Quality Control using DIMA

Quality control (QC) is the process of checking or inspecting a data set to make sure that it is complete and meeting a pre-defined data quality standard. Good habits in quality assurance efforts will minimize the effort needed during the QC process. For more information on how the QA and QC are part of the monitoring process, see the Monitoring Manual for Grassland, Shrubland, and Savanna Ecosystems, 2nd ed. In this tutorial, we will describe the QC process using DIMA.

Step 1. Enter data, if needed. See the Quality Control section of the Monitoring Manual for data entry instructions.

Step 2. Check the data set for completeness.
Each plot should have:

☐ Plot Description Information
☐ Core Methods
☐ Supplemental Methods (optional)
☐ Species growth habit assignments

Many of these completeness checks can be accomplished using the reporting function in DIMA. From the main screen select Reports
In this screen you may select the sites, plots, and data ranges of field data collection you would like to QC. In most situations, selecting “All Sites” and “All Plots” will be appropriate.

**Step 2.1 Check for complete Plot description information:**

- GPS coordinates, recorded in Decimal Degrees
  
  Select the **Plot Definition** report, highlight the **Soil Verification** report and select **Go**.

- Click **OK** when the “Report will now be displayed” window pops up. An Excel spreadsheet will open.
Select the **Soil Pits** tab. Note that the Latitude and Longitude of each plot is displayed. Plot AL-5 is missing longitude information, so I highlighted the empty cell to indicate a problem that needs to be corrected. I will check with the field crew and the GPS waypoint file to obtain the correct coordinate.

**Soil pit description**

Use the same Plot Definition report to examine the soil pit data. Select the **Horizons** tab. Examine the soil horizon descriptions. Is it complete? Does it look correct?

**Plot layout description (number, length, azimuth of the transects)**

Back in Access, return to the DIMA Home screen by selecting **Close**. The next task is to visually inspect each Plot Description page to ensure that the plot layout description is complete. Select a plot and then **Edit Plot** on the right.

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Switch between the tabs to ensure that the plot layout information is entered. In the plot below, driving directions and azimuth information were not recorded. I will check with the field crew to see if this information was recorded on paper or exists elsewhere. If so, I will enter it.
Plot observation notes
Examine the Disturbances/Management History tab. No weather information is recorded. If it is not present elsewhere, I will look up this information using NOAA or PRISM.

Step 2.2 Check for complete core methods

☐ Line-point intercept for each transect
☐ Canopy gap intercept for each transect
☐ 1 species richness form
☐ 1 soil stability form

In the Reports Manager window, select the Method Tracking Report and select Go.

When the Excel spreadsheet opens, select the Field Sampling tab.
For each plot, the total number of transects as well as the number of forms for each method is present. Note that AL-13 only has 2 Line-point intercept forms. I will add this to the list of missing data to pursue.

**Step 2.3. Check that supplemental methods (where collected) are present.**

Common supplemental methods include:

- ☐ Plant density
- ☐ Interpreting Indicators of Rangeland Health

Use the **Method Tracking** report described above.

**Step 2.4. Check that all species recorded are present in the State Species List**

Run the Method Species Recorded Report to make sure that all your codes are in the state species list. Codes like BRASSAF01 may need to be added manually. Maintain a list of codes that need to be added so that I can add them to the master list that will be used for future DIMA updates.

1) Select Report.
2) For selected method select “Species Reports”
3) Select All Sites
4) Under the select report Tab Select **Method Species Recorded**
5) Select Go
6) An Excel document will open in a new tab (may take several minutes to open).

Any entry that has ‘()’ or a **Scientific Name** is currently listed in your State Species list (Table 1).

**Table 1.**

Any entry that has **no value** in column B (Table 2) is not on your current State Species List.
7) Check that all codes in your **Method Species Recorded Report** are in the state species list (have “()” or a scientific name in the excel output, see Table 1 and 2) and meet the standard unknown code format.

8) For codes that do not follow protocols, use the mass update of species code function to change it.

9) All species codes that are in the list without a value in Column B need to be added to the States Species list.

   a. Do this by opening the species list from any random plot.
   b. Type the Code (eg BRASSAF01) into the Add Code(s)
   c. Select Add
   d. When prompted to add to table select ‘Yes’.

   e. Do this for all of the codes without a value in column B in Table 2 from the **Method Species Recorded**

**Step 2.5 Check that all species have growth habit assignments:**

1) Open DIMA and Select ‘Reports’.
2) Under “Select Method” choose the “Species Richness”
3) Select All Sites and plots
4) Under the Select Report Tab Select Species List-Vertical.
5) Click ‘Go...’ (this may take several minutes).
6) If any of your species don’t have a growth habit, sub-code, and duration you will need to update this information into your DIMA database (eg. ARTR2) using the classes listed in bullets below. Use the growth habit categories listed below. With any questions you have about classifying these plant codes do not hesitate to contact the GBI state office. Also see the growth habit assignment protocol for assignment rules based on USDA plants categories.

7) Any sub-Code that does not have one of the following categories will also have to be changed:
The growth habit categories we are using for AIM are:
  • Non-woody
  • Woody

For when growth habit was not assigned:
  • Unknown

The duration categories we are using for AIM are:
  • Perennial
  • Annual
Step 3. Documenting Missing Data

It is important to know where and why data may be missing. We’d rather know when something went wrong than ignore it or leave the data out.


Step 4. Check the data for correctness.

4.1 Run indicator reports. See the “AIM Data Reporting” tutorial for instructions. Do the indicators match expected variation for the stratum and ecosystem?

4.2 Map the plot locations using ArcGIS. See the “Creating a Shapefile from DIMA” tutorial for instructions. Are the plot locations correct relative to the original sample design?

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