MAOM and POM NEON assignment

2022-10-18

R Markdown

This first code chunk formats your data - be sure to change for your file path and your site.

```
#loading packages
library(tidyr)
```

```
## Warning: package 'tidyr' was built under R version 4.1.3
```

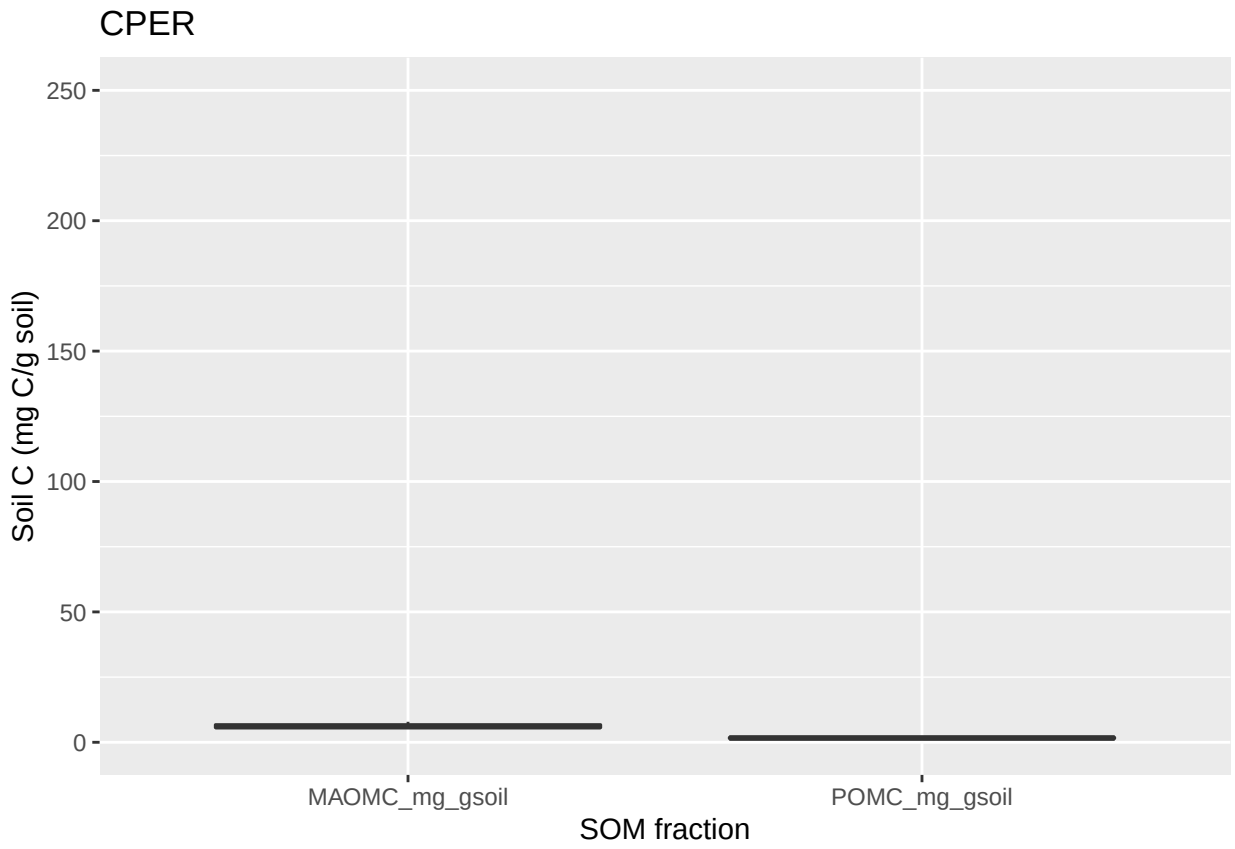
```
library(ggplot2)
```

```
## Warning: package 'ggplot2' was built under R version 4.1.3
```

