

Resetting_EDA_LS_FA

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! For best results, run these code chunks sequentially in RStudio rather than creating a knitted document.

Preliminary Set Up

```
# import useful libraries
library(tidyverse)
```

```
## -- Attaching core tidyverse packages ----- tidyverse 2.0.0 --
## v dplyr      1.1.4      v readr      2.1.5
## v forcats    1.0.0      v stringr   1.5.1
## v ggplot2    3.5.1      v tibble    3.2.1
## v lubridate  1.9.3      v tidyr     1.3.1
## v purrr      1.0.2
```

```
## -- Conflicts ----- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()     masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

```
library(mosaic)
```

```
## Registered S3 method overwritten by 'mosaic':
```

```
##   method                      from
##   fortify.SpatialPolygonsDataFrame ggplot2
##
```

```
## The 'mosaic' package masks several functions from core packages in order to add
## additional features. The original behavior of these functions should not be affected by this.
##
```

```
## Attaching package: 'mosaic'
```

```
##
```

```
## The following object is masked from 'package:Matrix':
```

```
##
```

```
##   mean
```

```
##
```

```
## The following objects are masked from 'package:dplyr':
```

```
##
```

```
##   count, do, tally
```

```
##
```

```
## The following object is masked from 'package:purrr':
```

```
##
```

```
##   cross
```

```
##
```

```
## The following object is masked from 'package:ggplot2':
```

```
##
```

```

##      stat
##
## The following objects are masked from 'package:stats':
##
##      binom.test, cor, cor.test, cov, fivenum, IQR, median, prop.test,
##      quantile, sd, t.test, var
##
## The following objects are masked from 'package:base':
##
##      max, mean, min, prod, range, sample, sum
library(ggformula)
library(dplyr)
library(lme4)

##
## Attaching package: 'lme4'
##
## The following object is masked from 'package:mosaic':
##
##      factorize
library(effects)

## Loading required package: carData
## Use the command
##      lattice::trellis.par.set(effectsTheme())
## to customize lattice options for effects plots.
## See ?effectsTheme for details.
# set import file path
path_r <- 'full_data_trapnz.csv'
# import full data set
all_data_r <- read_csv(file = path_r)

## Warning: One or more parsing issues, call `problems()` on your data frame for details,
## e.g.:
##   dat <- vroom(...)
##   problems(dat)

## Rows: 25658 Columns: 25
## -- Column specification -----
## Delimiter: ","
## chr  (14): line, code, trap type, status, initial bait, rebaited, bait type,...
## dbl   (7): trap nid, latitude, longitude, easting, northing, nid, strikes
## lgl   (3): Trap sub type, tags, Images
## dtm   (1): date
##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.

```

Data Wrangling

```

# address initial problems when loading csv
# image links trying to translate to logical
# remove the image column

```

```
neat_data_r <- select(all_data_r, -Images)
```

```
# rename columns to work better for analysis
colnames(neat_data_r) <- c("Line", "TrapID", "Code", "TrapType",
                           "TrapSubType", "Tags", "Latitude",
                           "Longitude", "Easting", "Northing", "EntryID",
                           "Date", "Status", "InitialBait", "Rebaited",
                           "BaitType", "BaitDetails", "RecordedBy",
                           "Strikes", "SpeciesCaught", "Sex",
                           "Maturity", "TrapCondition", "Notes")
```

Trap type notes

```
# Are trap types single-kill or self-resetting?
# 27 records have unspecified trap type
# single: cage trap, D-Rat, DOC 200, DOC 250, leg hold trap, rat trap, SA cat, Tāwhiti - Smart Cage,
# cage trap, leg hold trap, Tāwhiti - Smart Cage is live capture
# "rat trap"'s resetting type isn't specified but we can probably pretty safely assume it's single
# self-resetting: AT220, sentinel, supervisor max
# sentinel, supervisor max assumed to not be by looking up quickly but actually recorded as having

# sentinel trap is specifically for possums, supposed to stop rats from getting bait
```

```
# get all self-resetting trap data for traps baited with mayonnaise (mayo) or peanut butter (pb)
resetting <- subset(neat_data_r, grepl("MAYO", toupper(BaitType)) | grepl("PEANUT BUTTER", toupper(BaitType)) |
  subset(grepl("AT220", TrapType) | grepl("Sentinel", TrapType) | grepl("Supervisor Max", TrapType)))
```

```
# single-kill trap data baited with mayo or pb
nonresetting <- subset(neat_data_r, grepl("MAYO", toupper(BaitType)) | grepl("PEANUT BUTTER", toupper(BaitType)) |
  subset(!(grepl("AT220", TrapType) | grepl("Sentinel", TrapType) | grepl("Supervisor Max", TrapType))))
```

EDA

```
# examine trap types
tally(~TrapType, data=neat_data_r)
```

```
## TrapType
##           AT220           Cage Trap           D-Rat
##           2788           124           4984
##           DOC 200           DOC 250           Leg hold trap
##           7651           628           6
##           Rat trap           SA Cat           Sentinel
##           227           67           5367
##           Supervisor Max Tāwhiti - Smart Cage           Trapinator
##           147           3           3639
##           Unspecified
##           27
```

```
# examine bait types
#tally(~BaitType, data=neat_data_r)
# this listing for all bait types is very long, uncomment with caution
```

```
# date range for data
min(~Date, data=neat_data_r)
```

```
## [1] "2020-08-27 12:00:00 UTC"
```

```
max(~Date,data=neat_data_r)
```

```
## [1] "2025-07-08 14:36:00 UTC"
```

Average servicing interval

```
# find average servicing interval for self-resetting traps
```

```
avg_interval <- function(id, dates){
```

```
  total_interval <- 0
```

```
# for every record and the record after it, calculate the interval between the records (the servicing
```

```
  for (i in 1:(length(dates)-1)){
```

```
    total_interval <- total_interval + difftime(dates[i+1],dates[i],units="days")
```

```
  }
```

```
# if there is less than two records, return 0 as the servicing interval
```

```
  if (length(dates) <= 1){
```

```
    return(as.difftime(0,units="days"))
```

```
  }
```

```
# otherwise, take the average of the calculated pairwise intervals
```

```
  else{return(total_interval/(length(dates)-1))}
```

```
}
```

```
# calculate average servicing interval for self-resetting and single-kill traps
```

```
times_resetting <- resetting |> group_by(TrapID) |> summarize(AvgInterval = avg_interval(TrapID,Date)[1])
```

```
times_nonresetting <- nonresetting |> group_by(TrapID) |> summarize(AvgInterval = avg_interval(TrapID,D
```

```
# visualize self resetting interval
```

```
favstats(~AvgInterval,data=subset(times_resetting,AvgInterval>0))
```

```
## Warning in FUN(eval(formula[[2]], data, .envir), ...): Auto-converting difftime
```

```
## to numeric.
```

```
##           min      Q1   median      Q3      max      mean      sd    n missing
```

```
## 0.001041667 34.6217 50.97482 76.62826 370.9472 61.74193 42.61792 258      0
```

