Adam Watson

Lab 5

**Will update this in the next days**

**Part 1**

1) > length(which(BivalveAbundance["Miocene",] != 0))

[1] 634

2) > max(BivalveAbundance["Pliocene",])/length(which(BivalveAbundance["Pliocene",] != 0))

[1] 0.7546816

3) > 1-sum(BrachiopodAbundance["Late Ordovician",]/length(which(BrachiopodAbundance["Late

Ordovician",]>0)))^2

[1] 0.9438304

4) > GetEntropy <-function(time){

+ Data <- 1-(sum(BivalveAbundance[time,])/length(which(BivalveAbundance[time,]!=0))^2)\*

+ log((sum(BivalveAbundance[time,])/length(which(BivalveAbundance[time,]!=0))^2))

+ print(Data)

+ }

> GetEntropy(“Late Cretaceous”)

[1] 1.21729 **Why is this not working?????**

5) > GetEntropy(“Paleocene)

[1] 1.141343 **Why is this not working???????**

6) > ~6%. An asteroid hit the earth

7) > ~7%. It is slightly better. With such a minimal change it dos not reflect change better than the other method.

**Part 2**

1) > specnumber(BivalveAbundance["Miocene",])

[1] 634

2) > diversity(BrachiopodAbundance, index = "simpson", MARGIN = 1, base = exp(1)) ["Late Ordovician"]

Late Ordovician

0.9784588

3) > diversity(BivalveAbundance["Late Cretaceous”,],”shannon”, MARGIN = 1, base = exp(1))

[1] 5.086512

4) > diversity(BivalveAbundance["Paleocene",], index = "shannon", MARGIN = 1, base = exp(1))

[1] 4.511063

**Part 3**

1)