detection\_proportion\_1.r

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library(dplyr)

##   
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':  
##   
## filter, lag

## The following objects are masked from 'package:base':  
##   
## intersect, setdiff, setequal, union

library(ggplot2)  
library(lubridate)

##   
## Attaching package: 'lubridate'

## The following object is masked from 'package:base':  
##   
## date

#setwd()  
  
max\_count <- 4768  
  
library(readr)  
df <- read\_csv("~/r-code/#FO384AF5F243/Rangetag1.csv")

## Parsed with column specification:  
## cols(  
## `Date.and.Time.(UTC)` = col\_character(),  
## `Date.and.Time.(UTC+10:00)` = col\_character(),  
## Receiver = col\_character(),  
## Transmitter = col\_character(),  
## `Transmitter Name` = col\_character(),  
## `Transmitter Serial` = col\_character(),  
## `Sensor Value` = col\_character(),  
## `Sensor Unit` = col\_character(),  
## `Station Name` = col\_character(),  
## Latitude = col\_character(),  
## Longitude = col\_character()  
## )

#Second column is UTC+10 which is required time format (FYI the formatting is not needed in this case) the count down below takes care  
#of stripping the timestamp  
df$date <- as.Date(df$`Date.and.Time.(UTC+10:00)`,format="%d/%m/%Y")  
  
#Subset the data  
df <- df[,c(3,12)]  
  
#Convert the data (df) to a data.frame  
df <- data.frame(df, stringsAsFactors = TRUE)  
  
#check for missing values (return false or true)  
#if this returned true then we would replace the missing values.  
missing(df)

## [1] FALSE

head(df)

## Receiver date  
## 1 VR2W-110021 0014-03-11  
## 2 VR2W-110021 0014-03-11  
## 3 VR2W-110021 0014-03-11  
## 4 VR2W-110021 0014-03-11  
## 5 VR2W-110021 0014-03-11  
## 6 VR2W-110021 0014-03-11

dim(df)

## [1] 499518 2

#Count by dates with pipe %>%> = df <- (df,count) return count as "n"  
df <- df %>% count(date,Receiver)  
  
#Determine the daily proportions  
df$prop <- df$n/max\_count  
  
#Reorder factors by distance  
df$Receiver <- factor(df$Receiver, levels=c("VR2W-110021","VR2W-111070","VR2W-110020","VR2W-112177","VR2W-121133"))  
  
#Recode change the catagorical data to numeric   
df$rec<- dplyr::recode(as.character(df$Receiver),"VR2W-110021"=0,"VR2W-111070"=190,"VR2W-110020"=200,"VR2W-112177"=320,"VR2W-121133"=420)  
  
#Tell R that Receiver is numeric data  
df$Receiver <- as.numeric(df$Receiver)  
  
#exclude day one and last day  
df <- df[ which(df$date!='2014-03-11'),]  
df <- df[ which(df$date!='2014-01-05'),]  
  
# Graph  
ggplot(df, aes(x=rec, y=prop)) +  
 geom\_smooth(span= 0.9) +  
 geom\_point() +  
 labs(x="Receiver", y="prop", title="Range Tag 1") +   
 theme(plot.title = element\_text(hjust = 0.5, size = 20) )

## `geom\_smooth()` using method = 'loess'

