Project-Russian Federation

Julia Cuellar

2021-7-25

EDA

Baikal Data:

```
##         Hole Core-Sec.-Int. Depth Bio.sil.  Age   V6 V7
## 1: BDP-96-2          GC-1    11     0.11 13.1 11.4 NA
## 2: BDP-96-2          GC-1    13     0.13 15.7 11.9 NA
## 3: BDP-96-2          GC-1    15     0.15 13.5 12.3 NA
## 4: BDP-96-2          GC-1    17     0.17  7.7 12.8 NA
## 5: BDP-96-2          GC-1    21     0.21  8.8 13.7 NA
## 6: BDP-96-2          GC-1    23     0.23  4.5 14.2 NA
```

Summary of Baikal Data:

```
##      Hole            Core-Sec.-Int.        Depth            Bio.sil.
##  Length:3669        Length:3669        Min.   :  1.000   Min.   :  0.00
##  Class :character   Class :character   1st Qu.:  1.000   1st Qu.: 41.00
##  Mode  :character   Mode  :character   Median :  1.000   Median : 87.00
##                                        Mean   :  2.433   Mean   : 88.22
##                                        3rd Qu.:  1.000   3rd Qu.:133.00
##                                        Max.   :194.500   Max.   :205.00
##
##       Age              V6                V7
##  Min.   : 1.13   Min.   :   1.80   Min.   :  35.5
##  1st Qu.:18.73   1st Qu.:   4.40   1st Qu.: 421.3
##  Median :38.34   Median :   8.40   Median : 886.6
##  Mean   :38.34   Mean   :  20.24   Mean   : 876.7
##  3rd Qu.:57.59   3rd Qu.:  20.20   3rd Qu.:1258.7
##  Max.   :76.99   Max.   :1768.50   Max.   :1843.2
##                                    NA's   :67
```

Display nulls of Baikal Data:

```
## [1] FALSE
```

Display NA's of Baikal Data:

```
## [1] 0
```

```
## [1] 0
```

```
## [1] 0
```

```
## [1] 0
```

```
## [1] 0
```

```
## [1] 0
```

```
## [1] 67
```

Rename columns of Baikal Data:

```
## [1] "Hole"     "Core-Sec" "Int"      "Depth"    "Biosil"   "Age"      "X"
```

Redisplay NA's of X:
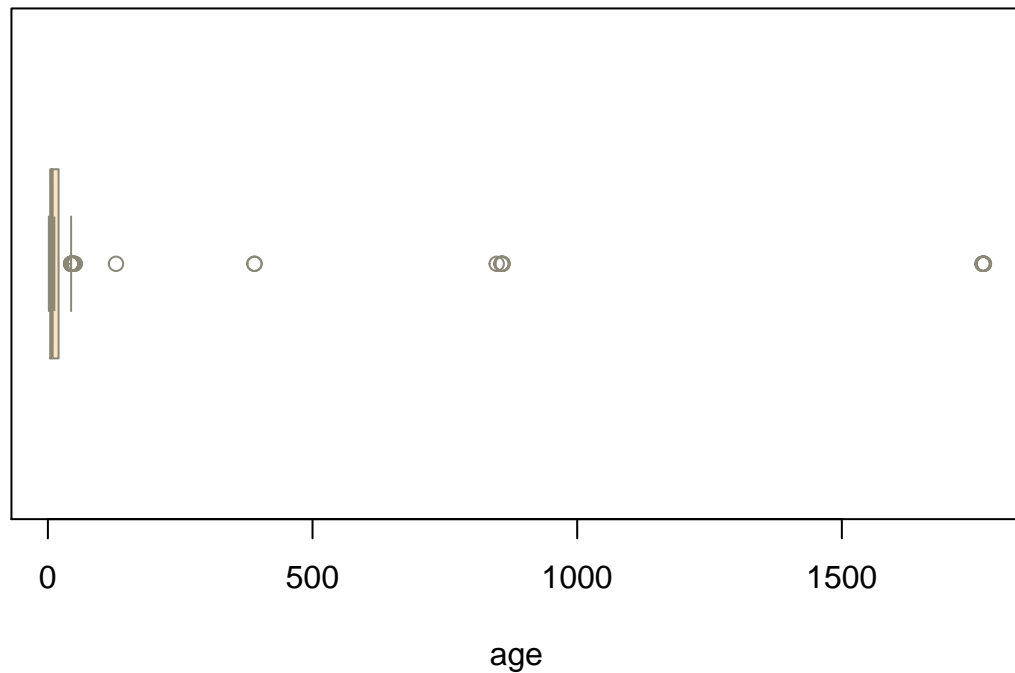
```
## [1] 0
```

Redisplay Baikal Data:

```
##          Hole Core-Sec Int Depth Biosil  Age        X
## 1: BDP-96-2     GC-1  11  0.11   13.1 11.4 876.7123
## 2: BDP-96-2     GC-1  13  0.13   15.7 11.9 876.7123
## 3: BDP-96-2     GC-1  15  0.15   13.5 12.3 876.7123
## 4: BDP-96-2     GC-1  17  0.17    7.7 12.8 876.7123
## 5: BDP-96-2     GC-1  21  0.21    8.8 13.7 876.7123
## 6: BDP-96-2     GC-1  23  0.23    4.5 14.2 876.7123
```

Project Age column plot from Baikal data:

