

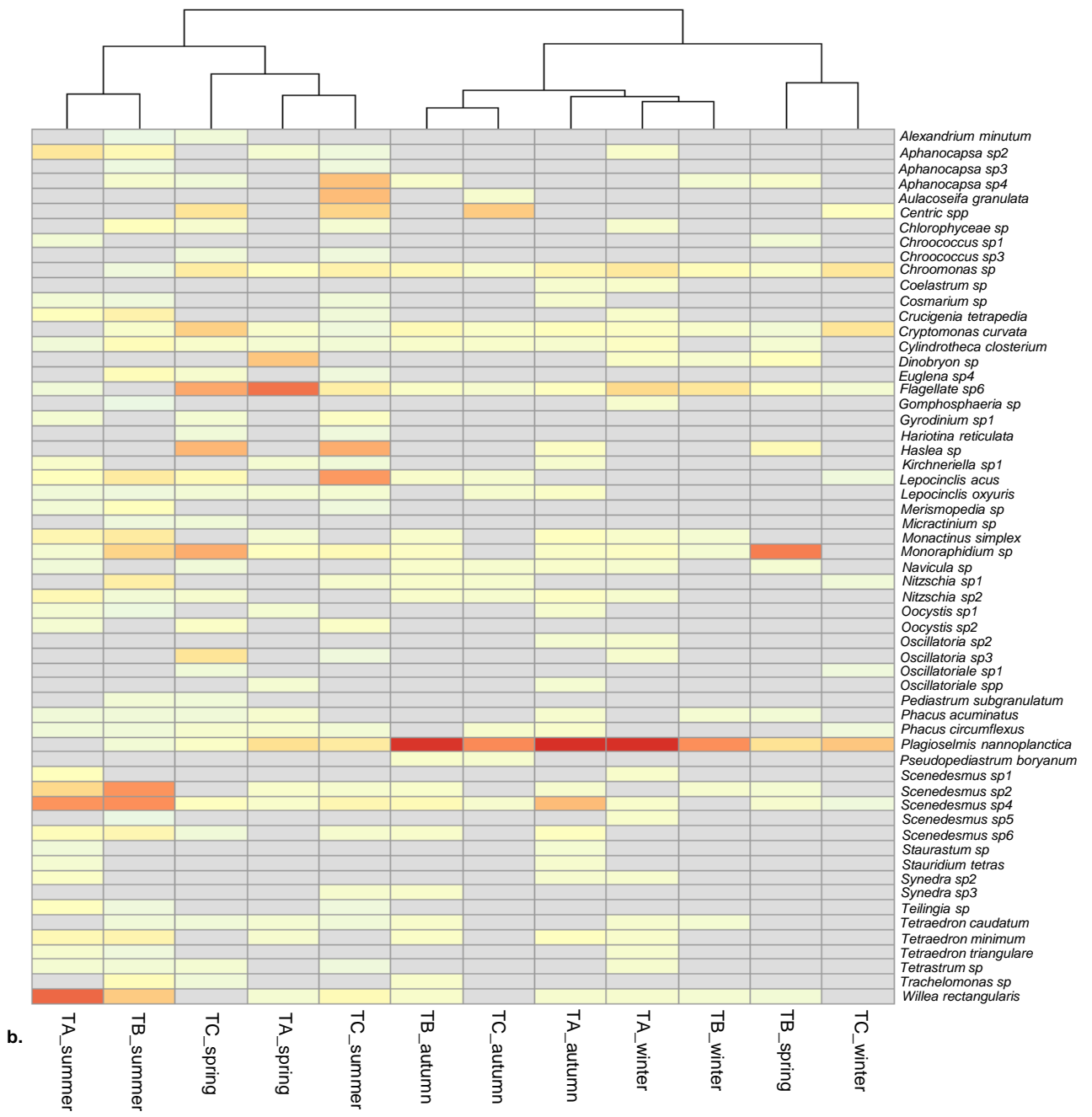
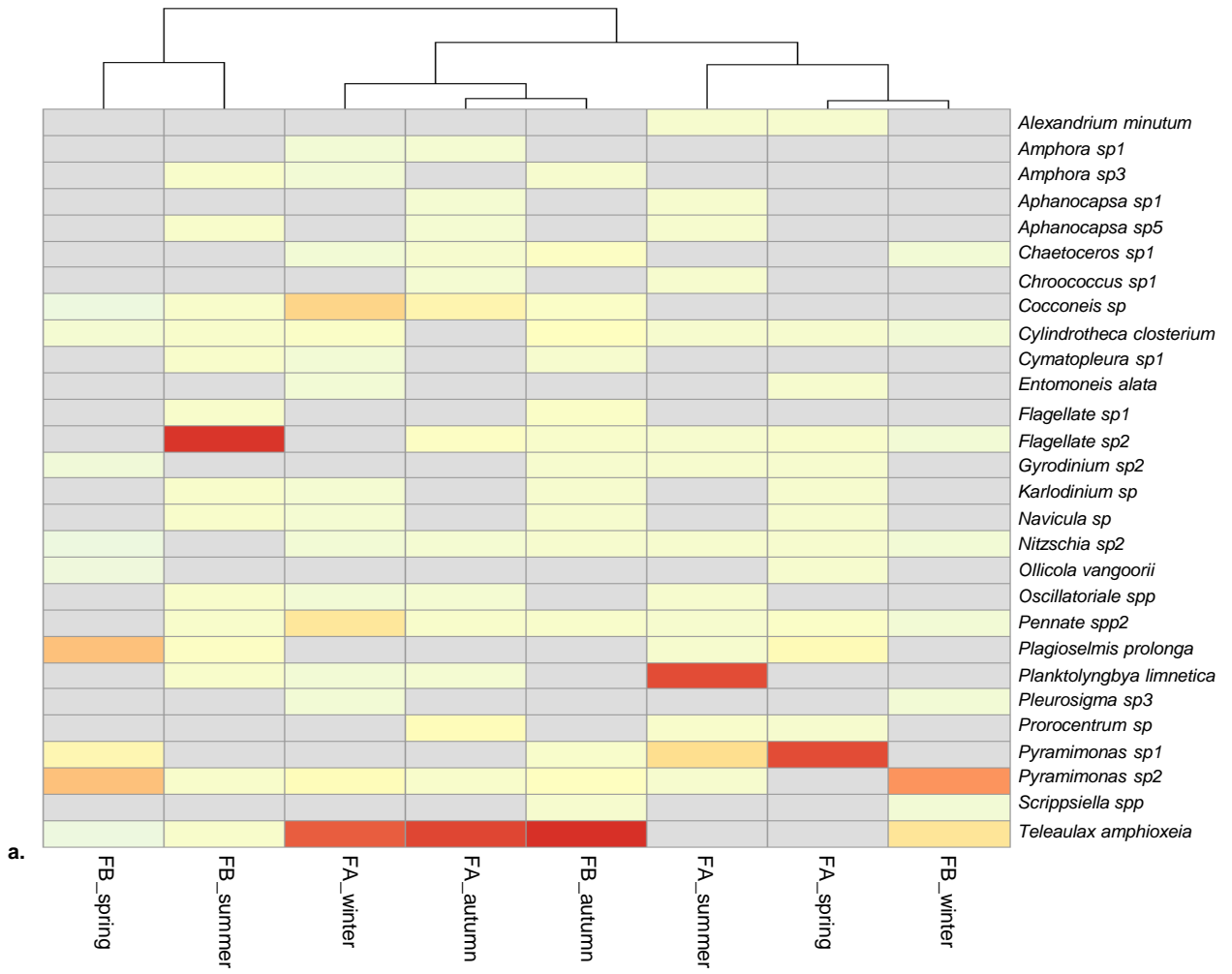


