

# Data Analysis for Wildlife Cameras

## Data Analysis (all software free & available online)

1. TimeLapse to ID photos and output a .csv file of IDs, which can then be analyzed in Excel or R: <http://saul.cpsc.ucalgary.ca/timelapse/>
  - Windows only
2. Colorado's image analysis software, CPW Photo Warehouse, which uses Microsoft Access: <https://cpw.state.co.us/learn/Pages/ResearchMammalsSoftware.aspx>
3. R download: <https://cran.r-project.org/>
  - Compatible with Windows, OSX, Linux
4. Rstudio download (must have R installed):  
<https://www.rstudio.com/products/rstudio/download/>
  - Rstudio is a software that improves the interface of R, combining all windows (script, output, plots, environment) into one window split into 4 collapsible/expandable screens. Recommend downloading & using this if you plan to use R.
5. R tutorial & walk-through: <https://swirlstats.com/students.html>
  - I have all of my students start out with this tutorial when beginning to work with R. I like it because it has students work directly in the R environment in order to teach them how it works, but there are many many other tutorials available for free as well.
  - Start out with "Basics of programming" interactive tutorial. There are also a lot of other interactive courses for specific skillsets available ([https://github.com/swirldev/swirl\\_courses#swirl-courses](https://github.com/swirldev/swirl_courses#swirl-courses))

## Including Spatial Data

If you want to take it a step further and include spatial data in your analysis, QGIS is free GIS software that does everything the expensive programs do, with a lot of amazing resources available online to walk you through analyses.

- QGIS download: <https://www.qgis.org/en/site/forusers/download.html>
  - Compatible with Windows, OSX, Linux