R Scripts within this folder:

1. Script to Create the “Green Table” of Independent Records: **“Independent Records (Green Table).R”**
   1. This script exports a table of independent records so that it can be visualized in excel
   2. Input:
      1. Raw Dataset: "CR\_Dataset03\_North - CR\_Dataset03\_North.csv”
   3. Output:
      1. GIANT excel table of independent records: “CR\_d2.CT\_IndsRecs3.csv”

Background pattern

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* + 1. Once you get this table, highlight the entire thing and select “conditional format” in order to color the cells based on values. Once you do this step, you table should look like this:

A picture containing text

Description automatically generated

* + 1. From here select your time window (with the most running cameras) and individually select time periods for each camera of up to 4 months. Your final table should have a time window, each camera running during that time window, and one time period of up to four months for each camera.
  1. Common Errors:
     1. I had a lot of trouble with the dates within my dataset. For some reason (in the large for-loop) R was not recognizing some dates as dates and giving the error:



I fixed this error by omitting the dates that the for loop got stuck on. To do this, I created a separate subset of recs with only the date that had the error. I then removed this from recs and reran the entire code.

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1. Data Processing: **“DataProcessing\_CR\_Dataset03\_Central\_Sarah\_06Jun2022.R”**
   1. This script cleans up the raw dataset ("CR\_Dataset03\_North.csv") and produces community detection histories
   2. Input:
      1. Raw Data: "CR\_Dataset03\_North.csv"
      2. Table of independent record date selection: "CR\_d2.CT.IndRecs4 SARAH.csv"

This table is manually produced after running the first code listed on this document.

Table

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* + 1. Table of ALL independent records: "recs.all\_CR\_Dataset03\_North\_07Jun2022.csv"
    2. Table of camera trap active days: "ston\_CR\_Dataset03\_North\_07Jun2022.csv"
  1. Output: (all are only partial examples, each table is HUGE)
     1. Independent records table (recs.all)

Table

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* + 1. Table of active camera days (ston)

Table

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* + 1. Collapsed detection table (per species) using function comm.hist.maker

Table

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* 1. Notes:
     1. Notice that many of the output tables are also listed within the required inputs. This is just because of the order in which the code was created! This code makes the independent records table and table of active camera days, but it also reads in the independent records table csv and the table of active camera days csv. This is so you don’t have to run the entire code again and again in order to access a specific piece of code. The early portion of this code can take a long time to run, so this step saves some time.
     2. In order to not run into errors, you need to export a csv of the independent records table (recs.all) and camera active days table (ston). Then, read these files in at a later time. Otherwise, you can change the variable name so that in the places it reads in prexisting files, you can set that variable equal to your dataset within the script. For example, instead of

**recs1<- read.csv("recs.all\_CR\_Dataset03\_North\_07Jun2022.csv")**

you can simply write

**recs1 <- recs.all**

Or use recs.all as a variable instead of recs1. Just use “ctrl f” in order to make sure you replace all instances of recs1 with recs.all! Otherwise, you will run into errors.

1. Extracting Site Covariates: **“Extracting Site Covariates.Rmd”**
   1. This script imports, plots, extracts, and exports data to be used as site covariates
   2. Input:
      1. Locations Table: "CT\_Locations\_CR\_Dataset03\_North\_Sarah.csv"

Table

Description automatically generated

* + 1. Covariate Raster Files:
       1. Human Footprint Index: ”HFI\_CostaRica\_EPSG4326.tif”
       2. Elevation: “SRTM\_CostaRica\_1arc.tif”
       3. Water Cover: "WaterSurf\_CostaRica\_EPSG4326.tif"
       4. Forest Cover: "PrimForest\_CostaRica\_EPSG4326.tif"
       5. Primary Productivity: "NPP\_CostaRica\_1arc.tif"
  1. Output:
     1. A .csv with all site covariate information for each camera station: "Site\_Covariates\_North\_Updated6.csv"

Table

Description automatically generated

1. Occupancy Modeling: **“Occupancy Practice - North (Paca).Rmd”**
   1. These scripts model occupancy for selected species, utilizing site covariates
   2. Input:
      1. The detection table for your species of interest (only one), made in code 2🡪c🡪iii of this document
         1. Coyote\_Detection.csv
         2. Ocelot\_Detection.csv
         3. Oncilla\_Detection.csv
         4. Paca\_Detection.csv
         5. Puma\_Detection.csv
         6. Peccary\_Detection.csv
         7. Skunk\_Detection.csv
         8. Tayra\_Detection.csv
      2. File containing site covariates: “Site\_Covariates\_North\_Updated5.csv”
      3. File containing survey covariates (effort): “Effort\_North.csv”
   3. Output:
      1. AIC table comparing all models

Table

Description automatically generated

* + 1. Some code included to plot these models, but will need to alter based on the model
       1. Errors for using predict() function to plot:



You will run into this error if you use a different name for your variable within the new.variable command. You need to use the same variable name when you define your site covariates as when you define this covariate.

Text

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Text

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R will not recognize the variable when you use different names within your siteCovs definition and within your creation of new.variable. In this example we use elev in siteCovs and Elev in new.elev and we run into this error. Both must be named the same thing.