Here is a set of scripts to help with the QA and analysis of the LTMN project - vegetation protocol.

1. **Species\_list** creates an excel file with four pages. This is designed to both fix the typos in the species names as well as create lists of the unique species in each site and survey. Run this after each survey is complete to fix all the typos in the species\_template tab of the excel survey files. Also use this to create the lists of species found on each site for future surveys.

2. **MAVIS** is for getting the NVC classifications as well as Ellenberg and Grime’s scores after the surveys are completed. There are two parts, the first sets up the input files for the MAVIS software. Unfortunately, you have to manually use MAVIS for each survey, and separately for the grimes/ellenberg and nvc analysis. I have found that I needed to close and reopen MAVIS each time as well. Once the outputs are saved (I save them as the same name as the input but in a different folder) you can use the MAVIS\_out code to turn them back into a form to combine with the survey files. I have written it so that it is its own excel page with everything in there and the identifying columns such as year, site and plot. You can use them like this or copy parts of them back into the survey files. I have written it so that if there are gaps in the whole\_plot\_data or plots with no information, these will be preserved in the outputs so that you can just copy and paste easily.

I have written the next part ‘dataframe\_creation’ to use the MAVIS output excel files as they are created. You will need to copy these over to the appropriate folder in there to use that code.

3. The **Dataframe\_creation** folder contains scripts for converting the excel file surveys into a useable form for data analysis. The excel files with the data in them have been arranged in such a way as to be most readable by humans. This will amalgamate all the surveys into one dataframe, arrange it so that each row is one plot and all the columns are various metrics for each plot. The final output of the two scripts will be three csv files. The first has each row and all the metrics needed for an overall analysis such as species richness, Ellenberg scores and habitats. The next two have each row as a plot with the columns being each of the species found in any of the surveys. One has the frequency out of 25 as the values in the cells and the other has percentage cover.

The report code uses the dataframes created here!! You will need to make dataframes with this code every time you add new data or change the data before making reports. They will also be useful for analysis, other than the reports.

4. Finally the **report** folder is one way of using the data on the vegetation protocol. It creates interactive reports as HTML files with maps and figures from the vegetation data. I have used HTML files to preserve the interactive figures and because there are no page breaks. These files are huge as they have all the formatting and javascript in there. It would be ideal to have the css and javascript as separate files and just the html in there but that isn’t how the R package does it. I think it could be done though to reduce the size of the files and to make them usable for hosting online. In this folder there is one R script with all the functions I made to make the output and an Rmd file so that you can knit it all together into one HTML output.