a.



b.

Fig 1: Satellite view map of the two marshes studied showing the sampling stations: a. the Fier d'Ars saltwater marsh (FA: N 46° 14' 5.964"; W 1° 30' 20.707"; FB: N 46° 13' 26.4"; W 1° 27' 21.599") , b. the Tasdon freshwater marsh (TA: N 46° 8' 56.4"; W 1° 7' 26.4"; TB: N 46° 9' 3.6"; W 1° 8' 9.599"; TC: N 46° 8' 49.2"; W 1° 8' 13.2"). The series of dots for each station indicates the sampling points (triplicates). Map background issued and modified from the geoportal website. (size: double column)



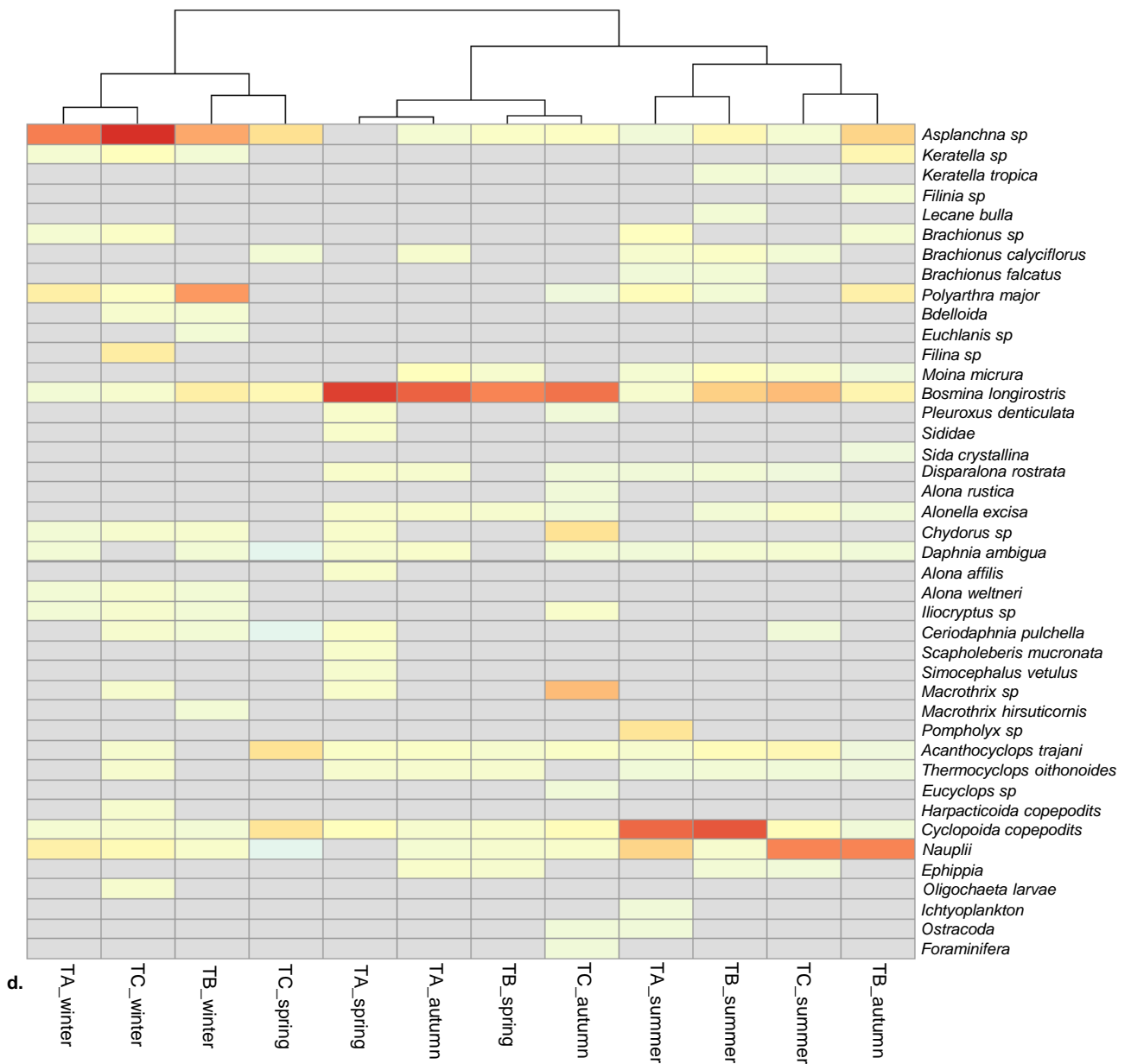
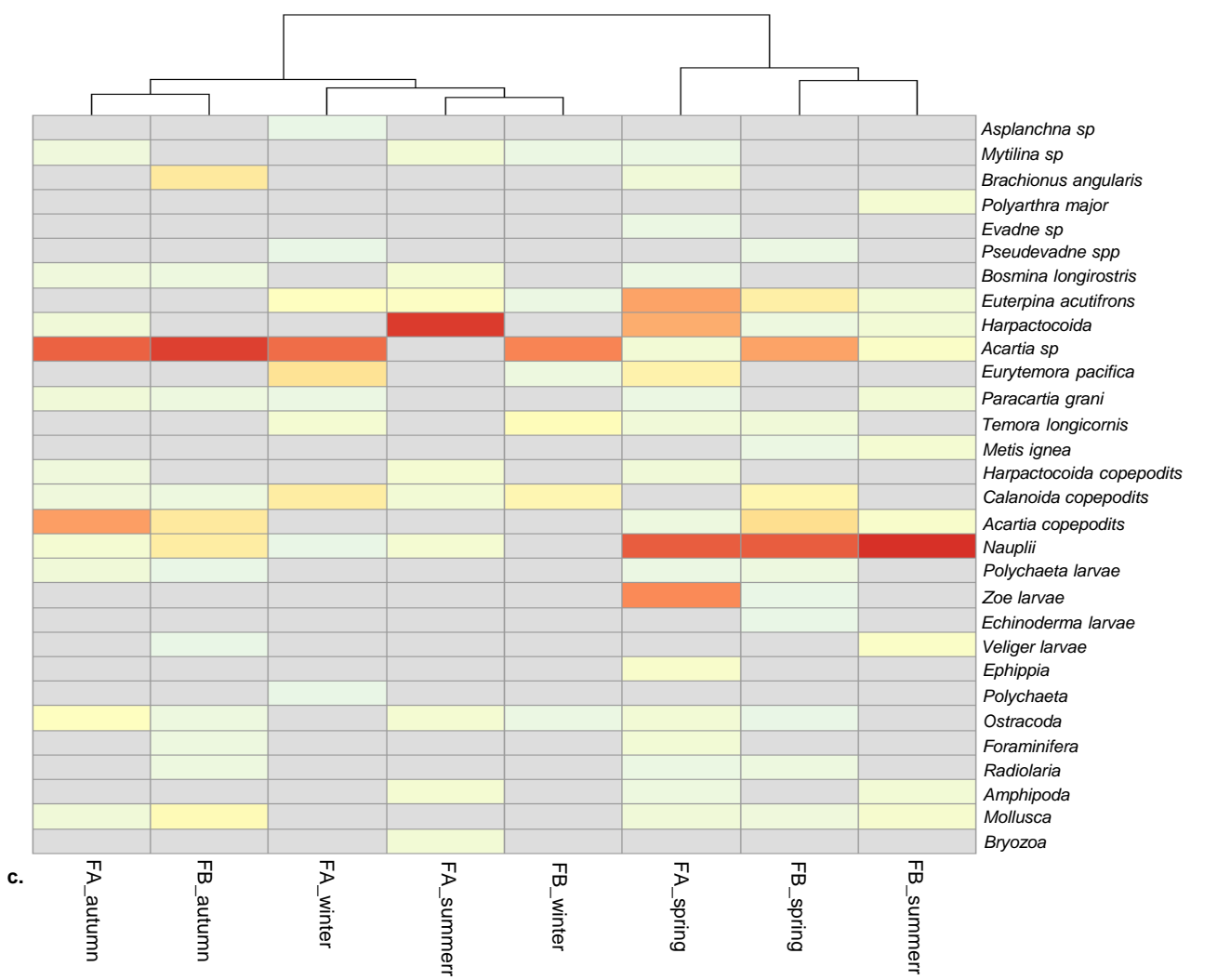


Fig 2: Relative abundances (%) of principal microphytoplanktonic taxa (a,b) and metazooplanktonic taxa (c,d) identified at each sampling station in winter, spring, summer and autumn in the Fier d'Ars marsh (FA, FB) and the Tasdon marsh (TA, TB, TC). The redder the color, the higher the relative abundance for that taxon. Clustering of station-season couples were done using the ward method with euclidean distances. [Size: double column]

