Feather Cort Levels Figure Practice #2

Frank Muzio

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Practice Figures #2

Frank Muzio

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Ambient temperature, body condition and sibling rivalry explain feather corticosterone levels in developing black kites

```
#Install packages
library(ggplot2)
library(colorspace)
library(dplyr)
```

```
##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':
##
##     filter, lag

## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
library(ggforce)



#setwd
setwd("C:/Users/frank/OneDrive/Desktop/R CSVs")

#Read CSV
read.csv("feathercort.csv")
```

	INDIVIDUAL	NEST.ID	AGE	BODY.CONDITION	BROOD.ORDER	MEAN.TEMPERATURE
1	1	58	41	1.23	FIRST	21.59
2	2	62	43	0.90	SECOND	21.94
3	3	40	27	0.90	SECOND	22.43
4	4	42	31	1.12	FIRST	22.37
5	5	7	36	1.04	FIRST	21.97
6	6	15	36	0.88	FIRST	21.92
7	7	194	32	1.03	SINGLETON	20.21
8	8	127	31	1.10	FIRST	19.20
9	9	179	29	0.75	SECOND	20.00
10	10	100	25	1.30	FIRST	20.70
11	11	115	38	1.09	FIRST	20.44
12	12	115	33	1.04	SECOND	20.36
13	13	103	31	0.93	SECOND	20.29
14	14	102	33	1.19	FIRST	20.40
15	15	184	26	1.33	FIRST	20.00
16	16	117	37	1.03	FIRST	19.71
17	17	146	35	0.99	FIRST	19.59
18	18	176	33	1.06	FIRST	19.36
19	19	106	37	0.98	FIRST	20.17
20	20	140	27	0.82	FIRST	20.14
21	21	164	29	0.99	FIRST	20.00
22	22	121	25	1.09	FIRST	20.70
23	23	163	31	1.21	FIRST	20.11
24	24	163	29	1.02	SECOND	20.18
25	25	135	27	1.10	FIRST	20.54
26	26	157	25	1.09	FIRST	20.70
27	27	138	25	1.30	FIRST	20.47
28	28	138	25	1.20	SECOND	20.47
29	29	144	25	1.37	FIRST	20.47
30	30	144	22	1.01	SECOND	21.10
31	31	158	25	0.90	FIRST	21.93
32	32	122	34	0.97	FIRST	20.34
33	33	122	34	1.10	SECOND	20.34
34	34	122	29	1.06	THIRD	20.97
35	35	199	32	0.80	FIRST	21.54
36	36	130	29	0.95	SINGLETON	20.97
37	37	119	31	1.10	SECOND	20.29
38	38	168	40	1.22	SINGLETON	20.45
39	39	139	27	1.28	FIRST	20.77
40	40	139	25	0.83	SECOND	21.43
41	41	155	29	1.15	FIRST	20.62
42	42	156	27	0.95	FIRST	20.77
43	43	129	32	1.06	FIRST	20.58
44	44	129	32	0.99	SECOND	20.58
45	45	195	31	1.06	FIRST	20.63
46	46	118	33	1.08	FIRST	20.53
47	47	195	31	0.95	SECOND	20.63
48	48	119	33	1.17	FIRST	20.40
49	49	118	33	0.92	SECOND	20.53
50	50	123	23	0.86	SINGLETON	22.05
51	51	171	27	0.83	SINGLETON	20.88
52	52	311	30	1.07	THIRD	16.94
53	53	311	36	1.09	SECOND	17.10

```
## 54          54     311  37          1.07       FIRST           17.25
## 55          55     289  43          0.93       FIRST           17.56
## 56          56     289  43          0.93      SECOND           17.56
## 57          57     241  37          1.10      SECOND           16.84
## 58          58     241  37          1.13       FIRST           16.84
## 59          59     286  27          1.05       FIRST           22.68
## 60          60     239  26          1.30       FIRST           16.95
## 61          61     239  26          0.94      SECOND           16.95
## 62          62     242  27          0.82      SECOND           17.02
## 63          63     242  29          0.87       FIRST           16.99
## 64          64     258  29          1.30       FIRST           16.87
## 65          65     288  29          0.95   SINGLETON           16.99
## 66          66     325  30          1.00      SECOND           16.88
## 67          67     325  33          1.11       FIRST           16.73
## 68          68     321  24          1.13      SECOND           17.20
## 69          69     321  27          1.35       FIRST           17.02
## 70          70     310  31          1.23      SECOND           17.86
## 71          71     220  23          1.26       FIRST           18.65
## 72          72     266  38          1.05       FIRST           18.57
## 73          73     266  35          0.64      SECOND           18.63
## 74          74     323  21          0.93   SINGLETON           22.08
## 75          75     307  29          1.05       FIRST           20.08
## 76          76     307  24          0.91      SECOND           21.57
## 77          77     261  28          0.89       FIRST           18.54
## 78          78     261  28          0.81      SECOND           18.54
## 79          79     260  38          0.98       FIRST           18.01
## 80          80     260  35          0.90      SECOND           18.18
## 81          81     272  35          1.19       FIRST           18.18
## 82          82     282  30          0.85       FIRST           18.28
## 83          83     282  30          1.02      SECOND           18.28
## 84          84     249  31          1.00       FIRST           18.19
## 85          85     249  31          0.61      SECOND           18.19
## 86          86     249  24          0.53       THIRD           19.07
## 