KM Brazil Life history3

Virginia Chu

October 21, 2017

```
##
Site for color coding plots- http://www.sthda.com/english/wiki/survminer-r-pack
age-survival-data-analysis-and-visualization
Tutorial-http://bioconnector.org/workshops/r-survival.html
```

Surv diff by loc

```
## Call:
## survdiff(formula = Surv(time, Death_stat) ~ Locality, data = surva,
##     rho = 0)
##
##                N Observed Expected (O-E)^2/E (O-E)^2/V
## Locality=ARS 145      134     47.3  1.59e+02  200.5817
## Locality=APR 218      198     93.6  1.16e+02  159.3133
## Locality=RPV 219      181    182.3  9.74e-03    0.0152
## Locality=RMO 223      192    229.8  6.22e+00   10.4785
## Locality=TLC 120       92     97.7  3.34e-01    0.4742
## Locality=TPN  59       32     44.3  3.43e+00    4.5170
## Locality=SJU 160      129    262.9  6.82e+01  133.4890
##
##  Chisq= 472  on 6 degrees of freedom, p= 0
```


```
## Call:
## survdiff(formula = Surv(time, Death_stat) ~ Locality, data = surva,
##     rho = 0)
##
##                N Observed Expected (O-E)^2/E (O-E)^2/V
## Locality=ARS 145      134     47.3  1.59e+02  200.5817
## Locality=APR 218      198     93.6  1.16e+02  159.3133
## Locality=RPV 219      181    182.3  9.74e-03    0.0152
## Locality=RMO 223      192    229.8  6.22e+00   10.4785
## Locality=TLC 120       92     97.7  3.34e-01    0.4742
## Locality=TPN  59       32     44.3  3.43e+00    4.5170
## Locality=SJU 160      129    262.9  6.82e+01  133.4890
##
##  Chisq= 472  on 6 degrees of freedom, p= 0
```

```
## Call:
## survdiff(formula = Surv(time, Death_stat) ~ Locality, data = surva,
##     rho = 0)
##
##                 N Observed Expected (O-E)^2/E (O-E)^2/V
## Locality=ARS 145      134     47.3  1.59e+02  200.5817
## Locality=APR 218      198     93.6  1.16e+02  159.3133
## Locality=RPV 219      181    182.3  9.74e-03    0.0152
## Locality=RMO 223      192    229.8  6.22e+00   10.4785
## Locality=TLC 120       92     97.7  3.34e-01    0.4742
## Locality=TPN  59       32     44.3  3.43e+00    4.5170
## Locality=SJU 160      129    262.9  6.82e+01  133.4890
##
##  Chisq= 472  on 6 degrees of freedom, p= 0
```

SUrv diff by biome

```
## Call:
## survdiff(formula = Surv(time, Death_stat) ~ Biome, data = surva,
##     rho = 0)
##
##                         N Observed Expected (O-E)^2/E (O-E)^2/V
## Biome=Amazon          805      705      553     41.72    133.09
## Biome=Cerrado         179      124      142      2.29      3.42
## Biome=Mata Atlantica 160      129      263     68.16    133.49
##
##  Chisq= 157  on 2 degrees of freedom, p= 0
```

```
## Call:
## survdiff(formula = Surv(time, Death_stat) ~ Biome, data = surva,
##     rho = 0)
##
##                         N Observed Expected (O-E)^2/E (O-E)^2/V
## Biome=Amazon          805      705      553     41.72    133.09
## Biome=Cerrado         179      124      142      2.29      3.42
## Biome=Mata Atlantica 160      129      263     68.16    133.49
##
##  Chisq= 157  on 2 degrees of freedom, p= 0
```

