**R (programming language)**

**http://www.r-project.org/**

**R is a**[**free software**](http://en.wikipedia.org/wiki/Free_software)[**programming language**](http://en.wikipedia.org/wiki/Programming_language)**and software environment for**[**statistical computing**](http://en.wikipedia.org/wiki/Statistical_computing)**and graphics.**

**It is essentially a public domain version of S (S+) which was developed at Bell Labs.**

**+ Free / - no implied warranty**

**+ Very Powerful / - hard to learn**

 **\* programming loops and logic**

 **\* embodies a matrix programming language**

 **\* script driven**

 **\* object oriented**

 **\* supports user written functions**

 **\* vast collection of add-on packages developed by World experts**

 **\* package are Juried.**

**Menu driven interfaces to R exist (see Wikipedia. R programming Language)**

**e.g. RStudio**

**If using command line interface – You will need a programming editor (text editor)**

**I use Boxer – (**[**http://www.boxersoftware.com/**](http://www.boxersoftware.com/)**)**

**See also Wikipedia article on R.**

**There are many user support groups –**

**e.g.**

|  |  |
| --- | --- |
| [R-sig-ecology](https://stat.ethz.ch/mailman/listinfo/r-sig-ecology) | Using R in ecological data analysis |
|  |  |
| [R-sig-Geo](https://stat.ethz.ch/mailman/listinfo/r-sig-geo) | R Special Interest Group on using Geographical data and Mapping |
| [R-sig-Jobs](https://stat.ethz.ch/mailman/listinfo/r-sig-jobs) | R SIG List for Announcements of Jobs where R is used |

**(see R homepage)**

**Downloading R**

[www.r-project.org](http://www.r-project.org)

Use ‘CRAN’ tab

Choose close by mirror

Download version for your platform.

(Mac Download comes with editor)

Standalone software (no network connection required)

**Manuals for R**

[www.r-project.org](http://www.r-project.org)

Use ‘Manuals’ tab

An Introduction to R is based on the former "Notes on R", gives an introduction to the language and how to use R for doing statistical analysis and graphics.

**Books for R**

Chambers, J.M. and T.J. Hastie. (1992)

 Statistical Models in S. Wadsworth & Brooks/Cole Advanced Books & Software. Pacific Grove, Ca. p608.

Bolker, Benjamin M. (2008)

Ecological Models and Data in R. Princeton Univ. Press. Princeton, N.J.

* Free PDF online

Wood, Simon N. (2006)

 Generalized Additive Models (An Introduction with R). Chapman & Hall/CRC, Boca Raton, Florida. p392.

Zuur, A.F., Ieno, E.N., Walker, N., Saveliev, A.A., Smith, G.M. (2009)

*Mixed Effects Models and Extensions in Ecology with R.*

Springer, New York, 574 p.

**Reasons for Learning R**

1. **Tired of Paying for SAS (R will do everything SAS does)**
2. **Need a Stat tool not available elsewhere**
3. **Want to be on cutting edge**
4. **Thinking of Graduate School**
5. **Need access to broad array of Stat tools**

**Reasons for not learning R**

1. **Only do Stats occasionally**
2. **Excel meets your needs**
3. **Need a product with warranty**

**R will be difficult for you if:**

1. **You have no programming experience**
2. **No stats background**
3. **Don’t like command line interface**