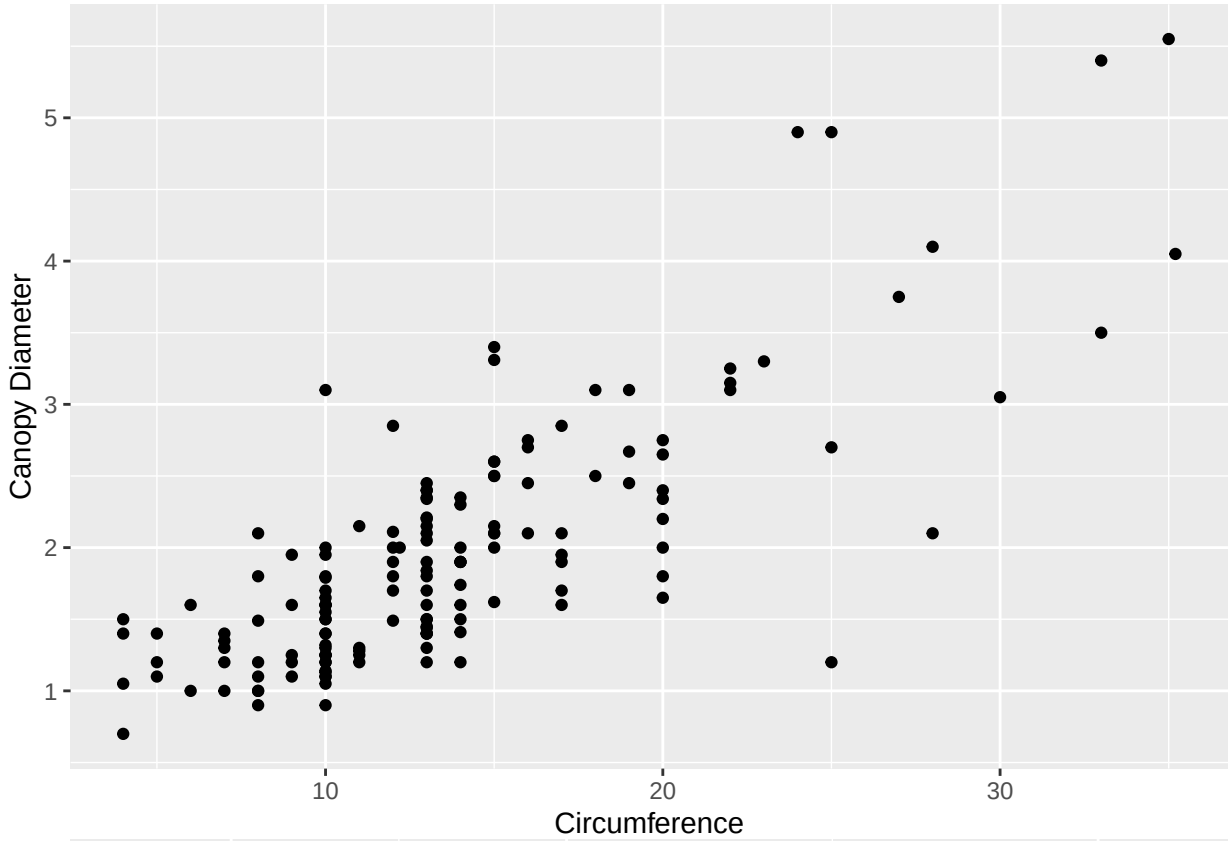
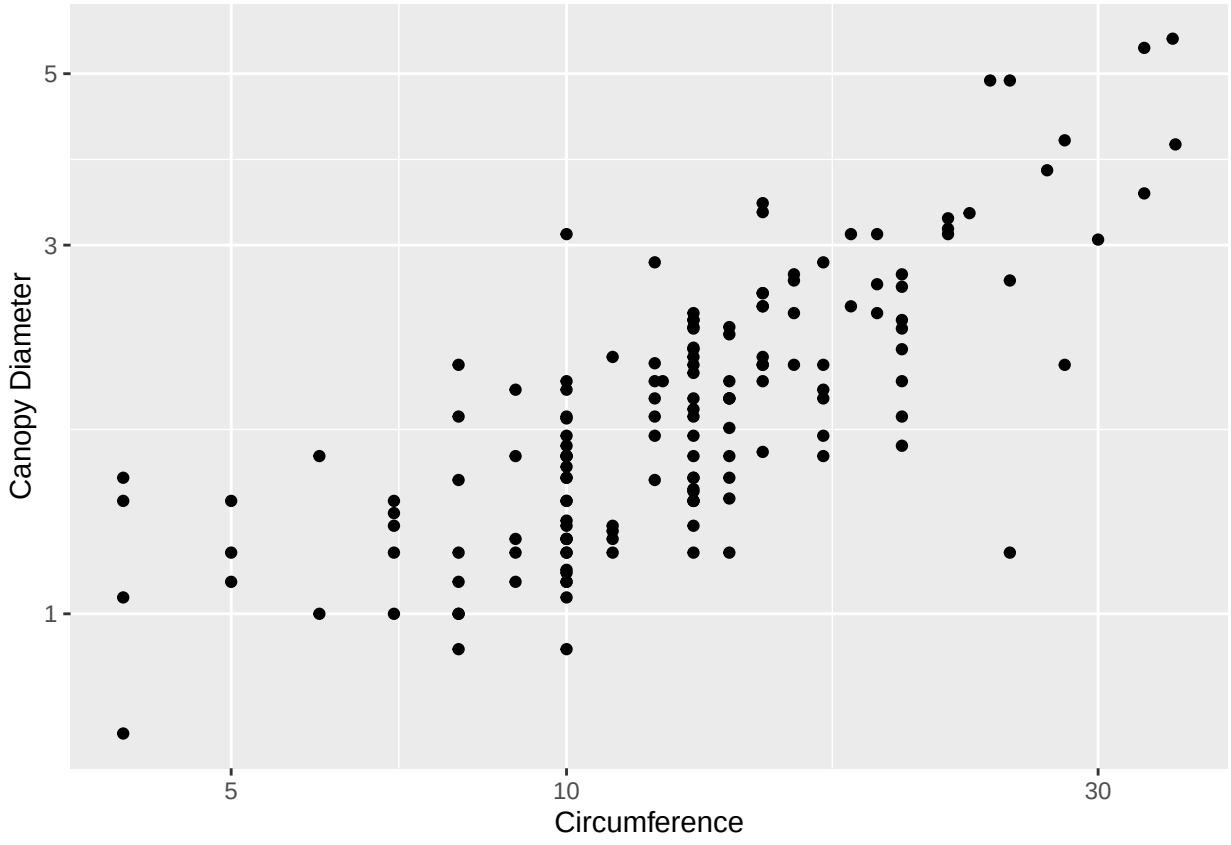
Week 5 Assignment

