

Triatoma huehuetenanguensis localities

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Packages used

```
library(lattice)
library(permute)
library(vegan)

## This is vegan 2.4-4
library(MASS)
library(sp)
library(foreign)
library(grid)
library(maps)
library(ggplot2)
library(mapdata)
library(dismo)

## Loading required package: raster
##
## Attaching package: 'raster'
## The following objects are masked from 'package:MASS':
##   area, select
library(maptools)

## Checking rgeos availability: TRUE
library(plyr)

##
## Attaching package: 'plyr'
## The following object is masked from 'package:maps':
##   ozone
library(caper)

## Loading required package: ape
##
## Attaching package: 'ape'
## The following objects are masked from 'package:raster':
##   rotate, zoom
## Loading required package: mvtnorm
```

```

library(RColorBrewer)
library(GISTools)

## Loading required package: rgeos
## Warning: package 'rgeos' was built under R version 3.4.2
## rgeos version: 0.3-25, (SVN revision 555)
## GEOS runtime version: 3.6.1-CAPI-1.10.1 r0
## Linking to sp version: 1.2-5
## Polygon checking: TRUE
##
## Attaching package: 'GISTools'
## The following object is masked from 'package:maps':
## map.scale

```

Load file with location data. Longitude →x-axis, latitude → y axis

```
Tria_coords<-read.csv("map_X_phylogeny.csv", header=T)
```

Summarize data by locality

```

b<-ddply(Tria_coords,.Locality,summarize,Lon=mean(Lon),Lat=mean(Lat))
sp_aff<-b[c(1:4,6,9:28),]
types<-b[c(5,7,8),]

```

Plot the points and call the map with the countries, include the scale and country names

```

plot(types$Lon,types$Lat, xlab="",ylab="",xlim=c(-95, -85), ylim=c(10,23),col='red',cex=.8,pch=19)
map("worldHires",c("USA","Mexico","Guatemala", "Belize", "Honduras", "El Salvador", "Costa Rica", "Nicaragua"), col="grey")
points(sp_aff$Lon,sp_aff$Lat, xlab="",ylab="",xlim=c(-95, -85), ylim=c(10,23),col='green',cex=.8,pch=19)
points(types$Lon,types$Lat, xlab="",ylab="",xlim=c(-95, -85), ylim=c(10,23),col='red',cex=.8,pch=19)

maps::map.scale(-94, 22,ratio=FALSE, relwidth = .1,cex=0.5)
text(-90, 19, "Mexico", cex=0.7)
text(-90.5, 15.3, "Guatemala", cex=0.7)
text(-87.8, 16.9, "Belize", cex=0.7)
text(-89, 12.7, "El Salvador", cex=0.7)
text(-86.2, 15, "Honduras", cex=0.7)
text(-85.5, 13, "Nicaragua", cex=0.7)
north.arrow(xb=-94.5, yb=21.5, len=0.2, lab="N", cex=.7)

```