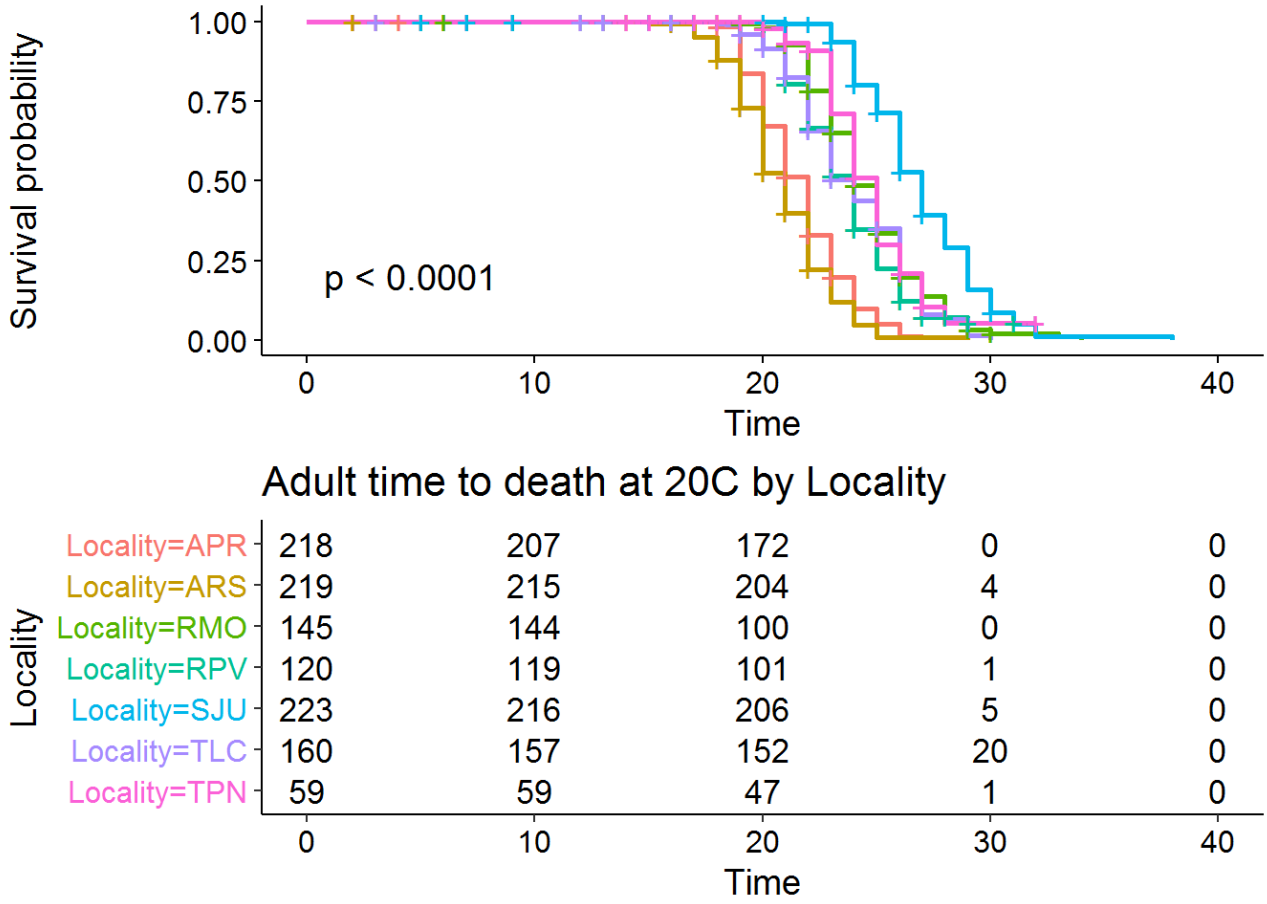
```
## Call:
## survdiff(formula = Surv(time, Death_stat) ~ Biome, data = surva,
##     rho = 0)
##
##                         N Observed Expected (O-E)^2/E (O-E)^2/V
## Biome=Amazon          805      705      553     41.72    133.09
## Biome=Cerrado         179      124      142      2.29      3.42
## Biome=Mata Atlantica 160      129      263     68.16    133.49
##
##  Chisq= 157  on 2 degrees of freedom, p= 0
```

