# Vegetation Data Quality Assurance and Control
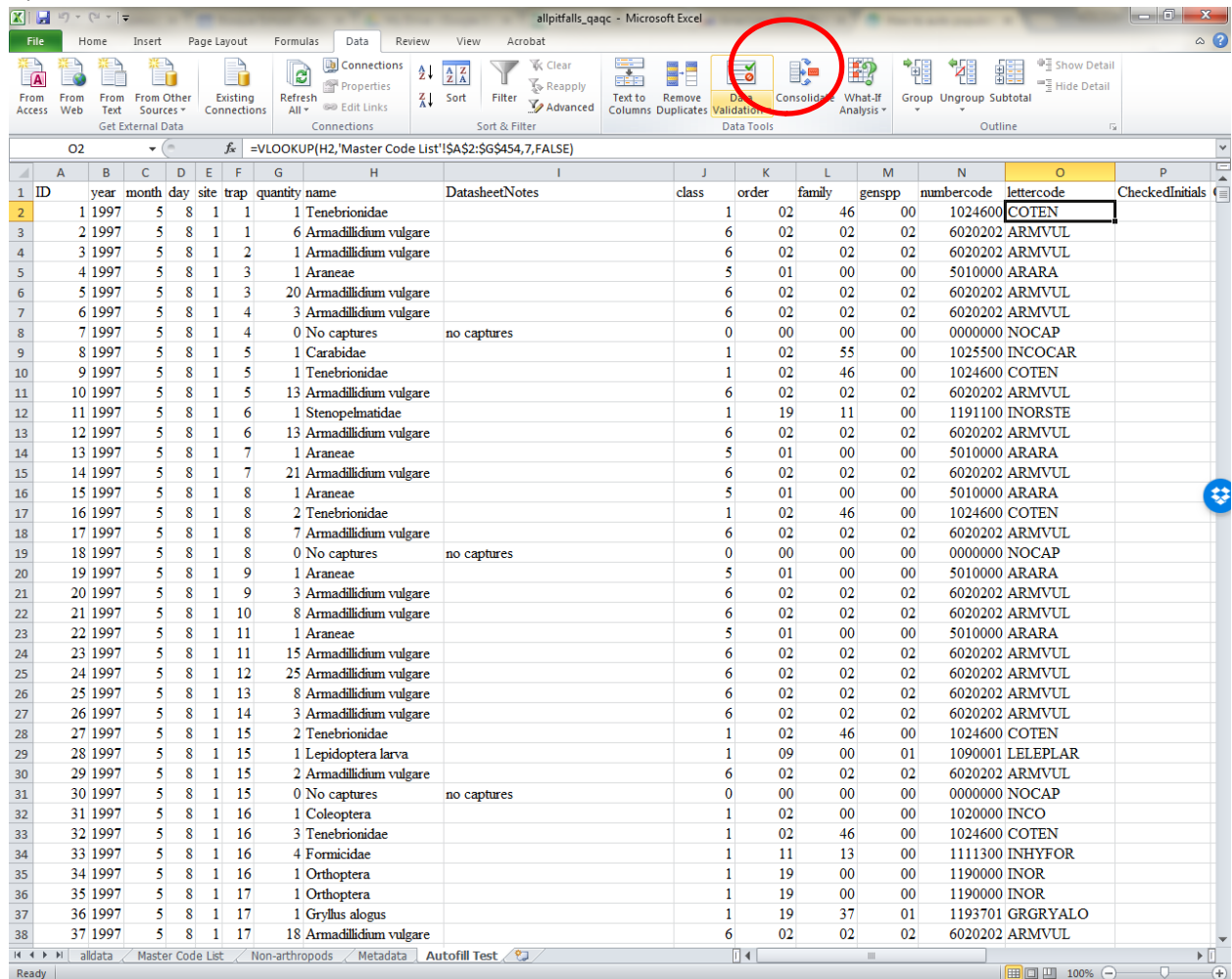
## General Information

- **NOTE ANY CHANGES MADE** in the QAQCNotes column, along with your initials.
- Only begin the QA/QC process when an entire year's worth of data have been entered and checked
- Conduct the steps of the procedure in the order they are written

