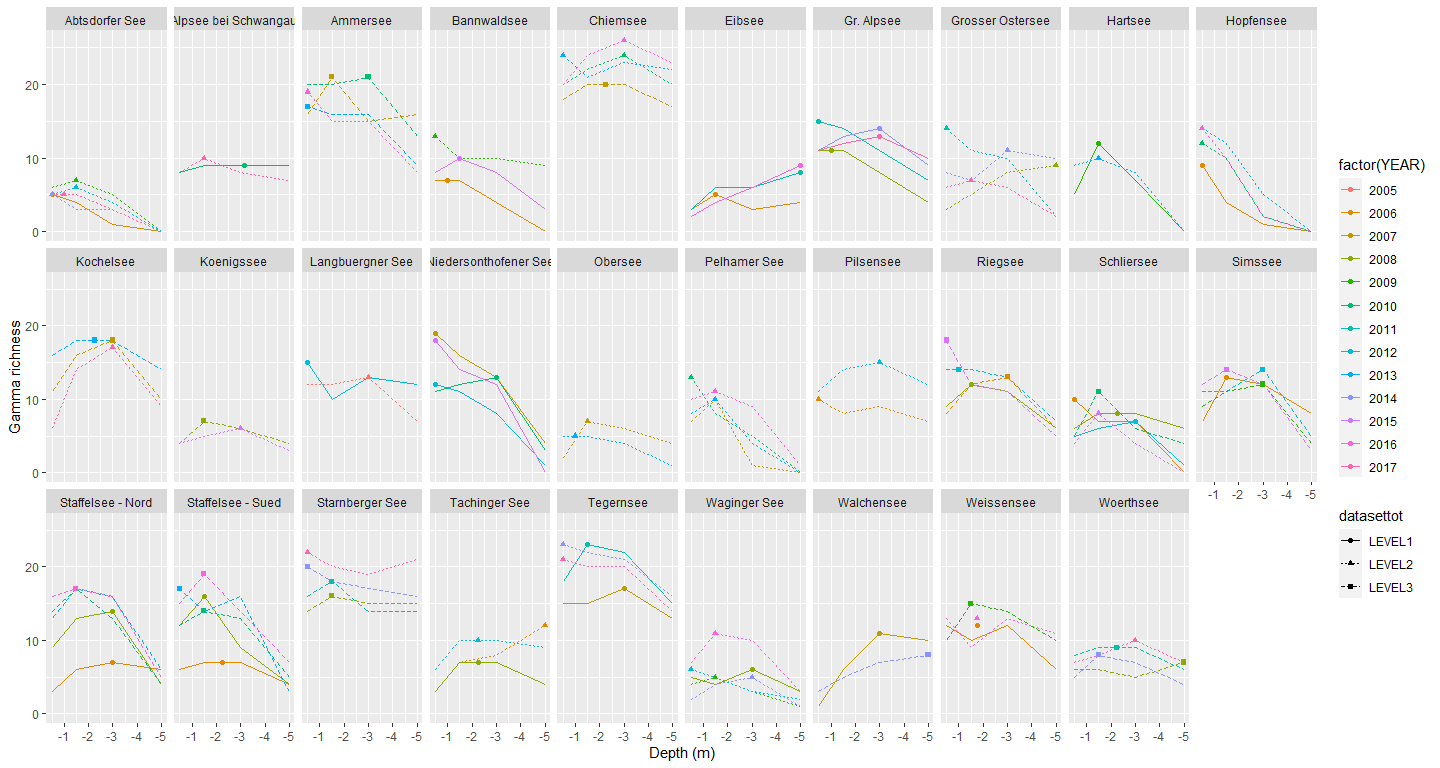
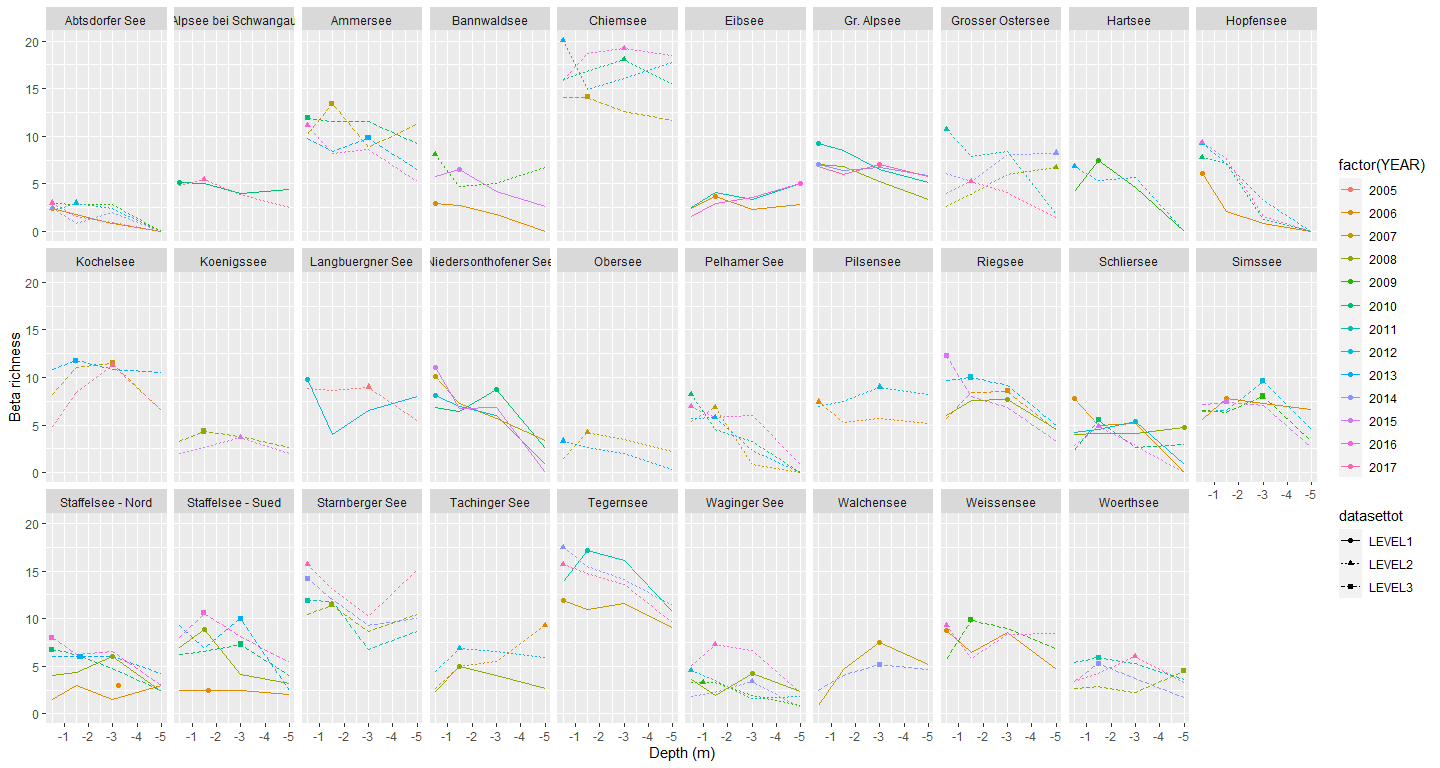