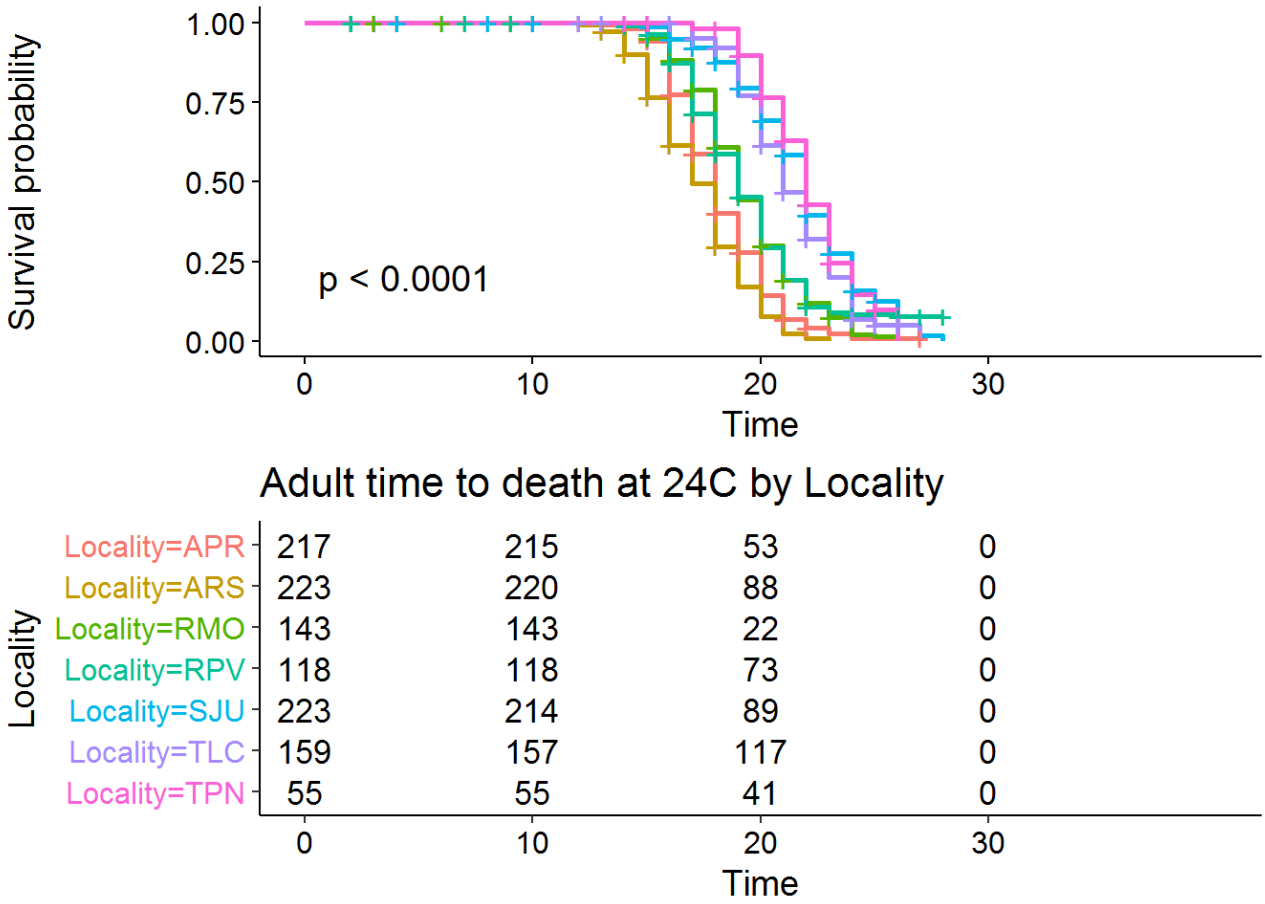
Surv diff by lat group

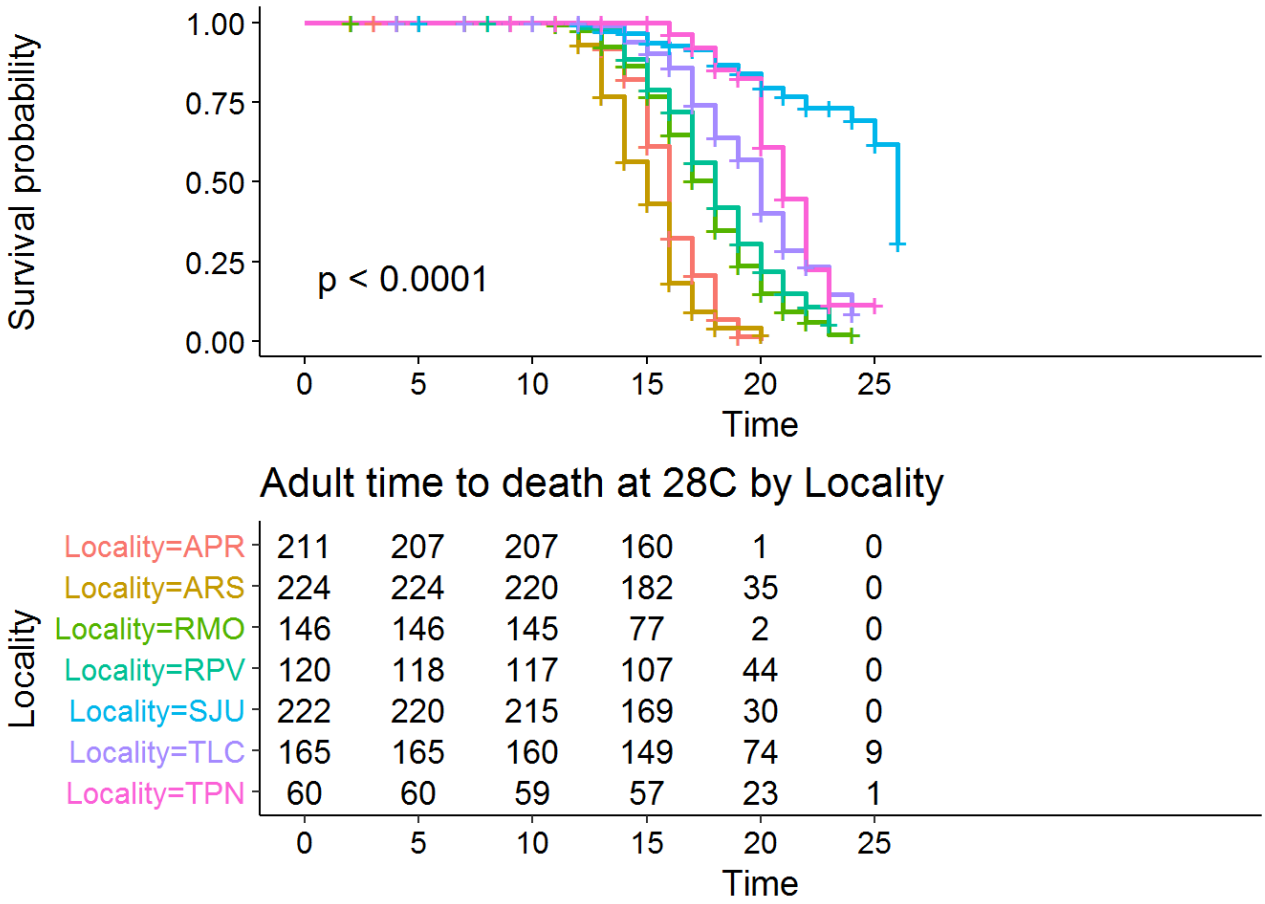
```
## Call:
## survdiff(formula = Surv(time, Death_stat) ~ Lat_group, data = surva,
##     rho = 0)
##
##                N Observed Expected (O-E)^2/E (O-E)^2/V
## Lat_group=1 363      332      141     258.8       388
## Lat_group=2 621      497      554       5.9        18
## Lat_group=3 160      129      263      68.2       133
##
##  Chisq= 446  on 2 degrees of freedom, p= 0
```