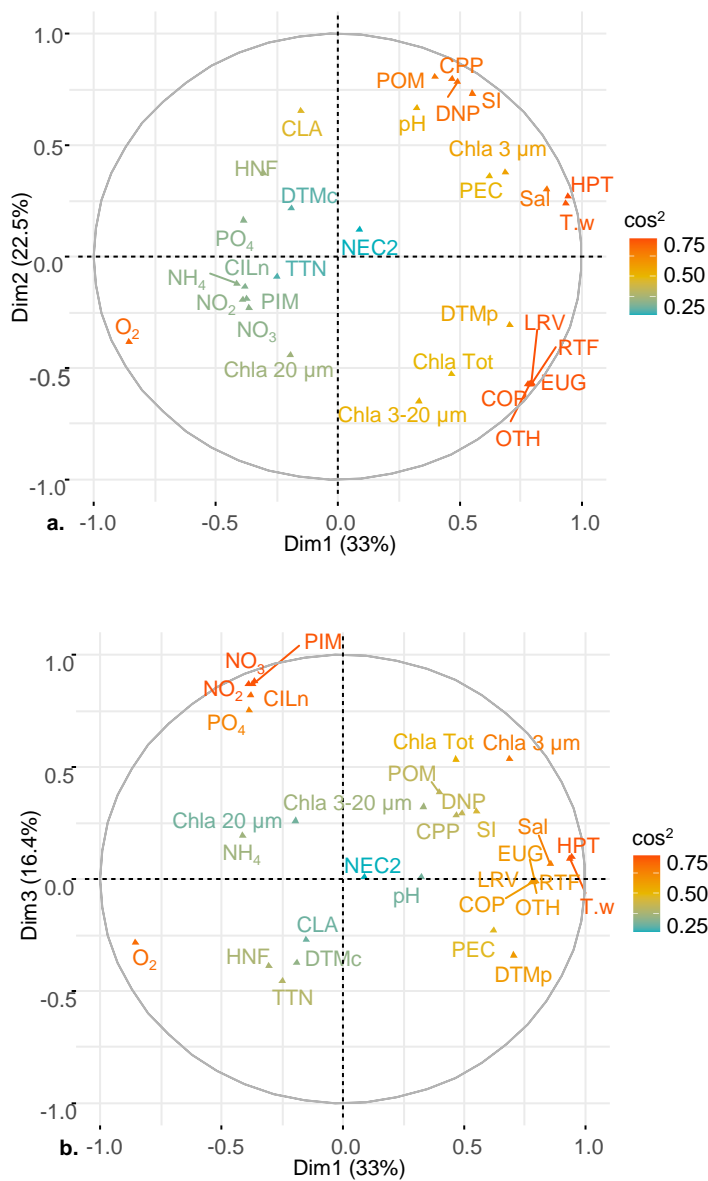


Fig 3: Correlation circle from MFA analysis on the Fier d'Aras marsh data: a. axes 1-2, b. axes 1-3. The quality of the representation of the quantitative variables is indicated by the  $\cos^2$  value. pH: hydrogen potential, T.w: water temperature, Sal: salinity (ppt),  $O_2$ : dissolved oxygen concentration (mg/l),  $NO_3$ : nitrate concentration ( $\mu\text{mol/l}$ ),  $NO_2$ : nitrite concentration ( $\mu\text{mol/l}$ ),  $NH_4$ : ammonium concentration ( $\mu\text{mol/l}$ ),  $PO_4$ : phosphate concentration ( $\mu\text{mol/l}$ ), Si: silicium concentration ( $\mu\text{mol/l}$ ), PIM: particulate inorganic matter concentration (mg/l), POM: particulate organic matter concentration (mg/l), Chla Tot: proportion of total active chlorophyll a (%), Chla 20  $\mu\text{m}$ : proportion of active chlorophyll a for organisms bigger than 20  $\mu\text{m}$  (%), Chla 3-20  $\mu\text{m}$ : proportion of active chlorophyll a for organisms between 3 and 20  $\mu\text{m}$  (%), Chla 3  $\mu\text{m}$ : proportion of active chlorophyll a for organisms smaller than 3  $\mu\text{m}$  (%), RTF: Rotifera abundance ( $\text{ind/m}^3$ ), CLA: Cladocera abundance ( $\text{ind/m}^3$ ), COP: Copepoda abundance ( $\text{ind/m}^3$ ), LRV: larvae and eggs abundances ( $\text{ind/m}^3$ ), OTH: other metazooplanktonic organisms abundance ( $\text{ind/m}^3$ ), DTMp: pennate diatoms abundance ( $\text{cell/l}$ ), DTMc: centric and chain diatoms abundance ( $\text{cell/l}$ ), TTN: tintinnids abundance ( $\text{cell/l}$ ), EUG: euglena abundance ( $\text{cell/l}$ ), DNP: dinophyceae abundance ( $\text{cell/l}$ ), CPP: cryptophyceae abundance ( $\text{cell/l}$ ), NEC2: nanoeukaryotes abundance determined by flow cytometry ( $\text{cell/ml}$ ), PEC: picoeucaryotes abundance determined by flow cytometry ( $\text{cell/ml}$ ), CILn: naked ciliates abundance ( $\text{cell/l}$ ), HNF: heterotrophic nanoflagellates abundance ( $\text{cell/l}$ ), HPT: heterotrophic prokaryotes abundance ( $\text{cell/ml}$ ). The quality of the representation of the variables on the graph is indicated by the squared cosine of the variables ( $\cos^2$ ). [Size: single column]

