Reformat USFWS Bat Reporting Form

# Install required packages

install.packages(readxl)

install.packages(xlsx)

install.packages(dplyr)

install.packages(stringr)

install.packages(stringi)

# Load required packages

library(readxl) library(xlsx) library(dplyr) library(stringr) library(stringi)

# Read in “CAPTURE\_SITE\_INFO” workbook and rename as “site.data”

# (user must insert the filepath on their local machine in the ““)

site.data<-read\_excel(“C:/Users/danesmith/Desktop/TO DELETE/SSA Capture Records/NJ-ENSP\_2015-2019\_USFWSBatReportForm.xlsx”,sheet=2)

# Read in “CAPTURE\_DATA” workbook and rename as capture.data

# (user must insert the filepath on their local machine in the ““)

capture.data<-read\_excel(“C:/Users/danesmith/Desktop/TO DELETE/SSA Capture Records/NJ-ENSP\_2015-2019\_USFWSBatReportForm.xlsx”,sheet=3,skip=2)

# Rename column headers in site.data

colnames(site.data)<-c(“Latitude”,“Longitude”,“Accuracy”,“Month”,“Day”,“Year”,“Start.Time”,“End.Time”,“Project”,“Location.Name”, “State”,“County”,“Survey.Type”,“Number.Nets”,“Net.Area”,“Feature.Surveyed”,“Permittee”,“Permit.Number”,“Contact”,“Comments”)

# Remove blank first row from site.data

site.data<-site.data[-1,]

# Designate site.data as R dataframe

site.data<-data.frame(site.data)

# Remove extra characters from “Start Time” and “End Time” columns in site.data

{str\_sub(site.data$Start.Time,1,11)<-"" str\_sub(site.data$End.Time,1,11)<-““}

# Create new columns in site.data needed to create “Site.ID” column

{site.data$dash<-"-" site.data$slash<-“/” site.data$site<-"site" site.data$space<-” “}

# Create “Site.ID” column in site.data. This column contains concatenated fields including Project Name,

# “Site Name”, “Month”, “Day”, “Year”, and “Survey Type.” This field will be used to join site.data and capture.data

site.data$Site.ID<-paste(site.data$Project,site.data$space,site.data$site,site.data$space,site.data$Location.Name, site.data$space,site.data$Month,site.data$slash,site.data$Day,site.data$slash,site.data$Year, site.data$dash,site.data$Survey.Type,sep=““)

# Create “date” column in site.data by concatenating “Month”, “Day”, “Year” columns

site.data$date<-paste(site.data$Month,site.data$slash,site.data$Day,site.data$slash,site.data$Year,sep=““) #,site.data$space,site.data$Start.Time,sep=”“)

# Check survey stop time and add a day to the end date if stop is after midnight

{site.data$End.Time\_2<-gsub(":","",site.data$End.Time) stri\_sub(site.data$End.Time\_2,5,6)<- “”

site.data = mutate(site.data, final\_stop = ifelse( End.Time\_2 >= 1600, # If above is true date, # Else
format(as.Date(date, format = ‘%m/%d/%Y’) + 1, ‘%m/%d/%Y’) ))

site.data = mutate(site.data, final\_stop = ifelse( is.na(final\_stop), date, final\_stop ))}

# Combine Date and Start/Stop Times into new columns

{site.data$start<-paste(site.data$date,site.data$Start.Time)site.data$end<-paste(site.data$final\_{s}top,site.data$End.Time)}

# Rename column headers in capture.data

colnames(capture.data)<-c(“Capture.Time”,“Species.Code”,“Age”,“Sex”,“Reproductive.Status”,“Scientific.Name”,“Age”, “Sex”,“Reproductive.Status”,“RFA”,“Ear.Length”,“Tragus.Length”,“Weight”,“Net.Height”, “Units”,“Sample”,“Wing.Score”,“New.Recapture”,“Band.Color”,“Band.Number”,“Band.Arm”, “Pit.Tag.Number”,“Radio.Frequency”,“Comments”,“Site.ID”,“ID.Check”)

# Designate capture.data as R dataframe

capture.data<-data.frame(capture.data)

# Remove extra characters from “Capture.Time” column of capture.data

str\_sub(capture.data$Capture.Time,1,11)<-“”

# Create new column in capture.data (“Net.Height.Meters”) to convert net height values from feet to meters

capture.data$Net.Height.Meters=ifelse(capture.data$“Units” == “ft”,capture.data$Net.Height\*0.3048,capture.data$Net.Height\*1)

# Round net height values to 2 digits

{capture.data$Net.Height.Meters<-format(round(capture.data$Net.Height.Meters, 2), nsmall = 2) capture.data$Weight<-as.numeric(capture.data$Weight) capture.data$Weight<-format(round(capture.data$Weight, 2), nsmall = 2)}

# Create “all.data” dataframe by joining site.data and capture.data on “Site.ID” column

all.data<-left\_join(capture.data,site.data,by=“Site.ID”)

# Create new “GRTS.Cell.ID” column in all.data

all.data$GRTS.Cell.ID<-“”

# Remove all instances of “None” from the data frame

all.data[] <- lapply(all.data, gsub, pattern = “None”, replacement = ““, fixed = TRUE)

# Remove commas from “Comments” column of all.data and create new list named “new.comments”

new.comments<-gsub(“,”,“;”,all.data$Comments.x)

# Create new dataframe (“nabat.template”) matching the NABat bulk upload template

nabat.template<-data.frame(all.data$GRTS.Cell.ID,all.data$Location.Name,all.data$Latitude,all.data$Longitude,all.data$Survey.Type,all.data$Species.Code,all.data$Age,all.data$Sex,all.data$Reproductive.Status.1,all.data$RFA,all.data$Weight,all.data$Net.Height.Meters,all.data$Sample,all.data$Wing.Score, all.data$New.Recapture,all.data$Band.Color,all.data$Band.Number,all.data$Band.Arm,all.data$Pit.Tag.Number,all.data$Radio.Frequency,all.data$Capture.Time,new.comments,all.data$start,all.data$end,all.data$Number.Nets, all.data$Net.Area,all.data$Feature.Surveyed,all.data$Permittee)

# Rename columns in nabat.template to match column headers in the NABat bulk upload template

colnames(nabat.template)<-c(“| GRTS Cell ID”,“Location Name”,“Latitude”,“Longitude”,“Type of Survey”,“Species”,“Age”,“Sex”,“Reproductive Status”, “Right Forearm Length”,“Mass (g)”,“Net Height (m)”,“Sample Type”,“Wing Score”,“Band”,“Band Color”, “Band Number”,“Band Arm”,“PIT Tag”,“Radio Frequency”,“Capture Time”,“Comments”,“Start Time”, “End Time”,“Effort”,“Total Net Area”,“Feature Sampled”,“Surveyor”)

#Remove any instances of NA in the dataframe nabat.template[] <- lapply(nabat.template, gsub, pattern = “NA”, replacement = ““, fixed = TRUE)

# Export nabat.template as CSV

# user must insert filepath where they wish to save the document in the ““. Filepath must end in the desired filename, including”.csv”

write.csv(nabat.template,“C:/Users/danesmith/DOI/GS-FORT-NABat - Documents/Outreach and Engagement/Capture Records/Reformatted Files/NJ-ENSP\_2015-2019\_USFWSBatReportForm\_DS.csv”, na=““, row.names=FALSE)