Population Modeling in Ecology
Semester: Spring 2023
Day/Time: Monday from 1:10–4:00 PM Mountain Time
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Software Installation to Complete Before the Course

We will use three free programs in this course: Program R, RStudio, and Program MARK.
These are three separate installations detailed below. In step 4 you'll install several R packages.

1st step: Install Program R

R is a free and open-source programming language and software environment for statistical
computing and graphics. The exercises for this workshop will be based in R.
- Windows
  - Click "Download R 4.2.2 for Windows" and install. Default installation settings
    are okay.
- Mac OS
  - Click the ".pkg" file that matches your version of Mac OS and install. R-4.2.2 is
    the latest version, but prior versions may work if your OS version isn't compatible
    with the latest R version. Default installation settings are okay.

2nd step: Install RStudio

RStudio is a free and open-source integrated development environment (IDE) for R. You can
opt to run R directly without an IDE, but we recommend RStudio.
- Windows or Mac
  - Scroll down past the table comparing license options to the section called "All
    Installers."
  - Click the link that corresponds to your OS and install. Default installation settings
    are okay.

3rd step: Install Program MARK

Program MARK is a free program for parameter estimation from marked individuals (e.g.,
capture-mark-recapture). We will run MARK from within R, but you must have the standalone
Program MARK installed.
- Windows
  - Click "setup.exe" and install. You may get a security prompt. Default settings
    are okay.
- Mac OS
  - MARK was written for Windows, but scroll down to the Apple logo for Mac
    options. We will be running MARK using the RMark interface, so that option may
    work for you.

4th step: Install add-on R Packages

Launch RStudio, and run the following line in the R console to install.

```
install.packages(c("AICcmodavg", "ggplot2", "tidyverse", "unmarked",
"RMark"))
```

*this document was adapted from a workshop co-led by Jason Carlisle (jason.carlisle@wyo.gov)