87          87     236  32          1.07       THIRD           16.92
## 88          88     244  33          1.25       FIRST           17.07
## 89          89     244  31          0.86      SECOND           17.16
## 90          90     304  24          1.19       FIRST           17.01
## 91          91     205  27          1.17       FIRST           16.91
## 92          92     263  19          1.14       FIRST           16.71
## 93          93     203  26          1.04      SECOND           16.94
## 94          94     204  19          1.09      SECOND           16.71
## 95          95     203  28          1.21       FIRST           16.85
## 96          96     314  33          0.97      SECOND           16.89
## 97          97     314  34          1.07       FIRST           17.05
## 98          98     252  32          1.07       FIRST           16.77
## 99          99     292  25          1.13       FIRST           17.03
## 100        100     292  23          1.11      SECOND           17.12
## 101        101     319  25          1.06       FIRST           17.03
## 102        102     312  28          1.11      SECOND           20.21
## 103        103     202  21          1.30       FIRST           22.03
## 104        104     268  30          1.14       FIRST           20.20
## 105        105     268  30          1.06      SECOND           20.20
## 106        106     205  43          0.67      SECOND           18.81
## 107        107     221  31          0.81   SINGLETON           19.95
```

```
## 108      108   302  22        1.33  SINGLETON        21.93
## 109      109   225  24        1.07      FIRST        21.77
## 110      110   243  41        1.09      FIRST        18.97
## 111      111   243  38        1.03     SECOND        19.08
## 112      112   312  31        1.09      FIRST        19.74
## 113      113   283  29        0.92      FIRST        22.13
## 114      114   290  39        0.66      FIRST        20.47
## 115      115   236  32        1.07      FIRST        16.92
## 116      116   226  21        1.16      FIRST        17.12
## 117      117   322  36        1.08      FIRST        17.22
## 118      118   250  34        1.17      FIRST        16.90
## 119      119   214  30        0.98      FIRST        17.61
## 120      120   214  27        0.67     SECOND        17.49
## 121      121   211  31        1.16      FIRST        17.63
## 122      122   246  27        0.88  SINGLETON        18.06
## 123      123   253  37        1.20      FIRST        17.00
## 124      124   253  36        1.27     SECOND        17.00
## 125      125   256  31        1.15      FIRST        17.16
## 126      126   257  28        1.09      FIRST        17.15
## 127      127   257  26        0.70     SECOND        16.99
## 128      128   294  30        1.13      FIRST        17.19
## 129      129   294  26        0.82     SECOND        16.99
## 130      130   232  45        0.92      FIRST        17.50
## 131      131   232  42        0.81     SECOND        17.15
## 132      132   223  30        0.87      FIRST        17.44
## 133      133   299  31        0.80      FIRST        17.42
## 134      134   298  24        0.75      FIRST        17.36
## 135      135   247  28        0.83  SINGLETON        24.38
## 136      136   235  38        1.11     SECOND        20.62
## 137      137   270  41        1.00  SINGLETON        20.39
## 138      138   320  43        1.20      FIRST        20.12
## 139      139   320  40        1.01     SECOND        20.55
## 140      140   262  33        1.07      FIRST        21.86
## 141      141   262  33        0.86     SECOND        21.86
## 142      142   265  32        0.84  SINGLETON        22.25
## 143      143   315  33        0.70  SINGLETON        23.92
## 144      144   217  29        0.91      FIRST        24.22
## 145      145   309  25        0.79  SINGLETON        24.83
## 146      146   295  28        0.72  SINGLETON        24.70
## 147      147   235  38        1.02      FIRST        20.62
## 148      148   310  55        0.99      THIRD        21.90
## 149      149   287  28        0.80  SINGLETON        24.38
## 150      150   296  25        1.02      FIRST        24.08
## 151      151   428  32        1.03  SINGLETON        19.76
## 152      152   370  32        0.80      FIRST        20.39
## 153      153   418  31        1.13      FIRST        19.71
## 154      154   393  32        0.98     SECOND        22.89
## 155      155   393  32        1.03      FIRST        22.89
## 156      156   394  35        0.99      FIRST        21.36
## 157      157   394  30        0.88     SECOND        21.82
## 158      158   407  32        1.22      FIRST        19.61
## 159      159   425  32        1.06      FIRST        22.89
## 160      160   451  31        1.00     SECOND        19.71
## 161      161   452  33        1.03      FIRST        19.42
```