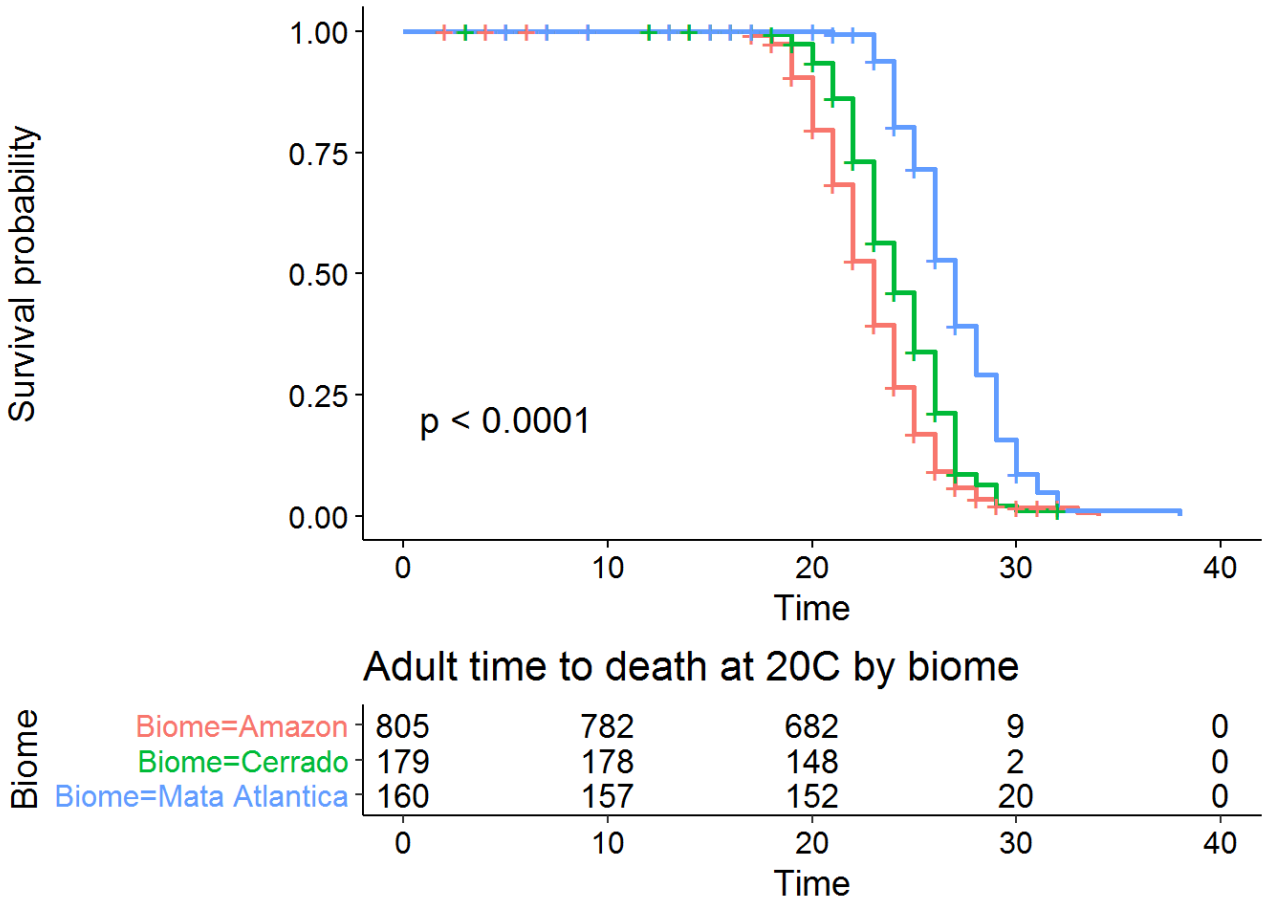
```
## Call:
## survdiff(formula = Surv(time, Death_stat) ~ Lat_group, data = survb,
##     rho = 0)
##
##                N Observed Expected (O-E)^2/E (O-E)^2/V
## Lat_group=1 360      333      179    132.07     208.0
## Lat_group=2 619      500      561      6.68      20.6
## Lat_group=3 159      123      216     39.77      69.1
##
##  Chisq= 234  on 2 degrees of freedom, p= 0
```