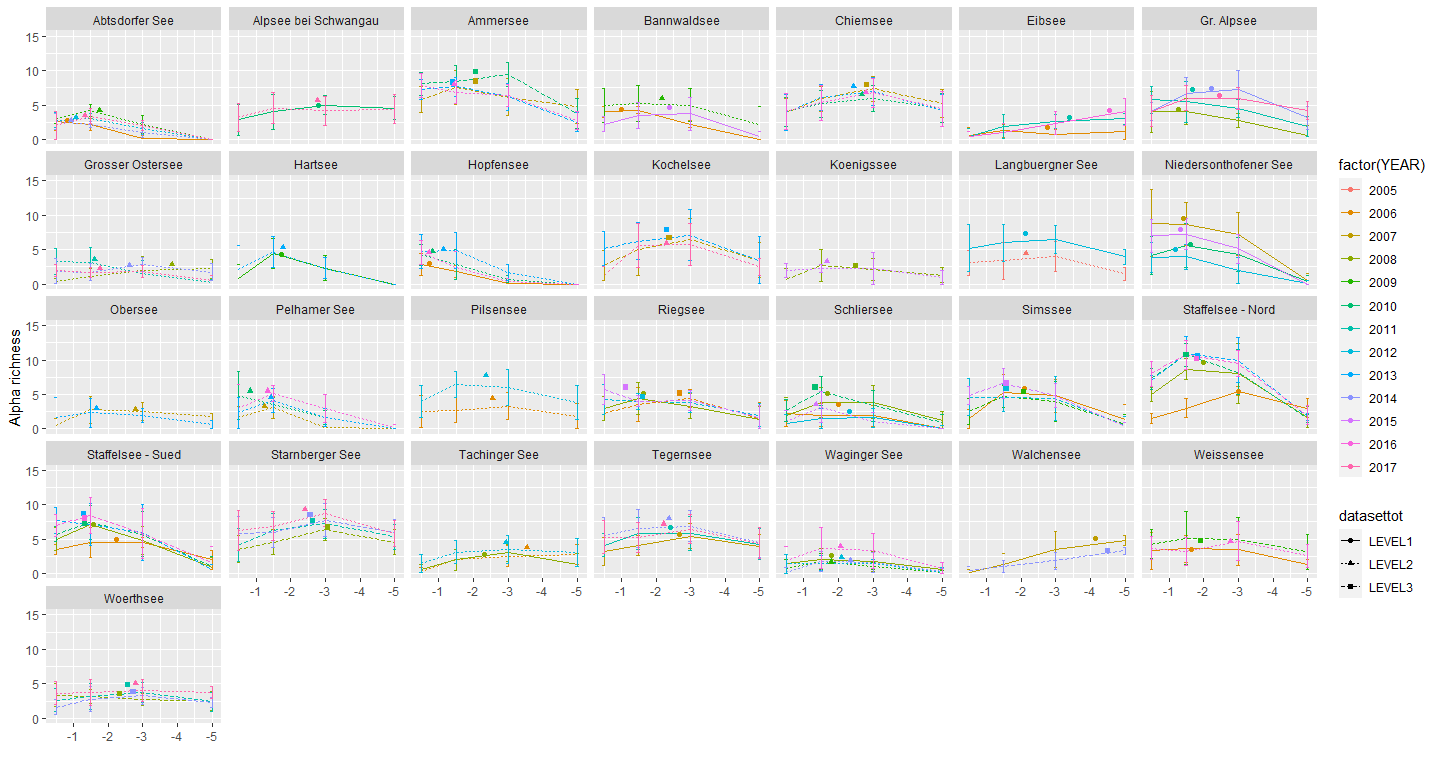
SupplementaryMaterial