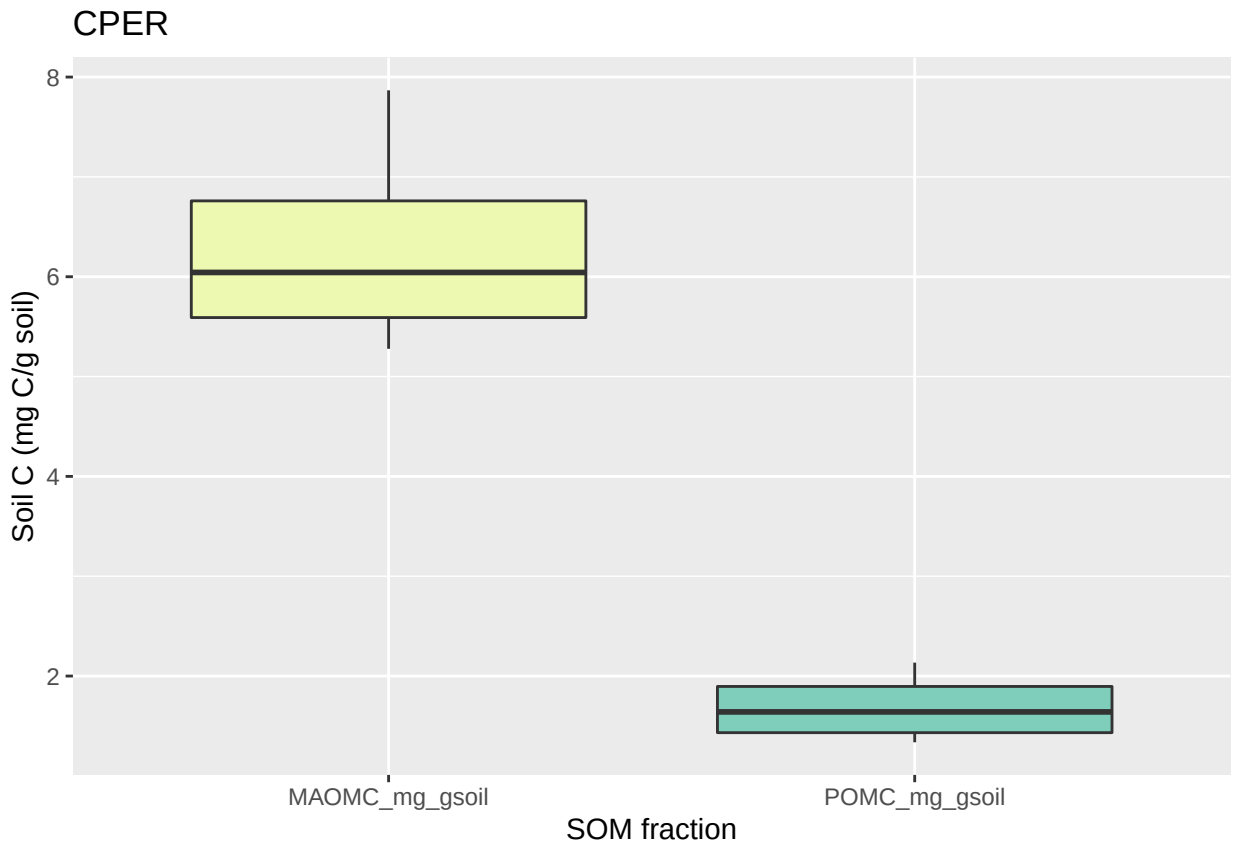
```
#formatting data

#import data
NEON_MAOMPOM <- read.csv("../data/NEON_POMMAOMdata.csv")

#select your site and just the top soil layer (0-15cm)
N_MP_CPER <- NEON_MAOMPOM[NEON_MAOMPOM$Site== "CPER" & NEON_MAOMPOM$layer== "M1", ]
```