Age of Baikal

age

Lake Data:

```
##      Age-ka MTWM-degC MTWM-deg-C MTWM-deg+C  PANN-mm PANN--mm PANN-+mm
## 1 0.000000  8.800000   8.800000   8.800000 255.0000 255.0000 255.0000
## 2 2.596983  8.888037   8.792730   8.992730 253.3380 253.3380 253.3380
## 3 2.929250  9.151988   9.072456   9.272456 259.9207 259.9207 259.9207
## 4 3.479885  8.898796   8.850015   9.050015 258.6479 258.6479 258.6479
## 5 4.090889  8.927818   8.850605   9.050605 258.6614 258.6614 258.6614
## 6 4.461754  8.896577   8.800574   9.000574 253.3380 253.3380 253.3380
##   Trees & Shrubs Picea
## 1           63.0     0
## 2           74.9     0
## 3           67.2     0
## 4           61.6     0
## 5           71.1     0
## 6           73.8     0
```

Summary of Lake Data:

```
##      Age-ka           MTWM-degC        MTWM-deg-C         MTWM-deg+C
##  Min.   :   0.00   Min.   : 1.984   Min.   : 1.500   Min.   : 2.200
##  1st Qu.:  15.17   1st Qu.: 8.840   1st Qu.: 5.962   1st Qu.: 9.014
##  Median : 388.21   Median : 9.302   Median : 8.807   Median :11.807
##  Mean   : 366.82   Mean   : 9.068   Mean   : 7.768   Mean   :11.173
##  3rd Qu.: 424.33   3rd Qu.:10.591   3rd Qu.: 9.145   3rd Qu.:14.953
##  Max.   :1091.50   Max.   :15.254   Max.   :13.327   Max.   :17.827
```

```
##      PANN-mm          PANN--mm          PANN-+mm       Trees & Shrubs
## Min.   :209.3   Min.   :125.8   Min.   :236.6   Min.   : 0.60
## 1st Qu.:253.3   1st Qu.:206.4   1st Qu.:259.2   1st Qu.:29.05
## Median :271.7   Median :253.3   Median :348.6   Median :63.50
## Mean   :337.1   Mean   :263.4   Mean   :439.1   Mean   :56.52
## 3rd Qu.:403.1   3rd Qu.:270.7   3rd Qu.:640.2   3rd Qu.:82.88
## Max.   :681.1   Max.   :607.2   Max.   :789.0   Max.   :94.40
##      Picea
## Min.   : 0.000
## 1st Qu.: 0.000
## Median : 0.000
## Mean   : 5.511
## 3rd Qu.: 6.200
## Max.   :55.590
```

Display nulls of Lake Data:

```
## [1] FALSE
```

Display NA's of Lake Data:

```
## [1] 0
```

Rename Age-ka column to Age of Lake Data:
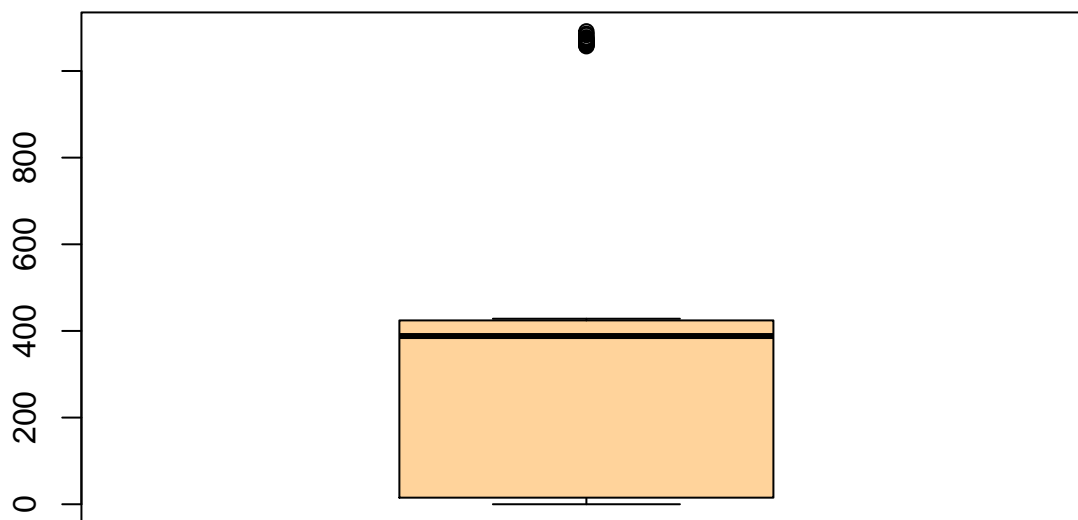
```
## [1] "Age"           "MTWM-degC"      "MTWM-deg-C"      "MTWM-deg+C"
## [5] "PANN-mm"       "PANN--mm"       "PANN-+mm"        "Trees & Shrubs"
## [9] "Picea"
```

