TransektCount 2.0

1. Introduction

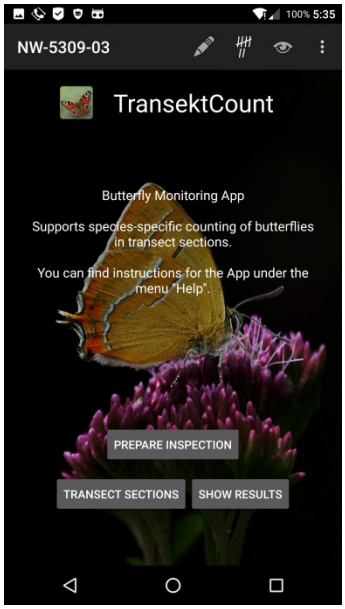

Fig. 1: Starting page

TransektCount is an Android app that supports transect counters in nature preserving projects according to the Butterfly Monitoring Scheme methodology in Europe (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 access permits which are needed for the app's serviceability and is published on https://github.com/wistein/TransektCount.

2. Set up

Before initial use you must set up an empty basic database (Basic DB) or import and adapt an example Basic DB.
In the first case, you enter the meta data of the transect. Click on PREPARE INSPECTION and enter at least the transect-No. and the inspectors name (Fig. 2).
Save this by clicking the save symbol. Changes can be applied at any time later.

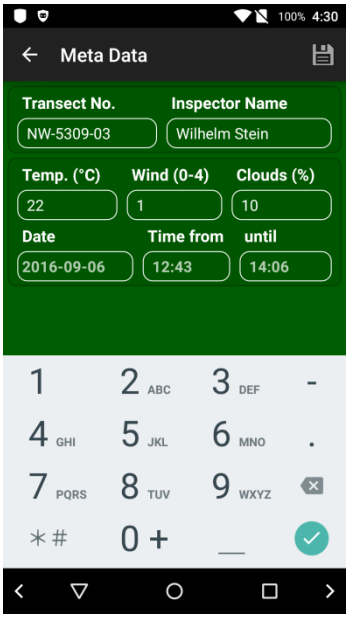

Fig. 2: Prepare inspection

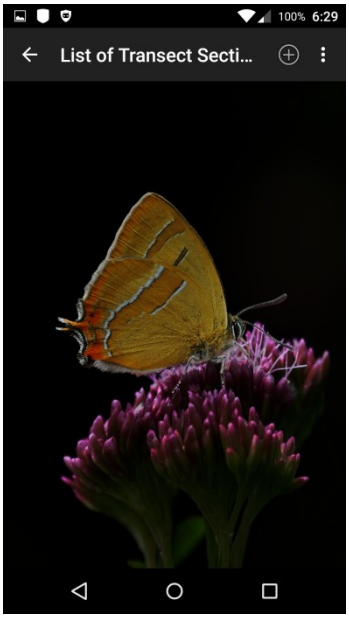

Fig. 3: Create new section list

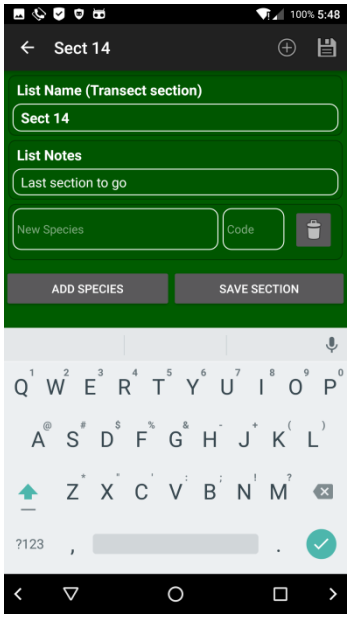

Fig. 4: Enter new section data

To create a species list for the first transect section from scratch click the (+)-Button in the head line of "List of Transect Sections" (Fig 3), enter a name and click SAVE AND EDIT. Use the (+)-Button in the head line of the section editor to add species, each with name and code (Fig. 4). When finished click SAVE SECTION.

The codes will be used as an option to sort the list and as a reference to show corresponding butterfly icons. The codes derive from the numbering according to Karsholt/Razowski, as used e.g. in the German Lepiforum (http://www.lepiforum.de).

```
Sect 01
--------------------------
...
Pieris napi            07000
Pieris rapae           06998
Pieris na./ra.-compl.  07000*
...
```

Detail of section list Sect 01

The appended *-symbol at code 07000 marks a species group whose code advisably should be the largest code of its members.

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

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,...).

Alternatively, you can just import an example Basic DB from
https://github.com/wistein/TransektCount/tree/master/transektcount/docs
out of your home directory and edit it suitably.

When you have entered the meta data and 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 or Android versions).

The Basic DB does not contain any inspection related data, it 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. All inspection related data will be ignored for an export as Basic DB.