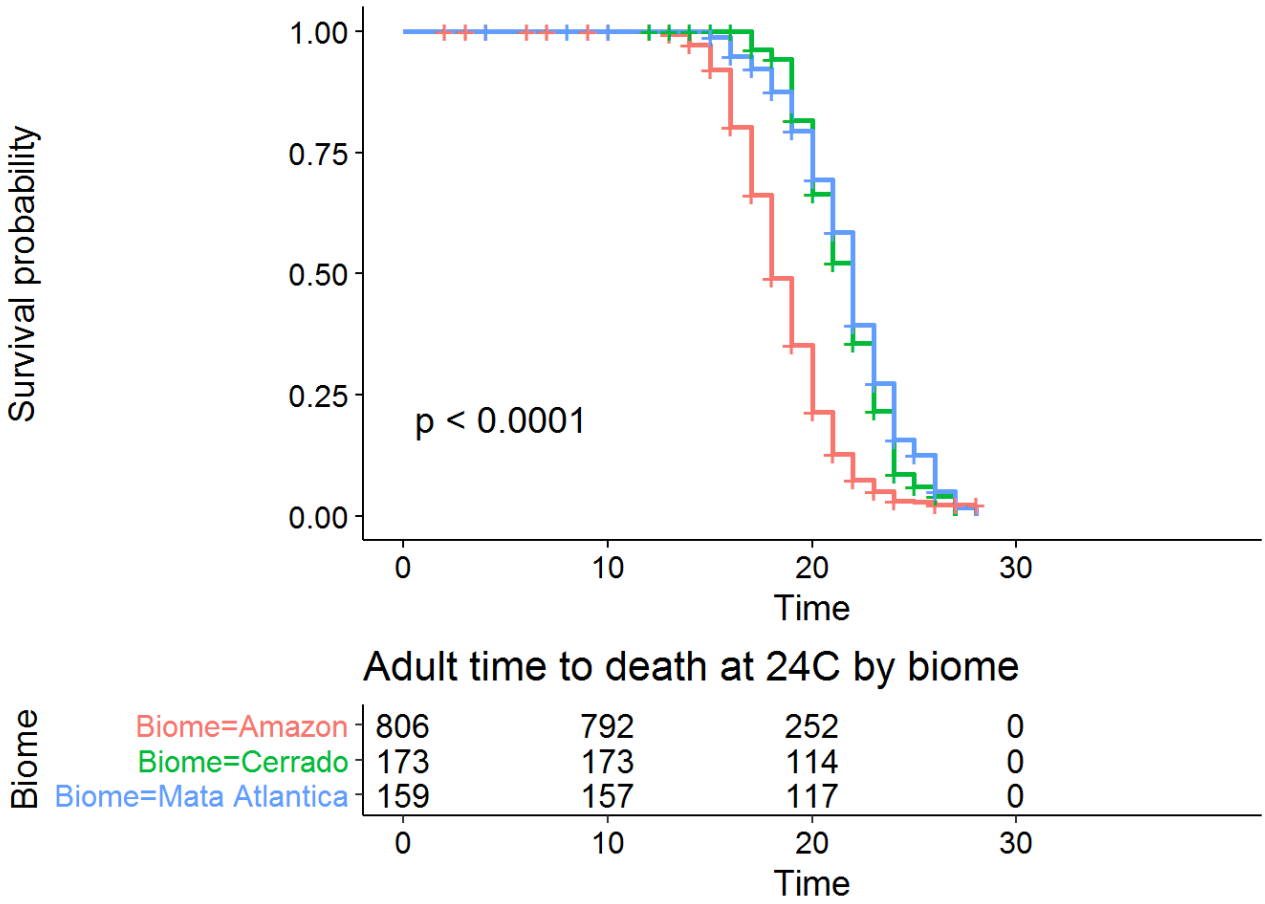
```
## Call:
## survdiff(formula = Surv(time, Death_stat) ~ Lat_group, data = survc,
##     rho = 0)
##
##                N Observed Expected (O-E)^2/E (O-E)^2/V
## Lat_group=1 357      309      130    247.33     371.7
## Lat_group=2 626      397      438      3.82      11.1
## Lat_group=3 165       33      171    111.66     183.8
##
##  Chisq= 466  on 2 degrees of freedom, p= 0
```

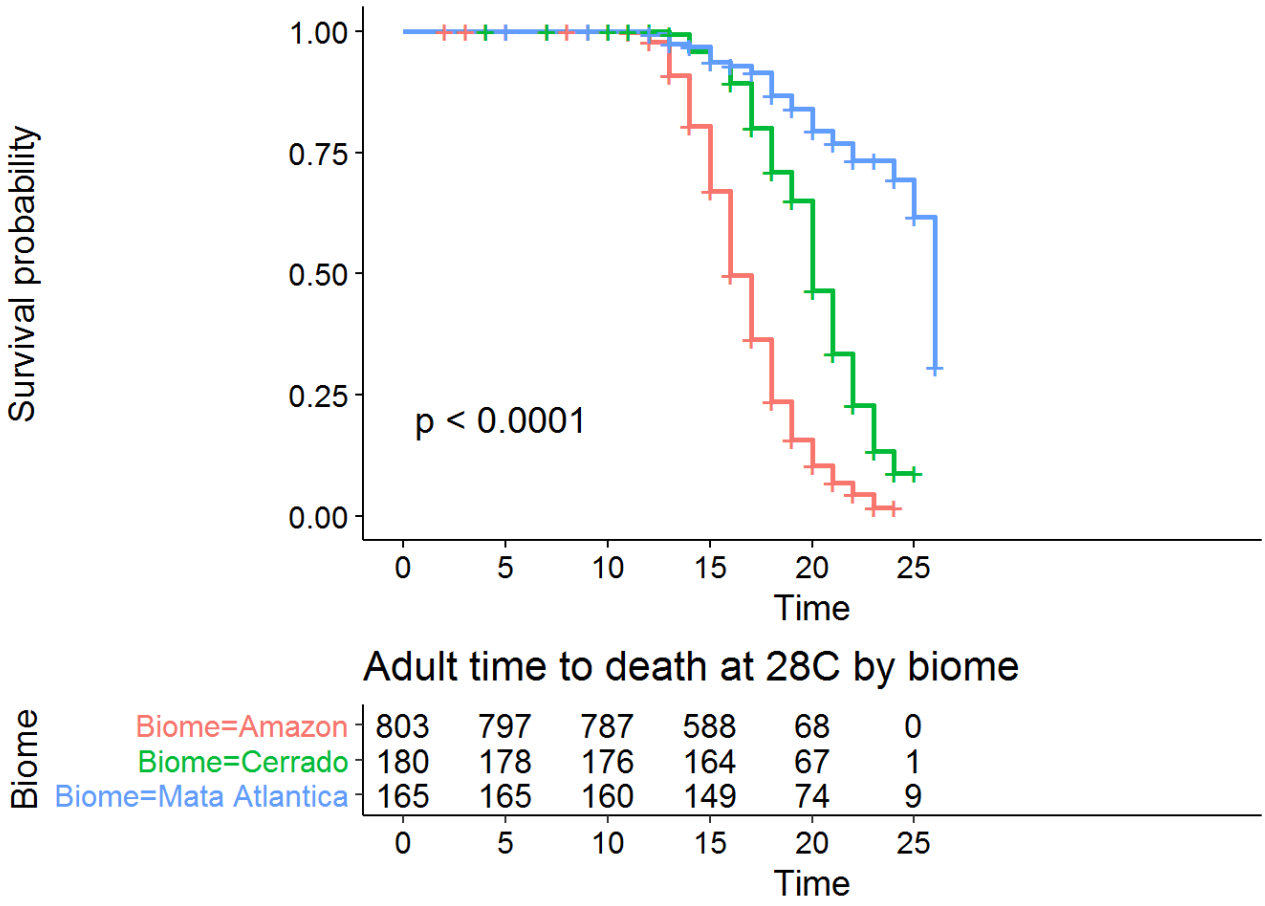
``` ## Including Plots

You can also embed plots, for example:


```

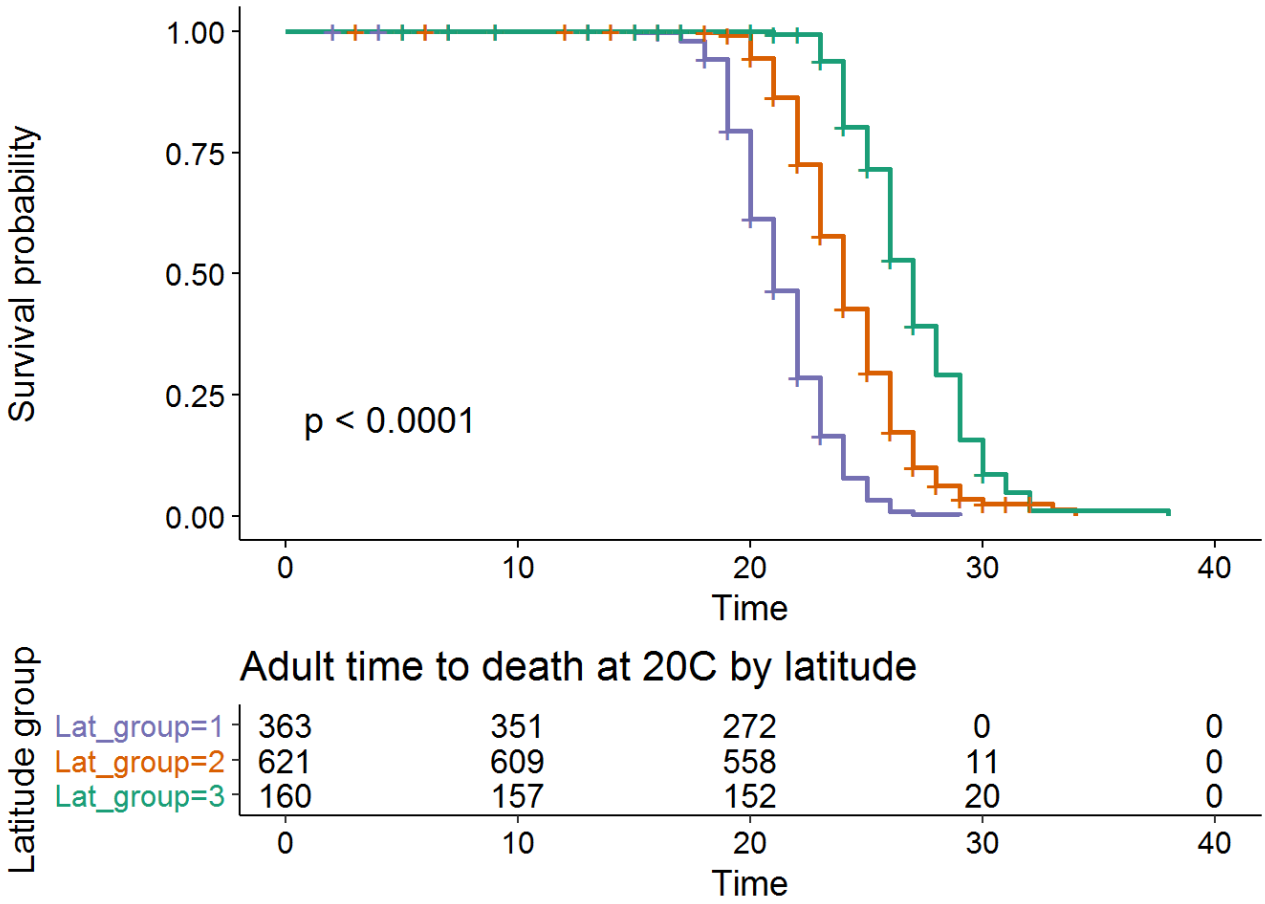

Survival probability
1.00
0.75
0.50
0.25
0.00
p < 0.0001
0
10
20
30
Time
Adult time to death at 24C by Locality
Locality
Locality=APR 217 215 53 0
Locality=ARS 223 220 88 0
Locality=RMO 143 143 22 0
Locality=RPV 118 118 73 0
Locality=SJU 223 214 89 0
Locality=TLC 159 157 117 0
Locality=TPN 55 55 41 0
0
10
20
30
Time