```
gf_histogram(~AvgInterval,data=subset(times_resetting,AvgInterval>0)) |>
```

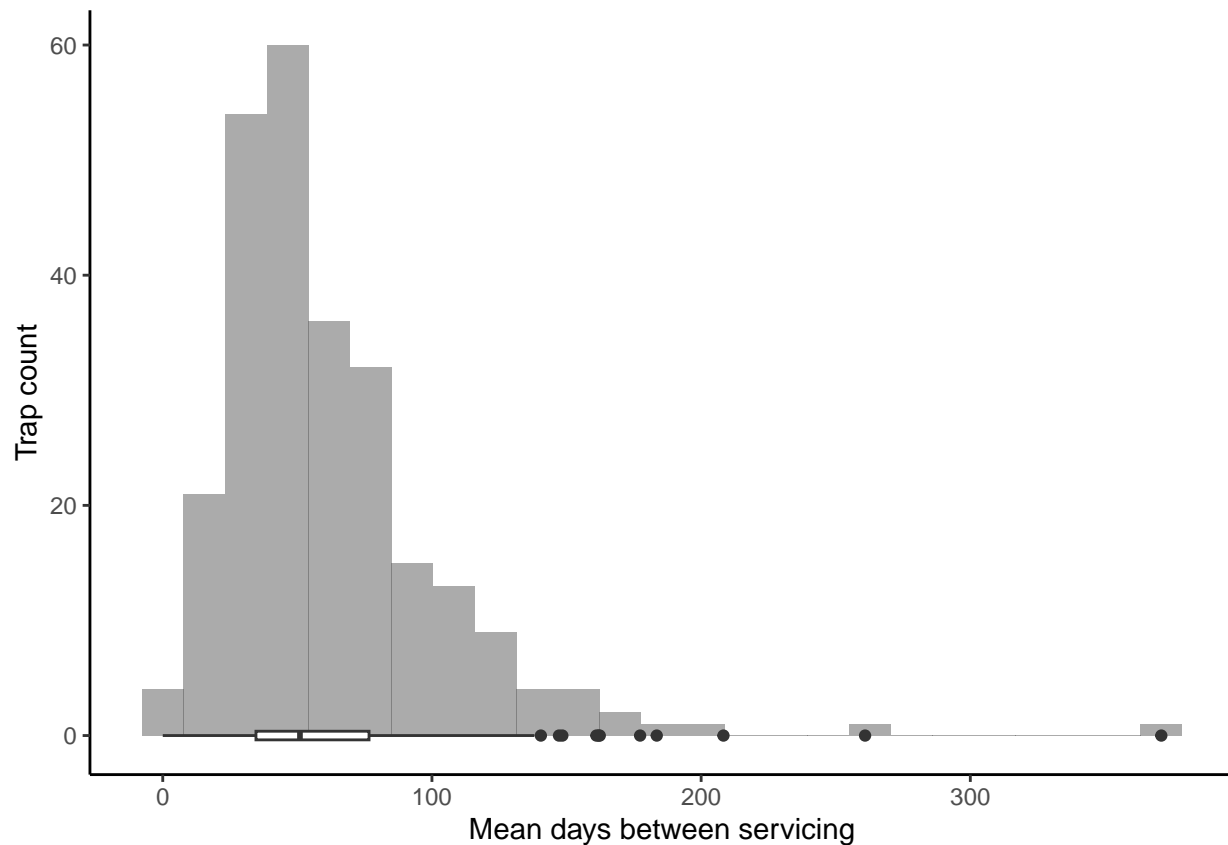
```
  gf_boxplot() |>
```

```
  gf_labs(x="Mean days between servicing",y="Trap count") +
```

```
  theme_classic()
```

```
## Don't know how to automatically pick scale for object of type <difftime>.
```

```
## Defaulting to continuous.
```



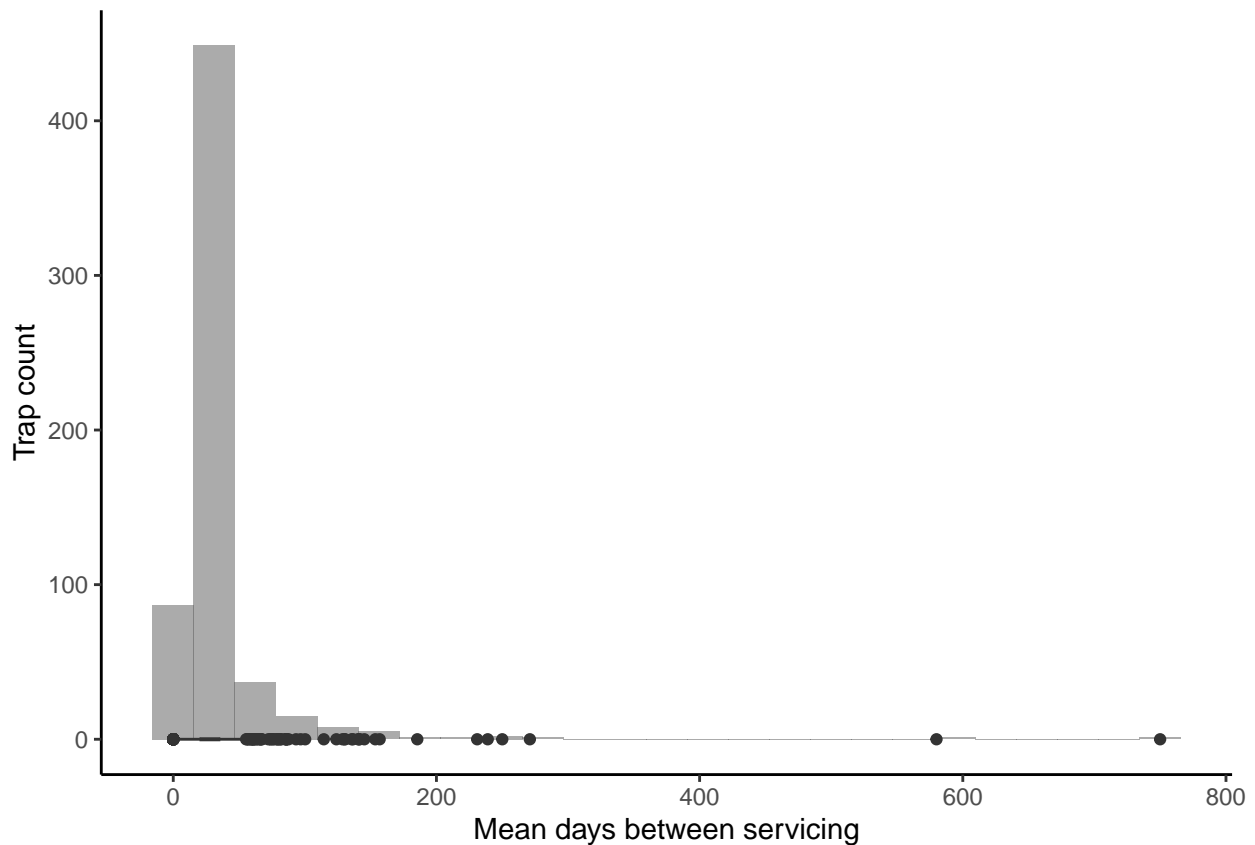
```
# visualize non self resetting interval
favstats(~AvgInterval,data=times_nonresetting)

## Warning in FUN(eval(formula[[2]], data, .envir), ...): Auto-converting difftime
## to numeric.

##   min      Q1   median      Q3      max      mean      sd    n missing
##    0 21.04754 26.48681 34.68424 749.9618 33.98009 46.97271 608      0

gf_histogram(~AvgInterval,data=times_nonresetting) |>
  gf_boxplot() |>
  gf_labs(x="Mean days between servicing",y="Trap count") +
  theme_classic()

## Don't know how to automatically pick scale for object of type <difftime>.
## Defaulting to continuous.
```



```
# non parametric two sample mean comparison for average servicing interval
wilcox.test(as.numeric(times_nonresetting$AvgInterval),as.numeric(times_resetting$AvgInterval))
```