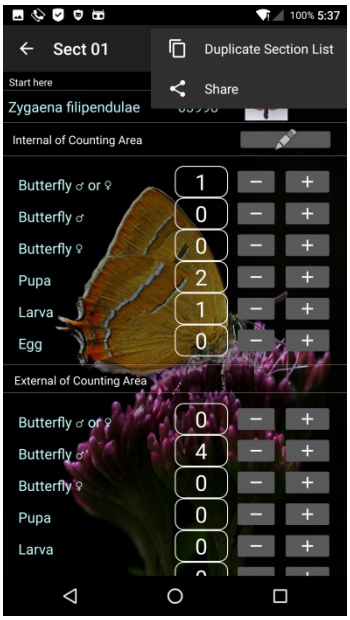

Fig. 5: Counting page

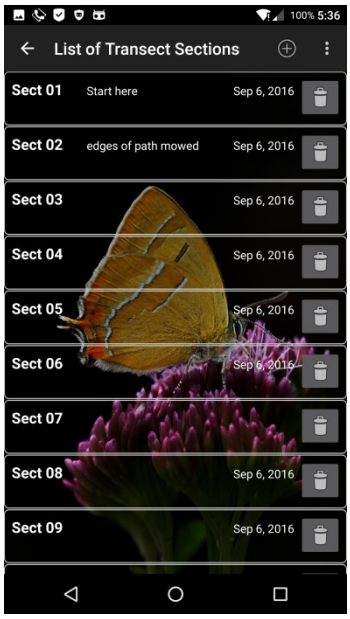

Fig. 6: Section list

3. Usage

Start with TRANSECT SECTIONS (Fig. 6). Select the relevant transect section. The counting page for the first species in the sorted section list appears (Fig. 5).
As counting of butterflies ought to be distinguished between those within the imaginary count area and butterflies outside this area you have 2 separate sets of counters (Internal and External of Counting Area).
To count just tip on the appropriate "+"-Button of the corresponding species. The "-"-Buttons allows for corrections.

Each count is stored immediately. While storing the count the current date and time will be stored either. The date and a possible section remark will then be shown in the list of sections and indicate a successful inspection of that section.

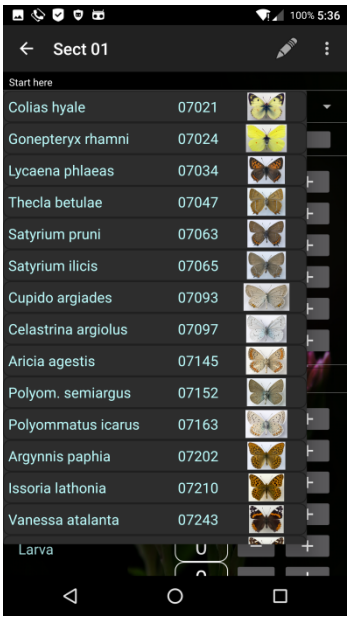

Fig. 7: Select species to count

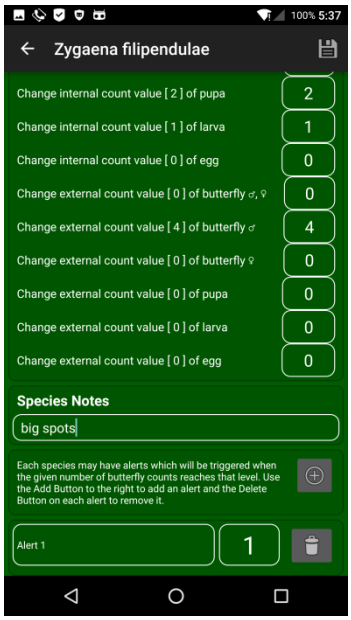

Fig. 8: Edit species

To select another species just tip on the scroll down list on top of the counting page (Fig. 7).
The Pencil-Button in the app bar of the counting page opens the section editing page (Fig. 4) for adding remarks for the section, adding species or 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 beneath the species name row of the counting page opens the species editing page (Fig. 8) that lets you add remarks for each species and set its counters to any value. Here you may also set pop-up alerts which show up while reaching a set number of butterflies on the corresponding internal counters (sum of all ♂ and ♀) 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 counting field.

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

Some app pages have functional icons and/or a specific context menu (3-point-symbol) in their header.

When you have large lists or have collected big amounts of data the app may delay the start of pages, especially the results page, as this needs heavy calculations. This will be indicated by a short popup message “View gets calculated!”

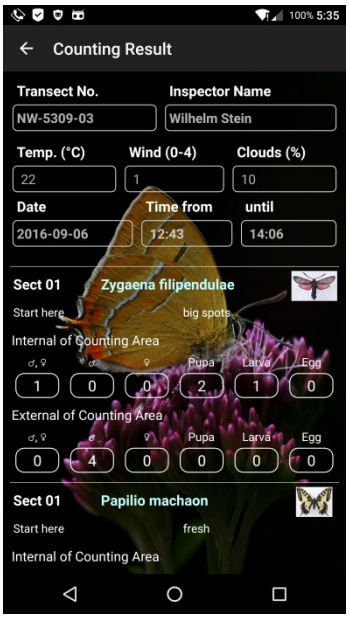

Fig. 9: Results page

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

4. Further functions

The menu on the starting page (Fig. 10) has Settings, Reset, Import, Export, Info and Help functions.