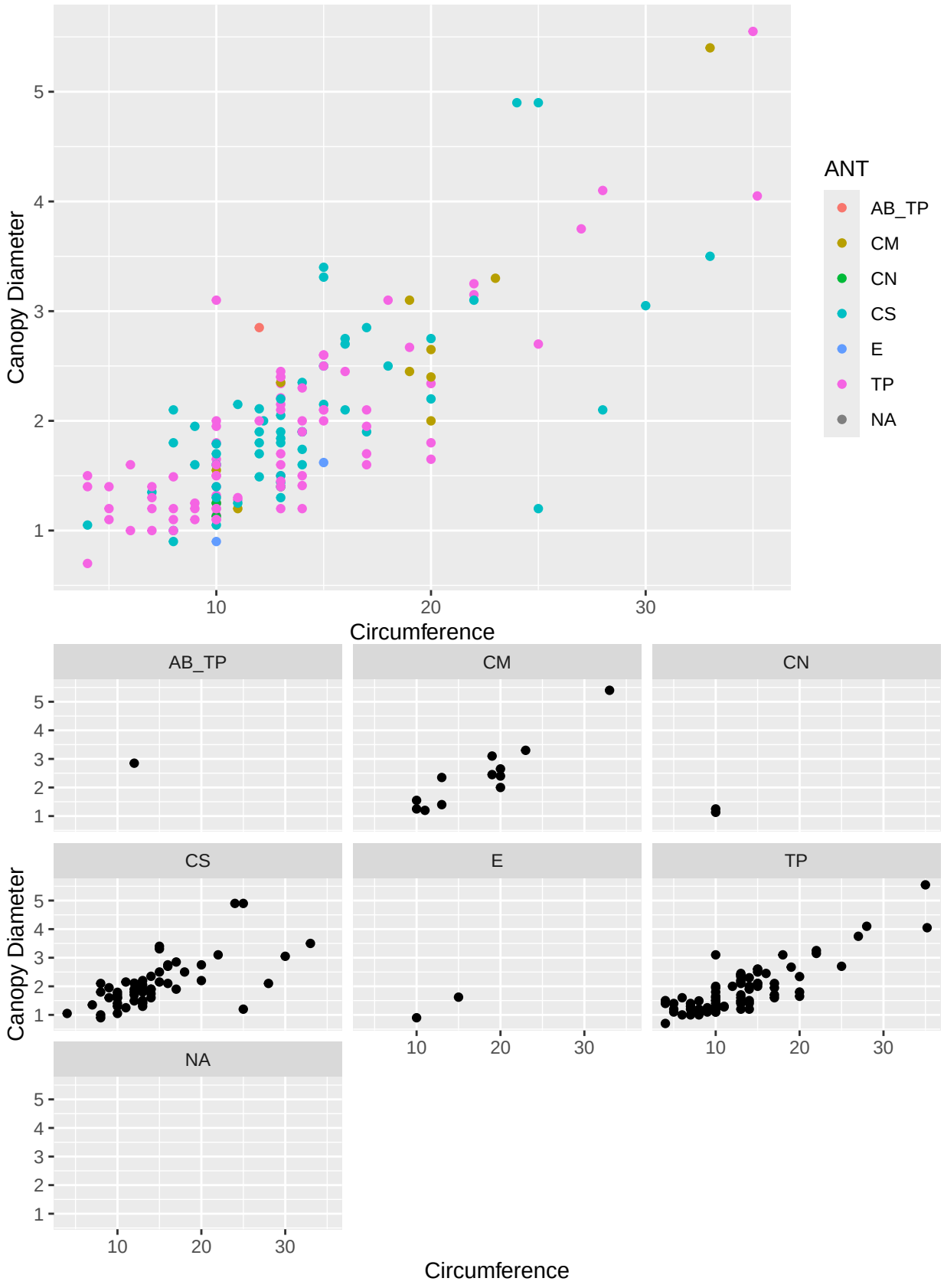
Ellen Bledsoe

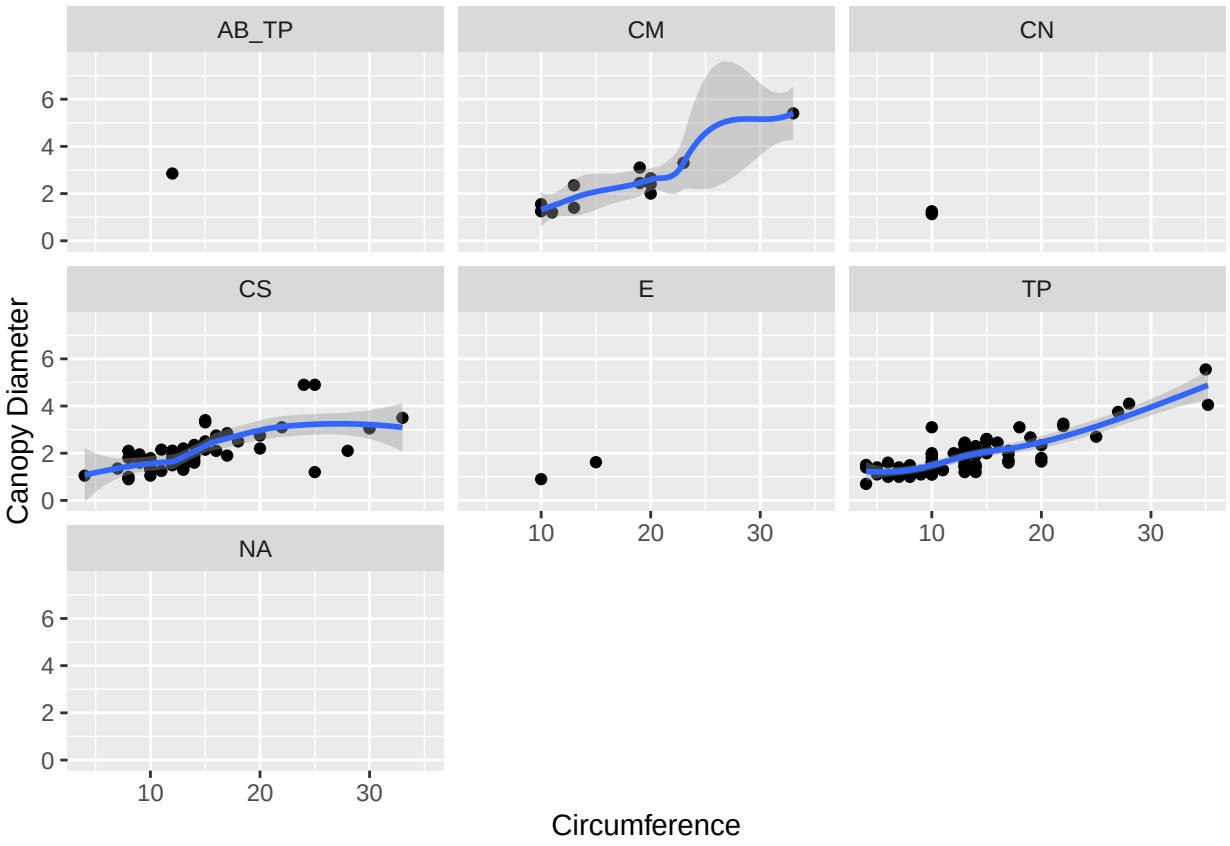
2025-09-24

1. Acacia and Ants (20 pts)

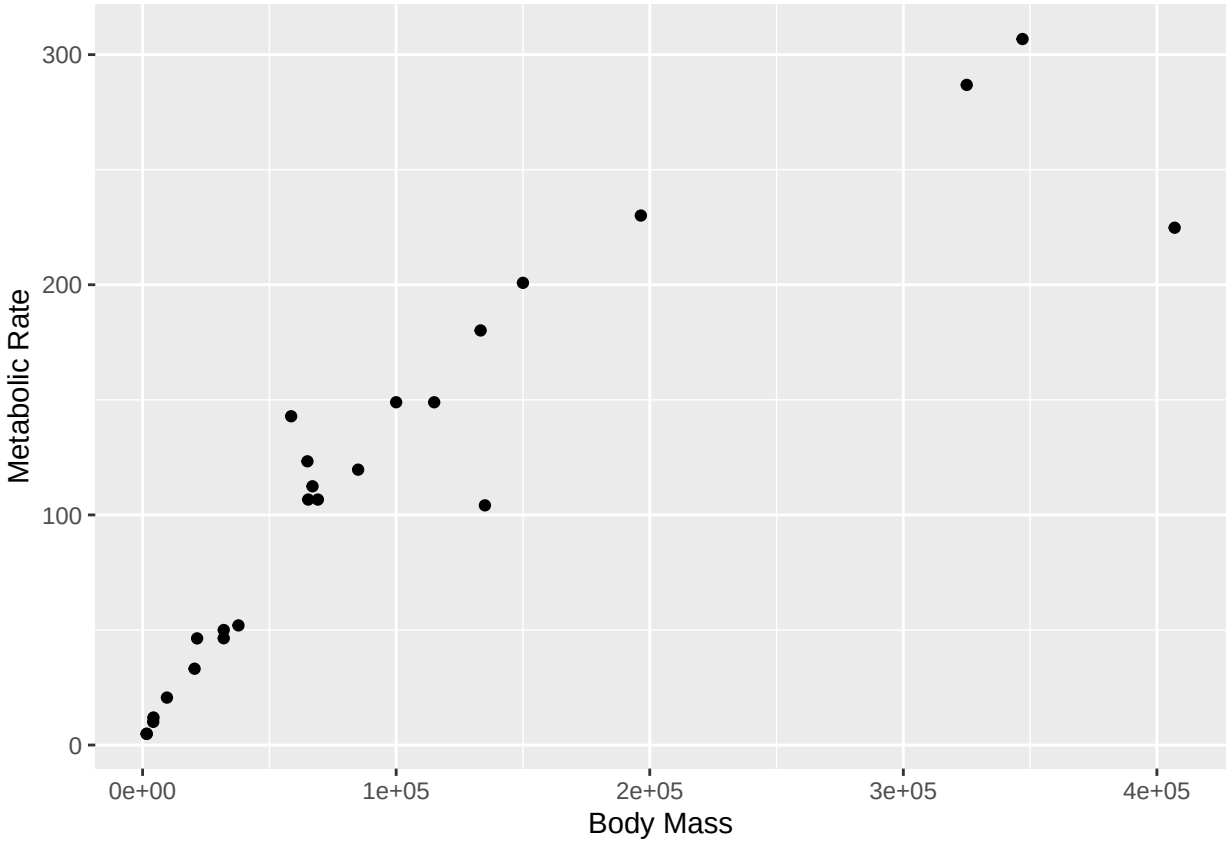


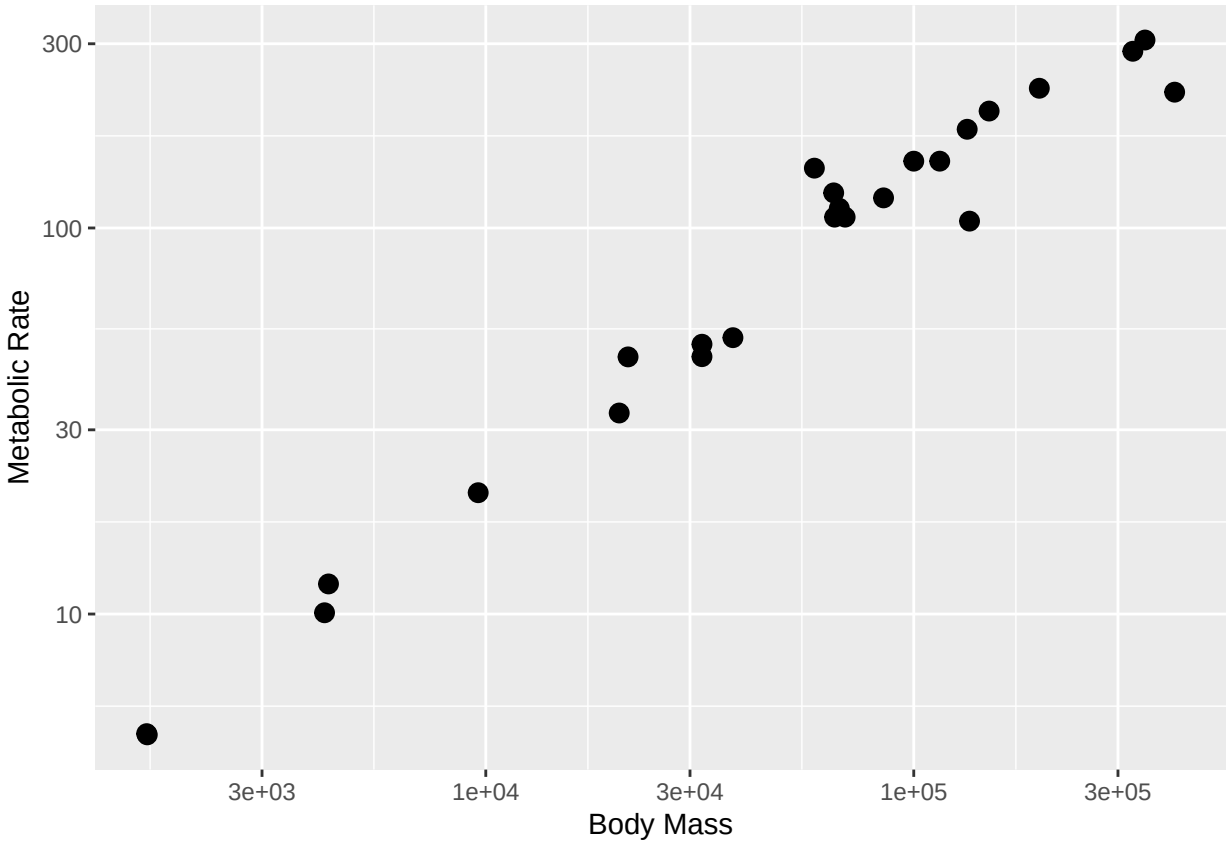