```
##
## Wilcoxon rank sum test with continuity correction
##
## data: as.numeric(times_nonresetting$AvgInterval) and as.numeric(times_resetting$AvgInterval)
## W = 60389, p-value < 2.2e-16
## alternative hypothesis: true location shift is not equal to 0
```

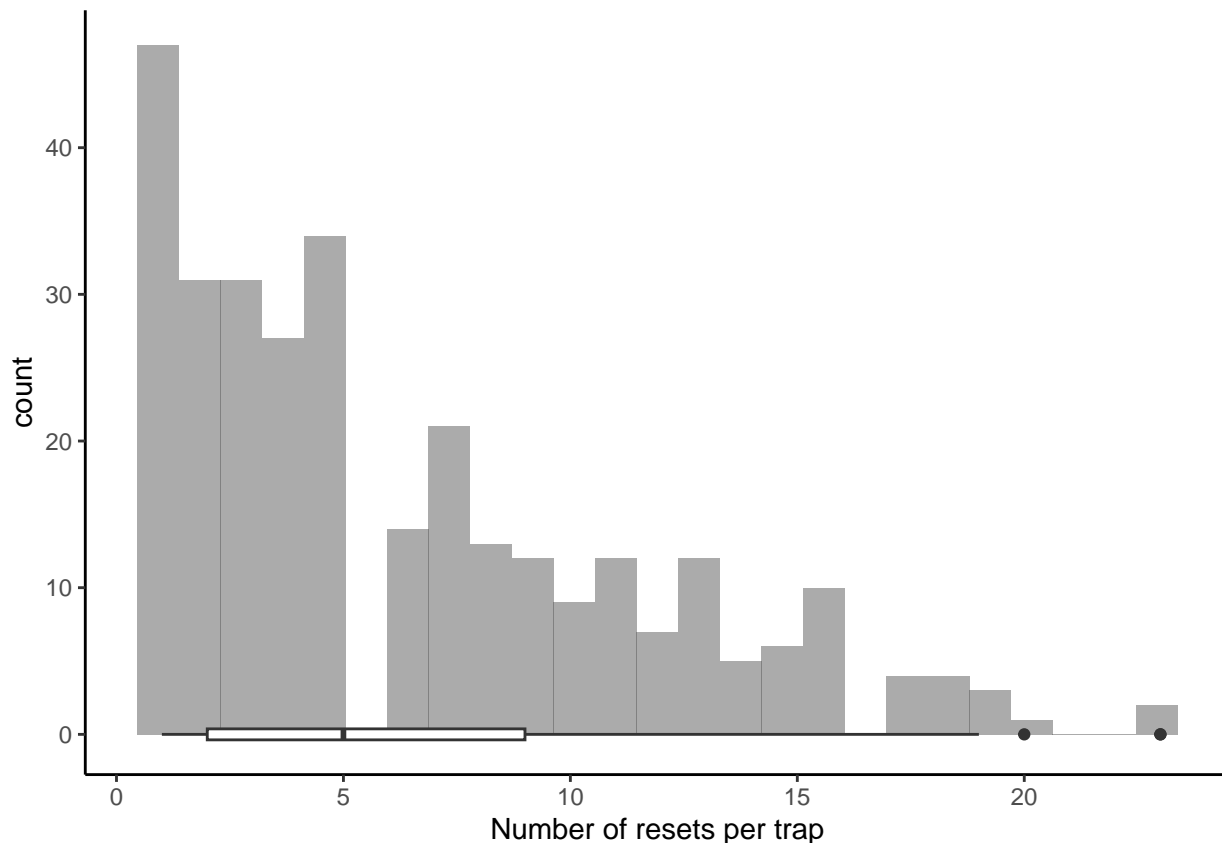
the average servicing interval between not resetting and self resetting is meaningfully different, p < 2.2e-16

Trap reset number

```
# visualize how many times each trap is reset
favstats(~n, data=times_resetting)
```

```
## min Q1 median Q3 max      mean      sd  n missing
##   1  2      5  9  23 6.452459 5.013653 305      0
```

```
gf_histogram(~n,data=times_resetting) |>
  gf_boxplot() |>
  gf_labs(x="Number of resets per trap") +
  theme_classic()
```



Self-resetting traps

```
# examine bait types for self-resetting traps
#tally(~BaitType, data=resetting)
# another very long list
```

```
# subset to just traps single-baited with mayonnaise or peanut butter
resetting_analysis_data <- subset(resetting, BaitType == "Mayo" | BaitType == "Peanut butter") |>
  mutate(Year = format(Date, "%Y"), Month = format(Date, "%m"))
```

```
# look at the sample size for just pb and mayo single baits
tally(~BaitType, data=resetting_analysis_data)
```

```
## BaitType
##           Mayo Peanut butter
##           680           653
# 680 Mayo, 653 Peanut butter
```

```
# further examine which trap types catch multiple animals per record
tally(TrapType~BaitType, data=resetting_analysis_data)
```

```
##           BaitType
## TrapType      Mayo Peanut butter
##   AT220         599           12
##   Sentinel        70          581
##   Supervisor Max   11           60
```

```
tally(~TrapType, data=subset(neat_data_r, (BaitType == "Mayo" | BaitType == "Peanut butter") & Strikes > 1))
```

```

## TrapType
##           AT220           Sentinel Supervisor Max
##           112             9             2

# in records where the trap was baited with only mayo or only pb, which trap types have more than one
tally(~TrapType,data=subset(neat_data_r,Strikes>1))

## TrapType
##           AT220           Sentinel Supervisor Max
##           414             32             9

# for any bait, which trap types have more than one strike?

# look at all records with multiple strikes that aren't known self-resetting trap
multiple_strikes <- subset(neat_data_r,Strikes>1 & TrapType!="AT220")
multiple_strikes

## # A tibble: 41 x 24
##   Line      TrapID Code  TrapType TrapSubType Tags  Latitude Longitude Easting
##   <chr>      <dbl> <chr> <chr>    <lg1>    <lg1>    <dbl>    <dbl>    <dbl>
## 1 6: ST Sou~ 7.25e6 ST 6M Sentinel NA      NA      -43.7      173.    1.57e6
## 2 <NA>      1.38e7 10C ~ Sentinel NA      NA      -43.6      173.    1.57e6
## 3 10. NT/N ~ 1.67e7 S 2B Sentinel NA      NA      -43.6      173.    1.57e6
## 4 10. NT/N ~ 1.67e7 S 43 Sentinel NA      NA      -43.6      173.    1.57e6
## 5 10. NT/N ~ 1.67e7 S 43 Sentinel NA      NA      -43.6      173.    1.57e6
## 6 10. NT/N ~ 1.71e7 S 17H Sentinel NA      NA      -43.6      173.    1.57e6
## 7 10. NT/N ~ 1.67e7 S 7 Sentinel NA      NA      -43.6      173.    1.57e6
## 8 10. NT/N ~ 1.67e7 S 43 Sentinel NA      NA      -43.6      173.    1.57e6
## 9 10. NT/N ~ 1.67e7 A43 ~ Sentinel NA      NA      -43.6      173.    1.57e6
## 10 10. NT/N ~ 1.67e7 RS #~ Supervi~ NA      NA      -43.6      173.    1.57e6
## # i 31 more rows
## # i 15 more variables: Northing <dbl>, EntryID <dbl>, Date <dtm>,
## #   Status <chr>, InitialBait <chr>, Rebaited <chr>, BaitType <chr>,
## #   BaitDetails <chr>, RecordedBy <chr>, Strikes <dbl>, SpeciesCaught <chr>,
## #   Sex <chr>, Maturity <chr>, TrapCondition <chr>, Notes <chr>

# look at non-self-resetting records with multiple strikes baited with only mayo or pb
multiple_strikes_mp <- subset(neat_data_r,(BaitType=="Mayo" | BaitType=="Peanut butter") & Strikes>1 &

# Sentinel
favstats(~Strikes,data=subset(resetting_analysis_data,TrapType=="Sentinel"))

##   min Q1 median Q3 max      mean      sd  n missing
##   0  0      0  0  4 0.1321045 0.4448665 651      0

tally(~Strikes,data=subset(resetting_analysis_data,TrapType=="Sentinel"))