This second code chunk creates box plots with fixed axes and unfixed axes

```
#boxplot of MAOM and POM with y axis as 0-250 mg C/g soil
#rename variables
N_MP_CPER$POM <- N_MP_CPER$POMC_mg_gsoil
N_MP_CPER$MAOM <- N_MP_CPER$MAOMC_mg_gsoil
#stack to have MAOM and POM on top of one another
NMP_CPER_stacked <-gather(N_MP_CPER, "SOM_frac", "C_conc", 5:6)
#plot with specific axes
ggplot(NMP_CPER_stacked, aes(y=C_conc, x=SOM_frac, fill=SOM_frac)) +
  geom_boxplot()+ scale_fill_brewer(palette="YlGnBu") + ggtitle("CPER") + ylim(0,250) +
  xlab("SOM fraction") + ylab("Soil C (mg C/g soil)") + theme(legend.position="none")
```



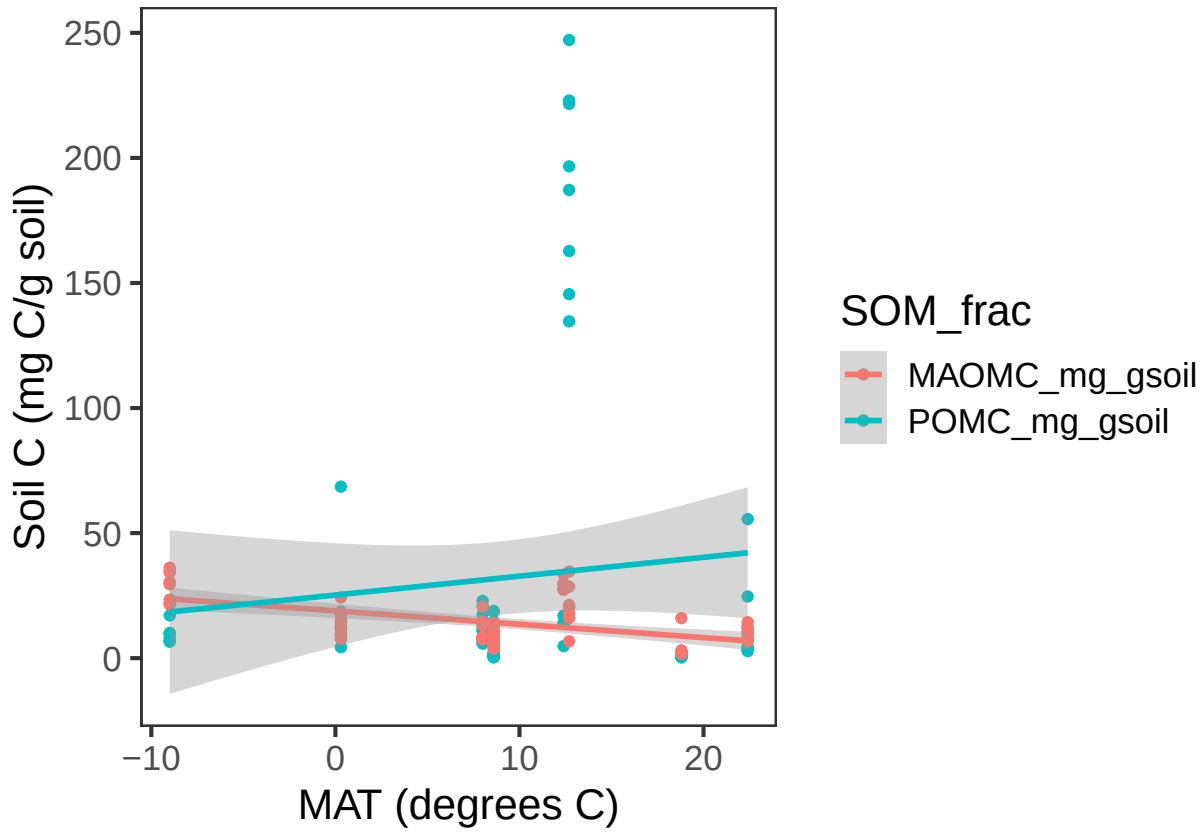

```
#plot without specific axes - remove ylim code
ggplot(NMP_CPER_stacked, aes(y=C_conc, x=SOM_frac, fill=SOM_frac)) +
  geom_boxplot()+ scale_fill_brewer(palette="YlGnBu") + ggtitle("CPER") +
  xlab("SOM fraction") + ylab("Soil C (mg C/g soil)") + theme(legend.position="none")
```