Redisplay Lake Data:

```
##          Age MTWM-degC MTWM-deg-C MTWM-deg+C  PANN-mm PANN--mm PANN-+mm
## 1 0.000000  8.800000   8.800000   8.800000 255.0000 255.0000 255.0000
## 2 2.596983  8.888037   8.792730   8.992730 253.3380 253.3380 253.3380
## 3 2.929250  9.151988   9.072456   9.272456 259.9207 259.9207 259.9207
## 4 3.479885  8.898796   8.850015   9.050015 258.6479 258.6479 258.6479
## 5 4.090889  8.927818   8.850605   9.050605 258.6614 258.6614 258.6614
## 6 4.461754  8.896577   8.800574   9.000574 253.3380 253.3380 253.3380
##   Trees & Shrubs Picea
## 1           63.0     0
## 2           74.9     0
## 3           67.2     0
## 4           61.6     0
## 5           71.1     0
## 6           73.8     0
```

Project Age column plot from Lake data:

Age of Lake

age

Lake 2 Data:

```
## # A tibble: 6 x 19
##   `Age [ka BP]` `Picea sect. Eupicea` `P. s/g Haplo-T` Larix Betula Alnus Salix
##           <dbl>                 <dbl>            <dbl> <dbl>  <dbl> <dbl> <dbl>
## 1          1.5                     0              8.1     0   33.2  36.8   0.8
## 2          2.27                    0              7.2     0   25.2  37.2   0.6
## 3          2.62                    0             16.1     0   12.4  38.7   0.6
## 4          3.14                    0             12.6     0   21    38.9   1
## 5          3.46                    0              7.7     0   24.6  43.8   0.8
## 6          3.65                    0             11.5     0   12.4  35.1   0.3
## # ... with 12 more variables: Poaceae <dbl>, Cyperaceae <dbl>, Artemisia <dbl>,
## #   Ericales <dbl>, Cphae <dbl>, Papae <dbl>, Ranae <dbl>, Tha <dbl>,
## #   Sax <dbl>, Lyc.a-T <dbl>, Sel.r <dbl>, Sph <dbl>
```

Summary of Lake 2 Data:

```
##   Age [ka BP]    Picea sect. Eupicea P. s/g Haplo-T       Larix
##  Min.   :   1.5  Min.   : 0.000     Min.   : 0.000   Min.   :0.0000
##  1st Qu.:  18.3  1st Qu.: 0.000     1st Qu.: 0.200   1st Qu.:0.0000
##  Median : 374.2  Median : 0.000     Median : 0.980   Median :0.0000
##  Mean   : 371.2  Mean   : 5.131     Mean   : 4.667   Mean   :0.5214
##  3rd Qu.: 420.8  3rd Qu.: 4.650     3rd Qu.: 8.015   3rd Qu.:1.0200
##  Max.   :1091.4  Max.   :55.590     Max.   :31.100   Max.   :3.7000
##     Betula          Alnus             Salix           Poaceae
##  Min.   : 0.00   Min.   : 0.000   Min.   :0.0000   Min.   : 0.000
```

```
## 1st Qu.:10.23    1st Qu.: 2.895    1st Qu.:0.3000    1st Qu.: 3.645
## Median :20.31    Median :20.180    Median :0.6200    Median :14.590
## Mean   :21.71    Mean   :21.740    Mean   :0.8811    Mean   :24.245
## 3rd Qu.:31.25    3rd Qu.:37.050    3rd Qu.:1.2750    3rd Qu.:44.050
## Max.   :65.17    Max.   :59.800    Max.   :3.7800    Max.   :84.750
##    Cyperaceae        Artemisia         Ericales          Cphae
## Min.   : 0.000    Min.   : 0.000    Min.   :0.0000    Min.   :0.000
## 1st Qu.: 1.885    1st Qu.: 0.200    1st Qu.:0.2000    1st Qu.:0.000
## Median : 3.270    Median : 1.030    Median :0.5400    Median :0.500
## Mean   : 5.006    Mean   : 4.332    Mean   :0.9371    Mean   :1.221
## 3rd Qu.: 6.630    3rd Qu.: 3.505    3rd Qu.:1.5300    3rd Qu.:1.805
## Max.   :21.490    Max.   :36.900    Max.   :5.3900    Max.   :7.700
##     Papae            Ranae             Tha               Sax
## Min.   : 0.000    Min.   :0.0000    Min.   :0.0000    Min.   :0.0000
## 1st Qu.: 0.060    1st Qu.:0.0000    1st Qu.:0.0000    1st Qu.:0.0000
## Median : 0.800    Median :0.0000    Median :0.0000    Median :0.0900
## Mean   : 2.197    Mean   :0.3655    Mean   :0.4063    Mean   :0.8082
## 3rd Qu.: 2.390    3rd Qu.:0.3000    3rd Qu.:0.3050    3rd Qu.:0.6700
## Max.   :22.820    Max.   :5.5800    Max.   :7.8100    Max.   :9.9000
##    Lyc.a-T           Sel.r             Sph
## Min.   :0.0000    Min.   : 0.000    Min.   : 0.000
## 1st Qu.:0.0000    1st Qu.: 0.355    1st Qu.: 1.695
## Median :0.2900    Median : 1.300    Median : 4.980
## Mean   :0.5255    Mean   : 3.351    Mean   : 8.217
## 3rd Qu.:0.8000    3rd Qu.: 3.345    3rd Qu.:10.430
## Max.   :3.1500    Max.   :31.950    Max.   :38.890
```

