# Pennate Diatom Group Collapse

Small = 3-10 µm ESD

Medium = 11-21.81 µmESD

Large = 22.58-160.46 µmESD

## References for deciding on groupings:

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

#pennate diatoms

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

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

taxaPen <- filter(taxaPen, grepl('pennate', Group))

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

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

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

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

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

pennateLook <- 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('pennate', grp\_sz))

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

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

### Make a dot plot of esd and counts

x <- penPlot

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("Pennate Diatoms by ESD")+

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



| **Pennate Diatoms** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| **<15, 15-25, >25 size groups** | | | **<10, 11-22, >22 size groups** | | **<12, 12-24, >24 size groups** | |
| **szGroup** | | **totalMnCPM** | **szGroup** | **totalMnCPM** | **szGroup** | **totalMnCPM** |
|  |  |  |  | |  | |
| **3** | small | 157.66 | small | 133.31 | small | 147.40 |
| **2** | medium | 60.22 | medium | 83.19 | medium | 70.43 |
| **1** | large | 17.00 | large | 18.37 | large | 17.04 |

List of ESD measurements

|  |  |
| --- | --- |
|  | **esd** |
| 1 | 3.11 |
| 2 | 3.63 |
| 3 | 3.91 |
| 4 | 4.16 |
| 5 | 4.58 |
| 6 | 4.76 |
| 7 | 4.93 |
| 8 | 5.45 |
| 9 | 5.65 |
| 10 | 6.21 |
| 11 | 6.46 |
| 12 | 6.60 |
| 13 | 7.27 |
| 14 | 7.83 |
| 15 | 8.32 |
| 16 | 8.55 |
| 17 | 9.16 |
| 18 | 9.52 |
| 19 | 9.86 |
| 20 | 9.93 |
| 21 | 11.04 |
| 22 | 11.54 |
| 23 | 12.44 |
| 24 | 12.93 |
| 25 | 13.03 |
| 26 | 13.21 |
| 27 | 13.47 |
| 28 | 13.74 |
| 29 | 13.91 |
| 30 | 14.23 |
| 31 | 14.46 |
| 32 | 14.54 |
| 33 | 15.12 |
| 34 | 15.30 |
| 35 | 15.66 |
| 36 | 15.72 |
| 37 | 15.76 |
| 38 | 16.29 |
| 39 | 16.64 |
| 40 | 16.87 |
| 41 | 16.97 |
| 42 | 18.04 |
| 43 | 18.32 |
| 44 | 18.64 |
| 45 | 19.43 |
| 46 | 19.73 |
| 47 | 20.52 |
| 48 | 21.81 |
| 49 | 22.58 |
| 50 | 22.96 |
| 51 | 23.08 |
| 52 | 23.63 |
| 53 | 24.00 |
| 54 | 24.86 |
| 55 | 25.01 |
| 56 | 25.27 |
| 57 | 26.04 |
| 58 | 26.42 |
| 59 | 27.81 |
| 60 | 29.07 |
| 61 | 30.24 |
| 62 | 31.32 |
| 63 | 31.51 |
| 64 | 32.27 |
| 65 | 32.77 |
| 66 | 33.28 |
| 67 | 34.18 |
| 68 | 35.56 |
| 69 | 38.10 |
| 70 | 39.62 |
| 71 | 40.66 |
| 72 | 42.77 |
| 73 | 56.04 |
| 74 | 60.48 |
| 75 | 78.92 |
| 76 | 160.46 |