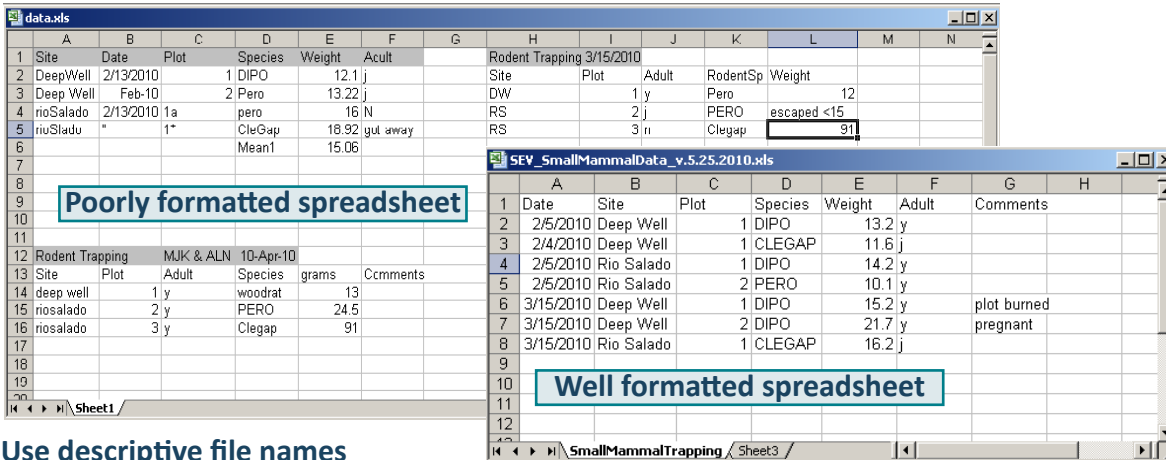


### Best Practices for spreadsheets & data files

- Create only one table per spreadsheet and enter data consistently. Do not leave empty rows or columns.
- Enter data using consistent formats. For example, always use the same formats for dates.
- Name columns consistently and without spaces or special characters.
- Order similar columns in multiple tables in a similar way.
- Use consistent formats, codes, spellings, etc. and do not mix data types in a single column.
- Store data in a format that will be accessibly by any (or many) applications now or in the future.
- Keep your raw data raw. Make a copy in another file for doing calculations and manipulations.



**GOAL of DATA ENTRY:**  
To create valid data sets that are organized to support ease of use.

### Use descriptive file names

Example:

**SEV\_SmallMammaData\_v.5.25.2010.csv**  
Project = SEV  
Type of data = SmallMammalData  
Date version was created = v5.25.2010  
File type = csv

### Data entry tools & data validations

Spreadsheets and Google Docs are two options for data entry. Many data entry tools offer data validation that provides users with lists of choices or restricts entries to a specific data type or size. These features can improve data quality by preventing data entry errors.

### Definition: Relational Database

A relational database consists of a set of tables, defined relationships between those tables (which are related to which and how), and a powerful command language called Structured Query Language (SQL) that facilitates data manipulation. Forms can be created to make data entry into a database much easier.

#### Spreadsheets

Great for charts, graphs, calculations  
Flexible about cell content (#s & text in one column)  
Easy to use  
No record integrity (columns sort independently)  
Harder to maintain as complexity & size grow

VS.

#### Relational Databases

Easy to query for portions of data  
Data fields are types (only #s OR text in one column)  
Steeper learning curve than spreadsheet  
Record integrity (columns can not sort independently)  
Better with large amounts of data

### Software options for data manipulation

>> Analyzing, subsetting, or transforming data <<

- SAS: outstanding support
- SPSS: user-friendly interface
- Matlab: toolboxes for different discipline
- R: free, quality graphics, lots of helpful forums

### Local contact information