Check_ScGl_data

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There seems to be a problem with holding the data for the same plant in two different plots like happens in Pond and to a lesser extent at Oil Pad and T-Junction https://research.botanicgardens.org/admin/demographics/scgl/reports/rawdata.php.

check the raw data

```
setwd(path.expand("Q:/Research/All_Projects_by_Species/Sclerocactus SPECIES/Sclerocactus_glaucus/Excel/1
test.scgl <- read.csv("RawData_scgl2014.csv", header = TRUE, as.is = TRUE)
head(test.scgl)
```

```
##   ScGl_data_id             Site Year Tag Transect X.coord.m. Y.coord.m.
## 1         1105 Atwell Gulch_108 2009 185      2.4        0.1       6.63
## 2         1103 Atwell Gulch_108 2010 185      2.4        0.1       6.63
## 3         1104 Atwell Gulch_108 2011 185      2.4        0.1       6.63
## 4         1102 Atwell Gulch_108 2012 185      2.4        0.1       6.63
## 5         6075 Atwell Gulch_108 2013 185      2.4        0.1       6.63
## 6         7748 Atwell Gulch_108 2014 185      2.4        0.1       6.63
##   Degrees Direction Height.cm. Width.cm. Fl Br Minis PhotoNumber
## 1      NA        NA        8.2      10.3  y  n    NA  1605, 1606
## 2      NA        NA        9.5       8.3  y  n    NA         900
## 3      NA        NA        7.7       9.0  y  n    NA        3800
## 4      NA        NA        6.5       8.1  y  n    NA
## 5      NA        NA        7.6       8.3  y  n    NA
## 6      NA        NA        8.1       9.5  y  n     1
##                              Comments X_coord_old Y_coord_old
## 1 largest of 3; also photos 1607, 1608           0           0
## 2                           No tag 186           0           0
## 3                                                0           0
## 4                                                0           0
## 5                                9 o'c           0           0
## 6                                                0           0
```

```
table(test.scgl$Site, test.scgl$Year)
```

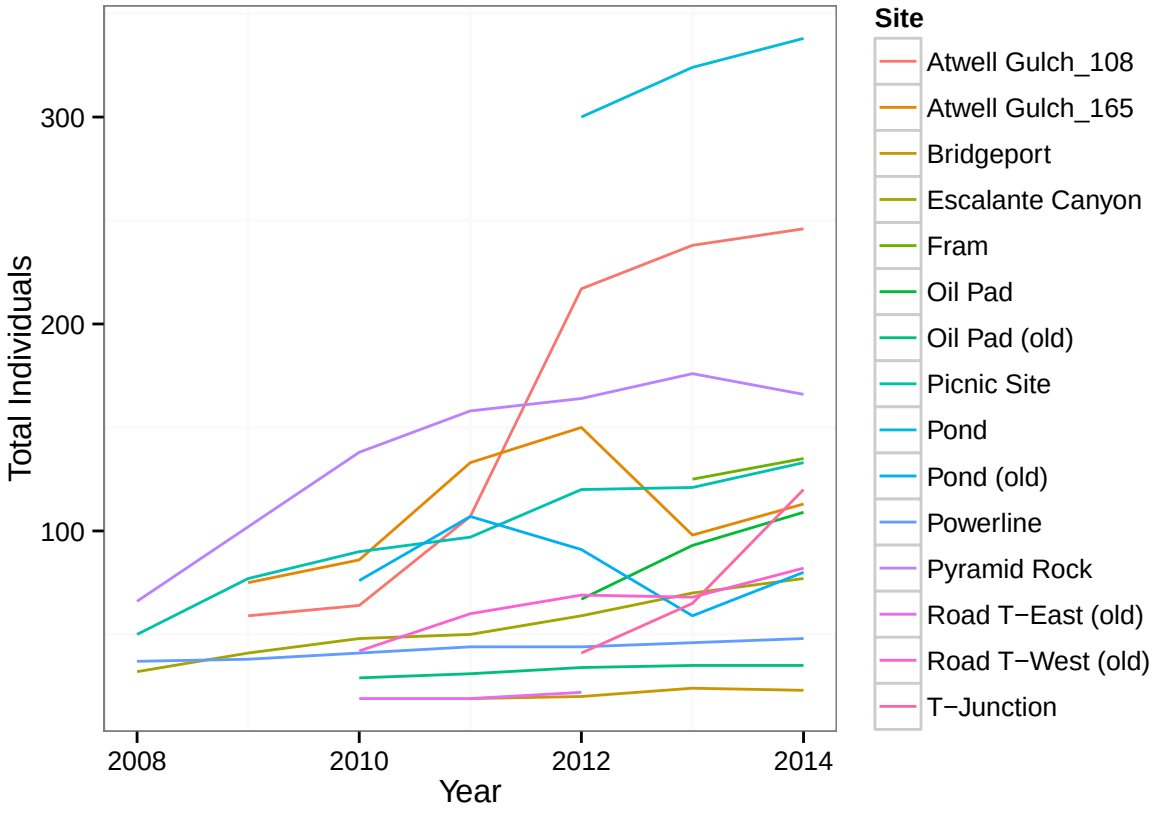
```
##
##                    2008 2009 2010 2011 2012 2013 2014
##   Atwell Gulch_108    0   59   64  107  217  238  246
##   Atwell Gulch_165    0   75   86  133  150   98  113
##   Bridgeport          0    0    0   19   20   24   23
##   Escalante Canyon   32   41   48   50   59   70   77
##   Fram                0    0    0    0    0  125  135
##   Oil Pad             0    0    0    0   67   93  109
##   Oil Pad (old)       0    0   29   31   34   35   35
##   Picnic Site        50   77   90   97  120  121  133
##   Pond                0    0    0    0  300  324  338
##   Pond (old)          0    0   76  107   91   59   80
```

```
##   Powerline           37   38   41   44   44   46   48
##   Pyramid Rock        66  102  138  158  164  176  166
##   Road T-East (old)    0    0   19   19   22    0    0
##   Road T-West (old)    0    0   42   60   69   68   82
##   T-Junction           0    0    0    0   41   65  120
```