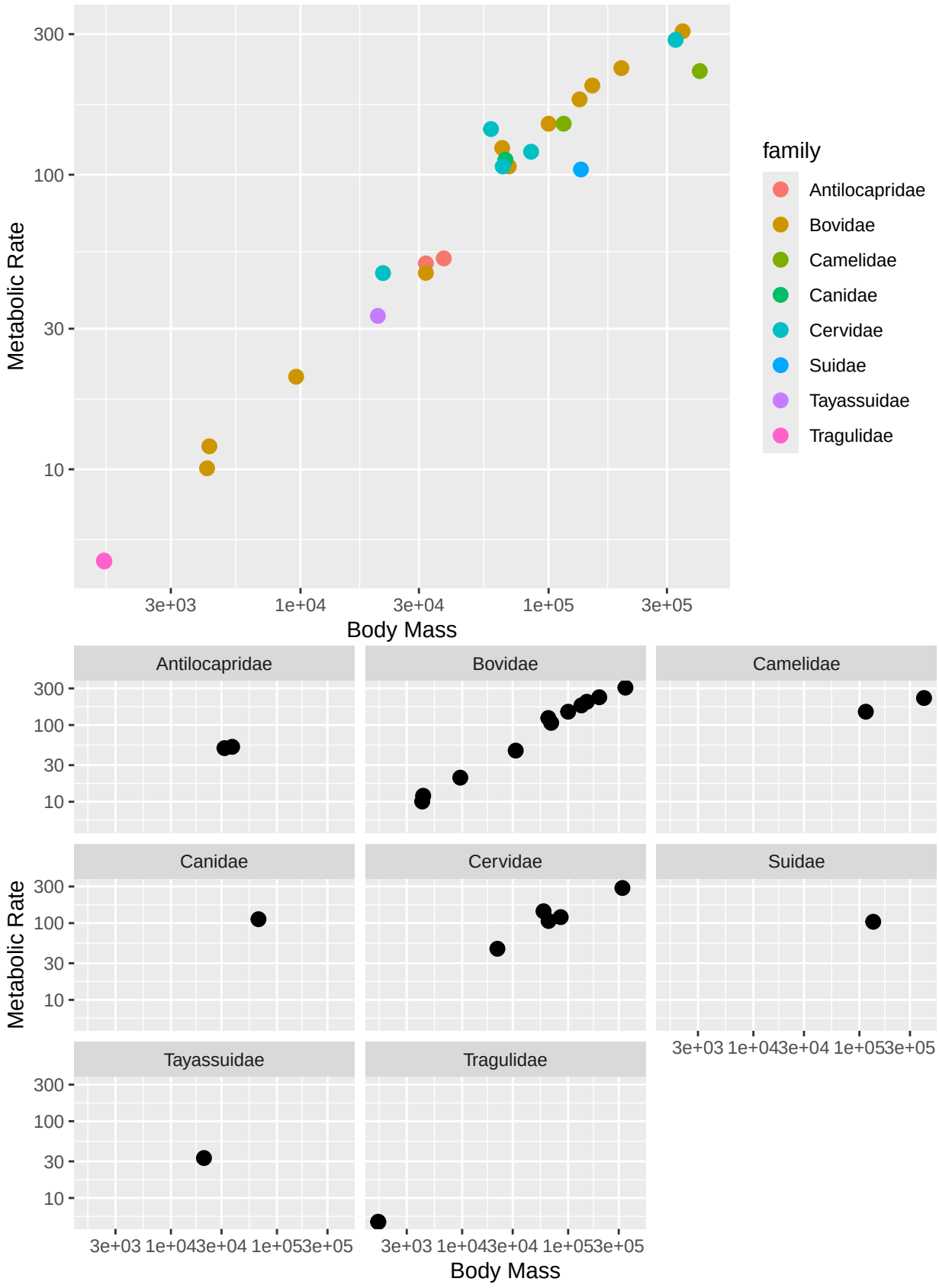

Canopy Diameter
Circumference
ANT
AB_TP
CM
CN
CS
E
TP
NA
1
2
3
4
5
10
20
30


AB_TP
CM
CN
CS
E
TP
NA
Canopy Diameter
Circumference
0
2
4
6
10
20
30

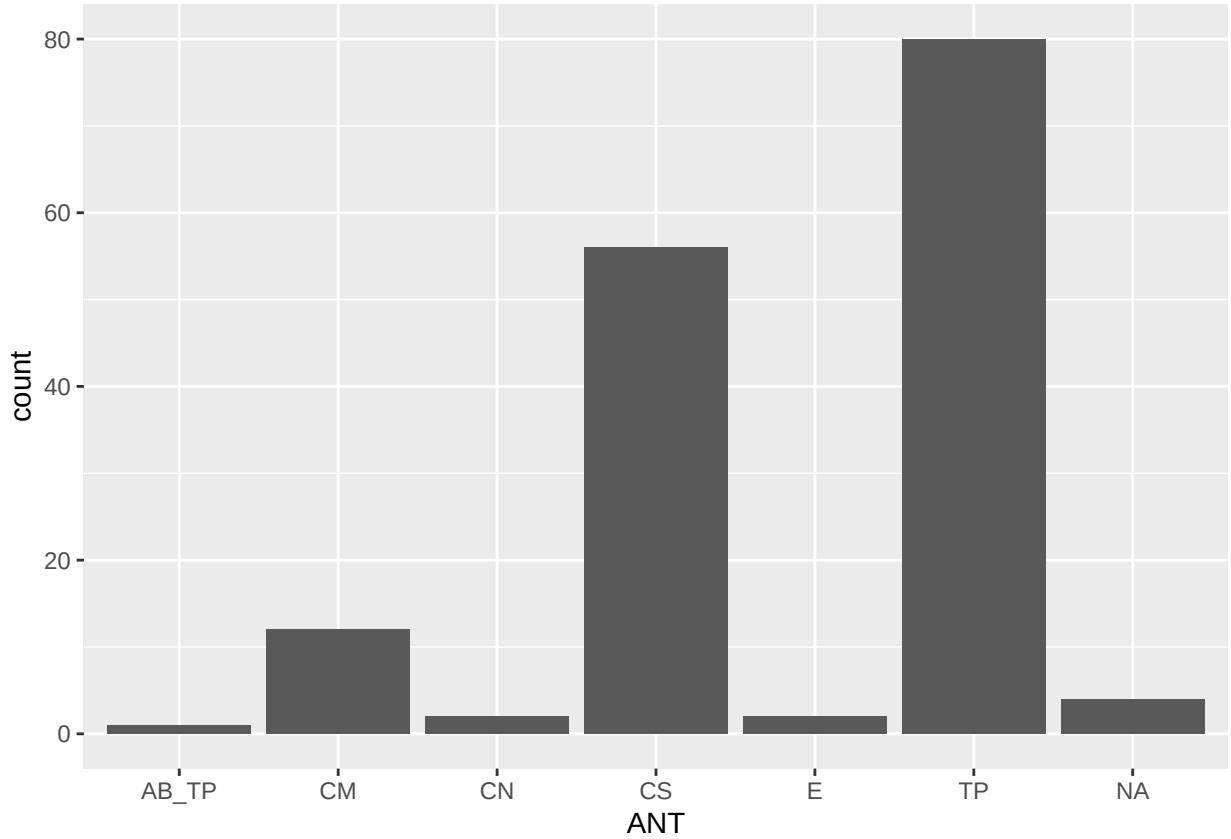
2. Mass vs. Metabolism (20 pts)

