**FOR CHOOSING POINTS**

getwd()

setwd("C:/Users/jensen/Desktop/mongolia/2019 interdisciplinary")

verts1=read.csv("LC1\_Hay2\_points\_real.csv")

verts <- verts1 %>% select("lat", "lon")

#convert to x,y grid coordinates

lat\_min=min(verts$lat)

lon\_min=min(verts$lon)

Y\_vec=(verts$lat-lat\_min)\*60

X\_vec=(verts$lon-lon\_min)\*38.326

plot(X\_vec,Y\_vec)

Y\_rand=runif(n=5, min = 0, max=max(Y\_vec))

X\_rand=runif(n=5, min = 0, max=max(X\_vec))

points(X\_rand,Y\_rand, col="red")

**FOR DIVERSITY ANALYSIS**

library(dplyr)

data <- read.csv("C:/Users/jensen/Desktop/mongolia/2019 interdisciplinary/SZ\_quadrats.csv")

View(data)

diversity <- data %>%

select(quadrat,square,species) %>%

#group\_by(quadrat) %>%

summarize(species\_count = n\_distinct(species))

rarefaction=matrix(nrow =10, ncol =10)

for (i in 1:10)

{

for (j in 1:10)

{

data\_subset <-filter(data, quadrat == i |quadrat == j)

diversity <- data\_subset %>%

select(quadrat,square,species) %>%

summarize(species\_count = n\_distinct(species))

rarefaction[i,j]=diversity$species\_count

}

}

Soilrandom=runif(n=5, min = 1, max=25)

diversity <- data %>%

select\_if(quadrat==2) %>%

#group\_by(quadrat) %>%

summarize(species\_count = n\_distinct(species))