## Strikes
##    0    1    2    3    4
## 582  60    3    4    2

subset(resetting_analysis_data,Strikes>0&TrapType=="Sentinel")

## # A tibble: 69 x 26
##   Line      TrapID Code  TrapType TrapSubType Tags  Latitude Longitude Easting
##   <chr>      <dbl> <chr> <chr>    <lg1>    <lg1>    <dbl>    <dbl>    <dbl>
## 1 <NA>      7.22e6 MT 2~ Sentinel NA      NA      -43.7      173.    1.57e6
## 2 <NA>      7.22e6 MT 2J Sentinel NA      NA      -43.6      173.    1.57e6

```



```
## 3 <NA>      7.22e6 MT 3A Sentinel NA      NA      -43.7      173.  1.57e6
## 4 <NA>      7.22e6 MT 3~ Sentinel NA      NA      -43.7      173.  1.57e6
## 5 <NA>      7.22e6 MT 3~ Sentinel NA      NA      -43.7      173.  1.57e6
## 6 <NA>      7.22e6 MT 3I Sentinel NA      NA      -43.7      173.  1.57e6
## 7 <NA>      7.22e6 MT 3~ Sentinel NA      NA      -43.7      173.  1.57e6
## 8 <NA>      7.22e6 MT 3G Sentinel NA      NA      -43.7      173.  1.57e6
## 9 <NA>      7.22e6 MT 3I Sentinel NA      NA      -43.7      173.  1.57e6
## 10 6: ST Sou~ 7.25e6 ST 6M Sentinel NA      NA      -43.7      173.  1.57e6
## # i 59 more rows
## # i 17 more variables: Northing <dbl>, EntryID <dbl>, Date <dtm>,
## #   Status <chr>, InitialBait <chr>, Rebaited <chr>, BaitType <chr>,
## #   BaitDetails <chr>, RecordedBy <chr>, Strikes <dbl>, SpeciesCaught <chr>,
## #   Sex <chr>, Maturity <chr>, TrapCondition <chr>, Notes <chr>, Year <chr>,
## #   Month <chr>
# Supervisor Max
tally(~Strikes,data=subset(resetting_analysis_data,Strikes>0 &TrapType=="Supervisor Max"))

## Strikes
## 1 2 3
## 9 1 1
```

TODO finish cleaning everything under this line

Models predicting strike number for self-resetting traps only

```
# predict strikes by bait type (accounting for date)
trapnz_model <- lmer(Strikes ~ BaitType + (1 | Date), data=resetting_analysis_data)

summary(trapnz_model)

## Linear mixed model fit by REML ['lmerMod']
## Formula: Strikes ~ BaitType + (1 | Date)
##   Data: resetting_analysis_data
##
## REML criterion at convergence: 3636.6
##
## Scaled residuals:
##    Min       1Q   Median       3Q      Max
## -2.7185 -0.1691 -0.0398  0.0667  5.7876
##
## Random effects:
##   Groups   Name                Variance Std.Dev.
##   Date      (Intercept)  0.8201    0.9056
##   Residual                    0.1318    0.3631
## Number of obs: 1333, groups: Date, 1270
##
## Fixed effects:
##              Estimate Std. Error t value
## (Intercept)      0.82518   0.03758   21.96
## BaitTypePeanut butter -0.72083   0.05304  -13.59
##
## Correlation of Fixed Effects:
##              (Intr)
## BtTypPntbtt -0.686
```

```
# predict strikes by bait type (accounting for year and month separately)
# year = general trend over time
# month = season
trapnz_model2 <- lmer(Strokes ~ BaitType + (1 | Year) + (1 | Month), data=resetting_analysis_data)

summary(trapnz_model2)
```

```
## Linear mixed model fit by REML ['lmerMod']
## Formula: Strokes ~ BaitType + (1 | Year) + (1 | Month)
## Data: resetting_analysis_data
##
## REML criterion at convergence: 3666.9
##
## Scaled residuals:
##      Min       1Q   Median       3Q      Max
## -1.2625 -0.5918 -0.0655  0.1392 15.6375
##
## Random effects:
## Groups Name Variance Std.Dev.
## Month (Intercept) 0.02529 0.1590
## Year (Intercept) 0.01313 0.1146
## Residual 0.89866 0.9480
## Number of obs: 1333, groups: Month, 12; Year, 4
##
## Fixed effects:
## Estimate Std. Error t value
## (Intercept) 0.85317 0.08507 10.03
## BaitTypePeanut butter -0.79217 0.07156 -11.07
##
## Correlation of Fixed Effects:
## (Intr)
## BtTypPntbtt -0.348
```

Species caught for records with multiple strikes

```
# records with multiple strikes, sorted by strike number from greatest to least
sorted_multiple_species <- subset(neat_data_r,Strokes>1) |>
  arrange(desc(Strokes))

sorted_multiple_species
```

```
## # A tibble: 455 x 24
## Line TrapID Code TrapType TrapSubType Tags Latitude Longitude Easting
## <chr> <dbl> <chr> <chr> <lg1> <lg1> <dbl> <dbl> <dbl>
## 1 17. Summi~ 1.86e7 17A ~ AT220 NA NA -43.6 173. 1.57e6
## 2 17. Summi~ 1.86e7 17A ~ AT220 NA NA -43.6 173. 1.57e6
## 3 17. Summi~ 2.76e7 17B ~ AT220 NA NA -43.6 173. 1.57e6
## 4 17. Summi~ 1.87e7 17F ~ AT220 NA NA -43.6 173. 1.57e6
## 5 <NA> 2.34e7 10K ~ AT220 NA NA -43.6 173. 1.57e6
## 6 17. Summi~ 1.85e7 17D ~ AT220 NA NA -43.6 173. 1.57e6
## 7 1: MT Upp~ 7.96e6 1H A~ AT220 NA NA -43.6 173. 1.57e6
## 8 1: MT Upp~ 7.24e6 1F A~ AT220 NA NA -43.6 173. 1.57e6
## 9 18: Coope~ 2.02e7 18L ~ AT220 NA NA -43.7 173. 1.57e6
## 10 1: MT Upp~ 7.24e6 1C A4 AT220 NA NA -43.6 173. 1.57e6
## # i 445 more rows
```

```
## # i 15 more variables: Northing <dbl>, EntryID <dbl>, Date <dtm>,
## #   Status <chr>, InitialBait <chr>, Rebaited <chr>, BaitType <chr>,
## #   BaitDetails <chr>, RecordedBy <chr>, Strikes <dbl>, SpeciesCaught <chr>,
## #   Sex <chr>, Maturity <chr>, TrapCondition <chr>, Notes <chr>
```

Check other single baits and combinations for sample size

```
# check for most popular bait
tally(~BaitType, data=neat_data_r) |> as.data.frame() |> arrange(desc(Freq))
```

