The Count Labels Tool

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The Count Labels tool (under Tools, Count Labels) lets you scan a directory structure for labelled files (files with labels in the species field of their headers). You have to tell it what depth in the structure you are going to scan. Then, each higher level becomes another field in the output file.

So the first thing to do is to label the files in the usual way. You can, of course, put more than one label in each file. For example, if the species field contained:

LACI,SAFL

this would label the file for both Lasiurus cinereus and for Saccolaimus flaviventris, not a likely combination, of course! If a file has no label, then it will be ignored in the Count Labels process, except that it will take some time to process it, so unlabelled files will cost time.

Next, you need to give thought to the folder structure you will use. Actually, you should have done this before labelling the files! Make sure that all the files are at the same level in the tree under a single base folder, and make sure the base folder contains only the files/folders you want to scan in this way. There is no need to disperse the files, in fact that would usually be a bad idea for this purpose.

So if you have a directory structure like:

```
Base
     Site1
          files
     Site2
          files
     Site3
          files
     Site4
          files
```

and you set Start from Folder: to Base, then if you set the Number of Folder Fields to 1, it will include a field in the output file for Site and will search for all bat files at the level of the Site folders. That is, it will find the files in the Site1, Site2, Site3 and Site4 folders.

With a structure like:

Base
    Island1
       Site1
         files
       Site2
         files
    Island2
       Site3
         files
       Site4
         files

the files are now two levels down from Base, so you would set the Number of Folder Fields to 2. Then you would get two different fields in the output file, one for Island and one for Site (they would be labelled Folder1 and Folder2 respectively).

The other parameter you have to set is the Output Format.

File

This option outputs the Folder fields followed by a field for the filename, followed by a field for the label. So for the second structure above, the fields would be named:

Folder1, Folder2, Filename and Label

Folder1 would contain either Island1 or Island2 and Folder2 would have Site1, Site2, Site3 or Site4. Filename will have the name of each file and Label will have the label from the Species field in each file. If a file contains two labels, then the same filename will appear in two consecutive records, with the labels separated into those two records.

1 min

This option outputs the Folder fields followed by Night, Time, Label and Number. So for the second structure above, the fields would be named:

Folder1, Folder2, Night, Time, Label and Number

Folder1 would contain either Island1 or Island2 and Folder2 would have Site1, Site2, Site3 or Site4. The Night field would have the date at the start of the night (eg 2004/12/22). The time field will give the time at the start of the 1 minute interval to the nearest minute (e.g. 16:35), but referenced to the previous midday (see below). For each label found in the species field of a file, the Number field will contain an entry giving the number of files which contain that label, in the 1 minute interval.

5 min

This option is identical to 1 min, except that the accumulation time is 5 minute intervals instead of 1 minute intervals.

Night

This option has the same effect as 1 min, except that there is no Time field, since numbers are accumulated over the whole night instead of 1 minute intervals.

What can you do with it?

If you manually go through your files labelling them (the best way for species identification, provided you are good at recognizing the species, and provided there aren't so many files that this becomes impractical) then the Count Labels tool gives you a way to quickly sum up the results of your data collection.

One cool way to present the data is to use the 1 min Output Format, then plot Night against Time for each data point for a given species. This gives a plot showing when a species was recorded each night. If you superimpose lines for sunset and sunrise times, it makes it easier to see where night started each day.

The output file format makes it easy to open directly in Excel. Then you can use Excel's Pivot Table functions to produce tables showing the features of your choice with impressive flexibility. For the second example above, you could use the pivot table to show how bat activity varied between islands, between sites, between nights or even within nights.

An important note about Nights and Times!

The Night and Time fields contained an inconsistency which I have just now rectified. So the following only applies to AnalookW version 3.2o or later. So if you have used Count Labels before, beware, because this will make a difference (though it should be fairly obvious!). The Night and Time fields do not give the date and time as we normally think of it (actual local time), but give the date and time of a recording time minus 12 hours. The reason for this is that the date normally changes during the night (I think this is true of any place with bats!). For a number of purposes, it is better to think of bat times as relative to a night, rather than a day. So I have made it so that the Night field always has the date when the night started (again, this might not be true at the poles!). For the purposes of the Count Labels tool, this is important, because you are really interested in what night contained a certain batch of data, not what date. Likewise, the Times given in the Time field are referenced to the previous midday, so the time is the time since midday. Again, the formula is simple - just subtract 12 hours from the real time and you get the Night Time. Again, the reason is that for many purposes you don't want a jump

back in time halfway through the night! If you want to get the actual time of an event, just add 12 hours to the Night and Time values.

In Excel, times are stored in a format where 0.5 represents 12 hours (half a day). To make a new field in Excel which incorporates both Night and Time in a single value, simply add the two values together! EG. if Night is in cell B1 and Time is in C1, then you could make a new value in E1 by entering the formula "=B1+C1" and E1 will now have the real time minus 12 hours. To get the actual local time of a particular bat occurrence, you can just add 0.5, so the formula for E1 could be "=B1+C1+0.5". Then E1 would contain the actual time as we normally think of it.

This is inconsistent with earlier versions of AnalookW, which had Date and Time fields, in which, for some bizarre reason, the Date was the Date - 12 hours, but the Time was the actual, local time! So I have fixed that inconsistency with another inconsistency - Sorry!