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14 Juni 2020

## Depth diversity gradients of macrophytes - overview

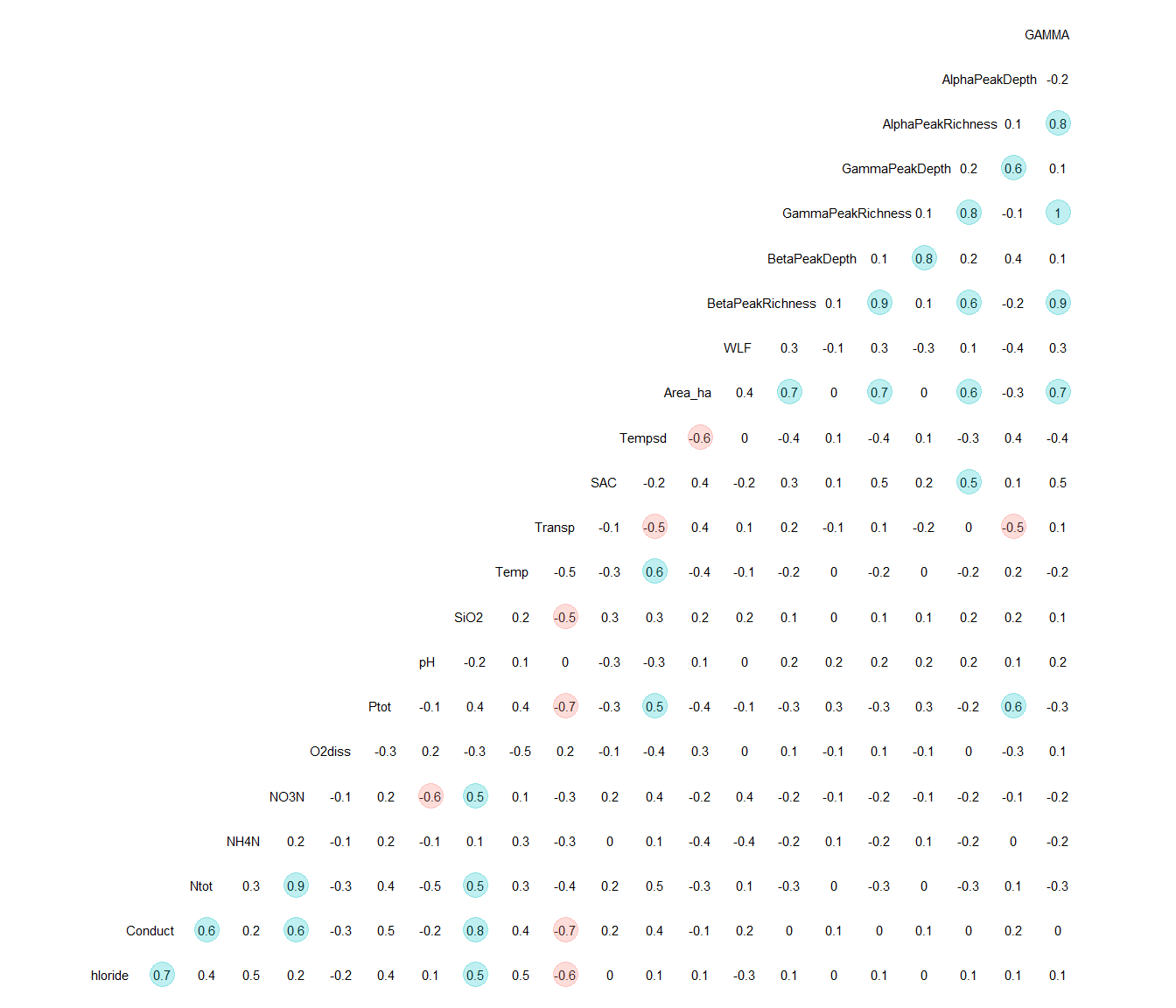
Depth pattern of Alpha, Beta and Gamma Richness for full dataset. Lines show the mean Alpha Richness per lake (boxes) and year with their corresponding standard deviation; the single RichnessPeaks are depicted as points. The different dataset levels can be distinguished by line type and point shape: Points and solid line=LEVEL1; triangles and dotted line=LEVEL2; squares and broken line=LEVEL3