```
##                                     BaitType
## 1                                     None
## 2                                Peanut butter
## 3                                Possum Dough
## 4                Deep Fried Dog Roll, Peanut butter
## 5                                     Mayo
## 6                Peanut butter, Deep Fried Dog Roll
## 7                Peanut butter, Fresh Rabbit
## 8                Fresh Rabbit, Peanut butter
## 9                Possum Dough, Smooth
## 10                                   Smooth
## 11                                   Fresh Rabbit
## 12                Deep Fried Dog Roll
## 13                Mayo, Smooth
## 14                Deep Fried Dog Roll, Fake Egg, Peanut butter
## 15                Salted Rabbit
## 16                Peanut butter, Deep Fried Dog Roll, Fake Egg
## 17                Fresh meat
## 18                Deep Fried Dog Roll, Good Nature Meat Lovers
## 19                Good Nature Meat Lovers
## 20                Fresh meat, Peanut butter
## 21                Peanut butter, Salted Rabbit
## 22                Smooth, Mayo
## 23                Peanut butter, Other (please specify)
## 24                Blaze, Possum Dough, Smooth
## 25                Smooth, Possum Dough
## 26                Peanut butter, Fresh meat
## 27                Deep Fried Dog Roll, Fake Egg
## 28                Peanut butter, Possum Dough
## 29                Deep Fried Dog Roll, Good Nature Meat Lovers, Peanut butter
## 30                Peanut butter, Fake Egg, Deep Fried Dog Roll
## 31                Good Nature Meat Lovers, Deep Fried Dog Roll
## 32                Other (please specify)
## 33                Peanut butter, Good Nature Meat Lovers, Deep Fried Dog Roll
## 34                Blaze, Possum Dough
## 35                Other (please specify), Peanut butter
## 36                Possum Dough, Peanut butter
## 37                Blaze, Smooth
## 38                Peanut butter, Lure
## 39                Lure, Peanut butter
## 40                Peanut butter, Salmon
## 41                NZAT Lure - Original
## 42                Mayo, Possum Dough
## 43                Fake Egg, Deep Fried Dog Roll, Peanut butter
## 44                Good Nature Meat Lovers, Deep Fried Dog Roll, Peanut butter
```

45 Deep Fried Dog Roll, Peanut butter, Good Nature Meat Lovers
 ## 46 Peanut butter, Deep Fried Dog Roll, Good Nature Meat Lovers
 ## 47 Good Nature Meat Lovers, Peanut butter, Deep Fried Dog Roll
 ## 48 Blaze, Mayo, Smooth
 ## 49 Fake Egg, Deep Fried Dog Roll
 ## 50 Possum Dough, Deep Fried Dog Roll
 ## 51 Possum Dough, Mayo
 ## 52 NZAT Lure - Original, Blaze
 ## 53 Other (please specify), Deep Fried Dog Roll
 ## 54 Possum Dough, Salted Rabbit
 ## 55 Salted Rabbit, Peanut butter
 ## 56 Deep Fried Dog Roll, Peanut butter, Other (please specify)
 ## 57 Peanut butter, Salted meat
 ## 58 Possum Dough, Blaze
 ## 59 Possum Dough, Fresh Rabbit
 ## 60 Salmon, Peanut butter
 ## 61 Smooth, Blaze
 ## 62 Smooth, Deep Fried Dog Roll
 ## 63 Whole egg, Mayo, Smooth
 ## 64 Blaze, NZAT Lure - Original
 ## 65 Peanut butter, Good Nature Meat Lovers
 ## 66 Peanut butter, Smooth
 ## 67 Deep Fried Dog Roll, Smooth
 ## 68 Deep Fried Dog Roll, Peanut butter, Fake Egg
 ## 69 Mayo, Fresh Rabbit, Peanut butter
 ## 70 Peanut butter, Deep Fried Dog Roll, Fresh Rabbit
 ## 71 PoaUku
 ## 72 Blaze, Deep Fried Dog Roll, Fake Egg, Peanut butter
 ## 73 Mayo, Peanut butter
 ## 74 Deep Fried Dog Roll, Other (please specify)
 ## 75 Fake Egg, Peanut butter, Deep Fried Dog Roll
 ## 76 Peanut butter, Fresh Rabbit, Deep Fried Dog Roll
 ## 77 Possum Dough, Smooth, Blaze
 ## 78 Whole egg
 ## 79 Deep Fried Dog Roll, Fresh Rabbit, Peanut butter
 ## 80 Mayo, Blaze
 ## 81 NZAT Lure - Original, Smooth
 ## 82 Peanut butter, Other (please specify), Deep Fried Dog Roll
 ## 83 Salted meat
 ## 84 Smooth, Peanut butter
 ## 85 Blaze, Mayo
 ## 86 Deep Fried Dog Roll, Good Nature Meat Lovers, Fake Egg
 ## 87 Deep Fried Dog Roll, Peanut butter, Whole egg
 ## 88 Fresh Rabbit, Nut
 ## 89 Peanut butter, Lure-it Salmon Spray, Fresh Rabbit
 ## 90 Peanut butter, Whole egg
 ## 91 Smooth, Possum Dough, Blaze
 ## 92 Deep Fried Dog Roll, Fake Egg, Good Nature Meat Lovers, Peanut butter
 ## 93 Good Nature Meat Lovers, Peanut butter
 ## 94 Goodnature Cinnamon pre feed
 ## 95 Lure
 ## 96 Mayo, Possum Dough, Smooth
 ## 97 Peanut butter, Blaze, Fake Egg, Deep Fried Dog Roll, Good Nature Meat Lovers
 ## 98 Peanut butter, Deep Fried Dog Roll, Other (please specify)

99 Smooth, Lure
 ## 100 Good Nature Meat Lovers, Deep Fried Dog Roll, Fake Egg
 ## 101 Peanut butter, Possum Dough, Smooth
 ## 102 Smooth, Deep Fried Dog Roll, Peanut butter
 ## 103 Deep Fried Dog Roll, Possum Dough
 ## 104 Deep Fried Dog Roll, Whole egg
 ## 105 Fresh Rabbit, Possum Dough
 ## 106 Peanut butter, Lure-it Salmon Spray, Other (please specify)
 ## 107 Smooth, Blaze, Possum Dough
 ## 108 Smooth, Deep Fried Dog Roll, Fake Egg, Peanut butter
 ## 109 Whole egg, Fresh Rabbit
 ## 110 Blaze, Smooth, Possum Dough
 ## 111 Dehydrated Rabbit
 ## 112 Other (please specify), Deep Fried Dog Roll, Peanut butter
 ## 113 Possum Dough, Smooth, Other (please specify)
 ## 114 Salmon
 ## 115 Smooth, Fresh Rabbit
 ## 116 Fresh fruit
 ## 117 Fresh meat, Mayo
 ## 118 Mayo, Smooth, Blaze
 ## 119 Other (please specify), Smooth
 ## 120 Peanut butter, Fresh Rabbit, Salmon
 ## 121 Smooth, Deep Fried Dog Roll, Good Nature Meat Lovers
 ## 122 Terracotta Lures
 ## 123 Whole egg, Other (please specify)
 ## 124 Deep Fried Dog Roll, Fake Egg, Fresh Rabbit, Peanut butter
 ## 125 Deep Fried Dog Roll, Good Nature Chocolate, Peanut butter
 ## 126 