Display nulls of Lake 2 Data:

```
## [1] FALSE
```

Display NA's of Lake 2 Data:

```
## [1] 0
```

Rename Age-ka-BP column to Age of Lake 2 Data:

```
##  [1] "Age"                "Picea sect. Eupicea" "P. s/g Haplo-T"
##  [4] "Larix"              "Betula"              "Alnus"
##  [7] "Salix"              "Poaceae"             "Cyperaceae"
## [10] "Artemisia"          "Ericales"            "Cphae"
## [13] "Papae"              "Ranae"               "Tha"
## [16] "Sax"                "Lyc.a-T"             "Sel.r"
## [19] "Sph"
```

Change Lake 2 Data into Dataframe:

```
##      Age Picea.sect..Eupicea P..s.g.Haplo.T Larix Betula Alnus Salix Poaceae
## 1   1.50                0.00           8.10  0.00  33.20 36.80  0.80    9.20
## 2   2.27                0.00           7.20  0.00  25.20 37.20  0.60   12.90
## 3   2.62                0.00          16.10  0.00  12.40 38.70  0.60   13.30
## 4   3.14                0.00          12.60  0.00  21.00 38.90  1.00   10.10
```

```
## 5     3.46          0.00       7.70  0.00  24.60 43.80  0.80    7.90
## 6     3.65          0.00      11.50  0.00  12.40 35.10  0.30   24.20
## 7     3.93          0.00       9.80  0.00  19.20 47.70  0.20   11.50
## 8     4.22          0.00       7.90  0.00  15.80 51.00  0.00   11.40
## 9     5.93          0.00       1.60  0.00  18.60 57.90  0.30    9.80
## 10    6.64          0.00       0.00  0.00  35.80 52.90  0.30    5.10
## 11    7.36          0.00       0.20  0.00  32.80 59.80  0.30    3.90
## 12    8.07          0.00       0.00  0.00  39.70 54.00  0.20    3.30
## 13    8.78          0.00       0.00  0.00  31.30 59.30  0.20    5.30
## 14    9.07          0.00       0.20  0.00  27.30 56.70  0.20   10.00
## 15    9.50          0.00       0.00  0.00  23.00 49.50  0.00   19.70
## 16   10.21          0.00       0.00  0.00  21.20 37.60  2.10   26.30
## 17   10.92          0.00       0.30  0.00  12.50 11.90  0.60   43.40
## 18   11.64          0.00       0.00  0.00  31.20  2.90  0.30   44.80
## 19   12.16          0.00       0.00  0.00  11.90  5.20  1.10   52.80
## 20   12.67          0.00       0.50  0.00  27.40 55.70  0.20    9.70
## 21   12.83          0.00       0.40  0.00  30.10 59.30  0.20    6.10
## 22   13.29          0.00       1.30  0.00  10.70 11.00  0.00   58.90
## 23   13.87          0.00       0.00  0.00   4.40  1.00  1.00   38.70
## 24   15.00          0.00       0.30  0.00   2.40  0.50  0.30   51.90
## 25   17.77          0.00       0.60  0.00   0.60  0.00  0.30   49.30
## 26   18.84          0.00       0.00  0.00   1.00  0.50  0.30   44.20
## 27   19.91          0.00       0.60  0.00   2.60  1.50  0.00   47.40
## 28   20.24          0.00       0.90  0.00   1.20  0.30  0.30   44.40
## 29  106.10          0.00      18.10  0.00  26.30 36.90  0.80    6.20
## 30  109.10          0.00       2.00  0.00  44.30 31.90  2.60   11.30
## 31  112.27          0.00      31.10  0.00  19.00 34.00  0.50    6.10
## 32  115.82          0.00      16.80  0.00  28.80 46.00  0.70    3.10
## 33  117.86          0.00       4.90  0.00  45.30 40.50  0.30    5.00
## 34  119.57          0.00       0.20  0.00  46.80 46.80  0.70    2.00
## 35  123.11          0.00       0.20  0.00  47.90 15.70  0.40   17.60
## 36  124.39          0.00       0.80  0.00  15.00  0.80  0.50   48.50
## 37  125.20          0.00       2.30  0.00  27.60 24.90  0.30   31.20
## 38  126.50          0.00       0.60  0.00   2.50  0.60  0.30   37.70
## 39  127.50          0.00       0.00  0.00   0.30  0.00  0.30   31.70
## 40  135.45          0.00       0.00  0.00   2.20  1.70  0.50   43.90
## 41  137.80          0.00       0.00  0.00   2.20  0.50  0.00   55.10
## 42  140.65          0.00       0.20  0.00   4.80  0.90  1.10   