```
## 162      162    366  38        1.16      FIRST          19.03
## 163      163    366  34        0.75     SECOND          19.28
## 164      164    340  33        0.76      FIRST          22.85
## 165      165    379  32        1.18      FIRST          19.61
## 166      166    379  27        1.20     SECOND          20.13
## 167      167    368  34        1.03      FIRST          19.42
## 168      168    368  34        1.00     SECOND          19.42
## 169      169    368  29        0.55       THIRD         19.97
## 170      170    448  35        0.93      FIRST          19.71
## 171      171    448  33        1.01     SECOND          19.87
## 172      172    336  30        1.00      FIRST          20.24
## 173      173    338  32        0.90  SINGLETON          19.60
## 174      174    343  28        1.06      FIRST          20.48
## 175      175    341  24        1.14      FIRST          23.08
## 176      176    399  28        1.02      FIRST          20.23
## 177      177    399  24        0.74     SECOND          19.77
## 178      178    415  33        1.14      FIRST          19.68
## 179      179    415  32        1.08     SECOND          19.76
## 180      180    419  32        0.95      FIRST          19.76
## 181      181    419  28        1.06     SECOND          20.23
## 182      182    389  32        1.06      FIRST          19.76
## 183      183    430  31        1.12      FIRST          19.86
## 184      184    401  31        1.05  SINGLETON          21.88
## 185      185    430  26        0.79     SECOND          20.34
## 186      186    453  23        0.90      FIRST          22.77
## 187      187    404  41        0.79     SECOND          22.91
## 188      188    459  29        0.99      FIRST          24.93
## 189      189    459  25        0.60     SECOND          26.92
## 190      190    367  36        1.11      FIRST          23.72
## 191      191    455  25        0.86      FIRST          20.50
## 192      192    334  26        0.95      FIRST          23.93
## 193      193    339  40        0.89      FIRST          20.74
## 194      194    440  31        0.92      FIRST          21.88
## 195      195    440  30        0.73     SECOND          21.82
## 196      196    440  29        0.57       THIRD         21.66
## 197      197    441  29        1.09      FIRST          21.66
## 198      198    441  25        0.64     SECOND          21.83
## 199      199    343  26        0.77     SECOND          20.27
## 200      200    439  29        1.07  SINGLETON          20.34
## 201      201    358  31        1.06  SINGLETON          20.12
## 202      202    371  33        0.74      FIRST          20.23
## 203      203    421  30        1.03     SECOND          17.85
## 204      204    421  31        1.04      FIRST          17.91
## 205      205    390  27        1.00      FIRST          17.62
## 206      206    390  27        1.19     SECOND          17.62
## 207      207    390  24        1.13       THIRD         18.02
## 208      208    383  36        1.01      FIRST          18.99
## 209      209    426  39        1.09  SINGLETON          20.51
## 210      210    427  32        1.17     SECOND          19.61
## 211      211    427  36        1.06      FIRST          18.99
## 212      212    391  33        0.99     SECOND          25.55
## 213      213    333  39        1.11     SECOND          25.20
## 214      214    411  36        0.99     SECOND          22.97
## 215      215    414  40        0.83      FIRST          24.13
```

```
## 216      216    425  29        0.84     SECOND         23.66
## 217      217    460  33        0.88      FIRST         22.85
## 218      218    388  47        1.12      FIRST         22.05
## 219      219    388  41        1.01     SECOND         22.91
## 220      220    406  31        0.72  SINGLETON         22.72
## 221      221    342  31        0.81      FIRST         22.72
## 222      222    411  36        1.00      FIRST         22.97
## 223      223    408  30        1.08  SINGLETON         22.93
## 224      224    380  26        0.63  SINGLETON         24.30
## 225      225    534  45        1.04      FIRST         20.74
## 226      226    517  35        1.00      FIRST         21.35
## 227      227    517  31        0.93     SECOND         21.34
## 228      228    523  34        0.93      FIRST         20.77
## 229      229    533  38        0.96      FIRST         23.65
## 230      230    514  32        1.06      FIRST         21.55
## 231      231    514  30        0.87     SECOND         21.47
## 