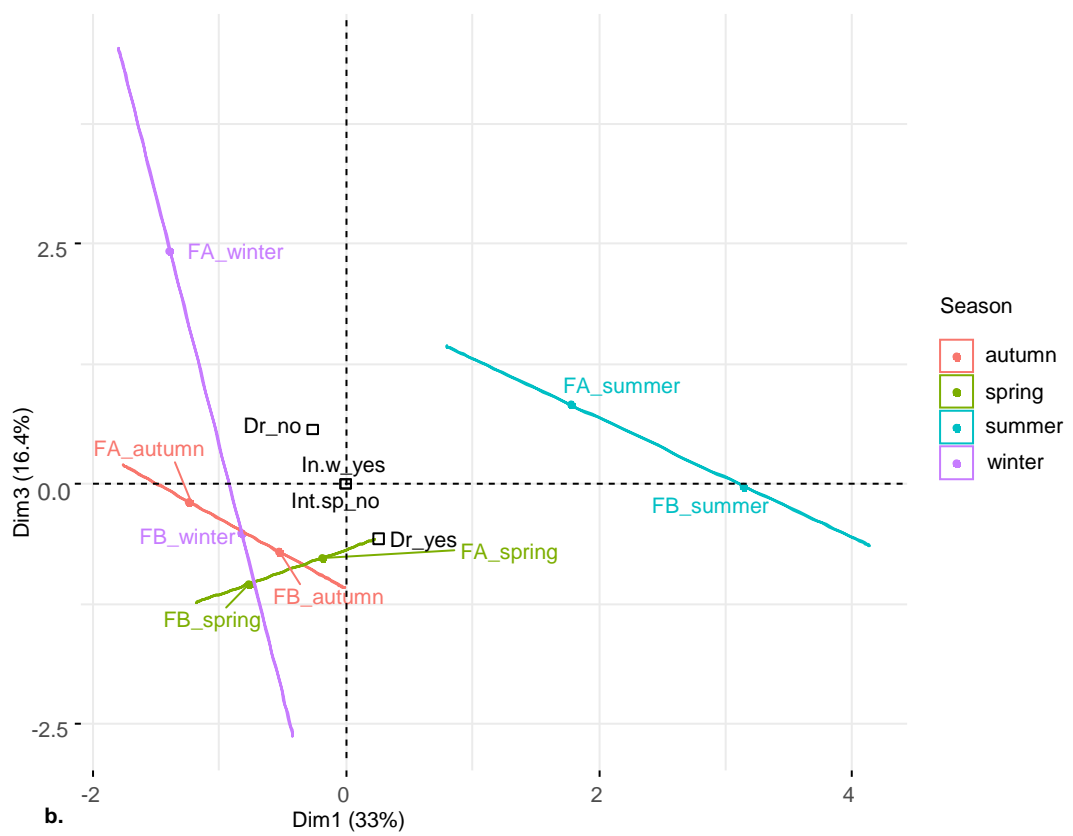
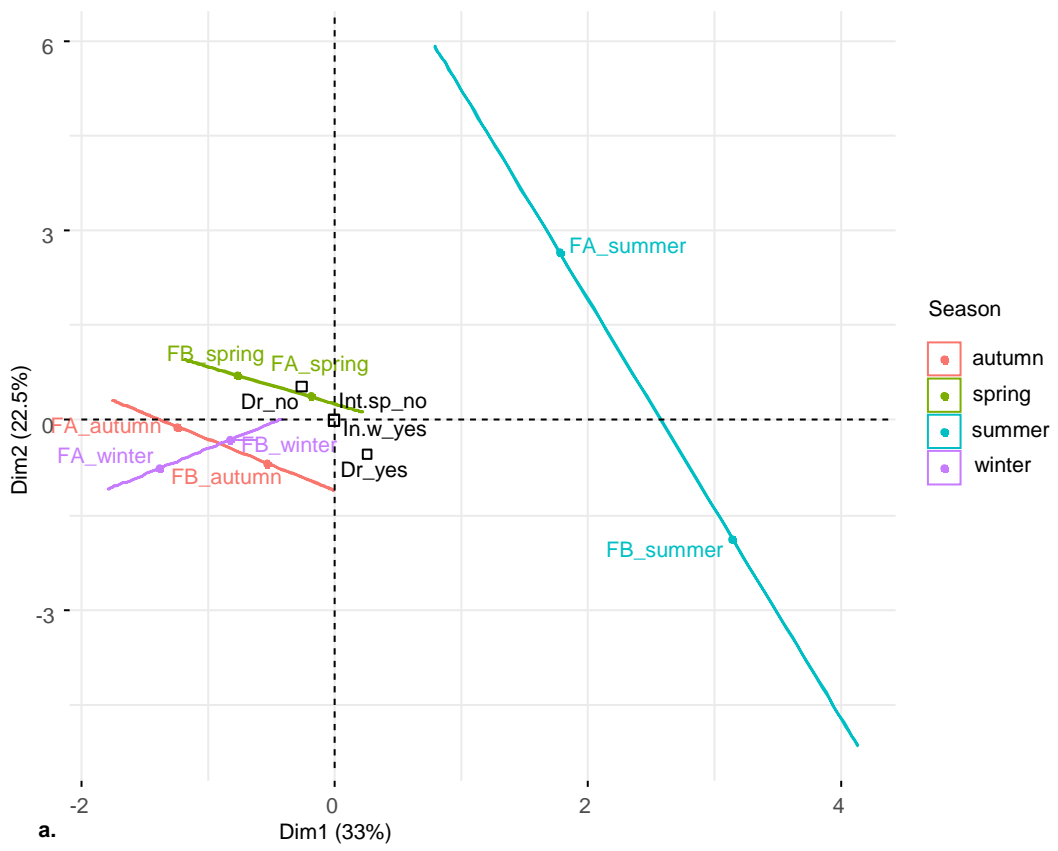