Correlations between metrices

## Correlations | Drivers

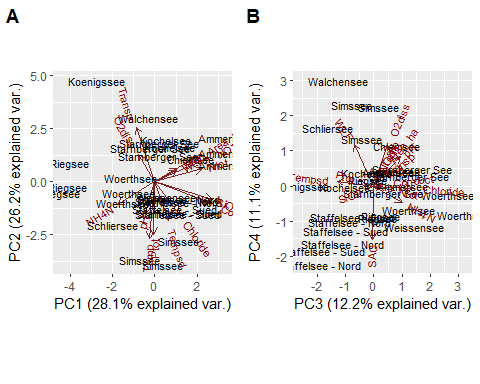
Normalized chemical-physical values



## Driver

Test for representativity of small dataset for medium dataset

library(ggbiplot)  
  
label\_lake<- PEAK\_Chem\_norm[complete.cases(PEAK\_Chem\_norm[,c(3:16,19)]),] #LEVEL 3 data #19 #  
lak.pca <- prcomp(na.omit(label\_lake[,c(3:16,19)]),center = TRUE, scale. = TRUE)  
#print(lak.pca)  
#plot(lak.pca, type="l")  
#summary(lak.pca)   
  
p1<- ggbiplot(lak.pca, choices = 1:2, obs.scale = 1, var.scale = 1,labels=label\_lake$Lake, arrow.color = "#FF0000",  
 #groups = group\_lake\_withoutSAK,   
 ellipse = TRUE, cicle = TRUE) #+ xlim(-4,4) +ylim(-4,4)  
p2<- ggbiplot(lak.pca, choices = 3:4, obs.scale = 1, var.scale = 1,labels=label\_lake$Lake, arrow.color = "#FF0000",  
 #groups = group\_lake\_withoutSAK,   
 ellipse = TRUE, cicle = TRUE) #+ xlim(-4,4) +ylim(-4,4)  
figure <- ggarrange(p1,p2,  
 #widths = c(2.3,2),heights = c(1.1,1,1,1.2),  
 labels = c("A","B"),  
 #label.x = c(0.18,0,0.18,0,0.18,0,0.18,0),label.y = c(0.8,0.8,1,1,1,1,1,1),  
 ncol = 2, nrow = 1, common.legend = TRUE, legend = "bottom", align = "hv")  
figure



PCA <- (data.frame(label\_lake$Lake))  
PCA$YEAR <- label\_lake$YEAR  
PCA$Morph\_PC1 <- lak.pca$x[,1]  
PCA$Morph\_PC2 <- lak.pca$x[,2]  
PCA$Morph\_PC3 <- lak.pca$x[,3]  
PCA$Morph\_PC4 <- lak.pca$x[,4]  
PCA$Morph\_PC5 <- lak.pca$x[,5]  
names(PCA)[1]<-"Lake"

## Temporal change

MISSING: Temporal plot just gamma Temporal plot chemical values