232      232    566  27        1.09      FIRST         21.40
## 233      233    548  25        1.28  SINGLETON         21.92
## 234      234    480  24        1.18      FIRST         20.21
## 235      235    480  24        1.29     SECOND         20.21
## 236      236    554  29        1.15      FIRST         20.91
## 237      237    554  29        1.11     SECOND         20.91
## 238      238    554  25        1.02       THIRD         21.15
## 239      239    555  28        1.15      FIRST         21.16
## 240      240    555  28        1.10     SECOND         21.16
## 241      241    555  23        0.56       THIRD         20.95
## 242      242    560  30        1.13      FIRST         20.92
## 243      243    560  26        0.89     SECOND         21.68
## 244      244    547  29        1.07      FIRST         21.09
## 245      245    547  29        0.92     SECOND         21.09
## 246      246    471  30        0.94      FIRST         20.92
## 247      247    473  26        0.91      FIRST         21.64
## 248      248    565  36        1.06      FIRST         20.71
## 249      249    549  27        0.91      FIRST         21.40
## 250      250    549  25        0.70     SECOND         21.92
## 251      251    479  35        1.32      FIRST         21.28
## 252      252    479  33        1.15     SECOND         21.19
## 253      253    512  33        1.02      FIRST         21.19
## 254      254    551  30        1.06      FIRST         20.92
## 255      255    551  30        1.02     SECOND         20.92
## 256      256    511  25        1.08      FIRST         19.92
## 257      257    513  31        1.22      FIRST         21.00
## 258      258    469  27        0.91      FIRST         20.70
## 259      259    568  33        0.94      FIRST         20.76
## 260      260    568  29        0.68     SECOND         21.26
## 261      261    550  26        1.05  SINGLETON         20.32
## 262      262    472  29        1.09      FIRST         21.26
## 263      263    472  24        1.00     SECOND         19.67
## 264      264    491  38        1.01      FIRST         20.75
## 265      265    491  37        0.86     SECOND         20.98
## 266      266    491  33        0.72       THIRD         21.43
## 267      267    557  36        0.91     SECOND         20.46
## 268      268    542  35        1.08      FIRST         20.76
## 269      269    487  29        1.11  SINGLETON         19.82
```

```
## 270        270     546  34          0.99       FIRST           20.52
## 271        271     546  30          0.77      SECOND           19.83
## 272        272     552  25          0.80       FIRST           20.19
## 273        273     558  29          1.09       FIRST           19.82
## 274        274     482  35          1.12       FIRST           20.74
## 275        275     482  32          1.03      SECOND           20.58
## 276        276     521  38          1.02       FIRST           20.67
## 277        277     521  38          1.00      SECOND           20.67
## 278        278     489  44          1.12      SECOND           20.52
## 279        279     557  40          0.89       FIRST           20.79
## 280        280     515  35          1.08       FIRST           21.28
## 281        281     515  35          1.20      SECOND           21.28
## 282        282     545  30          1.48       FIRST           20.92
## 283        283     561  29          1.14       FIRST           21.09
## 284        284     561  29          0.69      SECOND           21.09
## 285        285     559  36          1.08       FIRST           21.19
## 286        286     559  35          1.16      SECOND           21.15
## 287        287     488  33          1.15       FIRST           21.05
## 288        288     470  31          1.00   SINGLETON           20.76
## 289        289     544  40          1.14       FIRST           20.68
## 290        290     544  40          1.10      SECOND           20.68
## 291        291     496  40          0.98       FIRST           20.80
## 292        292     539  34          0.82       FIRST           20.48
## 293        293     541  38          1.20       FIRST           20.75
## 294        294     541  36          1.16      SECOND           21.17
## 295        295     543  30          1.12       FIRST           21.28
## 296        296     468  40          1.07       FIRST           20.80
## 297        297     468  40          0.98      SECOND           20.80
## 298        298     564  29          0.78   SINGLETON           25.79
## 299        299     519  27          1.02       FIRST           20.30
## 300        300     537  32          0.92       FIRST           20.13
## 301        301     502  28          