45.60
## 43  356.75          0.00       1.97  0.28   2.25  1.41  0.28   31.27
## 44  359.15          0.00       0.00  0.00   1.91  0.96  0.32   59.24
## 45  361.55          0.00       0.68  1.14   2.96  1.82  1.14   55.35
## 46  363.56          0.00       0.34  0.00   2.07  0.69  0.00   74.48
## 47  368.87          0.00       0.00  0.00   1.23  2.47  0.00   65.43
## 48  370.79          0.00       0.00  3.70   1.85  0.93  0.00   69.44
## 49  372.00          0.00       0.00  1.69   0.00  0.00  0.00   84.75
## 50  374.16          0.00       0.00  0.00   3.92  5.23  0.65   77.78
## 51  375.70          0.00       1.22  0.00   9.76  0.00  0.00   65.85
## 52  380.34          0.00       1.45  0.00   2.90  1.45  1.45   59.42
## 53  381.11          0.00       0.00  2.43   4.37  0.49  0.00   72.33
## 54  388.21          0.00       0.00  0.35   9.38  5.21  1.74   64.24
## 55  389.11          0.00       0.00  0.30  11.21  6.67  1.82   65.15
## 56  390.02          0.00       1.33  0.00  22.57  5.31  0.44   43.81
## 57  392.49          6.90       0.53  0.27   8.49  5.31  1.06   38.46
## 58  393.62          2.39       9.85  0.00  13.73  8.96  1.49   22.09
```

```
## 59  394.75           8.65          14.05  0.00  18.38 12.43  3.78   14.59
## 60  395.88          10.77          10.07  0.00  19.20 10.77  1.41   21.55
## 61  397.02          18.42          12.37  1.05  18.42 10.26  0.00   19.74
## 62  398.20           0.00          11.08  1.23  20.31 14.46  0.62   22.15
## 63  399.30           7.02          16.54  1.25  14.29 24.81  1.25    6.77
## 64  400.40          14.92          24.44  0.95  17.78 25.08  0.63    2.54
## 65  401.51          55.59           9.54  0.99  10.86 15.30  0.33    2.14
## 66  402.75          36.21          16.61  0.31  12.23 22.57  0.31    0.78
## 67  404.58          28.32          19.81  1.52  20.16 22.61  0.58    1.17
## 68  407.10          24.45          16.51  1.56  19.00 30.06  2.49    0.31
## 69  410.00          24.83           4.86  1.56  22.57 36.28  2.08    3.30
## 70  412.91          18.46          13.96  1.28  21.51 39.00  0.64    1.44
## 71  415.83          50.35           0.95  1.56  17.19 21.44  1.48    1.22
## 72  418.75          39.69           2.33  2.33  16.34 24.71  2.33    2.53
## 73  419.47          18.08           3.09  0.77  27.82 38.49  1.70    2.16
## 74  420.09          15.09           4.43  1.81  23.74 39.24  0.60    4.63
## 75  421.55          13.91           0.26  1.31  34.65 36.75  0.52    4.72
## 76  423.79          29.75           0.25  2.45  32.63 15.81  1.27    5.83
## 77  424.67           3.65           0.84  0.56  65.17  5.06  1.40    8.71
## 78  425.95           0.00           0.98  0.00  41.69  4.56  1.95   21.17
## 79  427.00           0.32           0.00  1.29  53.05  2.89  1.93   18.97
## 80  427.60           0.00           0.63  0.00  29.75  0.95  0.00   35.44
## 81  428.20           0.00           0.00  0.00   3.72  1.12  1.12   53.90
## 82 1057.19           0.00           1.06  2.12  22.28 25.20  1.33   28.12
## 83 1058.49           0.00           0.68  1.13  29.93 20.18  0.45   30.84
## 84 1059.60           0.00           0.00  1.64  30.41 21.10  1.92   21.37
## 85 1061.80           0.00           0.53  1.34  28.07 24.87  1.07   21.93
## 86 1062.58           0.66           2.64  1.98  33.41 33.19  1.10   10.11
## 87 1063.21           1.55           5.08  1.27  43.36 28.81  1.27    3.39
## 88 1064.56           3.60           3.96  0.18  26.98 39.93  2.34    2.34
## 89 1066.56           2.56           9.51  0.75  33.12 37.39  1.71    1.07
## 90 1067.42           6.51          13.90  0.65  30.51 31.16  1.19    1.74
## 91 1068.24           6.46           9.22  0.66  45.59 24.90  2.37    0.40
## 92 