# Flagellate Other Group Collapse

Small = 4.0 – 7.25 µm ESD

Medium = 10.08-17.60 µm ESD

Large = 20.00-40.00 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

## Note

This grouping includes the following organism Group designations:

* flagellate colonial
* flagellate euglenid
* flagellate in a cone
* flagellate other

And does NOT contain dinoflagellate peridinium and prorocentrum

## Code

#Flagellate Other

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

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

taxaFlagO <- filter(taxaFlagO, grepl('flagellate', Group))

taxaFlagO <- filter(taxaFlagO, !str\_detect(Group, "cryptomonas"))

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

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

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

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

### Look at the individual Flagellate entries

FlagOlook <- 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('cryptomonas', grp\_sz))

flagOlook <- filter(flagOlook, !str\_detect(grp\_sz, "cryptomonas"))

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

### Sum the counts per ml and biomass per organism for each distinct flagellate other size/esd name, separate data frames for each summing, then merge the data frames

taxaFlagOlumpC <- aggregate(counts\_per\_ml ~ Group,

data = taxaFlagO, FUN = sum, na.rm =TRUE)

taxaFlagOlumpB <- aggregate(bio\_per\_org\_pgC ~ Group,

data = taxaFlagO, FUN = sum, na.rm =TRUE)

taxaFlagOlump <- merge(taxaFlagOlumpC, taxaFlagOlumpB, by="Group")

taxaFlagOlump<- subset(taxaFlagOlump,

select = c(Group, esd.x, counts\_per\_ml, bio\_per\_org\_pgC))

colnames(taxaFlagOlump)[2] = "esd"

colnames(taxaFlagOlump)[3] = "totalCPM"

colnames(taxaFlagOlump)[4] = "totalBiomass”

### Make a dot plot of esd and counts

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

p <- ggplot(FlagOPlot, 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("Flagellate Other by ESD")+

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



|  |  |  |  |
| --- | --- | --- | --- |
| Flagellate Other | | | |
| total mean  CPM | <15, 15-25, >25 µm esd size groups | < 7.25, 7.25-18, >18 µm esd size groups | <12, 12-24, >24 µm esd size groups |
| small | 672.42 | 636.44 | 671.21 |
| medium | 2.35 | 36.06 | 3.56 |
| large | 2.74 | 5.00 | 2.74 |

List of ESD measurements

|  |  |  |  |
| --- | --- | --- | --- |
| **Group** | **esd** | **meanCPM** | **meanBPM** |
| flagellate in a cone 4 4 4.00 | 4.00 | 6.94 | 33.22 |
| flagellate other 3.67 5.5 4.20 | 4.20 | 507.24 | 2468.06 |
| flagellate in a cone 6 6 6.00 | 6.00 | 2.20 | 33.05 |
| flagellate other 6.33 9.5 7.25 | 7.25 | 120.06 | 2940.97 |
| flagellate other 8 16 10.08 | 10.08 | 1.84 | 122.80 |
| flagellate other 9 14 10.43 | 10.43 | 32.72 | 2327.75 |
| flagellate euglenid 8 20 10.86 | 10.86 | 0.21 | 19.01 |
| flagellate euglenid 8 32 12.70 | 12.70 | 0.09 | 12.79 |
| flagellate euglenid 8 40 13.68 | 13.68 | 0.92 | 145.20 |
| flagellate other 12 20 14.23 | 14.23 | 0.19 | 37.72 |
| flagellate colonial 16 16 16.00 | 16.00 | 0.09 | 25.45 |
| flagellate other 16 32 20.16 | 20.16 | 0.60 | 308.34 |
| flagellate euglenid 8 136 20.57 | 20.57 | 0.14 | 85.06 |
| flagellate euglenid 12 80 22.58 | 22.58 | 0.65 | 453.65 |
| flagellate euglenid 16 48 23.08 | 23.08 | 0.87 | 686.45 |
| flagellate other 24 32 26.42 | 26.42 | 1.87 | 1892.78 |
| flagellate euglenid 16 144 33.28 | 33.28 | 0.13 | 294.91 |
| flagellate euglenid 40 40 40.00 | 40.00 | 0.74 | 2551.03 |