0.85       FIRST           26.63
## 302        302     518  44          0.94       FIRST           20.83
## 303        303     510  40          1.15       FIRST           20.43
## 304        304     510  38          0.98      SECOND           20.75
## 305        305     497  31          0.96      SECOND           21.26
## 306        306     501  36          1.02       FIRST           20.17
## 307        307     501  34          1.04      SECOND           20.55
## 308        308     525  33          0.99       FIRST           20.74
## 309        309     525  31          0.90      SECOND           21.26
## 310        310     532  32          0.96       FIRST           21.35
## 311        311     535  37          1.21       FIRST           20.10
## 312        312     535  33          1.01      SECOND           20.74
## 313        313     506  32          0.99       FIRST           18.58
## 314        314     506  31          0.89      SECOND           18.76
## 315        315     503  31          1.09       FIRST           18.76
## 316        316     503  31          1.18      SECOND           18.76
## 317        317     485  30          1.15      SECOND           18.83
## 318        318     494  25          1.06       THIRD           19.92
## 319        319     483  39          1.20       FIRST           23.44
## 320        320     483  39          1.11      SECOND           23.44
## 321        321     516  39          0.74       FIRST           23.44
## 322        322     492  34          1.10       FIRST           20.39
## 323        323     659  28          0.85      SECOND           22.28
```

```
## 324        324     616  29          1.10   SINGLETON          22.21
## 325        325     590  31          1.08       FIRST          22.32
## 326        326     590  31          0.85      SECOND          22.32
## 327        327     609  31          1.15       FIRST          21.97
## 328        328     609  27          0.87      SECOND          22.67
## 329        329     656  25          0.99       FIRST          22.58
## 330        330     656  22          0.95      SECOND          22.40
## 331        331     600  23          1.31       FIRST          22.41
## 332        332     653  35          1.13       FIRST          21.35
## 333        333     653  30          1.01       THIRD          22.22
## 334        334     653  34          1.05      SECOND          21.45
## 335        335     608  27          1.05       FIRST          22.63
## 336        336     608  24          1.03      SECOND          22.54
## 337        337     626  32          1.19       FIRST          22.00
## 338        338     626  31          1.14      SECOND          22.24
## 339        339     626  24          0.85       THIRD          22.54
## 340        340     620  31          1.19       FIRST          22.32
## 341        341     618  27          1.02       FIRST          22.40
## 342        342     659  34          1.15       FIRST          22.43
## 343        343     638  37          1.07       FIRST          21.88
## 344        344     646  38          1.02       FIRST          21.92
## 345        345     646  35          1.04      SECOND          21.72
## 346        346     629  39          0.97       FIRST          22.04
## 347        347     604  39          0.87       FIRST          22.04
## 348        348     628  27          0.74       FIRST          21.50
## 349        349     586  23          1.23       FIRST          21.50
## 350        350     610  32          0.95      SECOND          21.98
## 351        351     623  26          1.06       FIRST          22.57
## 352        352     624  39          1.13       FIRST          22.22
## 353        353     624  33          0.83      SECOND          21.93
## 354        354     607  37          1.21       FIRST          22.12
## 355        355     607  37          1.10      SECOND          22.12
## 356        356     602  34          1.20       FIRST          21.95
## 357        357     602  31          0.77      SECOND          22.05
## 358        358     594  37          1.14       FIRST          22.12
## 359        359     594  34          1.22      SECOND          21.95
## 360        360     594  33          0.65       THIRD          21.93
## 361        361     610  32          0.97       FIRST          21.98
## 362        362     655  34          0.95       FIRST          21.91
## 363        363     655  34          0.95      SECOND          21.91
## 364        364     649  32          1.15   SINGLETON          22.05
## 365        365     617  37          0.96       FIRST          22.06
## 366        366     630  30          1.01       FIRST          22.00
## 367        367     630  