

# Landscape Assessment Workshop Part 2

## Workshop Resources

[https://app.sugarsync.com/wf/D048412\\_4571940\\_487473](https://app.sugarsync.com/wf/D048412_4571940_487473)

## Download R

The screenshot shows the R Project website. On the left is a sidebar with navigation links: About R, What is R?, Contributors, Screenshots, What's new?, Download Packages, CRAN, R Project, Foundation, Members & Donors, Mailing Lists, Bug Tracking, Developer Page, Conferences, Search, Documentation, Manuals, FAQs, The R Journal, Wiki, Books, Certification, Other, Misc, Bioconductor, Related Projects, User Groups, Links. The main content area features several statistical plots: a PCA plot titled 'PCA: 5 vars' showing variables like Fertility, Examination, Education, Agriculture, and Catholicism; a clustering dendrogram titled 'Clustering: 4 groups'; and two histograms titled 'Factor 1 [41%]' and 'Factor 2 [19%]'. Below the plots is a 'Getting Started' section with bullet points about R's platform support, CRAN mirrors, and frequently asked questions. A 'News' section lists recent updates like R 3.0.1 prerelease versions and R version 3.0.0. At the bottom, it states the server is hosted by the Institute for Statistics and Mathematics of WU (Wirtschaftsuniversität Wien).

## Select your nearest download site

<http://mirrors.webnosinggeeks.com/cran/>  
Mexico  
<http://cran.itam.mx/>  
<http://www.est.colpos.mx/R-mirror/>  
Netherlands  
<http://cran.xl-mirror.nl/>  
<http://cran-mirror.cs.uu.nl/>

webnosinggeeks  
Instituto Tecnológico Autónomo de México  
Colegio de Postgraduados, Texcoco  
XL-Data, Amsterdam  
Utrecht University

## Download the latest version

[R-3.0.0.pkg](#) (latest version)  
MD5-hash: 7e26aa38e940b6c84ef9f50098541fea  
(ca. 64MB)

## Download R-Studio

# Download RStudio v0.97

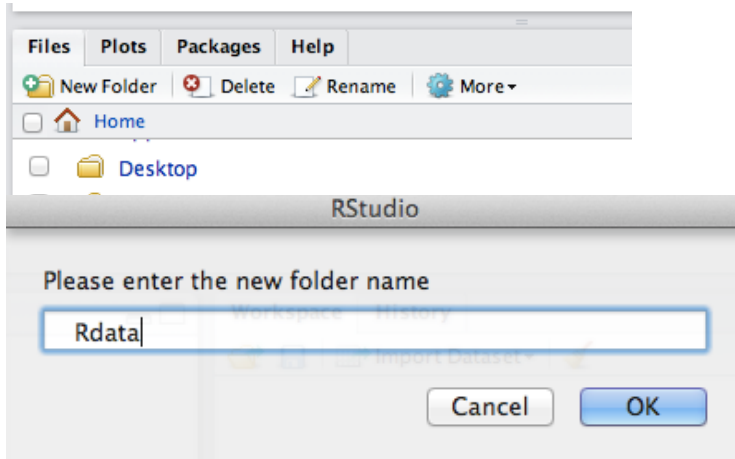


If you run R on your desktop:

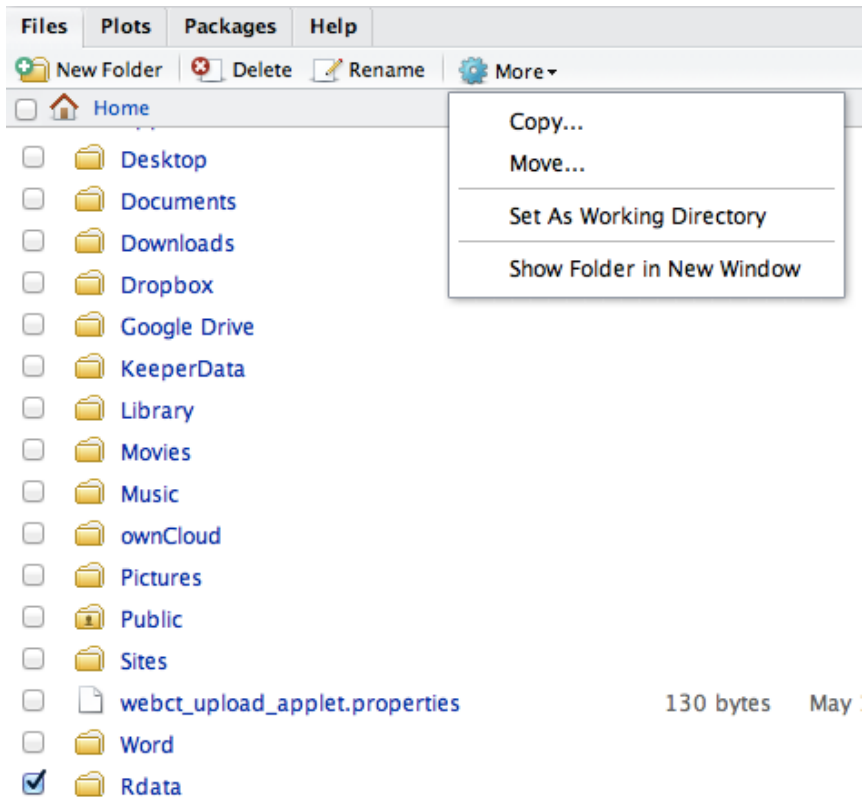


<http://www.rstudio.com/ide/download/>

## Create a file for your data



## Set working directory

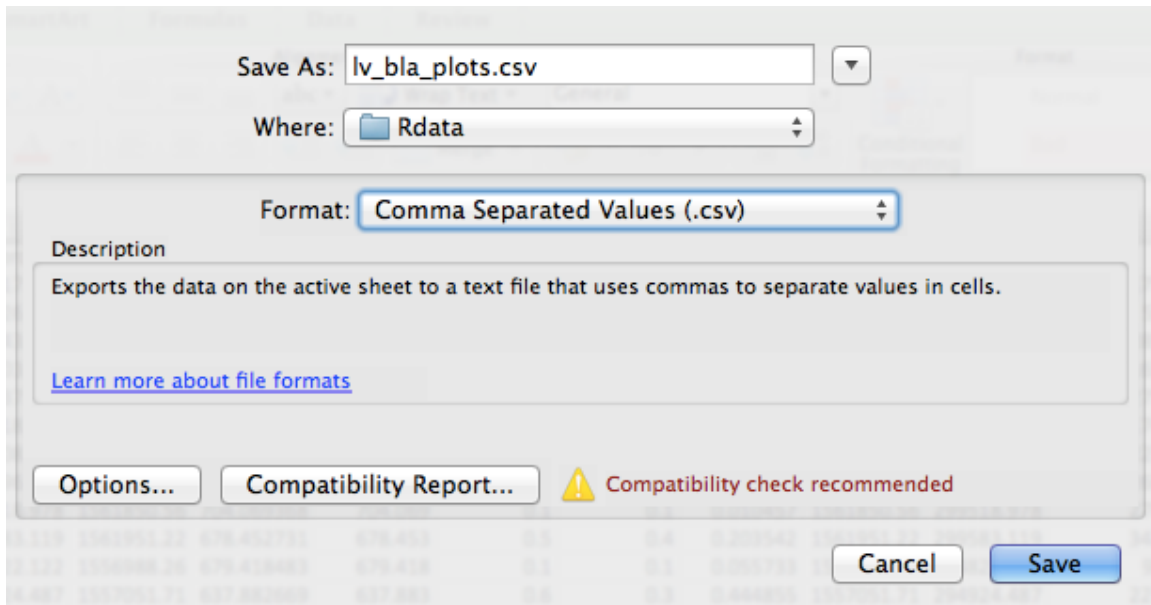


or

```
setwd("~/Rdata")
```

### Download Files from GeoNode

[http://vssweb3.landfood.ubc.ca/data/geonode:lv\\_bla\\_plots](http://vssweb3.landfood.ubc.ca/data/geonode:lv_bla_plots)




### Open the file in R

```
LBA <- read.csv("~/Rdata/lv_bla_plots.csv")
```

```
LBA[1:4,1:4]
```

### R resources



[Home](#) | [Interface](#) | [Input](#) | [Manage](#) | [Stats](#) | [Adv Stats](#) | [Graphs](#) | [Adv Graphs](#) | [Blog](#)

