# Centric Diatom Group Collapse

Small = 6.3-16.03 µm ESD

Large = 28.05-54.95 µmESD

## References for deciding on groupings:

Add Menden-Deuer & Lessard

Olenina et al. 2003: Re: a centric diatom: T. baltica varies considerably in diameter (20-100 μm). Factors for three size groups (small, medium and large) were calculated according to the common distribution of cell size

## Code

#centric diatoms

taxaCen <- subset(volbio\_all, select = c(samp\_ev, exp, rep, mag, grp\_sz, esd, counts\_per\_ml, bio\_per\_org\_pgC))

taxaCen$Group <- paste(taxaCen$grp\_sz, taxaCen$esd)

taxaCen <- filter(taxaCen, grepl('centric', Group))

taxaCen <- subset(taxaCen,counts\_per\_ml !=0)

taxaCen <- subset(taxaCen,select = c(samp\_ev, exp, rep, mag, Group, esd, counts\_per\_ml, bio\_per\_org\_pgC))

taxaCen$counts\_per\_ml<- formattable(taxaCen$counts\_per\_ml,format="f",digits=2)

taxaCen$bio\_per\_org\_pgC<- formattable(taxaCen$bio\_per\_org\_pgC,format="f",digits=2)

## 12/6/22 Look at the individual centric entries

centricLook <- subset(volbio\_all, select = c(samp\_ev, exp, rep, mag, grp\_sz, esd, counts\_per\_ml, vol\_per\_org\_um3, bio\_per\_org\_pgC)) %>% filter(grepl('centric', grp\_sz))

centricLook <- subset(centricLook, counts\_per\_ml !=0)

cenPlot <- subset(centricLook, select = c(esd,counts\_per\_ml)) %>% select(esd, totalCPM=counts\_per\_ml)

### Add up the counts per ml for each distinct centric diatom size/esd name but keep the esd and biomass columns

taxaCenLump <- group\_by(taxaCen, Group, esd, mag, bio\_per\_org\_pgC) %>%

summarise(totalCPM =sum(counts\_per\_ml)) %>%

summarise(totalBioM =sum(bio\_per\_org\_pgC))

### Make a dot plot of esd and counts

x <- CenPlot

p <- ggplot(x, aes(x=esd, totalCPM)) +

geom\_point(size=1, color="blue") +

scale\_x\_log10 (n.breaks=10) +

wimGraph()+

theme(axis.text.x = element\_text(angle=90, hjust =0.5, vjust = 0.2, size = 8))

p + ggtitle("Centric Diatoms by ESD")+

theme(plot.title = element\_text(size = 15))



|  |  |  |  |
| --- | --- | --- | --- |
| Centric Diatoms | | | |
| total mean  CPM | <15, 15-25, >25 µm esd size groups | < 16, >= 16 µm esd size groups | <12, 12-24, >24 µm esd size groups |
| small | 497.58 | 497.58 | 497.58 |
| medium | 52.51 |  | 52.51 |
| large | 391.69 | 444.20 | 391.69 |

List of ESD measurements

|  |  |  |  |
| --- | --- | --- | --- |
| **Group** | **esd** | **mag** | **totalBioM** |
| diatom centric 5.5 5.5 6.30 | 6.30 | 400x | 253.1 |
| diatom centric 9.5 9.5 10.87 | 10.87 | 400x | 1023.2 |
| diatom centric 14 14 16.03 | 16.03 | 400x | 1988.3 |
| diatom centric 24.5 24.5 28.05 | 28.05 | 100x | 11541.4 |
| diatom centric 32 32 36.63 | 36.63 | 100x | 899.2 |
| diatom centric 40 40 45.79 | 45.79 | 100x | 5367.3 |
| diatom centric 48 48 54.95 | 54.95 | 100x | 4530.6 |