29          0.95      SECOND          22.00
## 368        368     606  34          1.03       FIRST          21.91
## 369        369     606  34          1.03      SECOND          21.91
## 370        370     716  32          1.24      SECOND          21.46
## 371        371     716  32          1.08       FIRST          21.46
## 372        372     679  26          1.11       FIRST          20.38
## 373        373     697  29          1.12       FIRST          20.47
## 374        374     718  28          1.09       FIRST          22.13
## 375        375     680  33          0.83       FIRST          22.65
## 376        376     691  24          1.13       FIRST          20.94
## 377        377     686  29          1.23       FIRST          20.66
```

```
## 378        378     711  21          0.78       FIRST           22.42
## 379        379     672  31          1.06   SINGLETON           22.13
## 380        380     675  33          0.89       FIRST           21.93
## 381        381     675  33          0.85      SECOND           21.93
## 382        382     677  29          1.06       FIRST           22.24
## 383        383     723  39          0.99      SECOND           22.52
## 384        384     671  38          1.01       FIRST           22.48
## 385        385     671  34          0.57      SECOND           22.45
## 386        386     670  31          0.97       FIRST           22.57
## 387        387     706  25          0.50      SECOND           23.00
## 388        388     703  35          1.17       FIRST           22.61
## 389        389     718  21          0.60      SECOND           21.86
## 390        390     730  29          0.68       FIRST           23.06
## 391        391     690  36          1.15       FIRST           22.90
## 392        392     710  25          0.92       FIRST           23.69
## 393        393     704  37          0.86       FIRST           24.08
## 394        394     692  28          0.89       FIRST           24.88
## 395        395     674  31          0.86       FIRST           24.69
## 396        396     707  40          1.02       FIRST           21.17
## 397        397     707  38          1.13      SECOND           20.97
## 398        398     684  30          1.11       FIRST           21.01
## 399        399     683  24          1.03       FIRST           20.94
## 400        400     697  22          0.75      SECOND           22.03
## 401        401     699  31          1.06       FIRST           20.79
## 402        402     699  26          0.67      SECOND           22.21
## 403        403     719  28          1.07       FIRST           21.41
## 404        404     719  26          0.96      SECOND           22.21
## 405        405     724  26          0.73       FIRST           22.21
## 406        406     724  22          0.49      SECOND           22.63
## 407        407     723  28          1.15       FIRST           22.31
## 408        408     728  31          0.88       FIRST           22.00
## 409        409     728  28          0.80      SECOND           22.13
## 410        410     681  32          1.06       FIRST           21.93
## 411        411     722  37          0.80       FIRST           21.47
## 412        412     725  35          1.06       FIRST           21.97
## 413        413     725  33          0.99      SECOND           21.93
## 414        414     725  31          0.92       THIRD           22.13
## 415        415     701  27          0.85       FIRST           20.28
## 416        416     676  25          0.88       FIRST           20.25
## 417        417     686  31          0.41      SECOND           21.92
## 418        418     731  30          0.94       FIRST           22.00
## 419        419     731  25          0.77      SECOND           22.12
## 420        420     709  35          0.86   SINGLETON           21.42
## 421        421     693  38          0.80   SINGLETON           22.65
## 422        422     702  27          1.07       FIRST           22.13
## 423        423     713  38          1.01       FIRST           20.97
## 424        424     688  29          0.87       FIRST           22.15
## 425        425     689  36          1.01   SINGLETON           21.18
## 426        426     687  31          1.10       FIRST           21.92
## 427        427     717  29          1.10       FIRST           22.21
##     FEATHER.CORT
## 1           5.57
## 2          10.00
## 3          15.75
```

```