This third code chunk creates plots of POM and MAOM regressed against environmental variables

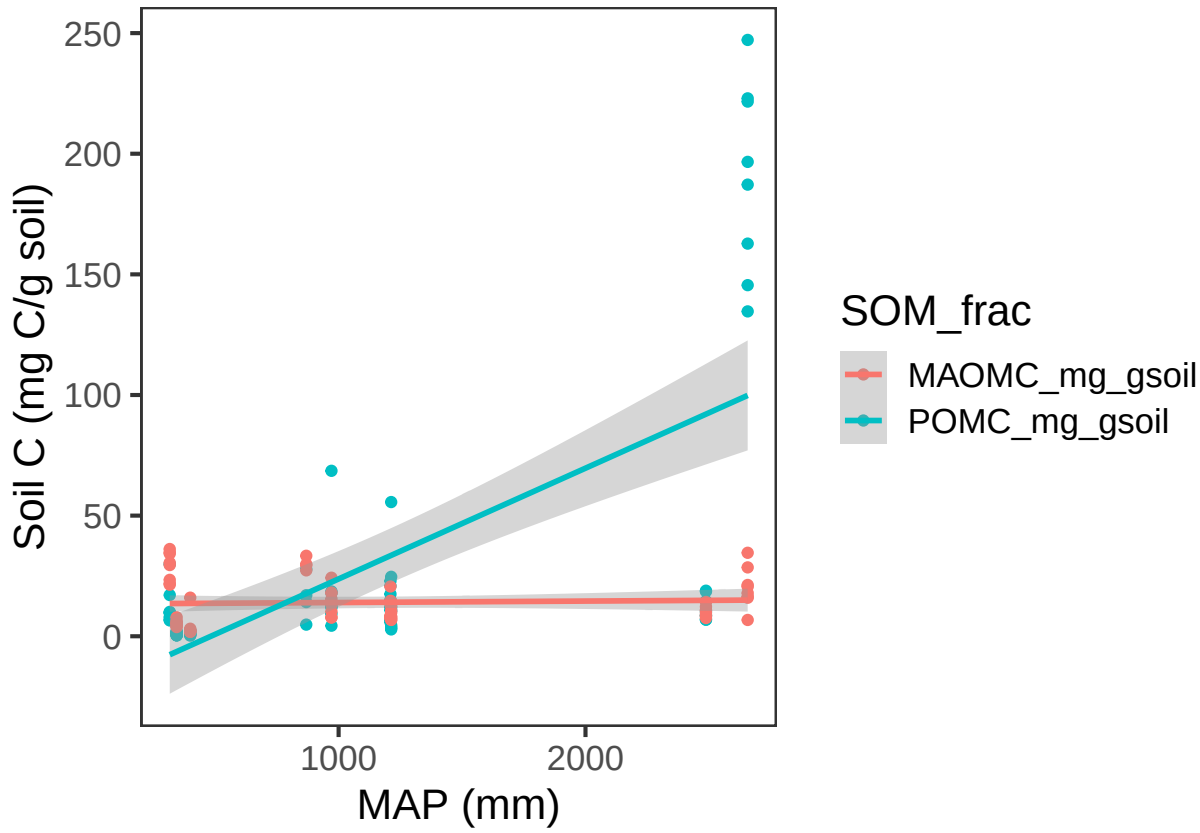
```
#back to full dataset
NMP_stacked <-gather(NEON_MAOMPOM, "SOM_frac", "C_conc", 5:6)

#MAT
ggplot(NMP_stacked, aes(x=MAT,y=C_conc, color=SOM_frac)) + geom_point() + geom_smooth(method="lm", se=TR
    xlab("MAT (degrees C)") + ylab("Soil C (mg C/g soil)") +
    theme_bw(base_size = 16) + theme(panel.grid.major = element_blank(), panel.grid.minor = element_blan
```

```
## `geom_smooth()` using formula 'y ~ x'
```