# Quick-R

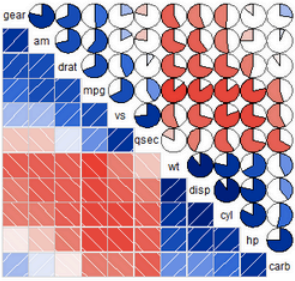
accessing the power of R

Top Menu

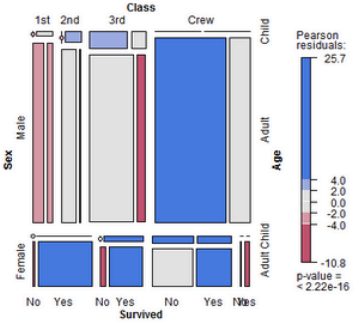
[Home](#)  
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## About Quick-R

### Correlations Among Auto Characteristics



### Who Survived the Titanic?



## Examine data

<http://www.statmethods.net/stats/descriptives.html>

## Install Packages

Install Packages

Install from:

?

Configuring Repositories

Repository (CRAN)

Packages (separate multiple with space or comma):

ggplot2

Install to Library:

/Library/Frameworks/R.framework/Versions/3.0/Resources/

☒

Install dependencies

Install

Cancel

<http://docs.ggplot2.org/current/>

## Examine data

```
summary(LBA$SlopeAvg)
```

```
#Colored Histogram with Different Number of Bins
```

```
hist(LBA$SlopeAvg, breaks=12, col="red")
```

```
# Pie Chart from data frame with Appended Sample Sizes
```

```
mytable <- table(LBA$VegStruct)
```

```
lbls <- paste(names(mytable), "\n", mytable, sep="")
```

```
pie(mytable, labels = lbls,  
    main="Pie Chart LULC\n (with sample sizes)")
```

## Simplify Land Use Land Cover

```
summary (LBA$VegStruct)
```

```
LBA$LULC.simple<-LBA$VegStruct
```

```
LBA$LULC.simple[LBA$LULC.simple== c("Wooded_grassland")]<-"Woodland"
```

```
shouldBecomeOther<-!(LBA$LULC.simple %in% c("Agroforestry",  
"Cropland","Forest","Grassland","Woodland"))
```

```
LBA$LULC[shouldBecomeOther]<- "Other"
```

```
tmp<-as.character(LBA$LULC.simple)
```

```
tmp[shouldBecomeOther]<-"Other"
```

```
LBA$LULC.simple<-factor(tmp)
```

```
summary (LBA$LULC.simple)
```

```
library(plotrix)
```

```
mytable <- table(LBA$LULC.simple)
```

```
lbls <- paste(names(mytable), "\n", mytable, sep="")
```

```
pie3D(mytable,labels=lbls,explode=0.1,
```

```
main="Pie Chart of Slope ")
```

## Graphing results ggplot2

<http://docs.ggplot2.org/current/>

```
library (ggplot2)
```

```
#####  
# make boxplots for Slope (Canopy_Cov) by LULC #  
#####
```

```
p <- ggplot(LBA, aes(factor(LULC), SlopeAvg))
```

```
p + geom_boxplot()
```

```
bplot <- ggplot(LBA, aes(LULC.simple, Canopy_Cov))  
#Sets the ggplot (dataframe, aes(x,y))
```

```
bplot + geom_boxplot(fill = "#E1EBF1", outlier.colour = "black", outlier.shape = 19,  
outlier.size = 2) + theme_bw() + labs(title = "Canopy Cover Observed in LBA", y =  
"Canopy Cover (%)", x = NULL) + theme(plot.title = element_text(size = rel(2), vjust  
= 2)) + theme(axis.text.x = element_text(size = rel(1.5), angle = 45, vjust = 1, hjust =  
1))  
#Standard box
```

```
#####  
# regression of canopy vs. water infiltration (Canopy_Cov x Infiltrati) #  
#####
```

```
p <- qplot(Canopy_Cov, Infiltrati, data = LBA)
```

```
# Fixed slopes and intercepts  
p + geom_abline() # Can't see it - outside the range of the data
```

```
#####  
# spatial analysis  
#####
```

```
#simple map of plots  
plot(LBA$X_Coord, LBA$Y_Coord, asp=1, main="Map of LBA Plots")
```