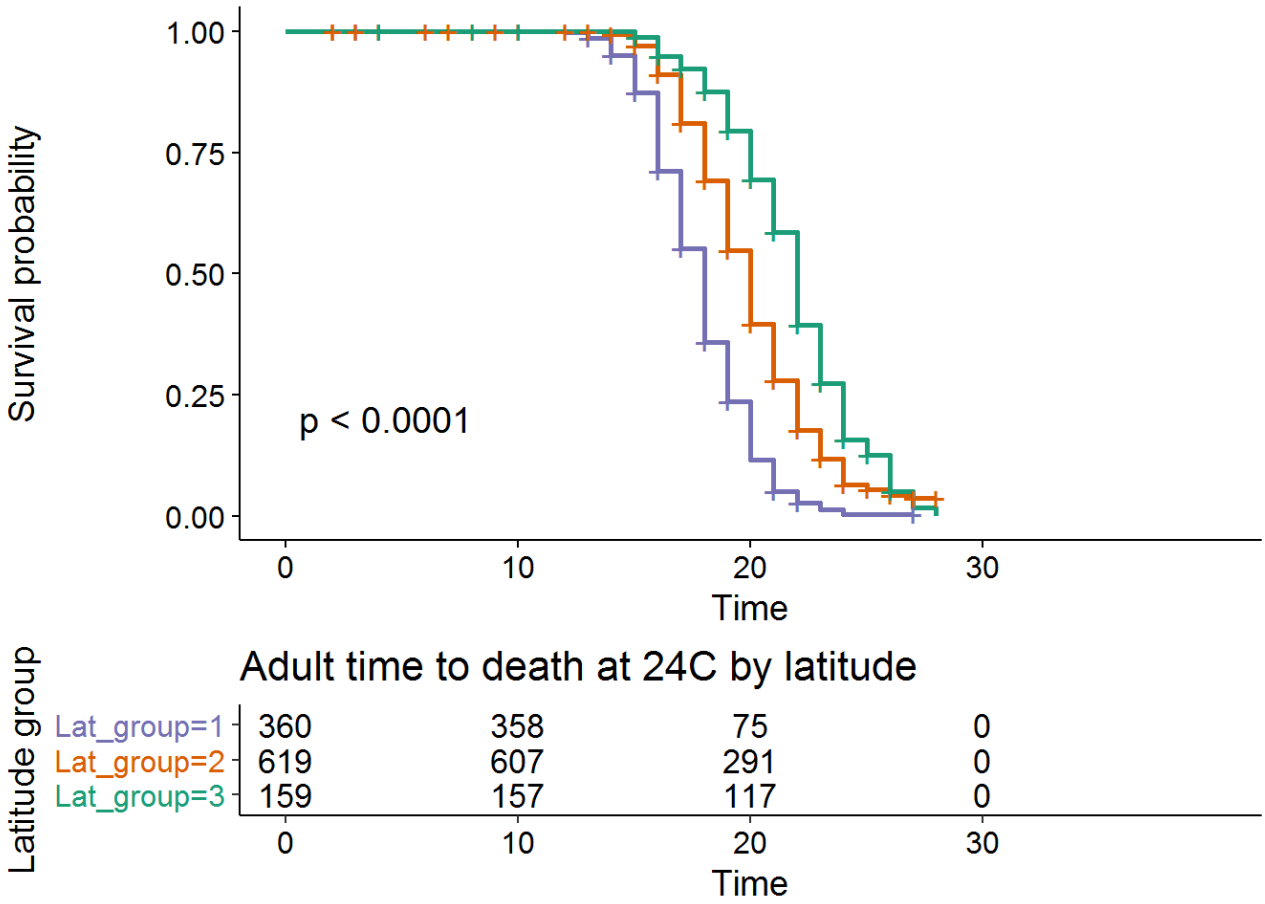

Survival probability
1.00
0.75
0.50
0.25
0.00
p < 0.0001
0
5
10
15
20
25
Time
Adult time to death at 28C by Locality
Locality
Locality=APR 211 207 207 160 1 0
Locality=ARS 224 224 220 182 35 0
Locality=RMO 146 146 145 77 2 0
Locality=RPV 120 118 117 107 44 0
Locality=SJU 222 220 215 169 30 0
Locality=TLC 165 165 160 149 74 9
Locality=TPN 60 60 59 57 23 1
0
5
10
15
20
25
Time