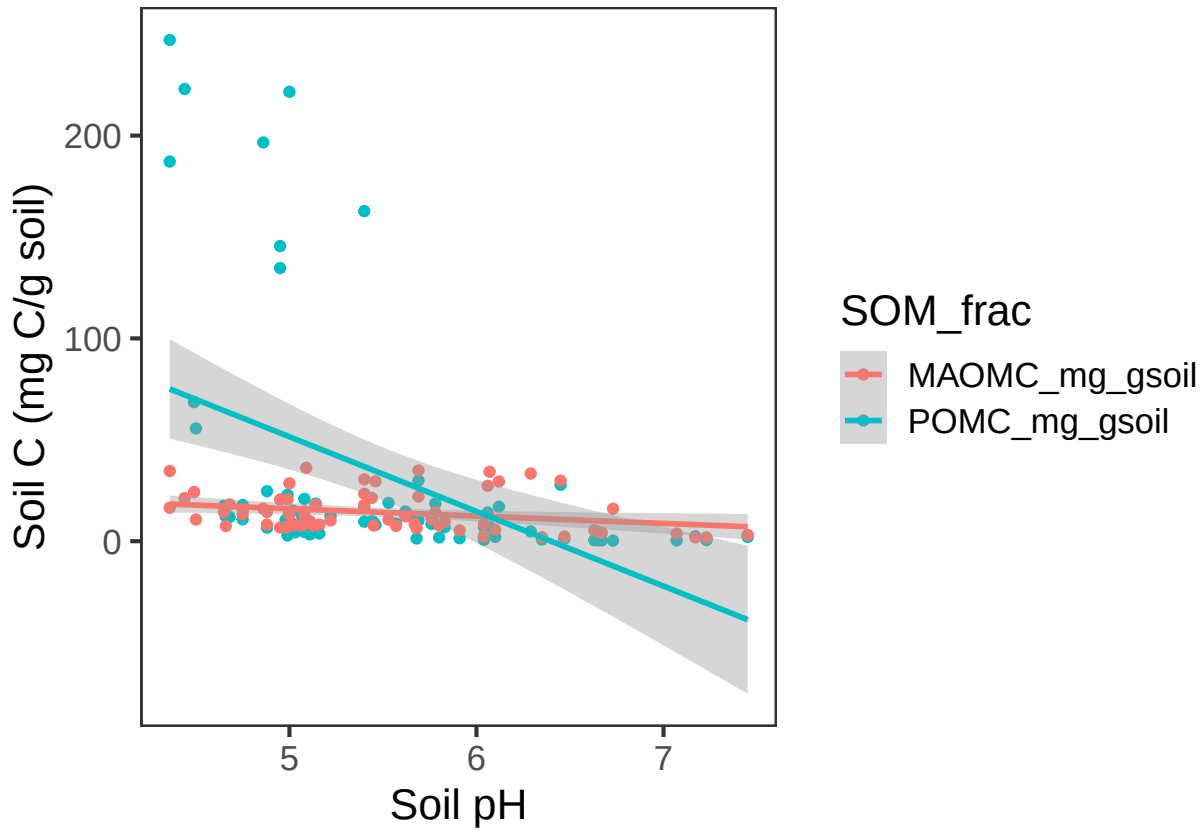

```
#MAP
ggplot(NMP_stacked, aes(x=MAP,y=C_conc, color=SOM_frac)) + geom_point() + geom_smooth(method="lm", se=TR
    xlab("MAP (mm)") + ylab("Soil C (mg C/g soil)") +
    theme_bw(base_size = 16) + theme(panel.grid.major = element_blank(), panel.grid.minor = element_blan
```

```
## `geom_smooth()` using formula 'y ~ x'
```