Fig 4: Confidence ellipses on individuals (station-season) from MFA analysis for the four sampling season (spring, summer, autumn, winter) for the Fier d'Ars marsh: a. axes 1-2; b. axes 1-3. Ellipses are represented by straight lines because there are only two sampling stations for this marsh. Dr\_no: no annual drought; Dr\_yes: annual drought made; In.w\_yes: water inlet and renewal made at high tide; Int.sp\_no: no introductions of non-native species. [Size: 1.5 column]

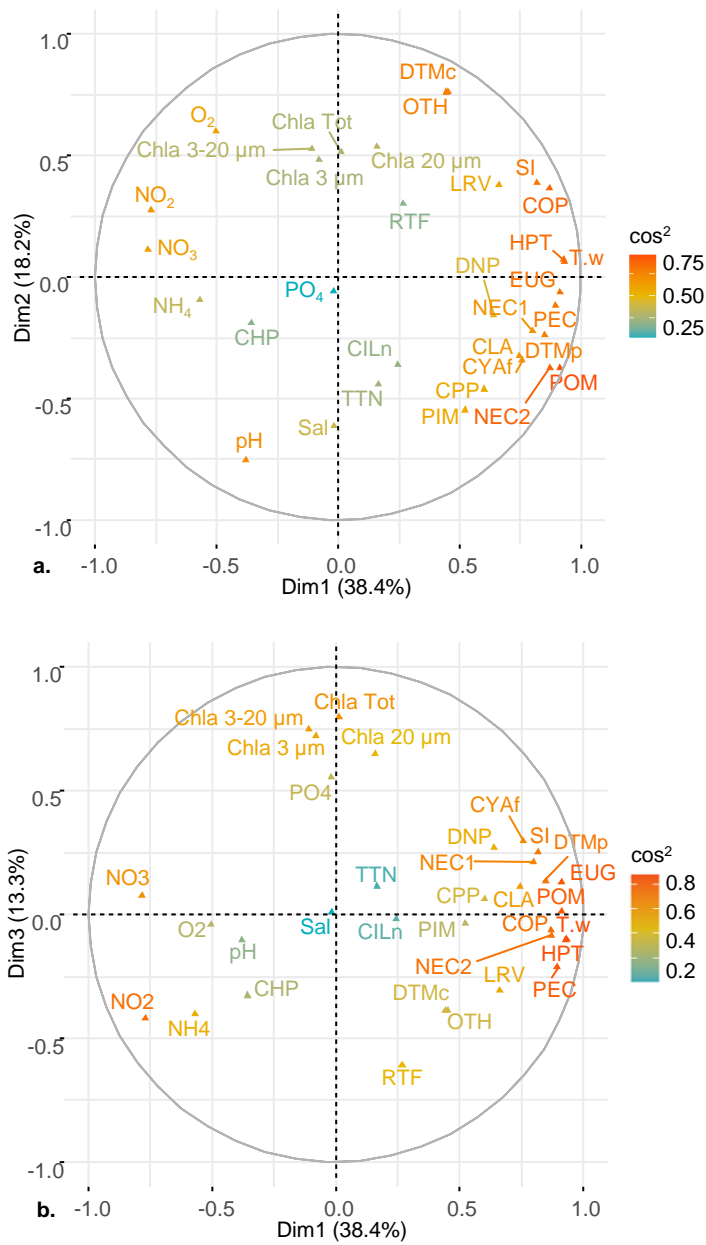


Fig 5: Correlation circle from MFA analysis on the Tasdon marsh data: a. axes 1-2, b. axes 1-3. The quality of the representation of the quantitative variables is indicated by the  $\cos^2$  value. pH: hydrogen potential, T.w: water temperature, Sal: salinity (ppt),  $O_2$ : dissolved oxygen concentration (mg/l),  $NO_3$ : nitrate concentration ( $\mu\text{mol/l}$ ),  $NO_2$ : nitrite concentration ( $\mu\text{mol/l}$ ),  $NH_4$ : ammonium concentration ( $\mu\text{mol/l}$ ),  $PO_4$ : phosphate concentration ( $\mu\text{mol/l}$ ), SI: silicium concentration ( $\mu\text{mol/l}$ ), PIM: particulate inorganic matter concentration (mg/l), POM: particulate organic matter concentration (mg/l), Chla Tot: proportion of total active chlorophyll a (%), Chla 20  $\mu\text{m}$ : proportion of active chlorophyll a for organisms bigger than 20  $\mu\text{m}$  (%), Chla 3-20  $\mu\text{m}$ : proportion of active chlorophyll a for organisms between 3 and 20  $\mu\text{m}$  (%), Chla 3  $\mu\text{m}$ : proportion of active chlorophyll a for organisms smaller than 3  $\mu\text{m}$  (%), RTF: Rotifera abundance ( $\text{ind/m}^3$ ), CLA: Cladocera abundance ( $\text{ind/m}^3$ ), COP: Copepoda abundance ( $\text{ind/m}^3$ ), LRV: larvae and eggs abundances ( $\text{ind/m}^3$ ), OTH: other metazooplanktonic organisms abundance ( $\text{ind/m}^3$ ), DTMp: pennate diatoms abundance ( $\text{cell/l}$ ), DTMc: centric and chain diatoms abundance ( $\text{cell/l}$ ), TTN: tintinnids abundance ( $\text{cell/l}$ ), EUG: euglena abundance ( $\text{cell/l}$ ), DNP: dinophyceae abundance ( $\text{cell/l}$ ), CPP: cryptophyceae abundance ( $\text{cell/l}$ ), NEC2: nanoeukaryotes abundance determined by flow cytometry ( $\text{cell/ml}$ ), PEC: picoeukaryotes abundance determined by flow cytometry ( $\text{cell/ml}$ ), CILn: naked ciliates abundance ( $\text{cell/l}$ ), HNF: heterotrophic nanoflagellates abundance ( $\text{cell/l}$ ), HPT: heterotrophic prokaryotes abundance ( $\text{cell/ml}$ ). The quality of the representation of the variables on the graph is indicated by the squared cosine of the variables ( $\cos^2$ ). [Size: single column]