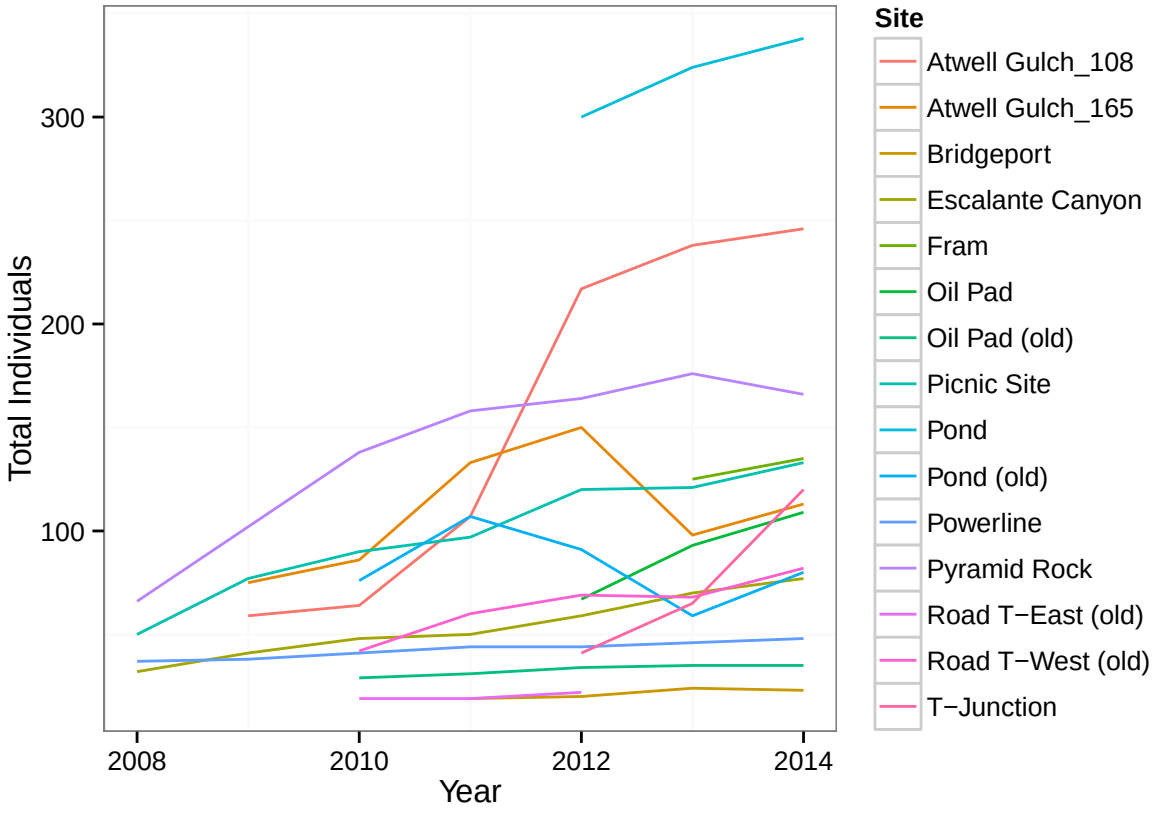
```
# Change Fl and Br to 1s and 0s, add a volume column
test.scgl$Fl2 <- 0
test.scgl$Fl2[test.scgl$Fl == "y"] <- 1
test.scgl$Br2 <- 0
test.scgl$Br2[test.scgl$Br == "y"] <- 1
test.scgl$vol <- pi*(test.scgl$Width.cm.^2)*test.scgl$Height.cm.

library(plyr)
scgl.raw <- ddply(test.scgl, .(Site, Year), summarise,
  X = length(Height.cm.),
    Rep = sum(Fl2),
    Brs = sum(Br2),
    avgH = mean(Height.cm., na.rm = T),
    sdH = sd(Height.cm., na.rm = T),
    avgW = mean(Width.cm., na.rm = T),
    sdW = sd(Width.cm., na.rm = T),
    avgvol = mean(vol, na.rm = T),
    sdvol = sd(vol, na.rm = T))

head(scgl.raw)
```

```
##               Site Year   X Rep Brs     avgH      sdH     avgW      sdW
## 1 Atwell Gulch_108 2009  59  39   0 3.488136 2.150708 4.579661 2.553887
## 2 Atwell Gulch_108 2010  64  44   1 3.642187 2.416596 4.742188 2.736398
## 3 Atwell Gulch_108 2011 107  46   2 2.427358 2.256991 3.388679 3.004039
## 4 Atwell Gulch_108 2012 217  88   2 2.171698 1.900998 3.113208 2.607266
## 5 Atwell Gulch_108 2013 238 107   0 2.665966 2.146014 3.152941 2.787338
## 6 Atwell Gulch_108 2014 246  80   3 2.189024 2.033636 2.908943 2.735586
##     avgvol    sdvol
## 1 450.5257 626.5992
## 2 523.5352 688.1527
## 3 331.3765 632.8100
## 4 220.4246 390.8534
## 5 285.6246 517.2443
## 6 233.9259 442.7700
```

All plots:



Only plots with old and new:



Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.