## 4           7.29
## 5           9.45
## 6          11.06
## 7          12.47
## 8          23.45
## 9          10.24
## 10         10.79
## 11          6.32
## 12          8.52
## 13         22.53
## 14          9.07
## 15         13.77
## 16          9.76
## 17          7.36
## 18          8.93
## 19          7.60
## 20         12.66
## 21         18.14
## 22         19.90
## 23          7.76
## 24          9.37
## 25          9.77
## 26         10.01
## 27          9.23
## 28         13.95
## 29         10.99
## 30         27.85
## 31         14.69
## 32          9.51
## 33          8.75
## 34         11.19
## 35          9.91
## 36          6.90
## 37          6.59
## 38          7.41
## 39          9.64
## 40         17.65
## 41          8.74
## 42         10.68
## 43          9.28
## 44          8.44
## 45          8.76
## 46          8.70
## 47         18.47
## 48          7.22
## 49          8.62
## 50         13.07
## 51         11.10
## 52         14.82
## 53          8.79
## 54         13.27
## 55          7.27
## 56          7.77
## 57          9.34
```

```
## 58         12.96
## 59          8.24
## 60         11.77
## 61         18.32
## 62         14.39
## 63          8.56
## 64          8.35
## 65          9.54
## 66          8.24
## 67          8.22
## 68         22.70
## 69         10.41
## 70         12.66
## 71         12.09
## 72          6.81
## 73         10.81
## 74         10.60
## 75          7.87
## 76         10.42
## 77         12.17
## 78         19.83
## 79          9.45
## 80         18.11
## 81          7.87
## 82         20.88
## 83         11.30
## 84         10.45
## 85         12.61
## 86         13.84
## 87         11.42
## 88          7.80
## 89          9.39
## 90         12.01
## 91         10.77
## 92         12.21
## 93         28.08
## 94         24.87
## 95         13.77
## 96          9.25
## 97         10.19
## 98         11.82
## 99         13.02
## 100        15.67
## 101        11.73
## 102         9.87
## 103        11.72
## 104         9.46
## 105        10.07
## 106         8.72
## 107         6.69
## 108        15.20
## 109         8.09
## 110         6.03
## 111         6.86
```

```
## 112        9.29
## 113        9.05
## 114       10.39
## 115        7.83
## 116       12.16
## 117        8.54
## 118       14.30
## 119        9.76
## 120       12.97
## 121       11.10
## 122        9.12
## 123        8.31
## 124       12.57
## 125       11.54
## 126       10.73
## 127       18.91
## 128       13.86
## 129       14.61
## 130        7.74
## 131        8.08
## 132        7.73
## 133        9.55
## 134        9.27
## 135        7.34
## 136        4.27
## 137       13.94
## 138       10.85
## 139       10.68
## 140       10.13
## 141       20.00
## 142        8.29
## 143        9.15
## 144       12.08
## 145        6.74
## 146       11.31
## 147        5.57
## 148        8.88
## 149        7.68
## 150       12.24
## 151       10.11
## 152       14.30
## 153        9.82
## 154        6.71
## 155        7.57
## 156       10.28
## 157       15.72
## 158       12.76
## 159        4.29
## 160       18.40
## 161       18.42
## 162        9.47
## 163       15.36
## 164       13.17
## 165        7.73
```

```
## 166        12.92
## 167        14.34
## 168        15.49
## 169        18.54
## 170        17.33
## 171        22.24
## 172         9.85
## 173        14.37
## 174        13.81
## 175         7.76
## 176        17.72
## 177        18.18
## 178         8.28
## 179         6.25
## 180        14.77
## 181        14.13
## 182         9.38
## 183        14.88
## 184         9.06
## 185        23.56
## 186         8.64
## 187         6.59
## 188        11.60
## 189        14.04
## 190         4.89
## 191        15.38
## 192         9.46
## 193        13.11
## 194         7.47
## 195        10.35
## 196         9.00
## 197        10.91
## 198         9.38
## 199        14.80
## 200         9.91
## 201        11.14
## 202        33.33
## 203        20.19
## 204        15.94
## 205        11.08
## 206        13.09
## 207        18.47
## 208        18.08
## 209        17.57
## 210        11.02
## 211         6.45
## 212         7.27
## 213        11.02
## 214         3.85
## 215        11.36
## 216         7.87
## 217        13.65
## 218         5.40
## 219         2.68
```

```
## 220        4.46
## 221        5.06
## 222        5.66
## 223        2.45
## 224       10.83
## 225       10.99
## 226        4.75
## 227        8.60
## 228       12.94
## 229       13.60
## 230        9.83
## 231        6.98
## 232        9.20
## 233        5.81
## 234       10.60
## 235       11.60
## 236        8.57
## 237        8.21
## 238       18.47
## 239       11.20
## 240       18.16
## 241       10.71
## 242       12.25
## 243       19.12
## 244       10.33
## 245       19.34
## 246        8.83
## 247       10.17
## 248       15.38
## 249        9.37
## 250        5.90
## 251        6.68
## 252        8.03
## 253       16.14
## 254       10.15
## 255        7.80
## 256       10.69
## 257       25.01
## 258       12.40
## 259        6.95
## 260        9.93
## 261        5.16
## 262       12.05
## 263       22.34
## 264        5.31
## 265       31.23
## 266       10.43
## 267       12.37
## 268        9.87
## 269       18.78
## 270       17.06
## 271       20.22
## 272       15.48
## 273        9.08
```