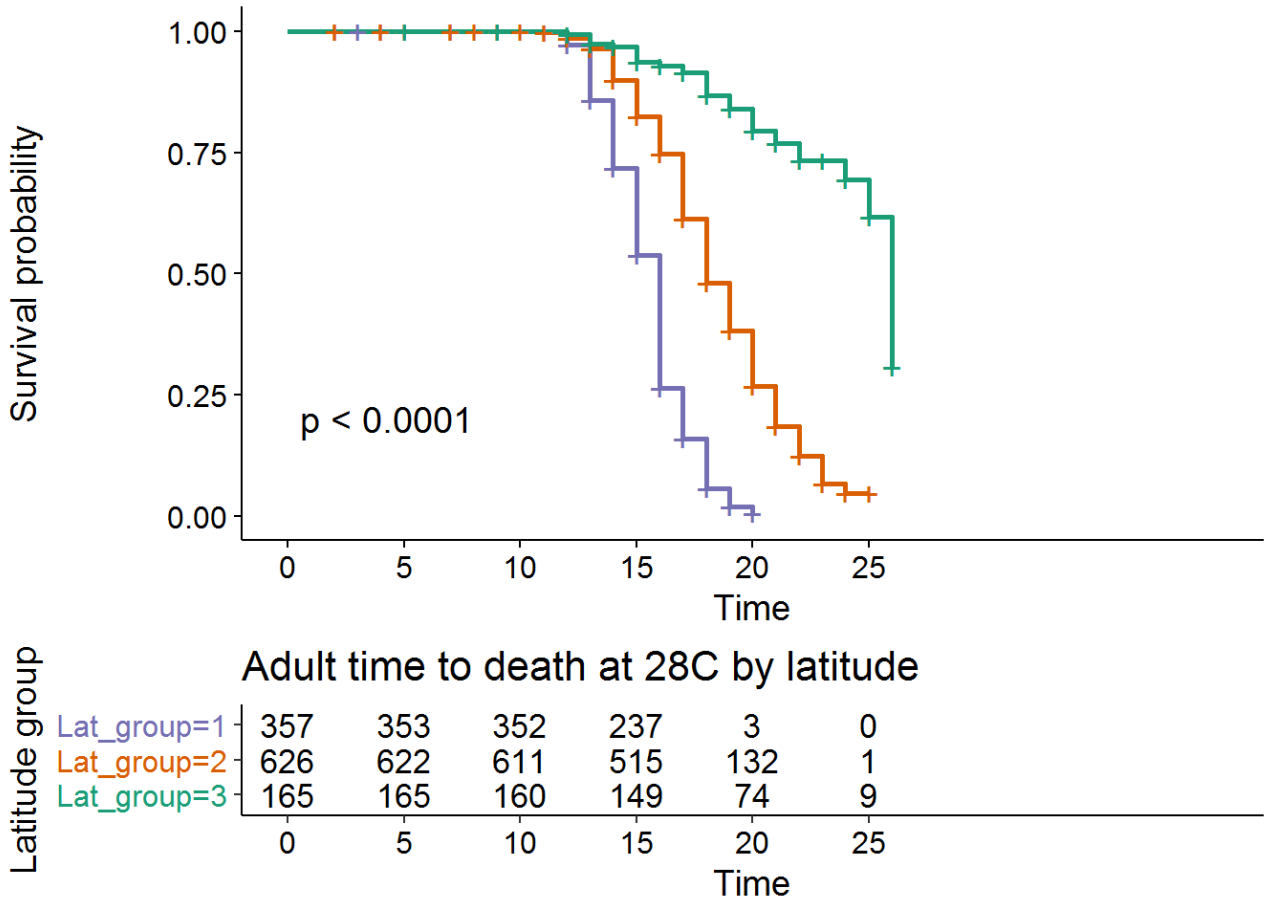

Survival probability
1.00
0.75
0.50
0.25
0.00
p < 0.0001
0
10
20
30
40
Time
Adult time to death at 20C by biome
Biome
Biome=Amazon 805 782 682 9 0
Biome=Cerrado 179 178 148 2 0
Biome=Mata Atlantica 160 157 152 20 0
0
10
20
30
40
Time


Survival probability
1.00
0.75
0.50
0.25
0.00
p < 0.0001
0
10
20
30
Time
Adult time to death at 24C by biome
Biome
Biome=Amazon 806 792 252 0
Biome=Cerrado 173 173 114 0
Biome=Mata Atlantica 159 157 117 0
0
10
20
30
Time


Survival probability
1.00
0.75
0.50
0.25
0.00
p < 0.0001
0
5
10
15
20
25
Time
Adult time to death at 28C by biome
Biome
Biome=Amazon 803 797 787 588 68 0
Biome=Cerrado 180 178 176 164 67 1
Biome=Mata Atlantica 165 165 160 149 74 9
0
5
10
15
20
25
Time


Survival probability
1.00
0.75
0.50
0.25
0.00
p < 0.0001
0
10
20
30
40
Time
Adult time to death at 20C by latitude
Latitude group
Lat_group=1 363 351 272 0 0
Lat_group=2 621 609 558 11 0
Lat_group=3 160 157 152 20 0
0
10
20
30
40
Time


Survival probability
1.00
0.75
0.50
0.25
0.00
p < 0.0001
0
10
20
30
Time
Adult time to death at 24C by latitude
Latitude group
Lat_group=1 360 358 75 0
Lat_group=2 619 607 291 0
Lat_group=3 159 157 117 0
0
10
20
30
Time



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