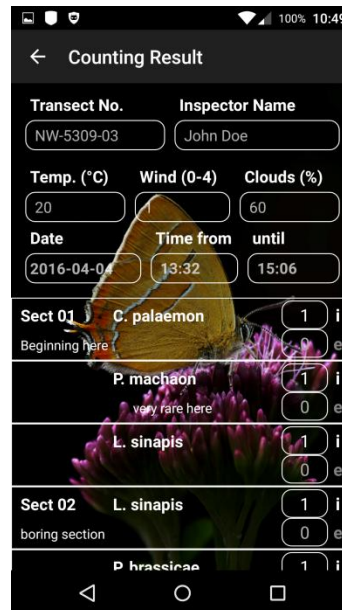


Fig. 9: Counting Result

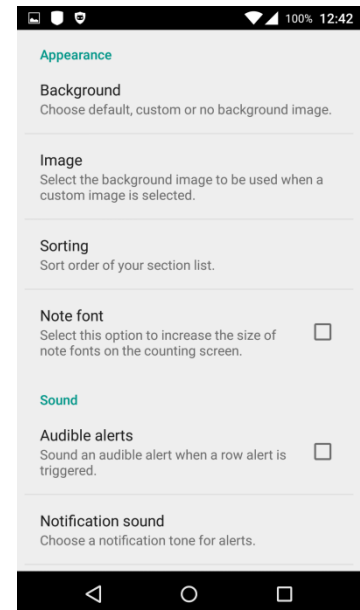


Fig. 10: Settings

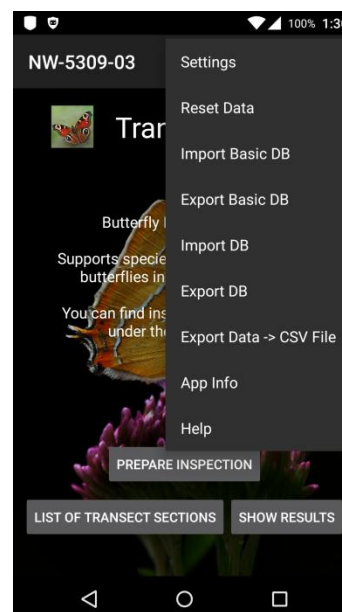


Fig. 11: Starting page menu

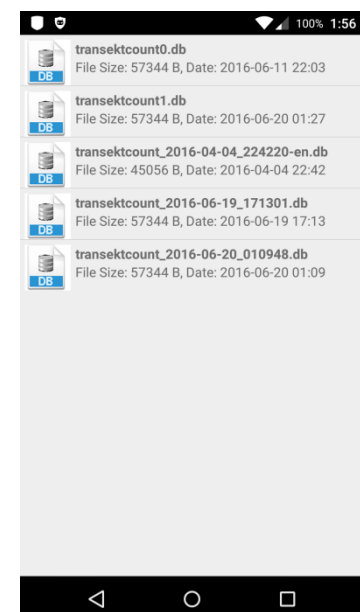


Fig. 12:

The function "Export Data -> CSV File" writes the meta data and the counting results into a MS Excel readable .csv-file to /sdcard/transektcount_YYYY-MM-DD_hhmmss.csv.

And you may find under "App Info" the email address of the author, the history of the app and the license note.

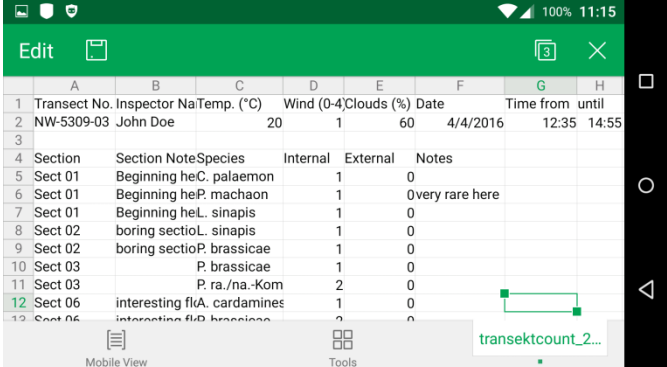
The menu of the "List of Transect Sections" allows you to create new section lists. This function will be used only while creating a transect Basic DB or when there are changes in a transect.

The counting page of a selected section list provides the "Duplicate Section List" function. This function is used while creating a Basic DB, as described under "2. Set up".

The menu of this page provides a "Share" function for sending notes using a standard app like SMS or email.

IT-affine users may transfer the exported "transektcount_YYYY-MM-DD_hhmmss.db" or ".csv" files to a PC. With the free tool "SqliteBrowser" (sqlitebrowser.org) you may examine the db-file. The .csv file may be imported as a text file (with file origin "Unicode UTF-8") to an Excel sheet for further processing.

Fig. 13 shows the exported .csv-table in an Android Office Suite



	A	B	C	D	E	F	G	H
1	Transect No.	Inspector Na	Temp. (°C)	Wind (0-4)	Clouds (%)	Date	Time from	until
2	NW-5309-03	John Doe	20	1	60	4/4/2016	12:35	14:55
3								
4	Section	Section Note	Species	Internal	External	Notes		
5	Sect 01	Beginning he	C. palaemon	1	0			
6	Sect 01	Beginning he	P. machaon	1	0	very rare here		
7	Sect 01	Beginning he	L. sinapis	1	0			
8	Sect 02	boring sectio	L. sinapis	1	0			
9	Sect 02	boring sectio	P. brassicae	1	0			
10	Sect 03		P. brassicae	1	0			
11	Sect 03		P. ra./na.-Kom	2	0			
12	Sect 06	interesting fl	A. cardamines	1	0			
13	Sect 06	interesting fl	P. brassicae	2	0			

Fig. 13: CSV import in Smartphone Office Suite