```
## 274       14.59
## 275       11.73
## 276        7.57
## 277       11.96
## 278       16.28
## 279       10.67
## 280        5.09
## 281       10.13
## 282       10.64
## 283       11.00
## 284       14.53
## 285        8.65
## 286       15.25
## 287        8.95
## 288        6.30
## 289       11.32
## 290       11.94
## 291        8.87
## 292       10.10
## 293        5.60
## 294        3.26
## 295        8.72
## 296        3.33
## 297        6.38
## 298       14.19
## 299        9.81
## 300       12.79
## 301        5.72
## 302        6.28
## 303        2.69
## 304        4.95
## 305        8.46
## 306       12.89
## 307       18.57
## 308       10.71
## 309       13.87
## 310       11.41
## 311        8.54
## 312       14.77
## 313       14.45
## 314       17.17
## 315        6.32
## 316        5.63
## 317       10.20
## 318       12.72
## 319        4.39
## 320        5.55
## 321        8.08
## 322       11.01
## 323        8.24
## 324        8.43
## 325       23.97
## 326       18.36
## 327        8.24
```

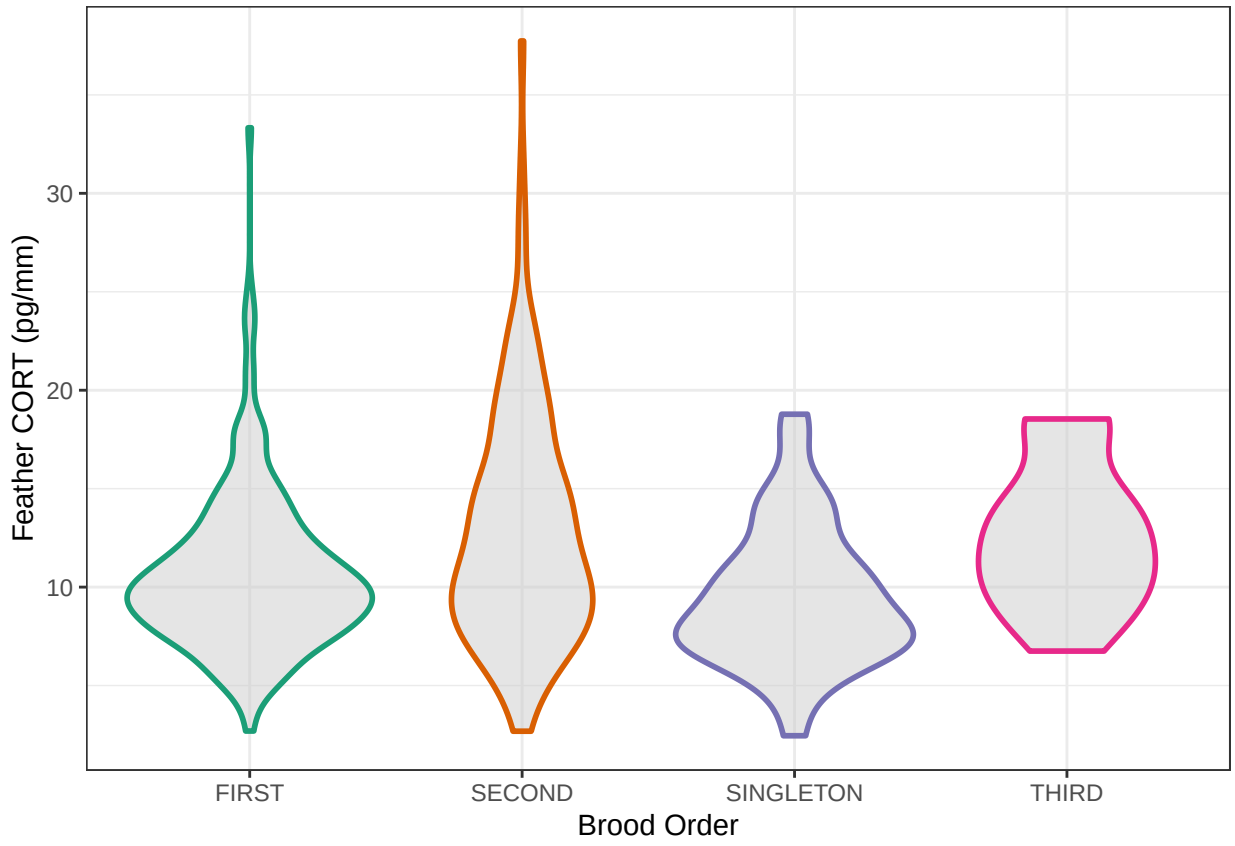
```
## 328       14.53
## 329       12.18
## 330       21.07
## 331       21.30
## 332       10.29
## 333        6.75
## 334        7.14
## 335        7.73
## 336       15.12
## 337        8.93
## 338        6.81
## 339       13.25
## 340       11.62
## 341       10.40
## 342        9.57
## 343       10.29
## 344        7.35
## 345       10.55
## 346        7.60
## 347        6.04
## 348       18.01
## 349        8.61
## 350       10.83
## 351        9.81
## 352       10.33
## 353       13.42
## 354       15.99
## 355       22.46
## 356       11.45
## 357       15.38
## 358        9.21
## 359       13.53
## 360       14.46
## 361        9.39
## 362        7.05
## 363        7.01
## 364        7.64
## 365        6.30
## 366        5.60
## 367        9.59
## 368        5.50
## 369        8.49
## 370       13.40
## 371       14.45
## 372       12.52
## 373       15.30
## 374        9.86
## 375       13.75
## 376        9.01
## 377       15.60
## 378        6.80
## 379        7.31
## 380        8.50
## 381        7.94
```

```
## 382         9.27
## 383         5.58
## 384         6.68
## 385        10.78
## 386        17.70
## 387        12.29
## 388         7.56
## 389        37.74
## 390         9.91
## 391         6.89
## 392        11.71
## 393        12.67
## 394         9.89
## 395         9.07
## 396        23.12
## 397        10.39
## 398         7.49
## 399        11.10
## 400        10.19
## 401         7.60
## 402        22.10
## 403         6.33
## 404         9.20
## 405        11.20
## 406        11.63
## 407         7.99
## 408         8.43
## 409        14.67
## 410        13.92
## 411        17.88
## 412         7.72
## 413         7.29
## 414         8.23
## 415        15.13
## 416        13.71
## 417        14.26
## 418        17.05
## 419        15.41
## 420         7.30
## 421         7.69
## 422         6.84
## 423         9.22
## 424        10.49
## 425         6.91
## 426         8.72
## 427         7.51
```

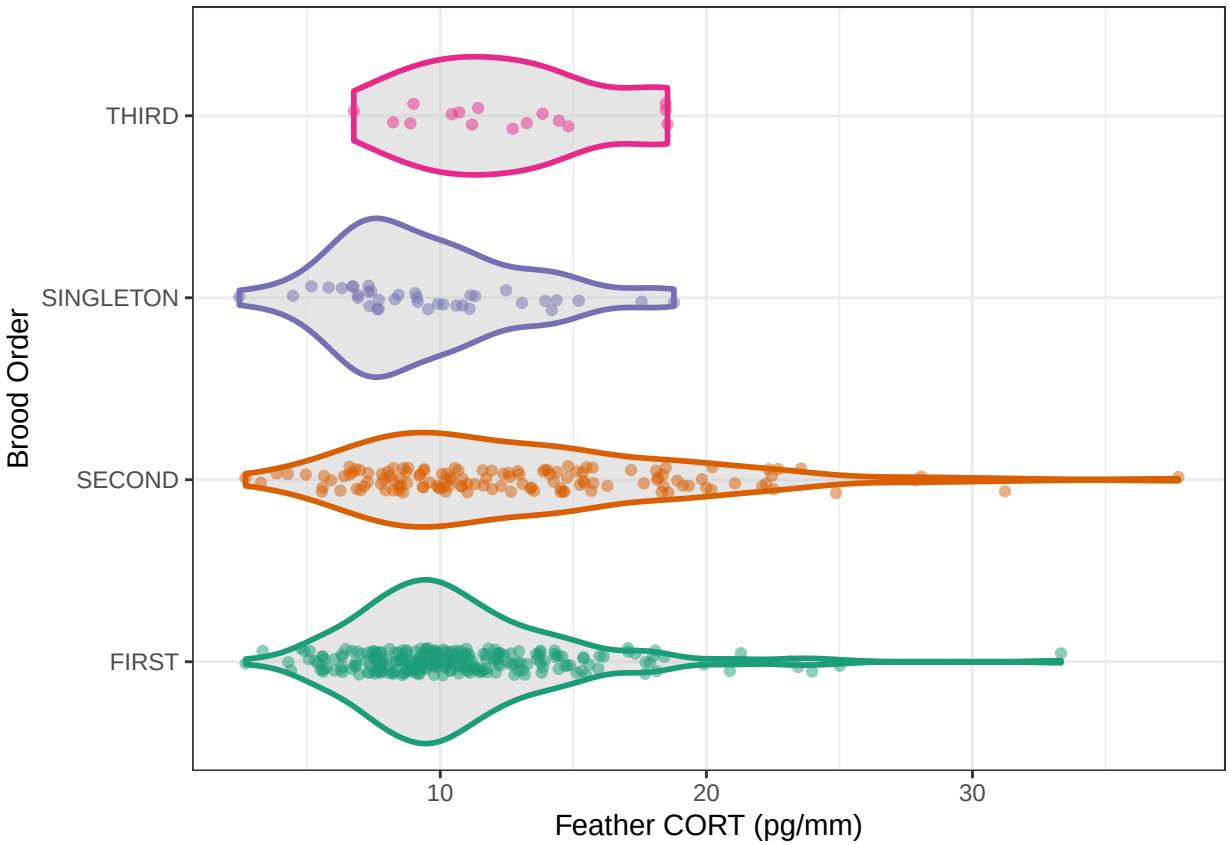
```
feathercort<-read.csv("feathercort.csv")

#Create data.frame
feathercort.df<-data.frame(feathercort)
```

```r
#setting up ggplot for brood order vs feather cort
 theme_set(theme_bw())
 h<- ggplot(feathercort.df, aes(x=BROOD.ORDER, y = FEATHER.CORT, color = BROOD.ORDER))+
   labs(x = "Brood Order", y = "Feather CORT (pg/mm)") +
   scale_color_brewer(palette = "Dark2", guide = "none")
```

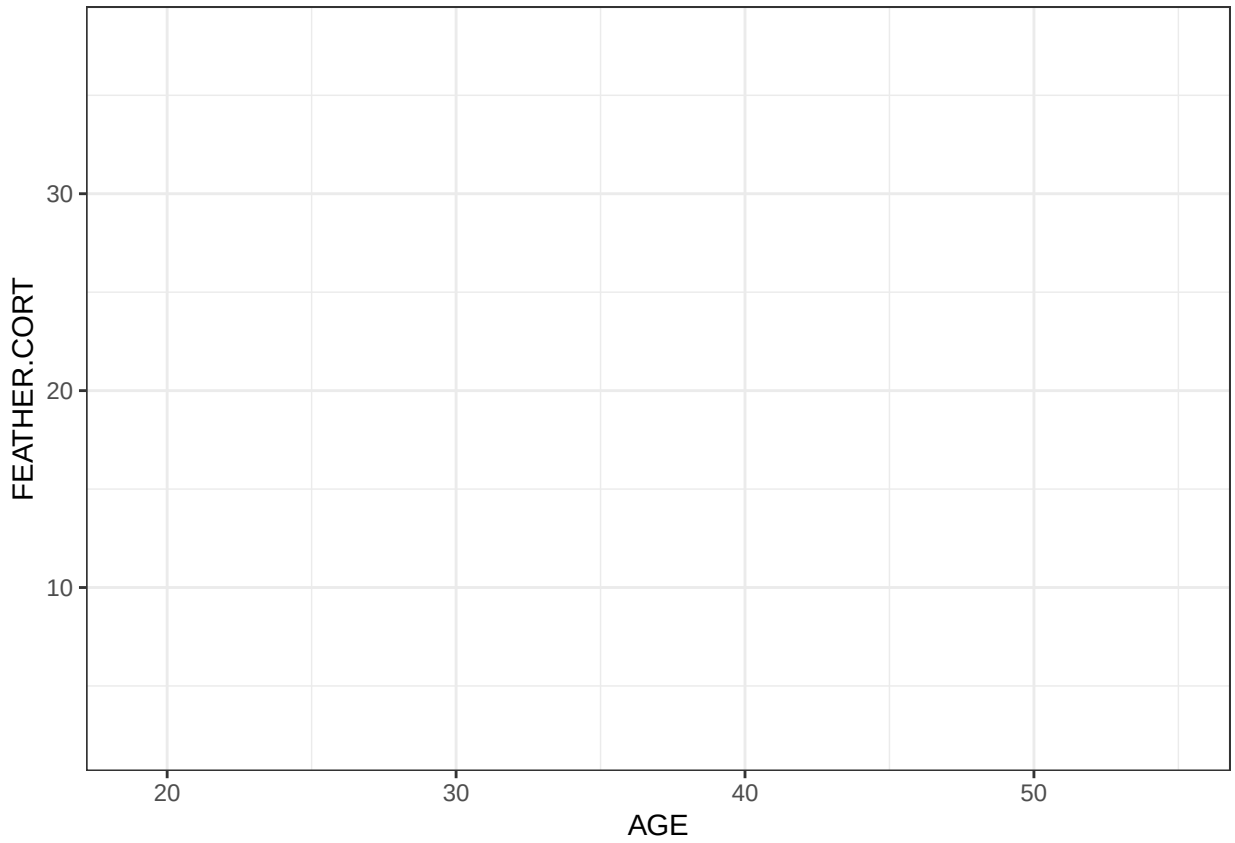
```r
# Plotting geom_violin
 h+geom_violin(fill = "gray80", size = 1, alpha=0.5)
```




```r
#Adding jitter plot over and coord flip
 h+geom_violin(fill = "gray80", size = 1, alpha=0.5)+
   geom_jitter(alpha = .50, width = .075)+
   coord_flip()
```

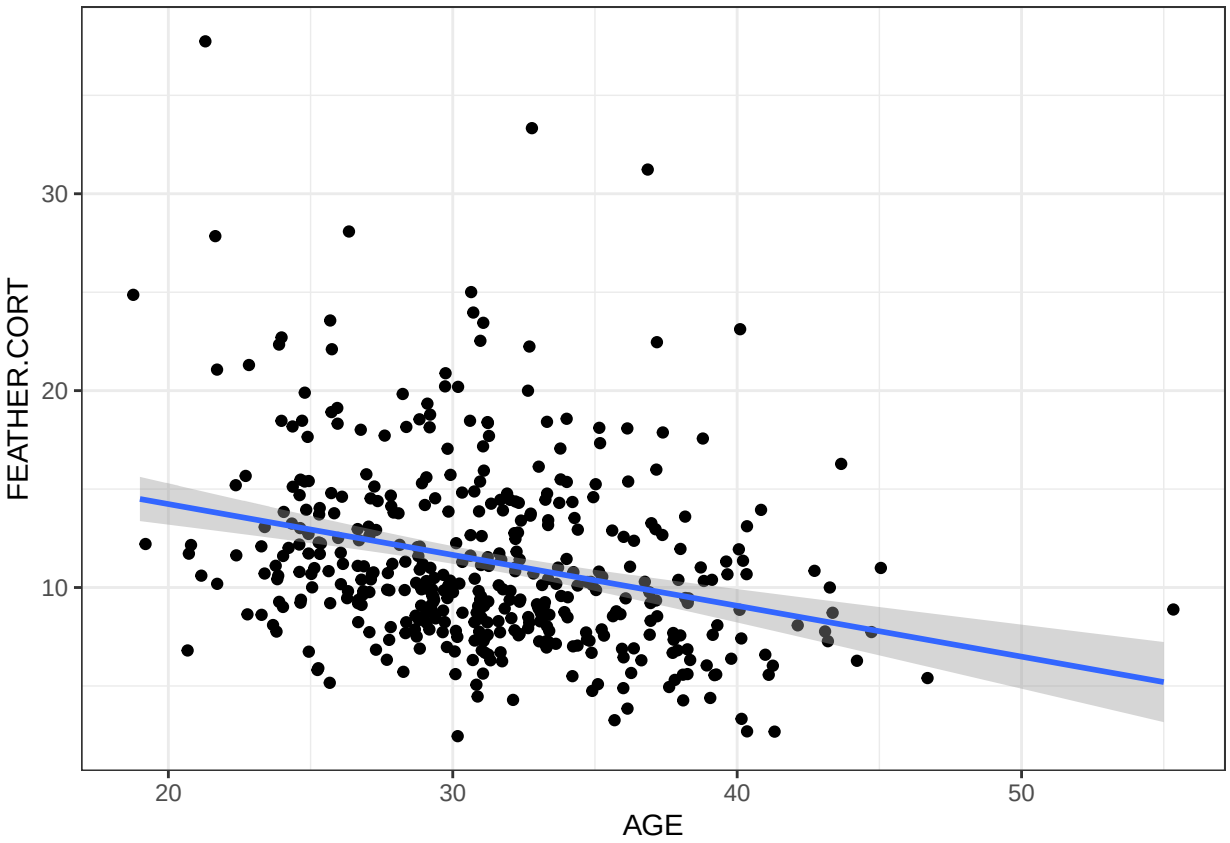



```
#Plot age vs cort level
 (age <- ggplot(feathercort.df, aes(x = AGE, y = FEATHER.CORT)))
```

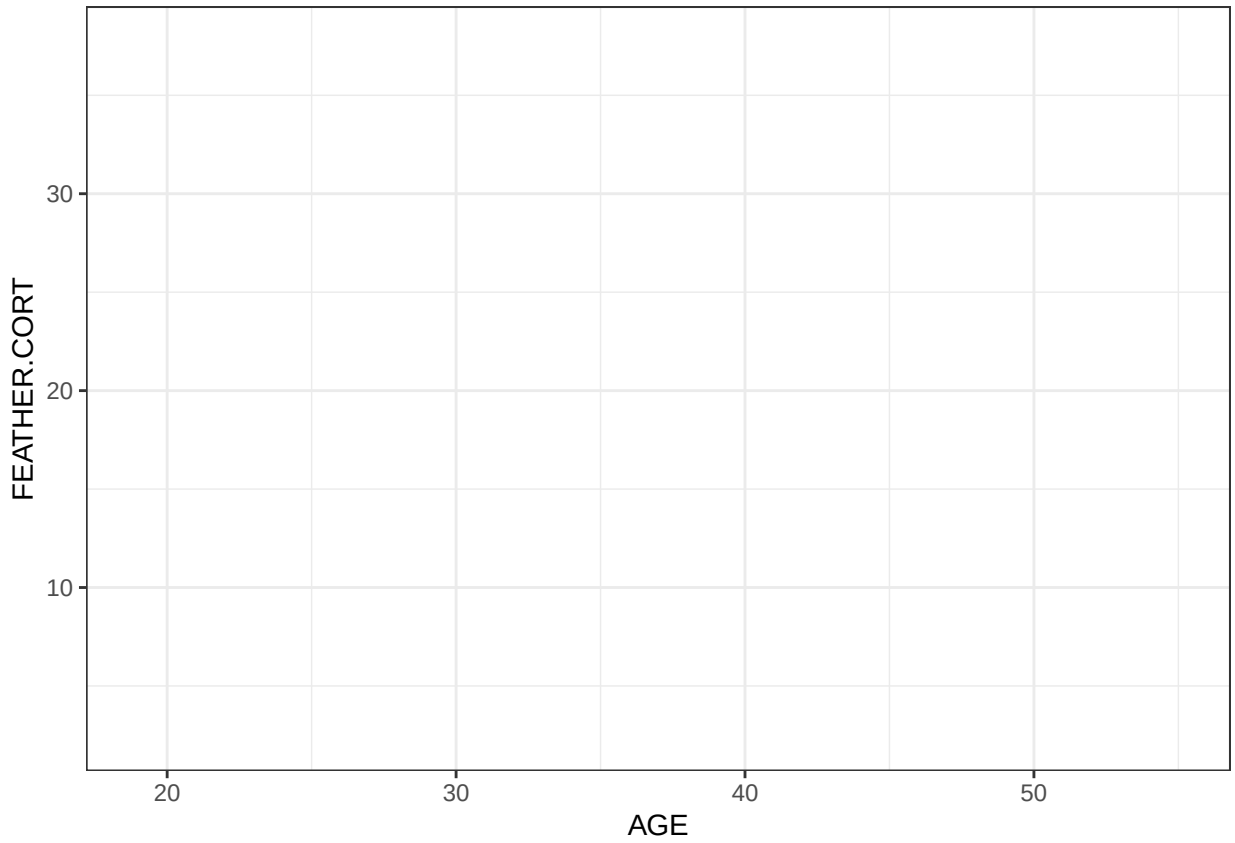



```
age + geom_jitter()+geom_smooth(method = "lm")
```

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

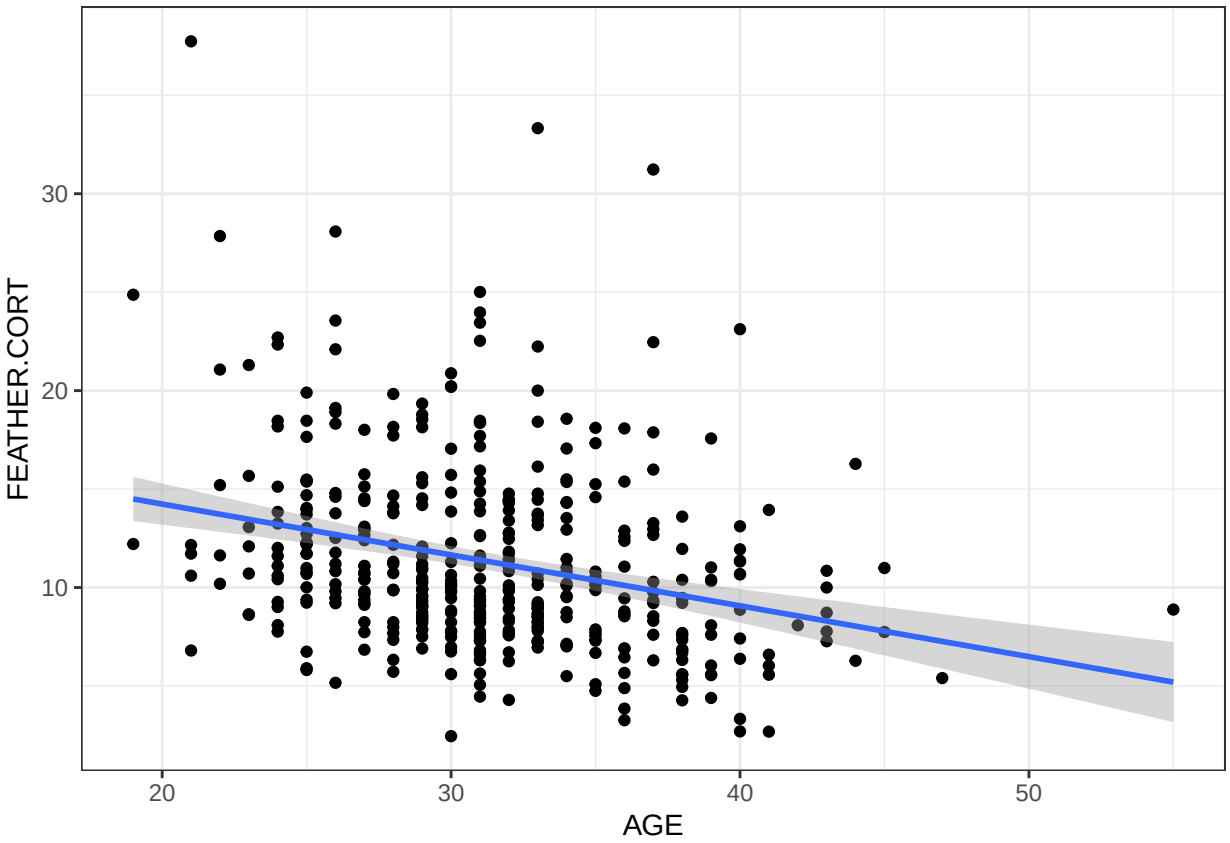



```
#add trendline
(age <- ggplot(feathercort.df, aes(x = AGE, y = FEATHER.CORT)))
```




```
age + geom_point()+geom_smooth(method = "lm")
```

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


FEATHER.CORT
30
20
10
20
30
40
50
AGE