1070.53          17.13          19.75  0.50  31.88 19.13  1.00    0.50
## 93 1072.92          16.58           6.76  0.25  36.61 22.11  1.23    0.86
## 94 1074.46           7.58           7.93  1.17  48.60 13.05  0.58    0.35
## 95 1074.97          11.76           9.75  0.62  35.76 15.17  0.77    0.00
## 96 1077.58           5.65           3.64  0.73  60.66 17.85  1.28    0.36
## 97 1083.93           0.19           0.00  2.08  57.55 28.68  1.32    0.94
## 98 1085.99           0.00           0.61  0.61  33.28 53.89  2.90    1.07
## 99 1091.42           0.00           1.03  0.00  19.59  6.19  3.09   49.48
##     Cyperaceae Artemisia Ericales Cphae Papae Ranae  Tha  Sax Lyc.a.T Sel.r
## 1         4.90      3.20     0.80  0.80  0.80  0.30 0.00 0.00    0.30  1.90
## 2         7.20      2.10     3.00  0.00  0.30  0.30 0.00 0.00    0.00  2.40
## 3         2.30      5.60     1.10  2.80  2.00  0.00 0.30 0.30    0.80  4.50
## 4         8.90      2.70     1.70  0.00  0.50  0.20 0.00 0.70    0.00  1.70
## 5         5.80      4.20     1.50  0.20  1.00  0.20 0.00 0.00    0.20  0.80
## 6         3.40      3.10     0.30  0.90  2.50  0.00 0.30 0.00    1.50  6.20
## 7         4.20      0.50     2.00  0.50  2.00  0.00 0.00 0.00    1.00  5.40
## 8         4.70      3.80     0.90  0.90  1.80  0.00 0.00 0.00    2.10  2.90
## 9         7.90      1.90     0.50  0.00  0.30  0.00 0.30 0.30    0.80  2.20
## 10        3.10      0.80     0.50  0.00  0.30  0.00 0.50 0.00    0.30  1.30
## 11        1.90      0.20     0.00  0.30  0.30  0.00 0.00 0.00    0.20  0.80
## 12        0.70      0.70     0.00  0.00  0.20  0.40 0.00 0.00    0.00  0.70
```

```
## 13      2.00      0.20      0.20 0.20  0.40  0.00 0.00 0.00   0.40  0.20
## 14      2.70      0.20      0.20 0.50  0.50  0.00 0.00 0.00   0.70  1.60
## 15      3.80      1.10      0.00 1.40  0.00  0.30 0.30 0.00   0.30  2.50
## 16      2.10      3.30      0.60 1.50  2.10  0.60 0.00 0.00   0.30  6.30
## 17      6.80      7.70      1.00 7.70  2.90  0.00 0.30 0.30   0.60 16.40
## 18      6.50      2.90      1.90 3.60  1.90  0.00 1.90 0.00   0.00 11.40
## 19      3.60      7.20      1.40 5.20  3.60  0.30 1.40 0.30   0.00 23.50
## 20      2.10      2.10      1.20 0.20  0.00  0.00 0.50 0.00   0.90  1.20
## 21      1.90      0.60      0.00 0.00  0.60  0.20 0.00 0.00   0.60  1.10
## 22      0.60      6.80      0.00 1.60  1.00  0.60 0.00 0.00   0.30  3.90
## 23      5.10     22.20      0.00 4.10  8.90  0.00 0.60 1.30   0.00  7.90
## 24      1.60     23.00      0.00 2.70  6.50  0.30 0.00 3.00   0.00  4.10
## 25      2.60     28.80      0.00 2.00  6.30  0.00 0.90 1.40   0.00  3.10
## 26      2.00     33.50      0.00 1.00  6.90  0.30 0.00 0.00   0.00  3.30
## 27      0.60     30.10      0.30 2.60  4.70  0.30 0.00 0.60   0.00  5.60
## 28      0.60     36.30      0.00 2.40  1.50  0.60 0.00 2.40   0.00  0.00
## 29      4.60      1.20      2.50 0.40  1.00  0.00 0.00 0.20   1.00  1.20
## 30      1.70      1.70      0.90 0.30  0.90  0.00 0.30 0.00   0.00  1.20
## 31      5.80      0.60      1.10 0.20  0.80  0.00 0.20 0.20   0.50  1.30
## 32      2.60      0.20      0.00 0.00  0.40  0.20 0.20 0.20   0.20  0.40
## 33      1.70      0.30      0.00 0.50  0.20  0.20 0.60 0.00   0.30  0.60
## 34      0.30      0.50      0.30 0.20  0.50  0.20 0.50 0.30   0.00  0.20
## 35      6.70      4.30      1.70 0.40  1.90  0.20 0.90 0.40   0.00  1.70
## 36      9.60      8.90      0.80 2.80  5.60  0.30 1.30 1.50   0.00  4.30
## 37      3.00      1.70      0.70 1.30  3.00  0.30 0.30 0.00   0.30  2.30
## 38      1.10     24.90      0.00 0.30 14.70  1.10 0.60 3.60   0.30  2.50
## 39      2.80     36.90      0.60 0.60 11.70  0.00 0.30 3.10   0.00  3.10
## 40      3.00     