Deep Fried Dog Roll, Other (please specify), Peanut butter
 ## 127 Dehydrated Rabbit, Lure-it Salmon Spray, Whole egg
 ## 128 Fresh meat, Whole egg
 ## 129 Fresh Rabbit, Peanut butter, Salmon
 ## 130 Good Nature Meat Lovers, Fake Egg, Deep Fried Dog Roll
 ## 131 Good Nature Meat Lovers, Mayo
 ## 132 Lure-it Salmon Spray
 ## 133 Mayo, Peanut butter, Fresh Rabbit
 ## 134 Peanut butter, Dehydrated Rabbit
 ## 135 Peanut butter, Fresh Rabbit, Fake Egg
 ## 136 Peanut butter, Salmon oil, Fresh Rabbit
 ## 137 Smooth, Deep Fried Dog Roll, Good Nature Meat Lovers, Peanut butter
 ## 138 Smooth, NZAT Lure - Original
 ## 139 Smooth, Possum Dough, Mayo
 ## 140 Blaze, Peanut butter
 ## 141 Deep Fried Dog Roll, Fake Egg, Good Nature Meat Lovers
 ## 142 Fake Egg, Possum Dough, Peanut butter
 ## 143 Fresh Possum, Peanut butter
 ## 144 Fresh Rabbit, Mayo, Peanut butter
 ## 145 Fresh Rabbit, Smooth
 ## 146 Good Nature Meat Lovers, Fresh Rabbit
 ## 147 Good Nature Meat Lovers, Possum Dough
 ## 148 Peanut butter, Blaze, Fake Egg
 ## 149 Peanut butter, Deep Fried Dog Roll, Fake Egg, Good Nature Meat Lovers
 ## 150 Peanut butter, Other (please specify), Good Nature Meat Lovers
 ## 151 PoaUku, Fresh Rabbit
 ## 152 Smooth, Good Nature Meat Lovers

153 Smooth, Terracotta Lures
 ## 154 Blaze, John.D mayo #1, NZAT Lure - Original
 ## 155 Dehydrated Rabbit, Peanut butter
 ## 156 Fake Egg
 ## 157 Fake Egg, Deep Fried Dog Roll, Good Nature Meat Lovers
 ## 158 Good Nature Chocolate
 ## 159 Lure, Possum Dough
 ## 160 Mayo, Blaze, Smooth
 ## 161 Mayo, NZAT Lure - Original
 ## 162 Mayo, Smooth, Possum Dough
 ## 163 Other (please specify), Peanut butter, Deep Fried Dog Roll
 ## 164 Peanut butter, Deep Fried Dog Roll, Fake Egg, Lure-it Salmon Spray
 ## 165 Peanut butter, Mayo, Fresh Rabbit
 ## 166 Possum Dough, Blaze, Smooth
 ## 167 Possum Dough, Fresh meat
 ## 168 Smooth, Deep Fried Dog Roll, Peanut butter, Good Nature Meat Lovers
 ## 169 Smooth, Fresh Rabbit, Peanut butter
 ## 170 Blaze, Deep Fried Dog Roll, Fake Egg, Good Nature Meat Lovers
 ## 171 Blaze, Deep Fried Dog Roll, Peanut butter
 ## 172 Deep Fried Dog Roll, Good Nature Meat Lovers, Peanut butter, Other (please specify)
 ## 173 Deep Fried Dog Roll, Good Nature Meat Lovers, Peanut butter, Smooth
 ## 174 Dehydrated Rabbit, Goodnature Cinnamon pre feed
 ## 175 Fake Egg, Fresh Rabbit
 ## 176 Fresh meat, Smooth, Peanut butter
 ## 177 Fresh Rabbit, Peanut butter, Fake Egg
 ## 178 Good Nature Meat Lovers, Deep Fried Dog Roll, Blaze
 ## 179 Good Nature Meat Lovers, Deep Fried Dog Roll, Fake Egg, Peanut butter
 ## 180 Goodnature Cinnamon pre feed, Whole egg, Peanut butter
 ## 181 NZAT Lure - Original, Good Nature Meat Lovers
 ## 182 NZAT Lure - Original, Mayo
 ## 183 Other (please specify), Salted meat
 ## 184 Peanut butter, Deep Fried Dog Roll, Fake Egg, Fresh Rabbit
 ## 185 Peanut butter, Fake Egg, Fresh Rabbit
 ## 186 Peanut butter, Fresh Rabbit, Salmon oil
 ## 187 Peanut butter, Good Nature Chocolate, Deep Fried Dog Roll
 ## 188 Peanut butter, Good Nature Meat Lovers, Terracotta Lures
 ## 189 Peanut butter, Lure-it Salmon Spray
 ## 190 Possum Dough, Fresh Rabbit, Peanut butter
 ## 191 Possum Dough, Mayo, Smooth
 ## 192 Possum Dough, Peanut butter, Deep Fried Dog Roll
 ## 193 Salmon oil, Peanut butter, Fresh Rabbit
 ## 194 Smooth, Other (please specify)
 ## 195 Smooth, Peanut butter, Fresh Rabbit
 ## 196 Blaze
 ## 197 Blaze, NZAT Lure - Original, Smooth
 ## 198 Blaze, Smooth, Mayo
 ## 199 Deep Fried Dog Roll, Fake Egg, Lure-it Salmon Spray, Peanut butter
 ## 200 Deep Fried Dog Roll, Fake Egg, Peanut butter, Good Nature Meat Lovers
 ## 201 Deep Fried Dog Roll, Fake Egg, Salmon
 ## 202 Deep Fried Dog Roll, Fresh meat, Peanut butter
 ## 203 Deep Fried Dog Roll, Fresh Rabbit
 ## 204 Deep Fried Dog Roll, Good Nature Meat Lovers, Blaze
 ## 205 Deep Fried Dog Roll, Good Nature Meat Lovers, Peanut butter, Fake Egg
 ## 206 Deep Fried Dog Roll, Lure-it Salmon Spray

207 Deep Fried Dog Roll, Peanut butter, Blaze
 ## 208 Dehydrated Rabbit, Goodnature Nut Butter
 ## 209 Fake Egg, Deep Fried Dog Roll, Good Nature Meat Lovers, Peanut butter
 ## 210 Fake Egg, Good Nature Meat Lovers, Deep Fried Dog Roll
 ## 211 Fake Egg, Peanut butter
 ## 212 Fake Egg, Possum Dough
 ## 213 Fresh meat, Other (please specify)
 ## 214 Fresh Possum
 ## 215 Fresh Rabbit, Mayo, Peanut butter, Smooth
 ## 216 Fresh Rabbit, Peanut butter, Mayo, Lure-it Salmon Spray
 ## 217 Fresh Rabbit, Salmon
 ## 218 Fresh Rabbit, Salmon, Peanut butter
 ## 219 Fresh Rabbit, Whole egg
 ## 220 Good Nature Chocolate, Deep Fried Dog Roll, Peanut butter
 ## 221 Good Nature Meat Lovers, Blaze, Deep Fried Dog Roll, Fake Egg
 ## 222 Good Nature Meat Lovers, Deep Fried Dog Roll, Mayo, Blaze
 ## 223 Good Nature Meat Lovers, NZAT Lure - Original
 ## 224 Goodnature Cinnamon pre feed, Deep Fried Dog Roll, Whole egg
 ## 225 John.D mayo #1
 ## 226 Lure-it Salmon Spray, Mayo
 ## 227 Lure-it Salmon Spray, Possum Dough, Smooth
 ## 228 Mayo, Deep Fried Dog Roll, Peanut butter
 ## 229 Mayo, Fake Egg, Salmon, Peanut butter
 ## 230 Mayo, Good Nature Meat Lovers
 ## 231 Mayo, Other (please specify)
 ## 232 Mayo, Peanut butter, Deep Fried Dog Roll
 ## 233 Mayo, Peanut butter, Lure-it Salmon Spray, Fresh Rabbit
 ## 234 Mayo, Peanut butter, Smooth
 ## 235 Mayo, Smooth, Fresh Rabbit
 ## 236 Other (please specify), Good Nature Meat Lovers
 ## 237 Other (please specify), Possum Dough
 ## 238 Peanut butter, Deep Fried Dog Roll, Good Nature Chocolate
 ## 239 Peanut butter, Deep Fried Dog Roll, Smooth
 ## 240 Peanut butter, Deep Fried Dog Roll, Whole egg
 ## 241 Peanut butter, Fresh Rabbit, Smooth
 ## 242 Peanut