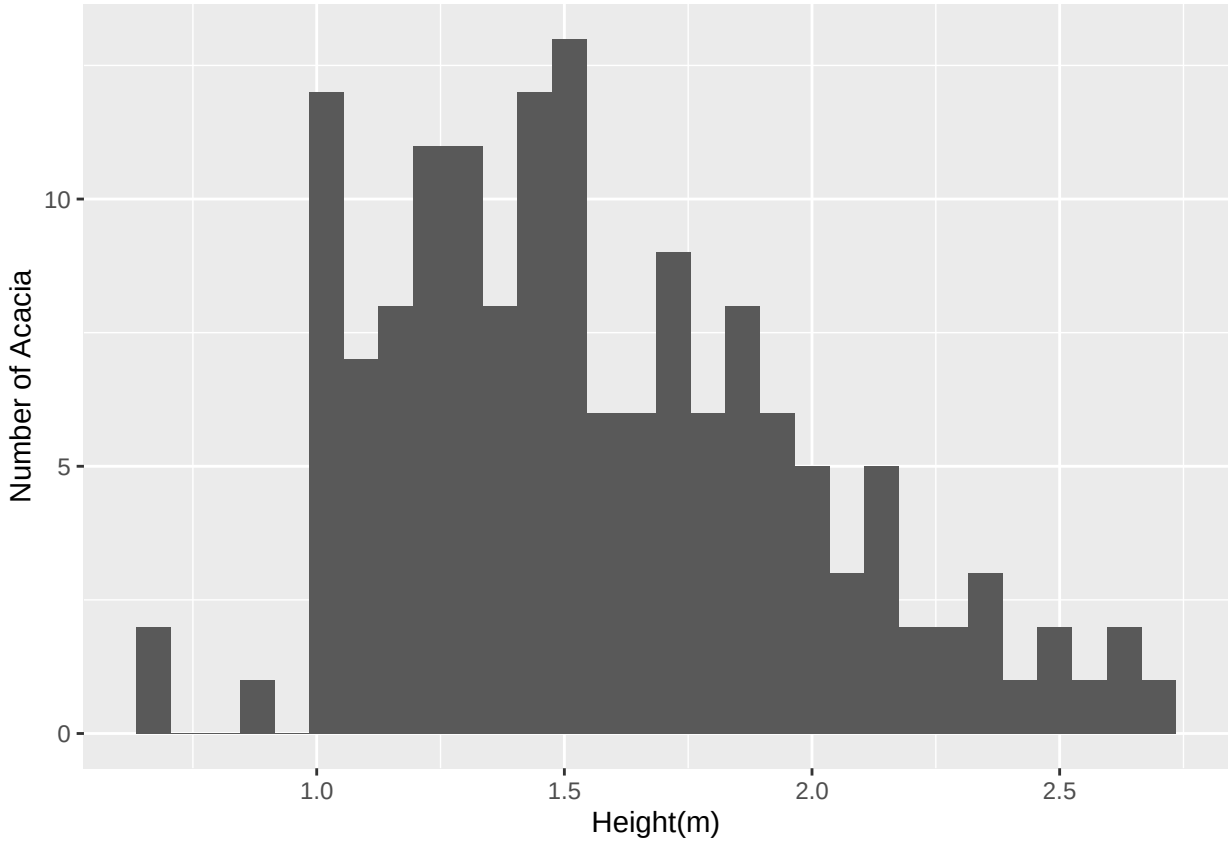


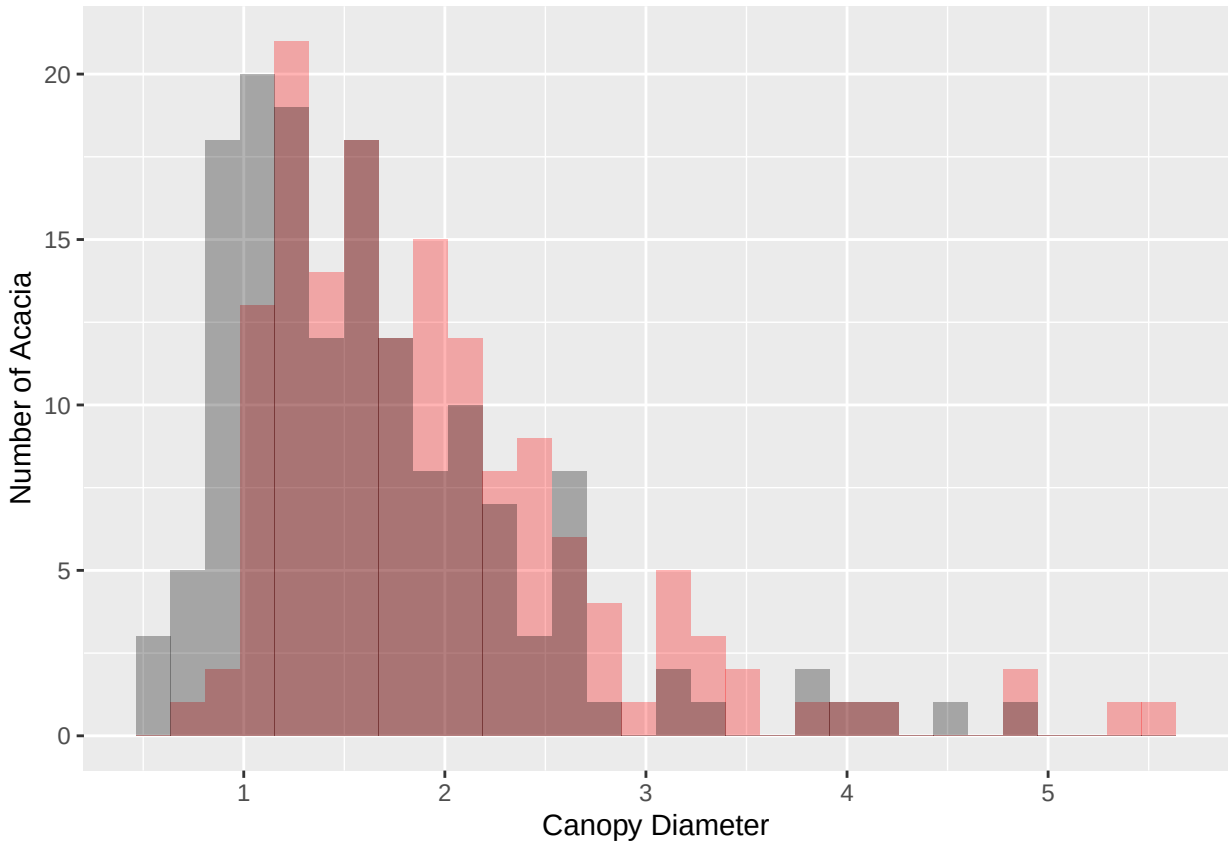


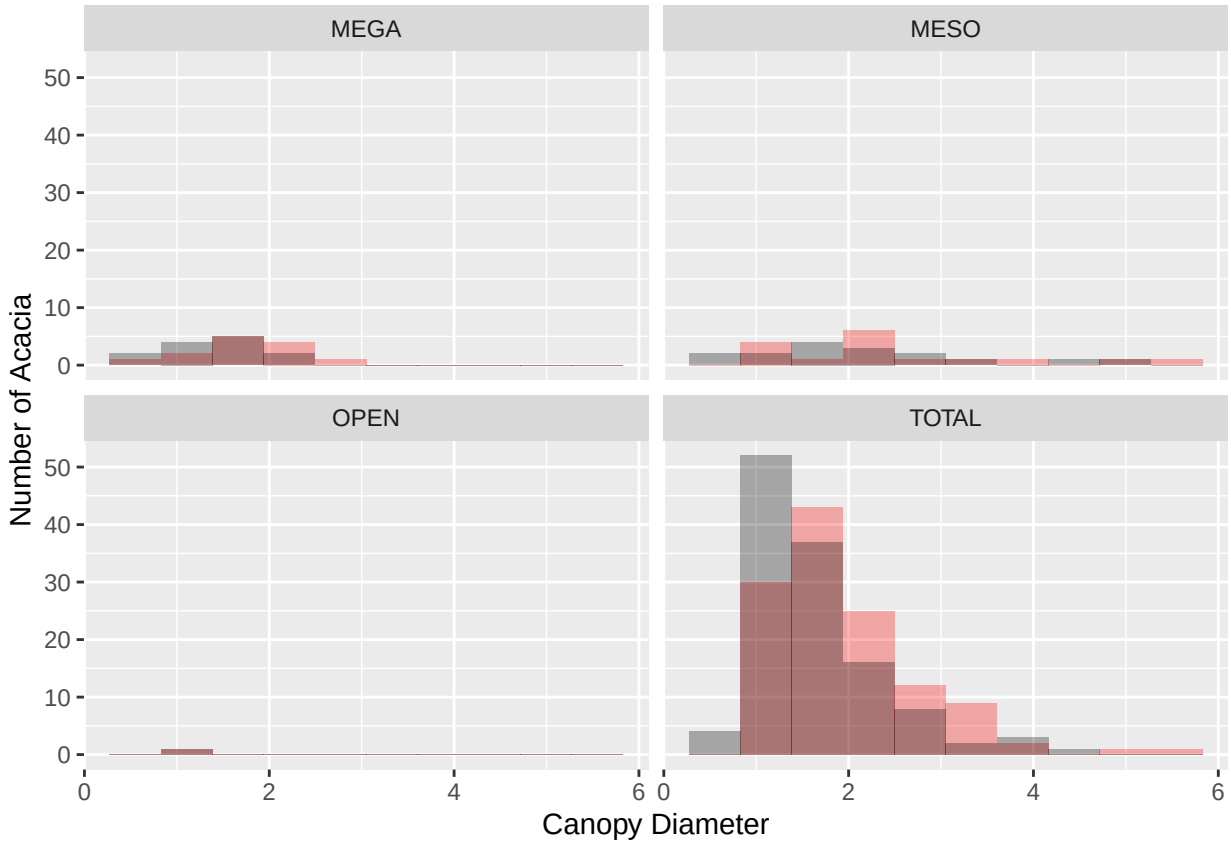

Metabolic Rate
300
100
30
10
3e+03
1e+04
3e+04
1e+05
3e+05
Body Mass
family
Antilocapridae
Bovidae
Camelidae
Canidae
Cervidae
Suidae
Tayassuidae
Tragulidae
Antilocapridae
Bovidae
Camelidae
Canidae
Cervidae
Suidae
Tayassuidae
Tragulidae

3. Acacia and Ants Histograms (20 pts)






Number of Acacia
20
15
10
5
0
1
2
3
4
5
Canopy Diameter


MEGA
MESO
OPEN
TOTAL
Number of Acacia
50
40
30
20
10
0
0
2
4
6
Canopy Diameter

4. Acacia and Ants Data Manipulation (20 pts)

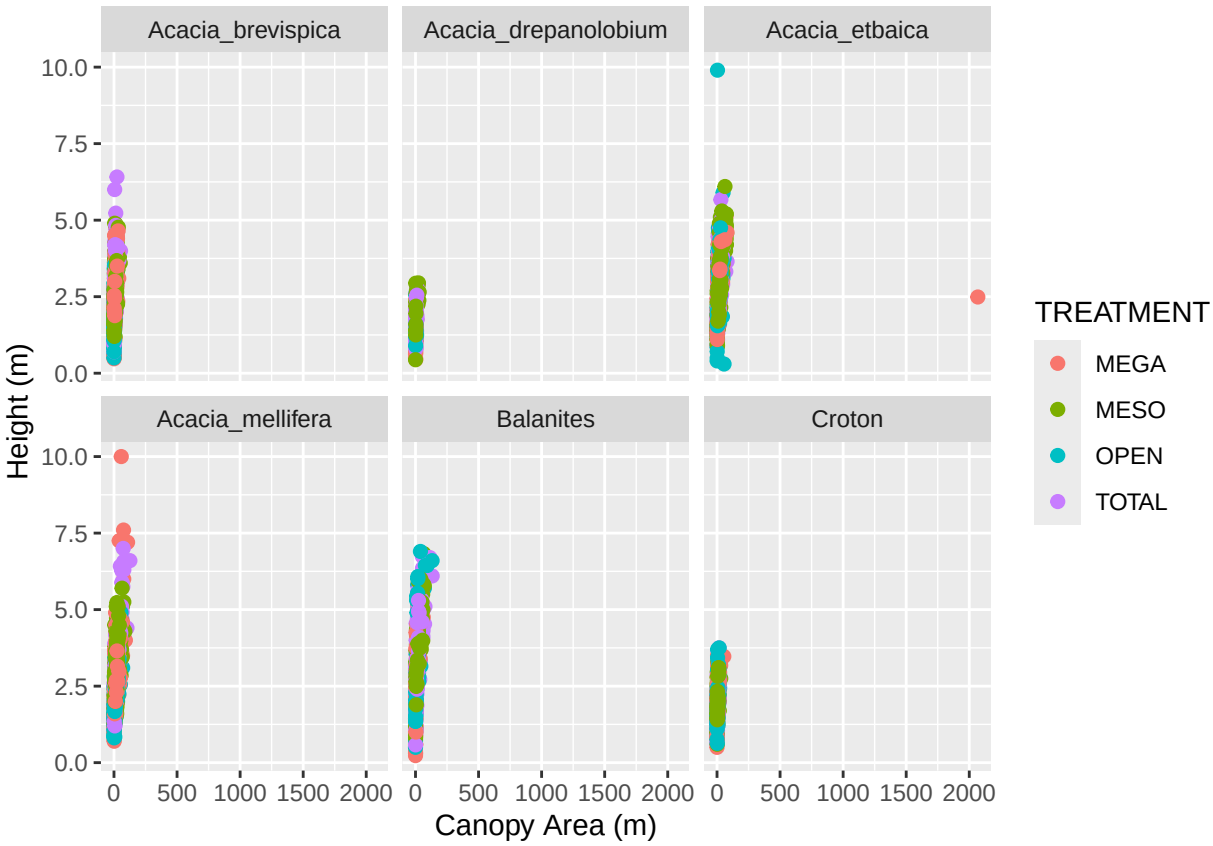
```
## [1] "4a"
```

```
## # A tibble: 7,501 x 17
##    SURVEY  YEAR SITE  TREATMENT BLOCK PLOT    SPECIES ORIGINAL_TAG NEW_TAG DEAD
##     <dbl> <dbl> <chr> <chr>     <dbl> <chr>   <chr>          <dbl>   <dbl> <chr>
##  1      1  2009 SOUTH TOTAL         2 S2TOTAL Acacia~            1      NA N
##  2      2  2010 SOUTH TOTAL         2 S2TOTAL Acacia~            1      NA N
##  3      3  2011 SOUTH TOTAL         2 S2TOTAL Acacia~            1      NA N
##  4      4  2012 SOUTH TOTAL         2 S2TOTAL Acacia~            1      NA N
##  5      5  2013 SOUTH TOTAL         2 S2TOTAL Acacia~            1      NA N
##  6      1  2009 SOUTH TOTAL         2 S2TOTAL Acacia~            2      NA N
##  7      2  2010 SOUTH TOTAL         2 S2TOTAL Acacia~            2      NA N
##  8      3  2011 SOUTH TOTAL         2 S2TOTAL Acacia~            2      NA N
##  9      4  2012 SOUTH TOTAL         2 S2TOTAL Acacia~            2      NA Y
## 10      5  2013 SOUTH TOTAL         2 S2TOTAL Acacia~            2      NA N
## # i 7,491 more rows
## # i 7 more variables: HEIGHT <dbl>, AXIS_1 <dbl>, AXIS_2 <dbl>, CIRC <dbl>,
## #   MEASUREMENT <chr>, STEMS <chr>, canopy_area <dbl>
```

