E4 Visualization

Marissa Lee

September 26, 2014

This code needs the following raw data files: All are located in 'e4DataPackage_092614' folder

1. 'e4_potData.txt'
2. 'e4_potData_dictionary.txt'

This code does the following things:

1. Cleans raw dataset.
2. Creates dataframes where y = soil property impact to the presence of Mv
3. Produces 1 multipanel figure for each soil property impact (soil moisture, nitrate, nitrification... others).

- Panel rows will be (a) Mv only, (b) Mv + Panicum, (c) Mv + Sorghum
- Panel cols will be (a) Mv biomass/Relative biomass, (b) Neighbor biomass/Relative biomass, (c) total biomass

This code produces the following items:

1. Multi-panel figures described above

Load libraries

```
library(ggplot2)
```

---

1. Clean raw dataset

Import data and check it out
Import

Check out dataframe; Note that...

- 'potid' and 'bk' columns need to be re-classified as factors
- 'mivi', 'pavi', 'sobi' have NA values ... If these are pots without that species planted, then these values should be zero. If these are missing values, then the rows need to be excluded
- there are notes that may mean some rows need to be excluded

Modify structure and remove rows with NAs

1. Re-classify 'potid' and 'bk' as factors

2. Change 'NAs' to 0s in 'mivi', 'pavi', and 'sobi' columns according to the treatment type. In other words, NA should be changed to 0 if the species' biomass is missing because it wasn't planted there in the first place due to its treatment assignment.

3. Remove rows with an 'NA' in any column (other than 'notes')

```
## [1] 159  18
```

4. Remove the row with the note about the nh and no outliers

```
## [1] 158  18
```

Calculate aggregate biomass columns

Create a total aboveground biomass column by adding Microstegium biomass, Panicum biomass, Sorghum biomass per observation (pot).
Create 'compabund' (aka Neighbor abundance) column by adding Panicum biomass and Sorghum biomass per observation (pot).

---

2. Create dataframes where y = soil property impact in response to the presence of Mv

Calculate the impact of invader presence on soil properties (Si1 - Si1)
Start by subsetting the data by neighbor treatment.
Look at the No neighbor treatment first