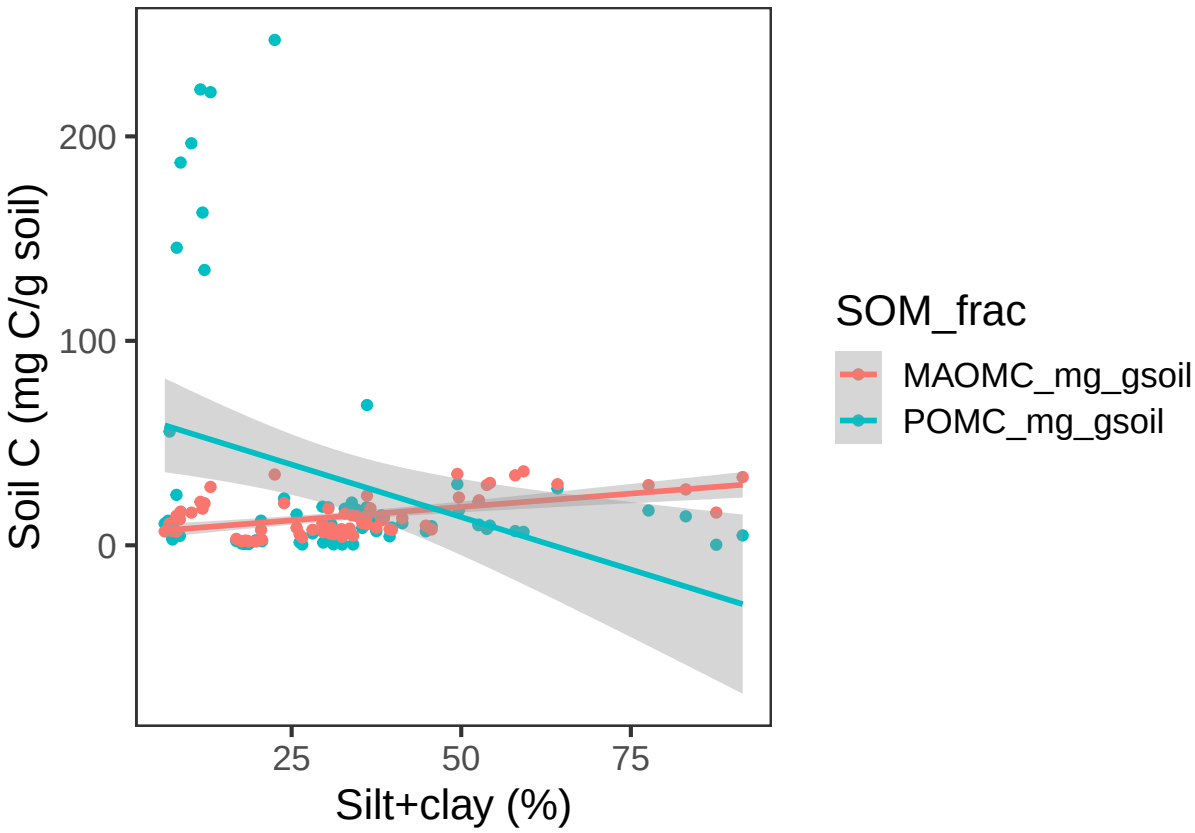

```
#initial_pH
ggplot(NMP_stacked, aes(x=initial_pH,y=C_conc, color=SOM_frac)) + geom_point() + geom_smooth(method="lm
    xlab("Soil pH") + ylab("Soil C (mg C/g soil)") +
    theme_bw(base_size = 16) + theme(panel.grid.major = element_blank(), panel.grid.minor = element_bla
```

```
## `geom_smooth()` using formula 'y ~ x'
```




```
#silt_clay
ggplot(NMP_stacked, aes(x=silt_clay, y=C_conc, color=SOM_frac)) + geom_point() + geom_smooth(method="lm
    xlab("Silt+clay (%)") + ylab("Soil C (mg C/g soil)") +
    theme_bw(base_size = 16) + theme(panel.grid.major = element_blank(), panel.grid.minor = element_bla
```

```
## `geom_smooth()` using formula 'y ~ x'
```


200
100
0
Soil C (mg C/g soil)
25
50
75
Silt+clay (%)
SOM_frac
MAOMC_mg_gsoil
POMC_mg_gsoil