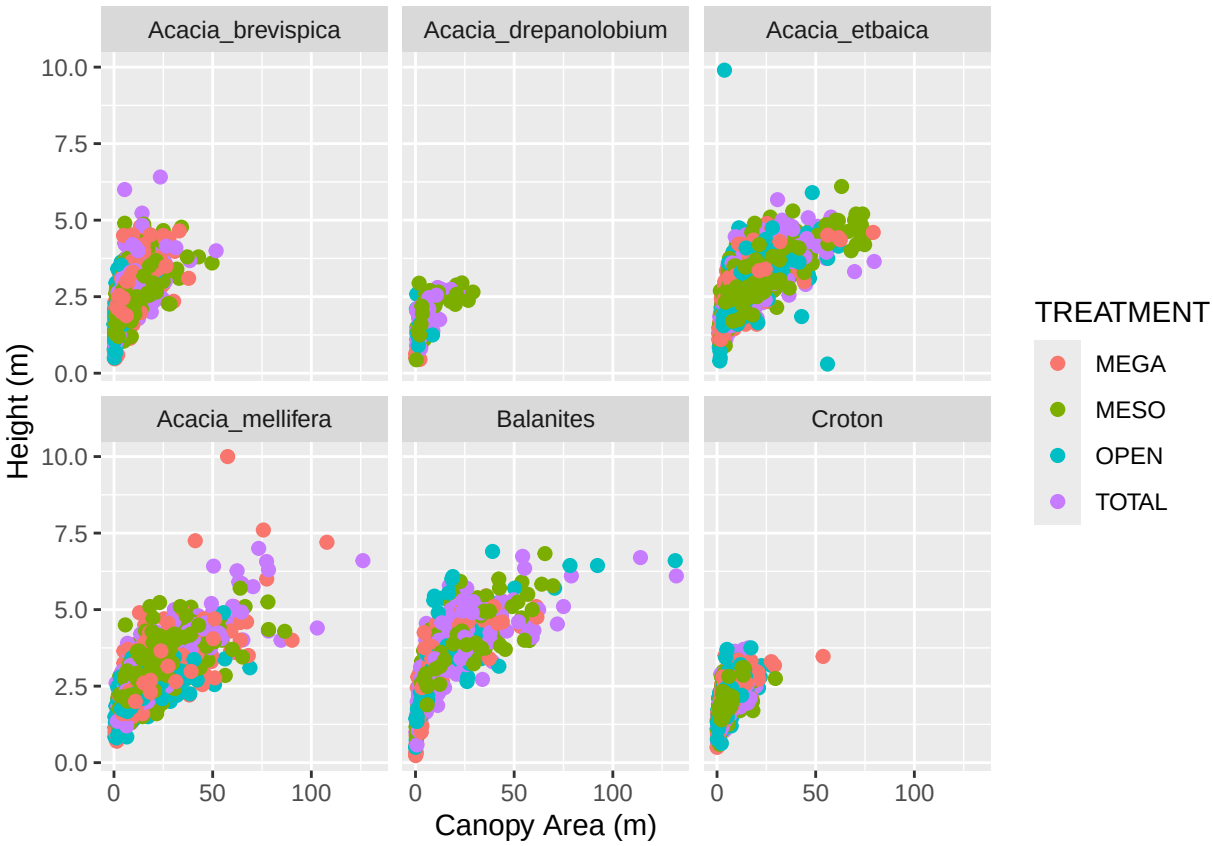
```
## [1] "4b"
```

```
## # A tibble: 7,501 x 5
##    SURVEY  YEAR SITE  SPECIES        canopy_area
##     <dbl> <dbl> <chr> <chr>                <dbl>
##  1      1  2009 SOUTH Acacia_etbaica       30.5
##  2      2  2010 SOUTH Acacia_etbaica       69.7
##  3      3  2011 SOUTH Acacia_etbaica       79.6
##  4      4  2012 SOUTH Acacia_etbaica       39.0
##  5      5  2013 SOUTH Acacia_etbaica       40.8
##  6      1  2009 SOUTH Acacia_etbaica        6.16
##  7      2  2010 SOUTH Acacia_etbaica        7.29
##  8      3  2011 SOUTH Acacia_etbaica       12.5
##  9      4  2012 SOUTH Acacia_etbaica       NA
## 10      5  2013 SOUTH Acacia_etbaica        9.62
## # i 7,491 more rows
```

```
## [1] "4c"
```


Acacia_brevispica
Acacia_drepanolobium
Acacia_etbaica
Acacia_mellifera
Balanites
Croton
Height (m)
10.0
7.5
5.0
2.5
0.0
0
500
1000
1500
2000
Canopy Area (m)
TREATMENT
MEGA
MESO
OPEN
TOTAL