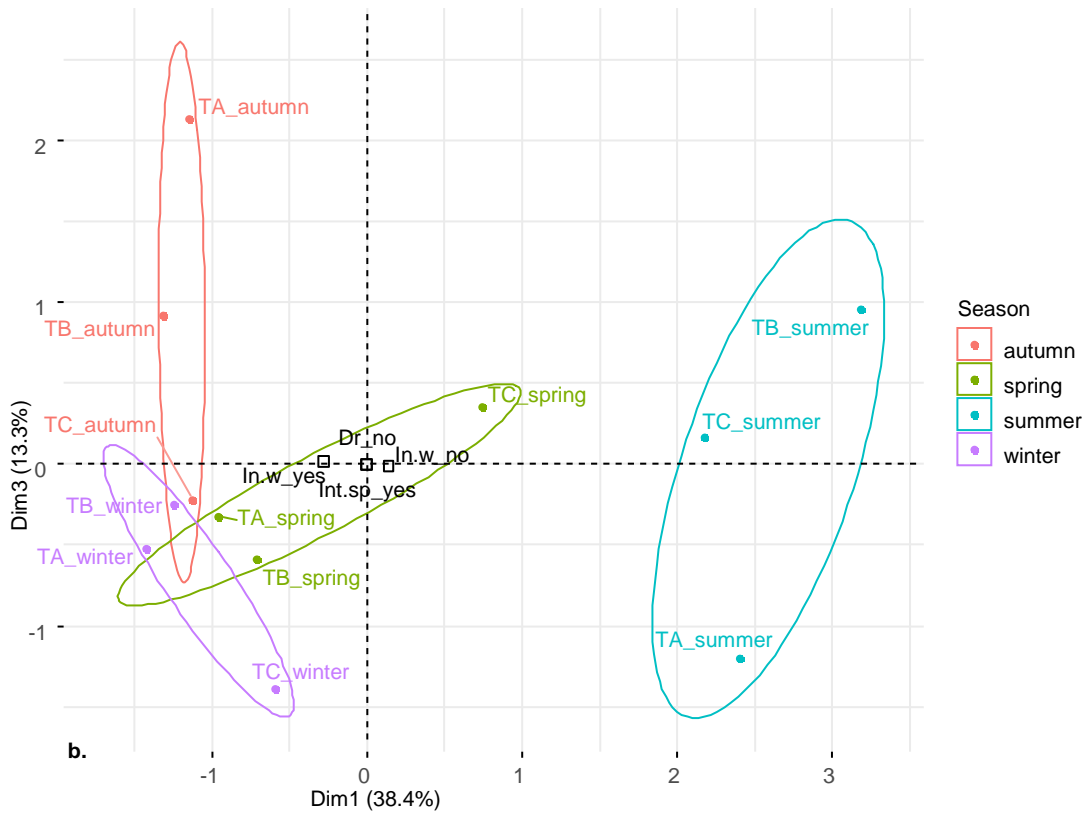
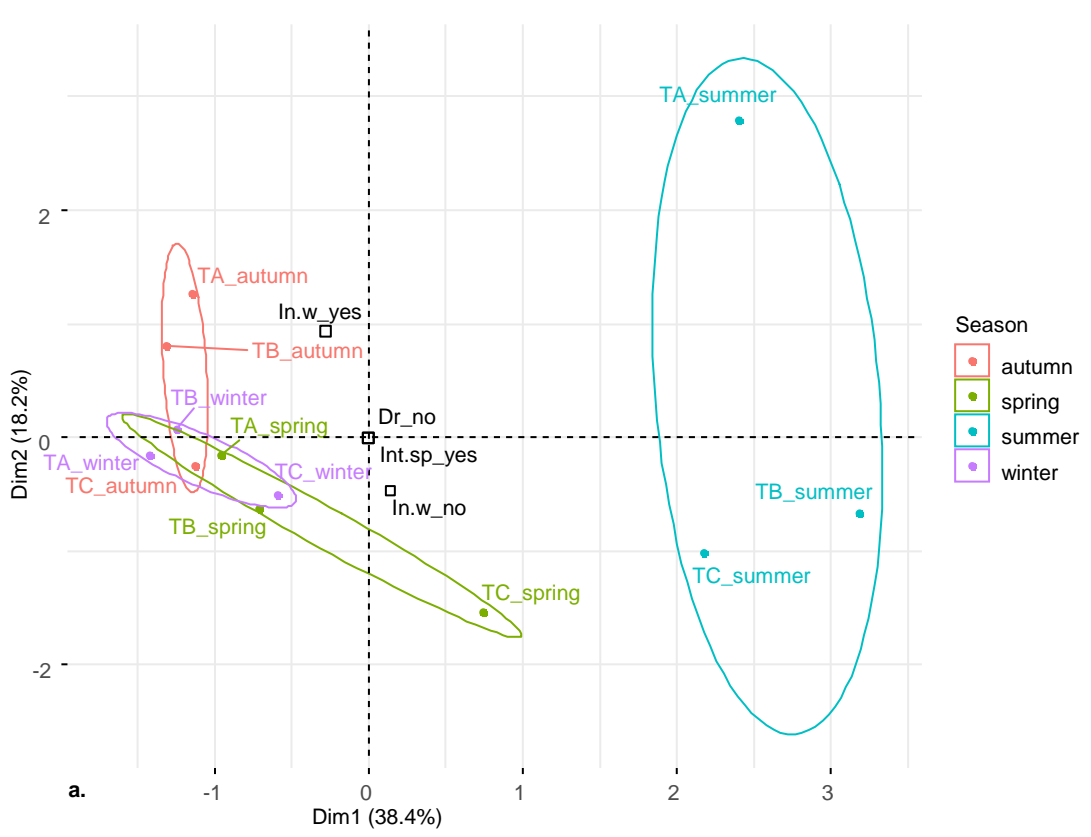


