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- 1. Confirm that you have a sufficiently recent version of Java installed on your computer. The current version of CADStat has been tested with Version 8.
 - a) Confirm that you have Java version 1.6 or higher on your computer. You can find directions for how to check your version of Java <u>here</u>.
 - b) If you do not have a recent enough version, download and install Java (<u>http://www.java.com</u>). This is

 a large file and may take some time to download. You may need administrative rights on your
 computer to install this program.
- 2. Confirm that you have R version 3.3.1 or higher installed on your computer. If you do not have R installed or if your version is too old, install the latest version as follows.
 - a) Go to http://www.r-project.org.
 - b) Click "CRAN" under "Download".
 - c) Select a mirror download site near you (e.g., "Duke University, Durham, NC").
 - d) Select your operating system under "Download and Install R".
 - e) Click "base".
 - f) Click "Download R X.X.X for Windows" and save it to your local disk. (This file may take some time to download.)
 - g) Navigate to the executable file you just downloaded and double-click it to install R. Installation may require administrator privileges.
- 3. Confirm that you already have RStudio version 1.0.136 or higher installed on your computer. RStudio is a program that makes it easier to work in R.
 - a) Go to https://www.rstudio.com/products/rstudio/download2/.
 - b) Under "Installer for Supported Platforms," choose the version for your operating system.
 - c) Install RStudio. Installation may require administrator privileges.
 - d) If you already had RStudio on your computer and downloaded a newer version of R for this because your previous version was before 3.3.1, make sure to point RStudio to the new version of R. To do this, in R-Studio go to Tools → Global Options. In the "R version" box at the top of the window, click on the "Change" button and navigate to the location of your new version of R. Click "Apply" in the Option window (Error! Reference source not found.).

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| Options | | | |
|----------------------------|--|--|--|
| | R version: | | |
| IK | [32-bit] C:\Users\dgibbs\Documents\R\R-3.3.1 Change | | |
| Vin Vin Vice Vice | Choose R Installation | | |
| Code Editing | RStudio requires an existing installation of R in order to work. Please select the version of R to use. Use your machine's default version of R64 (64-bit) | | |
| Appearance | | | |
| | Use your machine's default version of R (32-bit) Choose a specific version of R: | | |
| Pane Layout | [32-bit] C:\Users\dgibbs\Documents\R\R-3.3.1 [64-bit] C:\Users\dgibbs\DOCUME~1\R\R-33-1.1 [32-bit] C:\Users\dgibbs\DOCUME~1\R\R-33-1.1 | | |
| Packages | | | |
| Ran Do | | | |
| Sweave | Browse | | |
| ABC | | | |
| Spelling | OK Caprel | | |
| | | | |
| Git/SVN | | | |
| | OK Cancel Apply | | |

Figure 1- Pointing RStudio to the right version of R.

- 4. Install JGR and related R libraries (Figure 2).
 - a) Launch RStudio.
 - b) Click on "Tools" \rightarrow "Install packages".
 - c) Type "JGR" into the window that appears. A dropdown menu with JGR highlighted should appear. Click on it.
 - d) Make sure to check "Install dependencies", then click "Install."



Figure 2- Installing the JGR library.

- 5. Install CADStat and related libraries (Figure 3).
 - a) Click on "Tools" \rightarrow "Install packages".

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- b) Type "CADStat" into the window that appears. A dropdown menu with CADStat highlighted should appear. Click on it.
- c) Make sure to check "Install dependencies", then click "Install".

| Tools Help | | |
|--------------|--------------------------------|--------------------------------|
| Import Data | aset + | |
| Install Pack | ages | |
| Check for P | ackage Updates | |
| Version Cor | ntrol + | |
| ShinyApps | Þ | |
| Shell | | |
| Project Opt | ions | |
| Global Opti | ions | |
| | Install Packages | |
| | Install from: | Configuring Repositories |
| | Repository (CRAN, CRANe | xtra) 💌 |
| | Packages (separate multiple | with space or comma): |
| | CAD | |
| | CADENCE CADFlest CADStat | ts/R/R-3.3.1/library [Default] |
| | | Install Cancel |

Figure 3- Installing the CADStat library.

d) Type library() into the RStudio console and hit enter. This will bring up a tab showing the path to your R libraries and a list of all the R libraries on your computer. CADStat and JGR should be listed.

| R packages available × | | |
|--|-----------------------|--|
| \$\phi\$ a | | |
| Packages in library 'C:/Users/dgibbs/Documents/R/R-3.3.1/library': | | |
| base bio.infer | The R Base Package | |
| | Predict environmental | |
| | conditions from | |
| | biological | |
| | observations | |
| boot | Bootstrap Functions | |
| | (Originally by Angelo | |
| | Canty for S) | |
| CADStat | Provides a GUI to | |
| | several statistical | |
| | methods useful for | |
| | causal assessment | |
| car | Companion to Applied | |
| | Regression | |
| class | Functions for | |
| | Classification | |

Figure 4- Partial list of installed packages.

- e) Exit and restart RStudio.
- f) To check that the CADStat library was properly installed you can type the following into the command prompt in RStudio: library(CADStat)
- g) Your computer may be missing some packages for the above command to work. You will know if more packages are needed after you run <u>library(CADStat</u>) and see whether the console produces any error messages.

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- h) If any more packages are needed, install them on your computer. For example, if the RStudio console says that packages "car", "bio.infer", "gdata", "gmodels", and "XML" are missing, type install.packages(c("car", "bio.infer", "gdata", "gmodels", "XML") into the console and press enter. Alternatively, you can install them the same way you installed JGR and CADStat. You may need packages beyond this list and/or may already have some of these installed on your computer, so modify this list as needed. Your console should tell you which packages are missing.
- 6. Launch JGR from within RStudio and load CADStat.
 - a) In the console, type library(JGR). Then type in JGR(). The JGR GUI window should now pop up. The rest of the operations are done within JGR.
 - b) In JGR, click "Packages and Data" \rightarrow "Package Manager".
 - c) Make sure the "Loaded" and "Default" boxes next to CADStat are checked (Figure 5). If "Loaded" and/or "Default" are not staying checked for CADStat, it may be because you still haven't installed all the packages CADStat requires. The JGR interface will say whether any required packages are missing. For any that are missing, type install.packages("XXXXX", "YYYYY", ...) into the RStudio console.



Figure 5- Loading CADStat into JGR.

7. Close the JGR Package Manager Window. CADStat should now be ready for use. That is, after closing the package manager window, CADStat should automatically load, changing the options in the JGR's menu (Figure 6).



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8. To re-open CADStat in the future, open RStudio, type library(JGR), then JGR() into the console. The JGR window should open with the CADStat menus visible along the top. There may be a delay of a few seconds before the CADStat menus become visible.