**HOW TO DOWNLOAD R SOFTWARE TUTORIAL**

Carey, C.C., S. Aditya, K. Subratie, and R. Figueiredo. 1 May 2016. Project EDDIE: Modeling Climate Change Effects on Lakes Using Distributed Computing. Project EDDIE Module 4, Version 1. <http://cemast.illinoisstate.edu/data-for-students/modules/lake-modeling.shtml>.” Module development was supported by NSF DEB 1245707 and ACI 1234983.

1. Go to: <https://www.r-project.org>
2. Click on the blue “**download R**” text at the top of the page, which is part of the sentence, “To **download R**, please choose your preferred CRAN mirror.”
3. This will bring you to the CRAN (Comprehensive R Archive Network) mirror page, which lists a number of different sites where you can download R. This step ensures that you have the quickest download times possible from the closest geographical location. Scroll down to the country that you are currently located in and click on the blue underlined web address that corresponds to the city that is closest to you. For example, in Blacksburg, Virginia, USA that would be <http://archive.linux.duke.edu/cran/>, which corresponds to Duke University in Durham, North Carolina, USA.
4. This should bring you to a new webpage that says “Comprehensive R Archive Network” and “Download and Install R” at the top of the page.
5. Based off of your operating system, click on either “Download R for Linux,” “Download R for (Mac) OS X,” or “Download R for Windows.”
   1. For Macs:
      1. There should be three sections in gray on the page: at the top, “R for Mac OS X,” then “R version number (some numerals) with a name in quotes and release date” and then “Files.” The name in quotes is the nickname for that new R version.
      2. Under Files, click on the first blue file name that ends in .pkg. This corresponds to the most recent R binary file for OS X. This should start the file download. Proceed normally as with any new Mac application, following the automated download instructions.
   2. For PCs:
      1. At the top of the page, you should see “R for Windows” and then subdirectories underneath that. Click on “base,” which is highlighted in blue and underlined.
      2. At the top of this new webpage, you will see a box shaded in gray with “Download R version for Windows” at the very top (with the version number in numerals). This should start the file download. Proceed normally as with any new PC program, following the automated download instructions.
6. Once you have R downloaded onto your computer, open it up! In the window in the top left (which should start with a line at the top that says, “R version….”, type in the window to the right of the > this exact line:

install.packages(‘sp’) #NOTE: you may get output that says, "There is a binary version available but the source version is later... Do you want to install from sources the package which needs compilation? y/n" Type 'y' (without the quotes) and hit enter. This should now successfully load- when it's done, it should say 'DONE(sp)' if it worked successfully. Next, type in:

install.packages("glmtools", repos = c("http://gleon.github.com/", "http://usgs-r.github.com/", "http://cran.us.r-project.org"),

dependencies = TRUE, type = "both")

and then hit enter. You’re likely to get lots of red error messages at this step, but should hopefully see something that says “Installing package into…” with some directory on your computer listed. This means that you have successfully downloaded the glmtools R package. To confirm this, type:

library(glmtools) # note: you may get lots of output messages at this step; which is ok.

library(GLMr)

glm\_version() #see what version of GLM you are running- should be at least v.2.x.x, \*not\* v.1.4

If you’ve made it this far, congratulations! You have now successfully installed R and glmtools onto your computer.

1. (This step is optional - if you have space available in your hard disk - but recommended). While the installation of R is sufficient for the workshop, you may also want to install RStudio in your computer. The benefit of installing RStudio is that it provides a more advanced and intuitive user interface in addition to the core R command window. If you would like to install R-Studio:
   * 1. Go to https://www.rstudio.com/products/rstudio/download/
     2. Under “Installers for Supported Platforms”, click on the link for the installer depending on your operating system (note: the current RStudio version number, as of 29 September 2015, is 0.99.484 – the version number you see when you go to this page may be different)
        1. For PCs:
           1. Click on RStudio 0.99.896 - Windows Vista/7/8/10 and

download the .exe file to your computer

Note: the version number after RStudio likely is much higher now than when this tutorial was written on 1 May 2016 due to ongoing updates of the software.

* + - * 1. Double-click the .exe file and proceed normally as with any new PC program, following the automated install instructions.
      1. For Macs:
         1. Click on RStudio 0.99.896 - Mac OS X 10.6+ (64-bit) and download the .dmg file to your computer

Note: the version number after RStudio likely is much higher now than when this tutorial was written on 1 May 2016 due to ongoing updates of the software.

* + - * 1. Double-click the .dmg file; this will open a new window in your desktop. Drag the RStudio icon to the Applications folder to install it in your computer.