butter, Possum Dough, Fake Egg
 ## 243 Peanut butter, Salmon, Good Nature Meat Lovers
 ## 244 Peanut butter, Whole egg, Fresh meat
 ## 245 Possum Dough, Deep Fried Dog Roll, Fake Egg, Good Nature Meat Lovers
 ## 246 Possum Dough, Ferafeed Paste
 ## 247 Possum Dough, Fresh meat, Peanut butter
 ## 248 Possum Dough, Good Nature Meat Lovers
 ## 249 Possum Dough, Smooth, Deep Fried Dog Roll
 ## 250 Possum Dough, Smooth, Terracotta Lures
 ## 251 Possum Dough, Terracotta Lures
 ## 252 Rat and Possum Lure
 ## 253 Salmon, Good Nature Meat Lovers, Peanut butter
 ## 254 Salted meat, Other (please specify)
 ## 255 Smooth, Blaze, Mayo
 ## 256 Smooth, Deep Fried Dog Roll, Fake Egg
 ## 257 Smooth, Good Nature Meat Lovers, Deep Fried Dog Roll, Peanut butter
 ## 258 Smooth, Lure-it Salmon Spray, Peanut butter, Other (please specify)
 ## 259 Smooth, Peanut butter, Deep Fried Dog Roll
 ## 260 Smooth, Peanut butter, Deep Fried Dog Roll, Good Nature Meat Lovers

261 Whole egg, Peanut butter
 ## 262 Blaze, Deep Fried Dog Roll, Fake Egg
 ## 263 Blaze, Deep Fried Dog Roll, Good Nature Meat Lovers
 ## 264 Blaze, Deep Fried Dog Roll, Peanut butter, Good Nature Meat Lovers
 ## 265 Blaze, Deep Fried Dog Roll, Smooth
 ## 266 Blaze, Good Nature Meat Lovers, Peanut butter
 ## 267 Blaze, Good Nature Meat Lovers, Possum Dough, Smooth
 ## 268 Blaze, Mayo, Peanut butter
 ## 269 Blaze, Peanut butter, Good Nature Meat Lovers, Deep Fried Dog Roll
 ## 270 Blaze, Possum Dough, Ferafeed Paste
 ## 271 Blaze, Possum Dough, Mayo, Lure-it Salmon Spray
 ## 272 Deep Fried Dog Roll, Blaze, Peanut butter
 ## 273 Deep Fried Dog Roll, Fake Egg, Fresh meat, Peanut butter
 ## 274 Deep Fried Dog Roll, Fake Egg, Fresh Rabbit
 ## 275 Deep Fried Dog Roll, Fake Egg, Peanut butter, Blaze
 ## 276 Deep Fried Dog Roll, Fake Egg, Peanut butter, Lure-it Salmon Spray
 ## 277 Deep Fried Dog Roll, Fake Egg, Smooth
 ## 278 Deep Fried Dog Roll, Good Nature Chocolate
 ## 279 Deep Fried Dog Roll, Good Nature Chocolate, Possum Dough
 ## 280 Deep Fried Dog Roll, Good Nature Meat Lovers, Mayo
 ## 281 Deep Fried Dog Roll, Good Nature Meat Lovers, Peanut butter, Blaze
 ## 282 Deep Fried Dog Roll, Goodnature Cinnamon pre feed, Peanut butter, Whole egg
 ## 283 Deep Fried Dog Roll, NZAT Lure - Original
 ## 284 Deep Fried Dog Roll, NZAT Lure - Original, Blaze
 ## 285 Deep Fried Dog Roll, Other (please specify), Peanut butter, Whole egg
 ## 286 Deep Fried Dog Roll, Peanut butter, Fake Egg, Good Nature Meat Lovers
 ## 287 Deep Fried Dog Roll, Peanut butter, Fresh Rabbit
 ## 288 Deep Fried Dog Roll, Peanut butter, Lure-it Salmon Spray
 ## 289 Deep Fried Dog Roll, Possum Dough, Smooth
 ## 290 Deep Fried Dog Roll, Smooth, Possum Dough
 ## 291 Deep Fried Dog Roll, Terracotta Lures
 ## 292 Fake Egg, Deep Fried Dog Roll, Blaze, Peanut butter
 ## 293 Fake Egg, Deep Fried Dog Roll, Fresh Rabbit, Lure-it Salmon Spray
 ## 294 Fake Egg, Deep Fried Dog Roll, Peanut butter, Fresh meat
 ## 295 Fake Egg, Deep Fried Dog Roll, Peanut butter, Salmon
 ## 296 Fake Egg, Deep Fried Dog Roll, Salmon, Peanut butter
 ## 297 Fake Egg, Fresh Rabbit, Deep Fried Dog Roll
 ## 298 Fake Egg, Fresh Rabbit, Good Nature Meat Lovers
 ## 299 Fake Egg, Fresh Rabbit, Peanut butter
 ## 300 Fake Egg, Fresh Rabbit, Smooth
 ## 301 Fake Egg, Good Nature Meat Lovers
 ## 302 Fake Egg, Possum Dough, Smooth
 ## 303 Fake Egg, Salmon, Peanut butter, Deep Fried Dog Roll
 ## 304 Ferafeed Paste, Possum Dough, NZAT Lure - Original
 ## 305 Ferafeed Paste, Possum Dough, Peanut butter
 ## 306 Fresh meat, Possum Dough
 ## 307 Fresh Rabbit, Cats Goodnature Stoat Lure, Peanut butter
 ## 308 Fresh Rabbit, Deep Fried Dog Roll
 ## 309 Fresh Rabbit, Deep Fried Dog Roll, Fake Egg
 ## 310 Fresh Rabbit, Deep Fried Dog Roll, Peanut butter
 ## 311 Fresh Rabbit, Good Nature Meat Lovers
 ## 312 Fresh Rabbit, Mayo
 ## 313 Fresh Rabbit, NZAT Lure - Original
 ## 314 Fresh Rabbit, Peanut butter, Lure-it Salmon Spray

315 Fresh Rabbit, Peanut butter, Mayo
 ## 316 Fresh Rabbit, Possum Dough, Peanut butter
 ## 317 Fresh Rabbit, Smooth, Peanut butter
 ## 318 Golf ball
 ## 319 Good Nature Chocolate, Peanut butter, Deep Fried Dog Roll
 ## 320 Good Nature Meat Lovers, Blaze, Peanut butter
 ## 321 Good Nature Meat Lovers, Deep Fried Dog Roll, Blaze, Mayo
 ## 322 Good Nature Meat Lovers, Deep Fried Dog Roll, Peanut butter, Smooth
 ## 323 Good Nature Meat Lovers, Fake Egg, Fresh Rabbit
 ## 324 Good Nature Meat Lovers, Fresh Rabbit, Fake Egg
 ## 325 Good Nature Meat Lovers, NZAT Lure - Original, Fake Egg, Fresh Rabbit
 ## 326 Good Nature Meat Lovers, Other (please specify), Peanut butter
 ## 327 Good Nature Meat Lovers, Smooth
 ## 328 Good Nature Meat Lovers, Smooth, Fresh Rabbit
 ## 329 Good Nature Meat Lovers, Terracotta Lures
 ## 330 Good Nature Meat Lovers, Terracotta Lures, Smooth
 ## 331 Lure-it Salmon Spray, Deep Fried Dog Roll
 ## 332 Lure-it Salmon Spray, Fresh Rabbit, Mayo
 ## 333 Lure-it Salmon Spray, Peanut butter, Deep Fried Dog Roll
 ## 334 Lure-it Salmon Spray, Possum Dough
 ## 335 Lure, Smooth
 ## 336 Mayo, Fresh meat, Peanut butter
 ## 337 Mayo, Fresh Rabbit
 ## 338 Mayo, Fresh Rabbit, Peanut butter, Smooth
 ## 339 Mayo, Lure-it Salmon Spray
 ## 340 Mayo, Lure-it Salmon Spray, Possum Dough
 ## 341 Mayo, Other (please specify), Lure-it Salmon Spray
 ## 342 Mayo, Possum Dough, Lure-it Salmon Spray
 ## 343 Mayo, Salmon, Peanut butter
 ## 344 Mayo, Salmon, Peanut butter, Lure-it Salmon Spray
 ## 345 Mayo, Smooth, Fresh Rabbit, Peanut butter
 ## 346 Mayo, Whole egg, Deep Fried Dog Roll, Blaze
 ## 347 None, Terracotta Lures
 ## 348 NZAT Lure - Original, Smooth, Blaze
 ## 349 Other (please specify), Fresh