

Software: Rarefaction

I grant permission to any individual or institution for use, copying, or redistribution of this code and associated documentation, provided that such code and documentation are not sold for profit and the following copyright notice is retained in the code and documentation:

Copyright (c) held by Erik Otárola-Castillo all Rights Reserved.

```
# Erik Otárola-Castillo October 2012
# Rarefaction method (Sanders 1968)
# q is the total number of species in a sample, i=1:q species
# n is the total number of organisms
# ni is the number of organisms in qi
# npr (nprime) is some arbitrary sample size
# qpr (q prime) is the expected number of species given a sample npr

# example
n<-10
ni<-c(2,3,2,2,1)
npr<-seq(1,10,by=1)

qpr<-numeric(length(npr))
for (i in 1:length(npr)){
  q<-NULL
  for(j in 1:length(ni)){
    qi<-1-(choose(n-ni[j],npr[i])/choose(n,npr[i]))
    q<-c(q,qi)
  }
  qpr[i]<-sum(q)
}

plot(npr,qpr,type="l",xlab="Sample Size",ylab="E[# Species]")
```