16.10      0.50 2.00  4.70  0.00 0.00 9.90   0.00  0.50
## 41      3.80     12.10      0.30 1.60  5.80  0.30 0.30 7.70   0.00  0.30
## 42      1.80     17.80      0.20 1.10  5.70  1.10 0.20 3.70   0.00  1.50
## 43     17.46      6.20      0.56 4.51 22.82  2.25 0.56 0.00   0.00  5.65
## 44     11.15      1.59      0.96 0.96  7.32  1.91 2.87 4.14   0.00  3.28
## 45      5.24      4.78      0.23 1.14  8.43  2.28 1.14 6.83   0.00  2.42
## 46      6.90      1.03      0.00 1.72  4.14  0.34 2.07 0.34   0.00  4.84
## 47      3.70      2.47      0.00 4.94  9.88  0.00 0.00 0.00   0.00 18.80
## 48      0.00      0.00      0.00 4.63  0.00  0.93 2.78 3.70   0.00 31.95
## 49      0.00      0.00      1.69 0.00  1.69  0.00 0.00 0.00   0.00 18.07
## 50      1.31      0.65      0.00 2.61  0.65  0.00 0.65 0.00   1.12  8.99
## 51      9.76      0.00      0.00 2.44  0.00  0.00 2.44 0.00   0.99  4.95
## 52      5.80      4.35      1.45 7.25  2.90  0.00 0.00 0.00   0.82 30.33
## 53      0.97      1.94      0.97 2.91  0.49  0.49 1.46 3.88   2.00 11.60
## 54      4.51      0.35      0.35 1.04  1.74  1.39 0.00 1.39   0.32  3.21
## 55      1.21      0.00      2.12 1.52  0.91  0.00 0.30 0.61   0.28  1.97
## 56      8.85      0.88      0.00 3.98  0.88  2.21 0.44 0.88   1.12  6.37
## 57     21.49      3.71      1.86 1.33  4.51  0.53 0.27 1.86   1.39  0.23
## 58     18.21      9.55      2.09 1.19  1.79  0.00 0.00 2.39   1.99  1.00
## 59     12.43      2.16      3.24 3.24  1.08  0.00 0.00 1.08   1.41  5.04
## 60     10.30      0.94      5.39 3.04  0.23  0.00 0.00 0.47   1.56  2.60
## 61     10.79      0.53      3.16 0.53  0.00  0.26 0.26 0.79   2.23  0.89
## 62     19.69      0.62      2.15 2.46  0.62  0.00 0.31 0.00   3.15  1.92
## 63     19.55      0.75      1.75 1.75  0.75  0.00 0.00 0.25   1.33  1.33
## 64      7.94      0.32      0.32 0.00  0.00  1.27 0.00 0.00   0.29  0.00
## 65      2.47      0.16      0.33 0.16  0.16  0.00 0.00 0.00   0.91  0.30
## 66      2.82      0.16      0.47 0.00  0.00  0.00 0.00 0.00   0.14  0.14
```

```
## 67       3.38       0.00       1.05  0.00  0.12  0.00 0.00 0.00       0.21  0.11
## 68       3.27       0.31       1.56  0.00  0.00  0.00 0.00 0.00       0.14  0.14
## 69       3.13       0.52       0.35  0.17  0.00  0.00 0.00 0.00       0.15  0.15
## 70       2.25       0.00       0.16  0.00  0.00  0.00 0.00 0.00       0.29  0.00
## 71       3.65       0.00       0.35  0.00  0.00  0.00 0.00 0.09       0.51  0.07
## 72       8.56       0.19       0.39  0.19  0.00  0.00 0.00 0.00       0.57  0.29
## 73       5.10       0.31       0.62  0.00  0.15  0.00 0.00 0.31       0.14  0.41
## 74       6.04       0.20       0.00  0.00  0.00  1.41 0.00 0.00       0.00  0.00
## 75       6.56       0.00       0.26  0.00  0.00  0.26 0.26 0.00       0.00  0.48
## 76       4.48       0.17       0.25  0.17  0.25  0.25 0.08 0.00       0.60  0.37
## 77      10.11       0.28       0.56  0.28  0.56  0.84 0.00 0.00       0.20  0.61
## 78      20.20       0.00       1.63  2.61  2.28  0.00 0.00 0.00       0.77  2.89
## 79       9.32       1.61       2.89  0.64  1.61  0.00 0.32 0.64       0.24  3.39
## 80      15.82       3.16       4.11  0.95  3.16  0.00 1.90 0.63       0.38  4.41
## 81       7.43       3.72       0.00  1.86  8.18  5.58 7.81 0.00       0.00  3.03
## 82       2.12       1.06       1.86  0.27  0.80  0.80 0.27 1.59       1.57  0.39
## 83       0.68       2.95       2.49  0.00  2.04  0.23 0.00 1.59       0.51  0.34
## 84       1.10       3.29       3.01  0.82  0.82  1.37 0.00 1.92       1.16  0.39
## 85       1.87       2.14       2.14  0.00  1.07  0.80 0.27 0.53       1.39  0.40
## 86       3.52       0.66       2.42  0.88  0.00  0.22 0.44 0.44       1.48  0.66