## Procedure

1. Ensure that all sites that are being monitored are present (filter the site number column as a quick check). Consult the Science Coordinator for a list of sites that were monitored in the year of interest.
2. Filter the following columns to screen for prohibited values:
   a. Year should all be the same
   b. Month should only be 8 or 9
   c. Day should not exceed 31
   d. Site should not exceed 34
3. Filter the spp column for blank cells. There should be a species code entered into the DatasheetNotes column. These will be new additions to the species database. You will need to verify their presence in New Mexico (and in applicable counties) before approving their addition to the master species list.
   a. Use the USDA PLANTS database (plants.usda.gov). Type in the species code into the search bar. Each entry should have a map that will indicate if the species is native, introduced, or unknown in the United States. If the species has been confirmed in New Mexico, add it to the species list document (Dropbox/Data/Datasets/Veg/SpeciesList_QAQCed.xls) and fill in all the relevant columns.
      i. If the species has NOT been confirmed in New Mexico, consult Dr. Tonne to check his confidence in the identification. He has discovered a handful of species that had previously not been known to be present in New Mexico!
   b. If there is NO species code entered in the DatasheetNotes column, open AllVegData.xls (Dropbox/Data/Datasets/Veg) and look at previous values for that site. You may be able to determine the species based on the cover value and surrounding species in the transect. If not, write UNID as the species code (for "unidentified")
   c. When all new species have been added to the Master List, you will need to update the Species List Copy sheet and the data validation control on the rawdata sheet in order to add in the new values:
      i. First, make a copy of the new Master Species List (SpeciesList_QA_QCed.xls) and paste it over the current Species List Copy in VegYYYY.xls . Sort it alphabetically, and add back the columns for obsolete or commonly confused codes.

ii. Go to the RawData sheet, to the Data tab in the top pane. Select "Data Validation". Use the following images to help you. Under "Validation Critera", select "Allow List," and for the permitted values of the list, select all the valid names in your Species Code List Copy. Check the box (apply these changes to all other cells with the same settings)
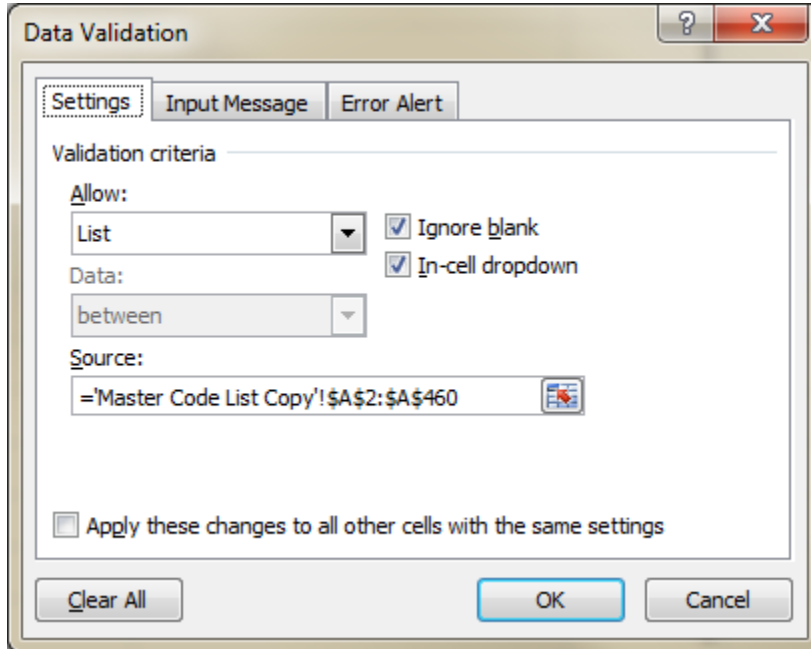
4.

5.

   i.  On the RawData sheet of pitfallsXX, navigate to all of your new species entries. You should now be able to add their database names by using the dropdown list. Do so before moving onto the next step.

6.  Use the filter function to derive a species list for the year. Ensure that there are no prohibited values that snuck through using the autofill function—sometimes the number at the end of a species code will fill as a series rather than a copy when the autofill function is used (eg, ELEL5, ELEL6, ELEL7, ELEL8, etc.). For some reason the data validation tool does not catch this type of error.

7.  Correct any missing or incorrect start or end points. Search for any values in the Difference column that are <0 or >30.00. Also search for end points >30.00. Try the following to resolve the error:

   a.  Swap start and end points
   b.  Check the original datasheet for messy handwriting (a 7 that looks like a 9, a 2 that looks like a 5, etc.)
   c.  If this site has had vegetation data recorded in years prior, look at previous years to deduce what an appropriate end point might be based on the species code and start point.
   d.  If all else fails, make start point + .01 the end point. This is the most conservative value that allows for analysis.
   o   Search for differences of 0.00 and change to difference of 0.01 (most conservative value)

8.  Search for any double periods ".." to ensure this typo does not appear in the dataset.

9.  When all issues have been resolved for a given year, append the data to the master veg file (AllVeg.xls)

10. Update the metadata tab of the master file with the date of update, the new date range of the dataset, and, if applicable, review the entire metadata tab to ensure that all information is still accurate.


This procedure document has been approved by _____Kim Eichhorst_____


Date _____7/6/20_____