The "Settings" page (Fig. 11) can be reached from some pages of the app. Here you may adapt the look an feel in some aspects to your wishes, e.g. sounds, alerts or left-/right-hand counting page.

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)..

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.

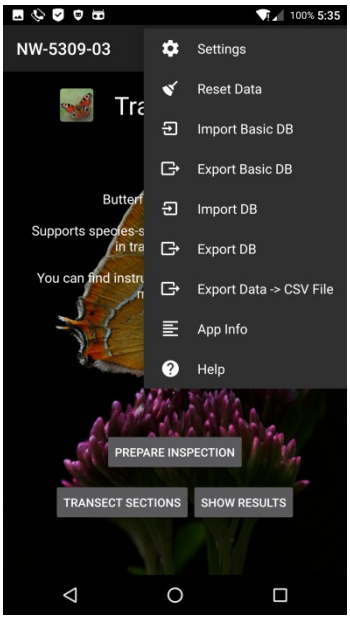

Fig. 10: Starting page menu

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.

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.

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

And “Help” explains the app like this document.

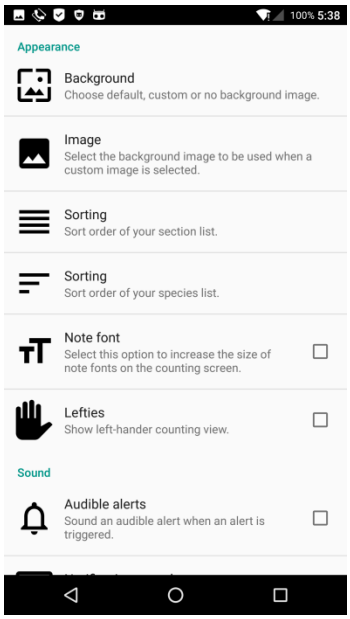

Fig. 11: Settings

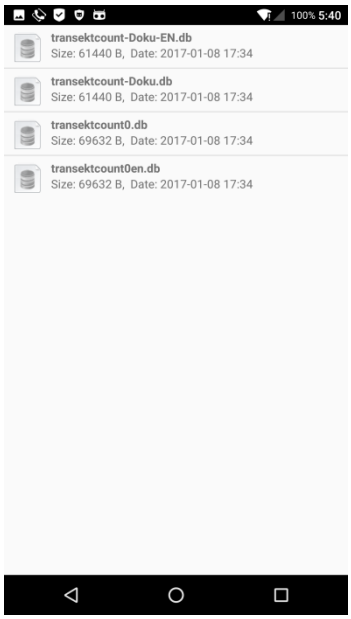

Fig. 12: Import file selection

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 the counting page provides a "Share" function for sending notes using a standard app like SMS or email.

From Android version 5.0.1 on, the counting page is temporarily switched off by the proximity sensor when the phone is put into a pocket. This saves energy, prohibits unwanted input and recalls the app into its current state immediately.

IT-affine users may transfer the exported "transektcount_YYYY-MM-DD_hhmmss.db" or “.csv” files to a PC.

With a free tool like "SQliteBrowser" (sqlitebrowser.org) you may examine the db-file.

The .csv file may be imported into a spreadsheet (e.g. MS Excel) as a

- comma-delimited text file with
- quotations marks for textfield recognition and
- file origin “Unicode UTF-8”

for further processing. This table is optimized for easy transmission of the results into the Monitoring web page.

Fig. 13 shows the csv formatting parameters for a correct representation in the free Android app PlanMaker Mobile Free.

Fig. 14 shows part of the imported .csv-table

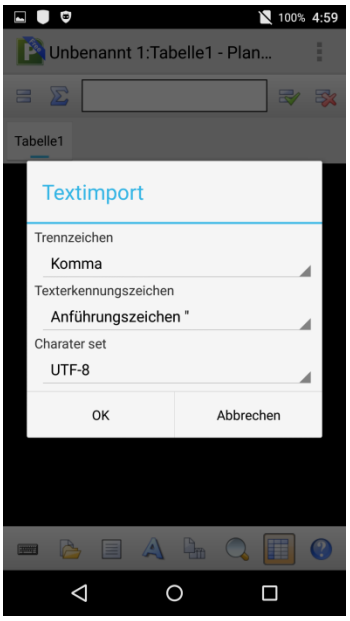

Fig. 13: Text import parameters

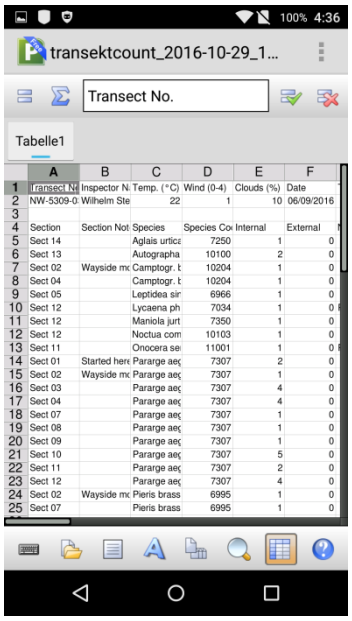

Fig. 14: Imported .csv-table