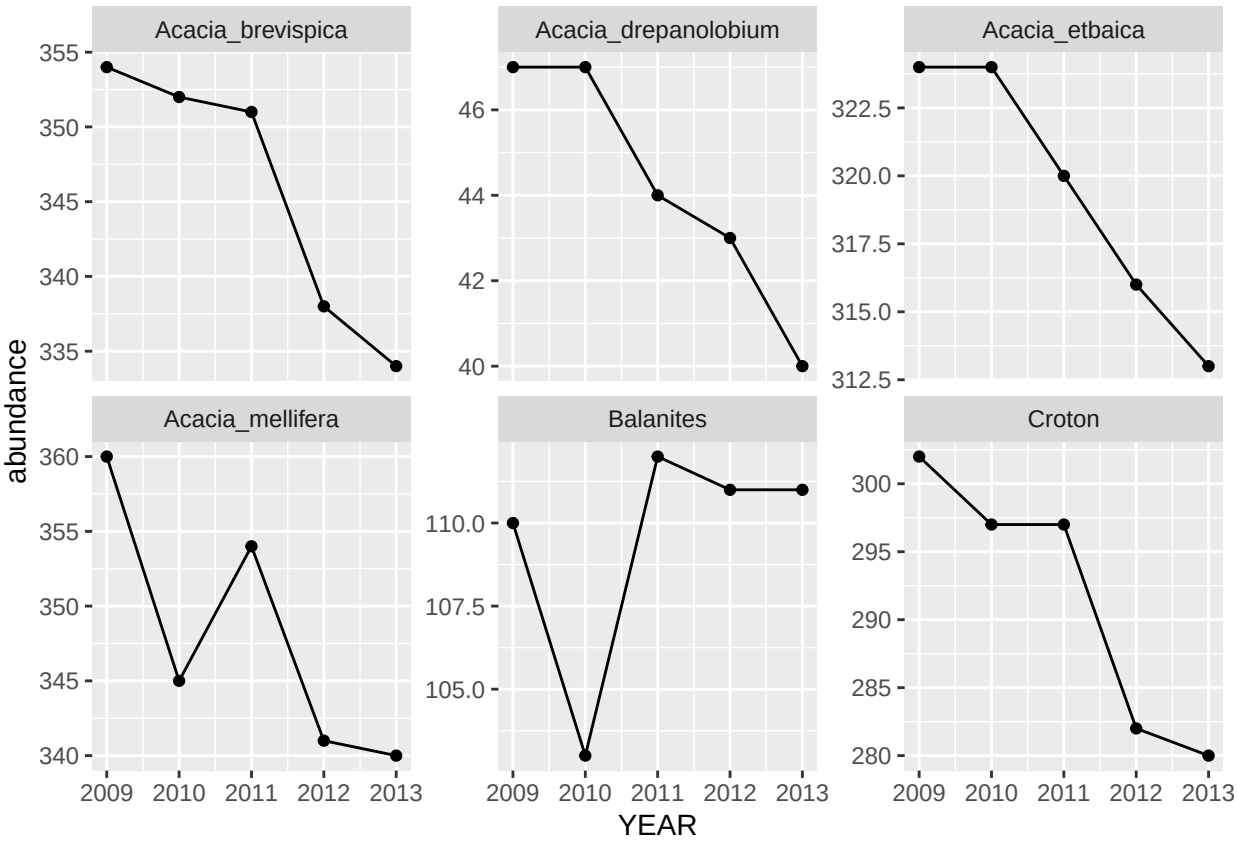
```
## [1] "4d"
```



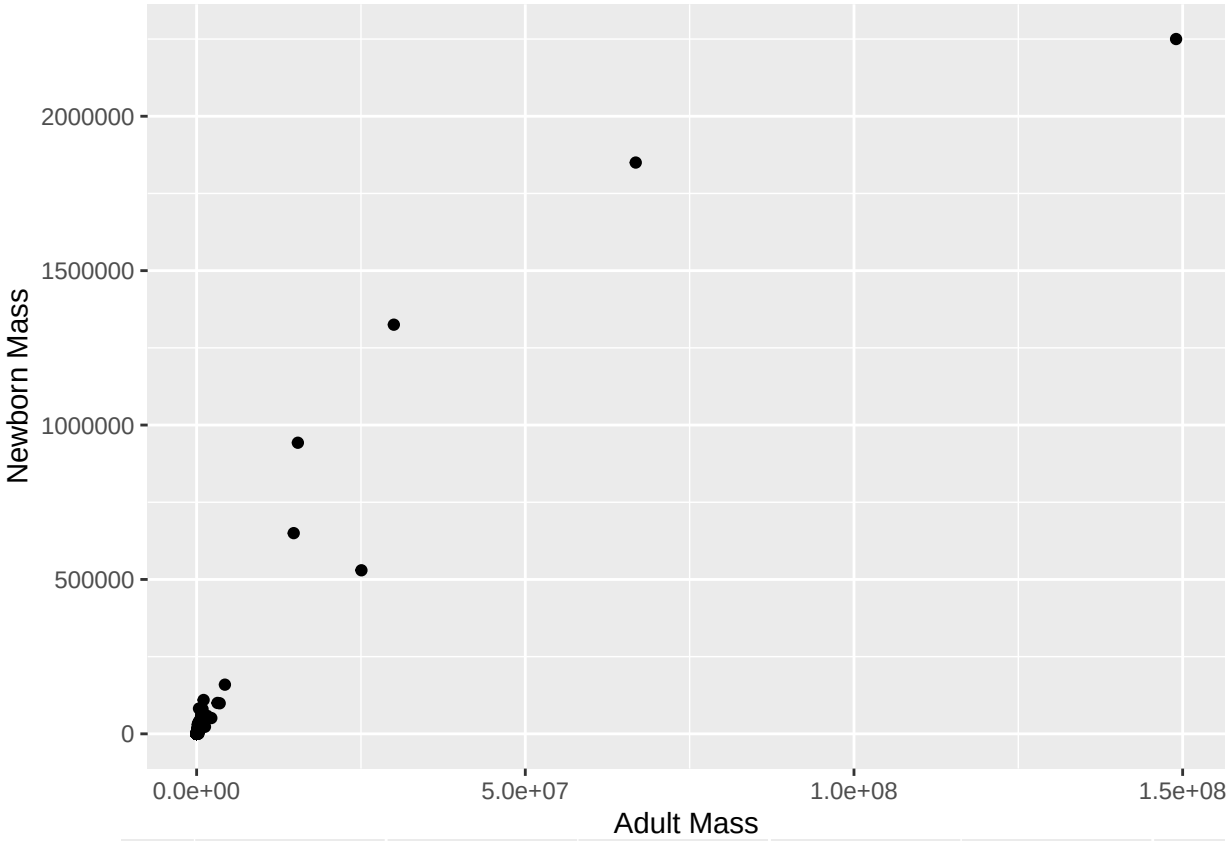

```
## [1] "4e"
```

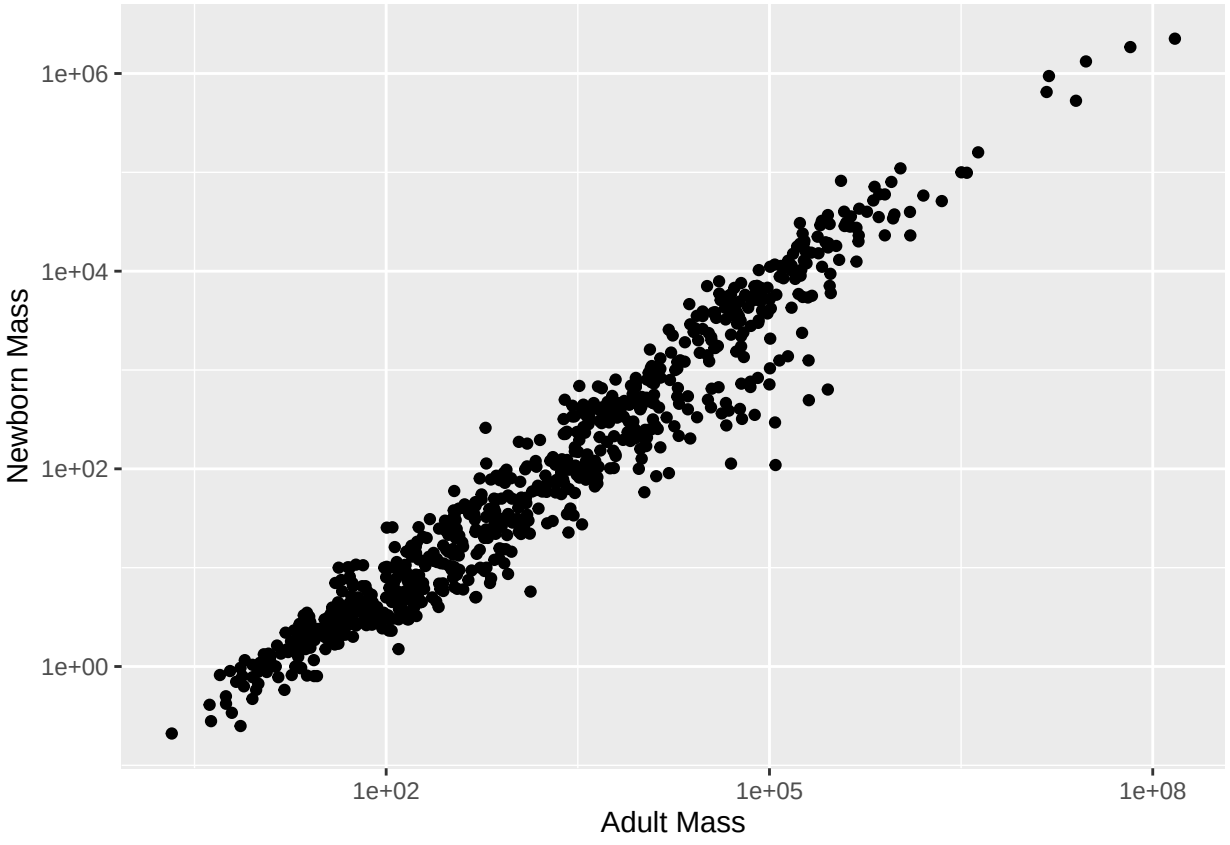
```
## # A tibble: 30 x 3
## # Groups:   YEAR [5]
##      YEAR SPECIES               abundance
##     <dbl> <chr>                     <int>
##  1  2009 Acacia_brevispica           354
##  2  2009 Acacia_drepanolobium         47
##  3  2009 Acacia_etbaica              324
##  4  2009 Acacia_mellifera            360
##  5  2009 Balanites                   110
##  6  2009 Croton                      302
##  7  2010 Acacia_brevispica           352
##  8  2010 Acacia_drepanolobium         47
##  9  2010 Acacia_etbaica              324
## 10  2010 Acacia_mellifera            345
## # i 20 more rows
```