## 87       1.98       1.41       2.68  0.28  0.00  0.28 0.14 0.00       2.38  0.52
## 88       4.50       0.36       0.72  0.36  1.26  0.00 0.18 0.36       2.28  0.76
## 89       1.71       0.11       1.28  0.00  0.00  0.00 0.00 0.21       0.00  0.10
## 90       2.50       0.00       0.54  0.00  0.00  0.33 0.00 0.22       0.51  0.41
## 91       1.05       0.13       0.40  0.00  0.00  0.00 0.00 0.00       0.13  0.00
## 92       0.63       0.00       0.25  0.00  0.00  0.00 0.00 0.13       0.24  0.12
## 93       1.23       0.00       0.49  0.00  0.00  0.12 0.00 0.12       0.22  0.11
## 94       1.86       0.12       0.12  0.00  0.00  0.00 0.00 0.00       0.33  0.00
## 95       1.86       0.00       0.31  0.00  0.00  0.00 0.00 0.00       0.14  0.00
## 96       2.91       0.00       0.18  0.00  0.00  0.00 0.00 0.00       0.17  0.17
## 97       3.21       0.00       0.57  0.00  0.00  0.00 0.00 0.00       0.36  0.18
## 98       2.90       0.00       0.31  0.15  0.31  0.00 0.00 1.22       0.00  0.14
## 99       0.00       1.03       1.03  3.09  7.22  1.03 0.00 0.00       0.00  0.79
##       Sph
## 1    2.70
## 2    1.80
## 3    2.80
## 4    1.50
## 5    1.70
## 6    8.70
## 7    4.70
## 8    4.40
## 9    4.60
## 10   2.00
## 11   2.70
## 12   2.20
## 13   6.90
## 14   5.00
## 15   7.10
## 16   9.00
## 17   4.80
## 18   5.20
## 19  11.00
## 20   7.70
```

```
## 21  4.80
## 22  0.30
## 23  0.30
## 24  0.00
## 25  0.00
## 26  0.30
## 27  0.90
## 28  0.60
## 29  1.00
## 30  0.60
## 31  0.80
## 32  0.70
## 33  0.60
## 34  1.30
## 35  0.90
## 36  0.80
## 37  0.70
## 38  0.30
## 39  0.90
## 40  2.50
## 41  0.80
## 42  1.30
## 43  9.88
## 44  2.69
## 45  1.10
## 46  1.29
## 47  7.69
## 48  3.55
## 49  7.23
## 50  1.69
## 51 12.87
## 52  5.74
## 53  2.80
## 54  3.53
## 55  2.82
## 56  7.12
## 57 10.85
## 58 27.49
## 59 15.12
## 60 16.84
## 61  9.58
## 62 34.09
## 63 19.13
## 64  8.09
## 65  5.94
## 66  7.24
## 67  7.17
## 68 10.36
## 69 15.06
## 70 10.32
## 71 13.29
## 72 23.53
## 73 10.29
## 74 10.27
```

```
## 75 38.89
## 76 10.66
## 77 25.56
## 78 34.68
## 79 20.34
## 80 30.84
## 81  1.35
## 82 19.69
## 83 22.20
## 84 26.64
## 85 22.22
## 86 19.77
## 87 21.20
## 88 10.50
## 89  4.82
## 90  3.40
## 91  3.05
## 92  2.99
## 93  9.49
## 94  3.33
## 95  4.98
## 96  5.81
## 97  2.89
## 98  6.12
## 99 20.47
```
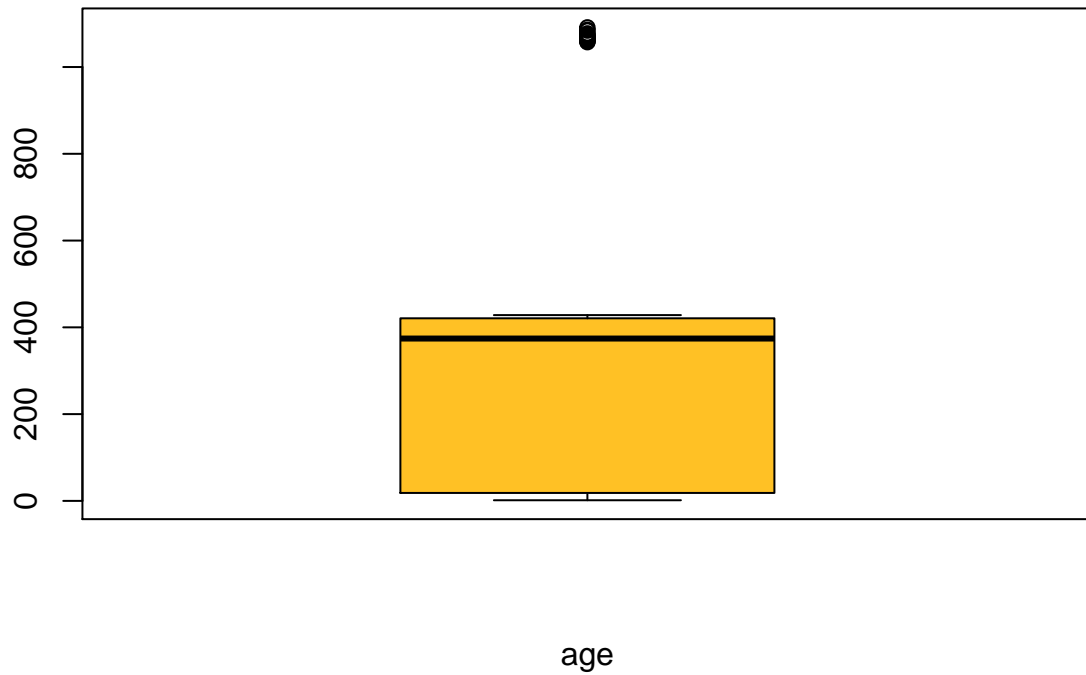
Redisplay Lake 2 Data:

```
##      Age Picea.sect..Eupicea P..s.g.Haplo.T Larix Betula Alnus Salix Poaceae
## 1 1.50                     0           8.1     0   33.2  36.8   0.8     9.2
## 2 2.27                     0           7.2     0   25.2  37.2   0.6    12.9
## 3 2.62                     0          16.1     0   12.4  38.7   0.6    13.3
## 4 3.14                     0          12.6     0   21.0  38.9   1.0    10.1
## 5 3.46                     0           7.7     0   24.6  43.8   0.8     7.9
## 6 3.65                     0          11.5     0   12.4  35.1   0.3    24.2
##   Cyperaceae Artemisia Ericales Cphae Papae Ranae Tha Sax Lyc.a.T Sel.r Sph
## 1        4.9       3.2      0.8   0.8   0.8   0.3 0.0 0.0     0.3   1.9 2.7
## 2        7.2       2.1      3.0   0.0   0.3   0.3 0.0 0.0     0.0   2.4 1.8
## 3        2.3       5.6      1.1   2.8   2.0   0.0 0.3 0.3     0.8   4.5 2.8
## 4        8.9       2.7      1.7   0.0   0.5   0.2 0.0 0.7     0.0   1.7 1.5
## 5        5.8       4.2      1.5   0.2   1.0   0.2 0.0 0.0     0.2   0.8 1.7
## 6        3.4       3.1      0.3   0.9   2.5   0.0 0.3 0.0     1.5   6.2 8.7
```

Project Age column plot from Lake 2 data:

Age of Lake 2

age

Merge all file formats into a database

```
## [1] 3856    33
```

Project Age column plot from database data:

Age of database data

age