# Unidentified Round Group Collapse

Small = 5.5-14.00µm ESD

Medium = 16.00-28.00 µm ESD

Large = 40.00-80.00 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

## Code

taxaUnRn <- subset(volbio\_all, select = c(samp\_ev, exp, rep, mag, Group, type, grp\_sz, esd, counts\_per\_ml, bio\_per\_vol\_pgc\_ml))

taxaUnRn$szesd <- paste(taxaUnRn$grp\_sz, taxaUnRn$esd)

taxaUnRn <- taxaUnRn <- filter(taxaUnRn, type=='round',Group=='unidentified')

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

taxaUnRn <- subset(taxaUnRn, = c(samp\_ev, exp, rep, mag, Group, type, esd, szesd counts\_per\_ml, bio\_per\_vol\_pgc\_ml))

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

taxaUnRn$bio\_per\_vol\_pgc\_ml<- formattable(taxaUnRn$bio\_per\_vol\_pgc\_ml, format="f",digits=2)

write\_xlsx(taxaUnRn, "data/TopTen/Unidentified/taxaUnRn.xlsx")

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

taxaUnRnlumpC <- aggregate(counts\_per\_ml ~ szesd +esd,

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

taxaUnRnlumpB <- aggregate(bio\_per\_vol\_pgc\_ml ~ szesd + esd,

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

taxaUnRnlump <- merge(taxaUnRnlumpC, taxaUnRnlumpB, by="szesd")

taxaUnRnlump<- subset(taxaUnRnlump,

select = c(szesd, esd.x, counts\_per\_ml, bio\_per\_vol\_pgc\_ml))

colnames(taxaUnRnlump)[1] = "Group"

colnames(taxaUnRnlump)[2] = "esd"

colnames(taxaUnRnlump)[3] = "totalCPM"

colnames(taxaUnRnlump)[4] = "totalBPM"

write\_xlsx(taxaUnRnlump, "data/TopTen/Unidentified/taxaUnRnlump.xlsx")

save(taxaUnRnlump, file = "data/TopTen/Unidentified/taxaUnRnlump.Rdata")

### Make a dot plot of esd and counts

UnRnPlot <- subset(taxaUnRn,

select = c(esd, totalCPM))

p <- ggplot(UnRnPlot, 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("Unidentified Round by ESD")+

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



|  |  |  |  |
| --- | --- | --- | --- |
| Unidentified Round | | | |
| total mean  CPM | <15, 15-25, >25 µm esd size groups | < 14, 14-28, >28 µm esd original size groups | <12, 12-24, >24 µm esd size groups |
| small | 754.88 | 732.54 | 735.54 |
| medium | 85.39 | 109.74 | 22.56 |
| large | 5.34 | 3.33 | 90.52 |

List of ESD measurements

|  |  |  |  |
| --- | --- | --- | --- |
| **Group** | **esd** | **totalCPM** | **totalBPM** |
| unidentified round 5.5 5.5 5.50 | 5.5 | 610.56 | 6417.67 |
| unidentified round 9.5 9.5 9.50 | 9.5 | 121.97 | 6477.79 |
| unidentified round 14 14 14.00 | 14 | 22.35 | 3818.37 |
| unidentified round 16 16 16.00 | 16 | 0.21 | 59.75 |
| unidentified round 24.5 24.5 24.50 | 24.5 | 85.18 | 65376.36 |
| unidentified round 28 28 28.00 | 28 | 2.01 | 2528.44 |
| unidentified round 40 40 40.00 | 40 | 2.06 | 6964.38 |
| unidentified round 48 48 48.00 | 48 | 0.80 | 4859.34 |
| unidentified round 56 56 56.00 | 56 | 0.27 | 2549.38 |
| unidentified round 64 64 64.00 | 64 | 0.16 | 2263.82 |
| unidentified round 80 80 80.00 | 80 | 0.04 | 1180.93 |

List of ESD measurements

|  |  |  |  |
| --- | --- | --- | --- |
| **Group** | **esd** | **totalCPM** | **totalBiomass** |
| flagellate in a cone 4 4 4.00 | 4.00 | 6.94 | 34.13 |
| flagellate other 3.67 5.5 4.20 | 4.20 | 507.24 | 283.71 |
| flagellate in a cone 6 6 6.00 | 6.00 | 2.20 | 30.08 |
| flagellate other 6.33 9.5 7.25 | 7.25 | 120.06 | 1436.42 |
| flagellate other 8 16 10.08 | 10.08 | 1.84 | 133.58 |
| flagellate other 9 14 10.43 | 10.43 | 32.72 | 2264.12 |
| flagellate euglenid 8 20 10.86 | 10.86 | 0.21 | 91.02 |
| flagellate euglenid 8 32 12.70 | 12.70 | 0.09 | 145.06 |
| flagellate euglenid 8 40 13.68 | 13.68 | 0.92 | 156.99 |
| flagellate other 12 20 14.23 | 14.23 | 0.19 | 194.92 |
| dinoflagellate peridinium 16 16 16.00 | 16.00 | 1.00 | 1098.56 |
| flagellate colonial 16 16 16.00 | 16.00 | 0.09 | 580.25 |
| dinoflagellate prorocentrum 17.6 17.6 17.60 | 17.60 | 0.85 | 324.52 |
| dinoflagellate peridinium 20 20 20.00 | 20.00 | 1.27 | 1428.90 |
| flagellate other 16 32 20.16 | 20.16 | 0.60 | 2134.71 |
| flagellate euglenid 8 136 20.57 | 20.57 | 0.14 | 1177.63 |
| dinoflagellate peridinium 20 24 21.25 | 21.25 | 0.78 | 1130.77 |
| flagellate euglenid 12 80 22.58 | 22.58 | 0.65 | 2156.86 |
| flagellate euglenid 16 48 23.08 | 23.08 | 0.87 | 3188.45 |
| dinoflagellate peridinium 24 24 24.00 | 24.00 | 3.32 | 8241.13 |
| flagellate other 24 32 26.42 | 26.42 | 1.87 | 3213.28 |
| flagellate euglenid 16 144 33.28 | 33.28 | 0.13 | 2283.61 |
| flagellate euglenid 40 40 40.00 | 40.00 | 0.74 | 6989.27 |