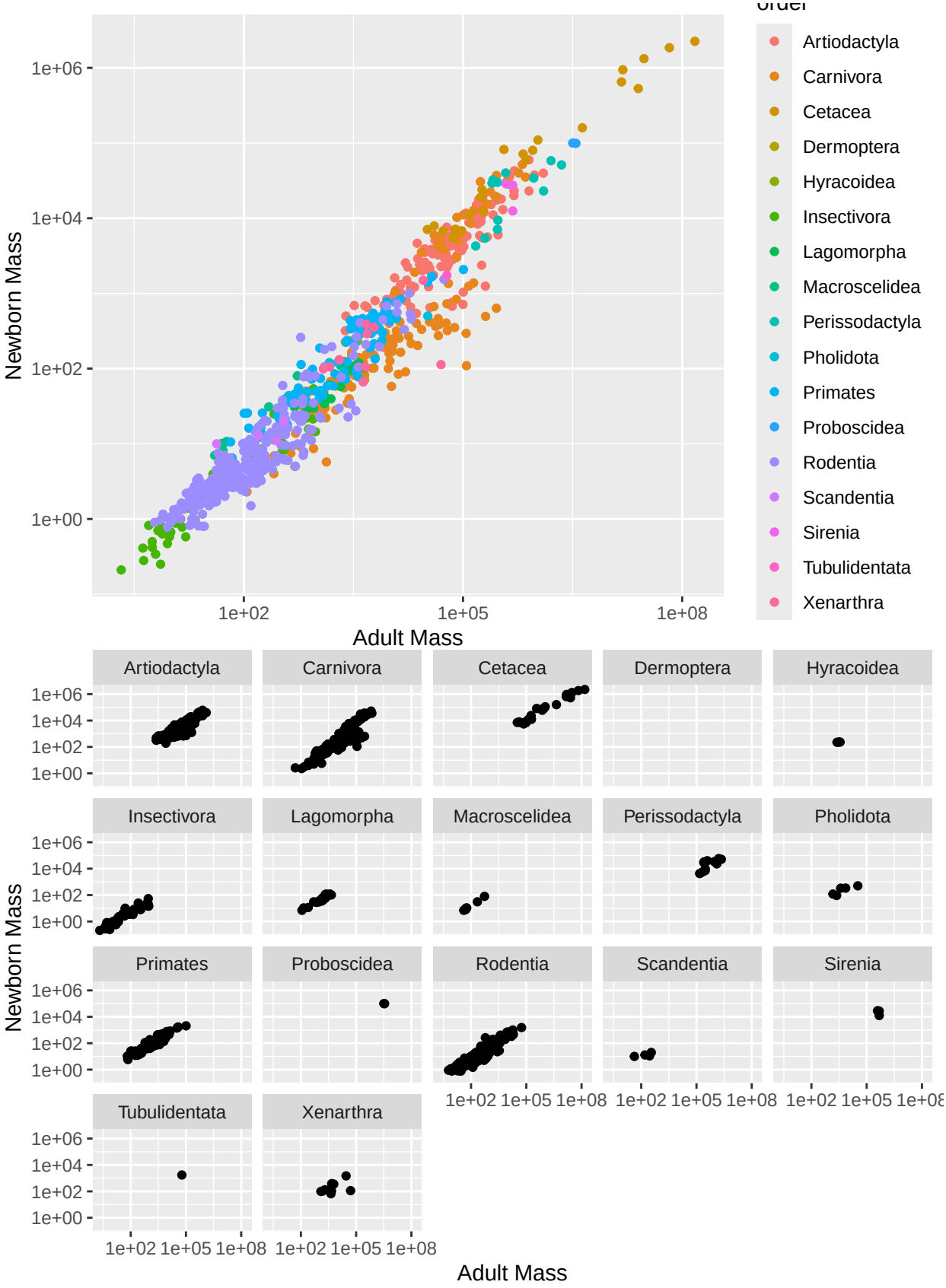
```
## [1] "4f"
```

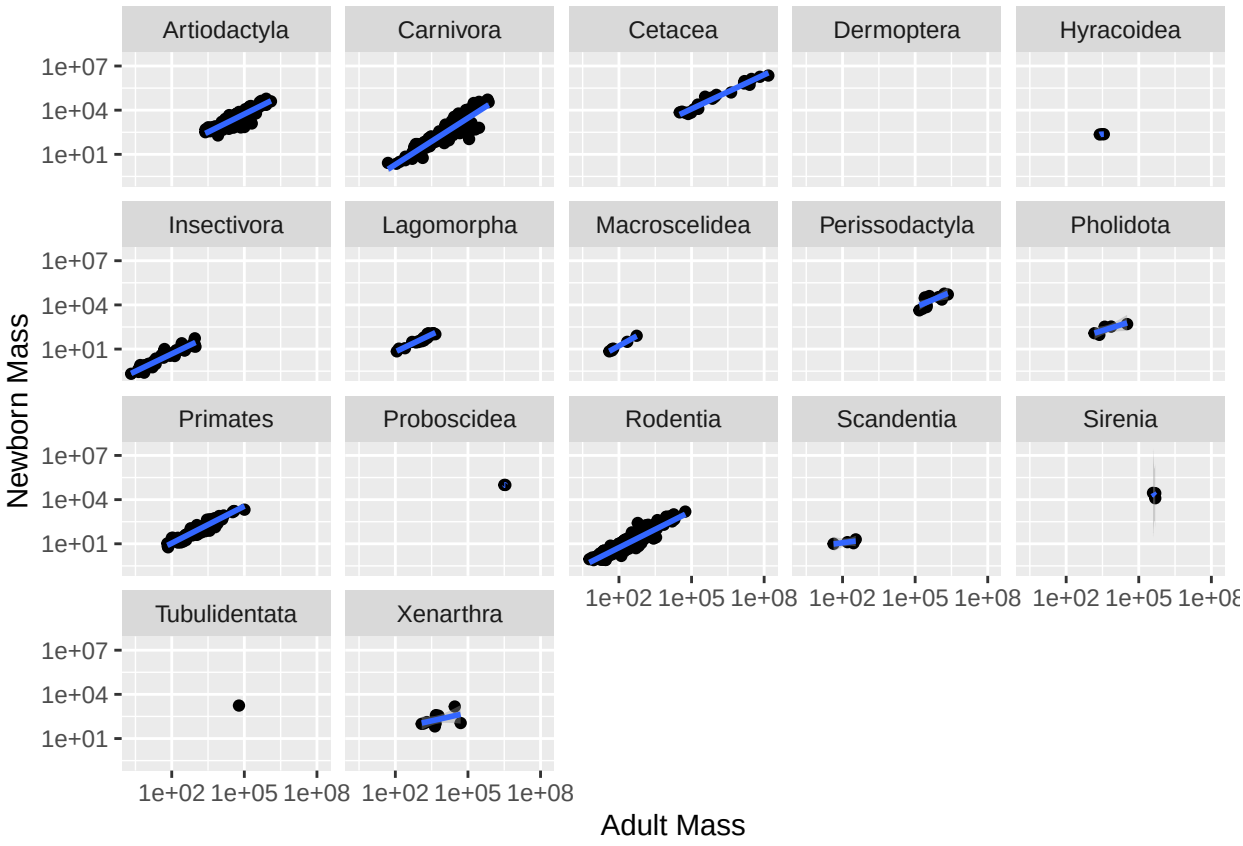
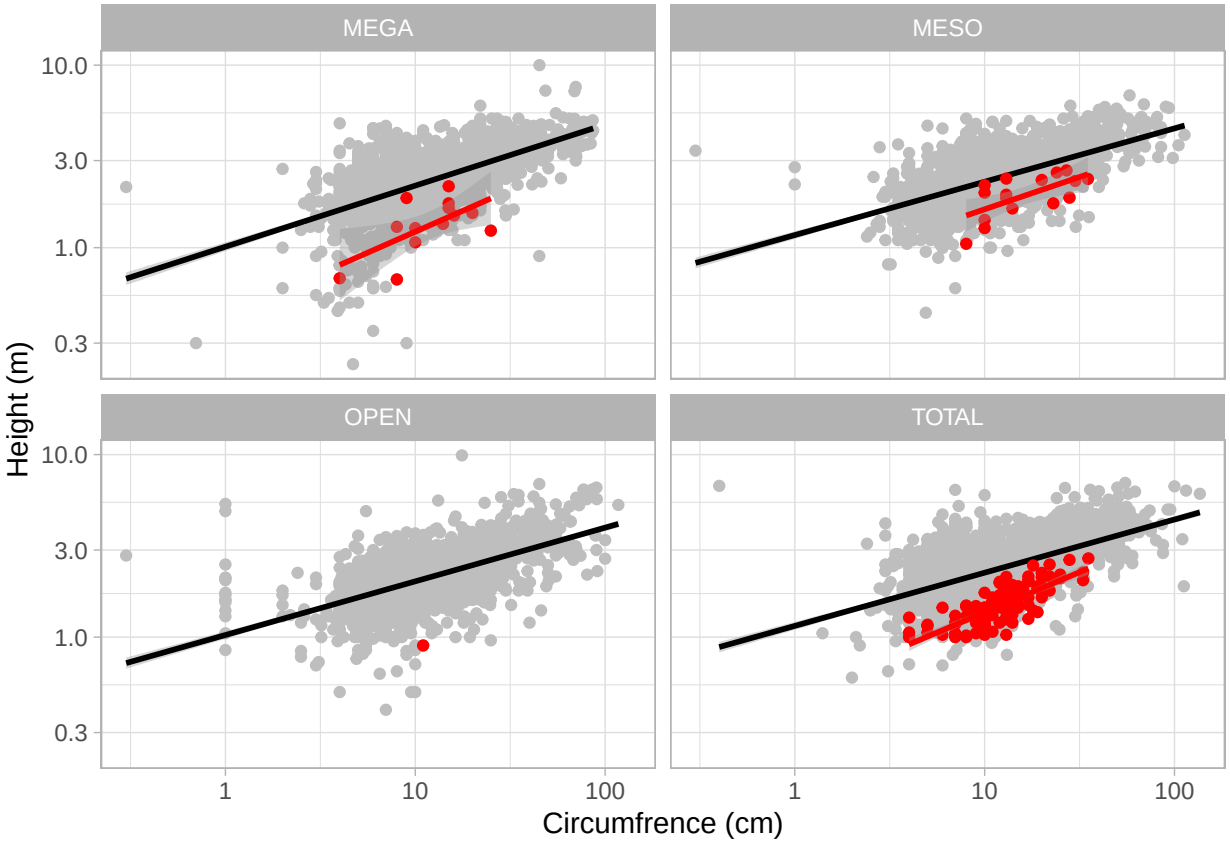

Acacia_brevispica
Acacia_drepanolobium
Acacia_etbaica
Acacia_mellifera
Balanites
Croton
abundance
YEAR
355
350
345
340
335
46
44
42
40
322.5
320.0
317.5
315.0
312.5
360
355
350
345
340
110.0
107.5
105.0
300
295
290
285
280
2009
2010
2011
2012
2013

5. Adult vs. Newborn Size (20 pts)






order
Artiodactyla
Carnivora
Cetacea
Dermoptera
Hyracoidea
Insectivora
Lagomorpha
Macroscelidea
Perissodactyla
Pholidota
Primates
Proboscidea
Rodentia
Scandentia
Sirenia
Tubulidentata
Xenarthra
Newborn Mass
1e+06
1e+04
1e+02
1e+00
1e+02
1e+05
1e+08
Adult Mass
Artiodactyla
Carnivora
Cetacea
Dermoptera
Hyracoidea
Insectivora
Lagomorpha
Macroscelidea
Perissodactyla
Pholidota
Primates
Proboscidea
Rodentia
Scandentia
Sirenia
Tubulidentata
Xenarthra


Artiodactyla
Carnivora
Cetacea
Dermoptera
Hyracoidea
Insectivora
Lagomorpha
Macroscelidea
Perissodactyla
Pholidota
Primates
Proboscidea
Rodentia
Scandentia
Sirenia
Tubulidentata
Xenarthra
Newborn Mass
1e+07
1e+04
1e+01
1e+02
1e+05
1e+08
Adult Mass

7. Graphing Data from Multiple Tables (*Optional*)