meat
 ## 350 Other (please specify), Fresh Rabbit
 ## 351 Other (please specify), Good Nature Meat Lovers, Peanut butter
 ## 352 Other (please specify), Peanut butter, Good Nature Meat Lovers
 ## 353 Peanut butter, Blaze, Mayo, Smooth
 ## 354 Peanut butter, Blaze, Possum Dough, Smooth
 ## 355 Peanut butter, Deep Fried Dog Roll, Fresh meat
 ## 356 Peanut butter, Deep Fried Dog Roll, Fresh meat, Fake Egg
 ## 357 Peanut butter, Deep Fried Dog Roll, Fresh Rabbit, Fake Egg
 ## 358 Peanut butter, Deep Fried Dog Roll, Possum Dough
 ## 359 Peanut butter, Dehydrated Rabbit, Goodnature Cinnamon pre feed
 ## 360 Peanut butter, Fake Egg
 ## 361 Peanut butter, Fake Egg, Deep Fried Dog Roll, Dehydrated Rabbit
 ## 362 Peanut butter, Fake Egg, Dehydrated Rabbit, Good Nature Meat Lovers
 ## 363 Peanut butter, Fake Egg, Possum Dough
 ## 364 Peanut butter, Fake Egg, Salmon, Deep Fried Dog Roll
 ## 365 Peanut butter, Fresh fruit
 ## 366 Peanut butter, Fresh meat, Golf ball
 ## 367 Peanut butter, Fresh Possum
 ## 368 Peanut butter, Fresh Rabbit, Lure-it Salmon Spray

369 Peanut butter, Fresh Rabbit, Mayo
 ## 370 Peanut butter, Fresh Rabbit, Other (please specify)
 ## 371 Peanut butter, Good Nature Meat Lovers, Other (please specify)
 ## 372 Peanut butter, Mayo
 ## 373 Peanut butter, PoaUku
 ## 374 Peanut butter, Possum Dough, Other (please specify)
 ## 375 Peanut butter, Salmon, Fresh meat
 ## 376 Peanut butter, Salted Possum
 ## 377 Peanut butter, Smooth, Deep Fried Dog Roll
 ## 378 Peanut butter, Smooth, Goodnature Nut Butter
 ## 379 Peanut butter, Whole egg, Fresh Rabbit
 ## 380 Possum Dough, Deep Fried Dog Roll, Good Nature Meat Lovers
 ## 381 Possum Dough, Deep Fried Dog Roll, Good Nature Meat Lovers, Peanut butter
 ## 382 Possum Dough, Fake Egg, Deep Fried Dog Roll
 ## 383 Possum Dough, Lure
 ## 384 Possum Dough, Lure-it Salmon Spray, Blaze
 ## 385 Possum Dough, Lure-it Salmon Spray, Smooth
 ## 386 Possum Dough, Lure-it Salmon Spray, Smooth, Mayo
 ## 387 Possum Dough, Lure, Smooth
 ## 388 Possum Dough, NZAT Lure - Original
 ## 389 Possum Dough, Other (please specify), Mayo
 ## 390 Possum Dough, Peanut butter, Ferafeed Paste
 ## 391 Possum Dough, Peanut butter, Fresh Rabbit
 ## 392 Possum Dough, Peanut butter, Good Nature Meat Lovers
 ## 393 Possum Dough, Peanut butter, Mayo
 ## 394 Possum Dough, Salmon
 ## 395 Possum Dough, Smooth, Mayo
 ## 396 Salmon, Peanut butter, Mayo
 ## 397 Salmon, Possum Dough
 ## 398 Salmon, Possum Dough, Smooth
 ## 399 Salmon, Smooth, Mayo, Lure-it Salmon Spray
 ## 400 Salted meat, Fake Egg, Deep Fried Dog Roll
 ## 401 Smooth, Blaze, Deep Fried Dog Roll, Fake Egg, Good Nature Meat Lovers, Peanut butter
 ## 402 Smooth, Deep Fried Dog Roll, Mayo
 ## 403 Smooth, Dehydrated Rabbit, Good Nature Meat Lovers, Peanut butter
 ## 404 Smooth, Fake Egg, Peanut butter, Deep Fried Dog Roll
 ## 405 Smooth, Fresh meat
 ## 406 Smooth, Fresh Rabbit, Peanut butter, Salmon
 ## 407 Smooth, Good Nature Meat Lovers, Deep Fried Dog Roll
 ## 408 Smooth, Good Nature Meat Lovers, Peanut butter, Deep Fried Dog Roll
 ## 409 Smooth, Lure-it Salmon Spray
 ## 410 Smooth, Lure, Peanut butter
 ## 411 Smooth, Mayo, Blaze
 ## 412 Smooth, Mayo, Lure-it Salmon Spray, Peanut butter, Salmon
 ## 413 Smooth, Peanut butter, Deep Fried Dog Roll, Fake Egg
 ## 414 Smooth, Peanut butter, Fake Egg, Deep Fried Dog Roll
 ## 415 Smooth, Salmon
 ## 416 Smooth, Terracotta Lures, Deep Fried Dog Roll, Peanut butter
 ## 417 Terracotta Lures, Deep Fried Dog Roll, Peanut butter
 ## 418 Terracotta Lures, Peanut butter
 ## 419 Terracotta Lures, Possum Dough
 ## 420 Terracotta Lures, Smooth
 ## 421 Terracotta Lures, Smooth, Good Nature Meat Lovers, Peanut butter, Deep Fried Dog Roll
 ## 422 Tinned Sardines

## 423	Whole egg, Fresh Rabbit, Possum Dough
## 424	Whole egg, Fresh Rabbit, Smooth, Good Nature Meat Lovers
## 425	Whole egg, Peanut butter, Fresh Rabbit
## 426	Whole egg, Smooth, Other (please specify), Ferafeed Paste
##	Freq
## 1	8058
## 2	5059
## 3	3327
## 4	721
## 5	693
## 6	659
## 7	623
## 8	607
## 9	480
## 10	428
## 11	398
## 12	259
## 13	245
## 14	166
## 15	158
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## 17	143
## 18	131
## 19	123
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```
# filter to only single bait records (bait type doesn't contain commas)
single_bait <- subset(neat_data_r, !grepl(",", BaitType))
tally(~BaitType, data=single_bait)
```

```
## BaitType
##           Blaze           Deep Fried Dog Roll
##           2           259
##   Dehydrated Rabbit           Fake Egg
##           8           4
##           Fresh fruit           Fresh meat
##           7           143
##           Fresh Possum           Fresh Rabbit
##           2           398
##           Golf ball           Good Nature Chocolate
##           1           4
##   Good Nature Meat Lovers Goodnature Cinnamon pre feed
##           123           11
##           John.D mayo #1           Lure
##           2           11
##           Lure-it Salmon Spray           Mayo
##           6           693
##           None           NZAT Lure - Original
##           8058           34
##   Other (please specify)           Peanut butter
##           58           5059
##           PoaUku           Possum Dough
##           16           3327
##           Rat and Possum Lure           Salmon
##           2           8
##           Salted meat           Salted Rabbit
##           13           158
##           Smooth           Terracotta Lures
##           428           7
##           Tinned Sardines           Whole egg
##           1           14
```

```
# 30 single bait types (including none and other)
```