Fig 6: Confidence ellipses on individuals (station-season) from MFA analysis for the four sampling season (spring, summer, autumn, winter) for the Tasdon marsh: a. axes 1-2; b. axes 1-3. Dr\_no: no annual drought; In.w\_yes: water inlet and renewal made at high tide; In.w\_no: no water inlet and renewal made; Int.sp\_yes: introductions of non-native species have been made. [Size: 1.5 column]



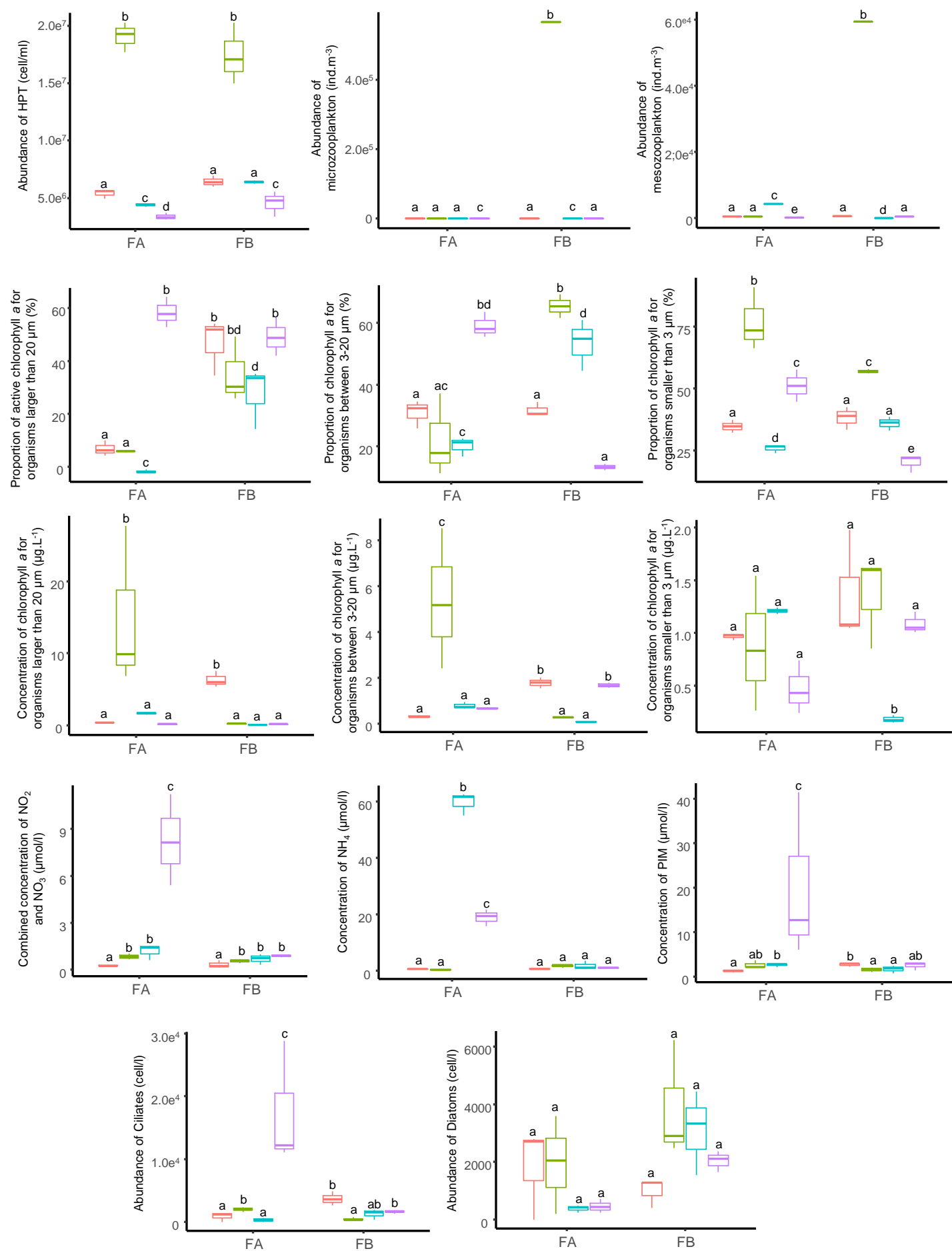


Fig 7: Boxplot showing the median per group for abiotic and biotic parameters per station on the Fier d'Aras saltwater marsh (FA, FB) for each sampling season (red: spring, green: summer, blue: autumn, purple: winter). Results of Permanova analysis for each station per season, showing the significance of differences in values, are represented by the lettering above each box. Boxes for micro- and mesozooplankton concentrations are shown as straight lines because the counts were made on the average of the pulled samples (triplicates). [Size: double column]



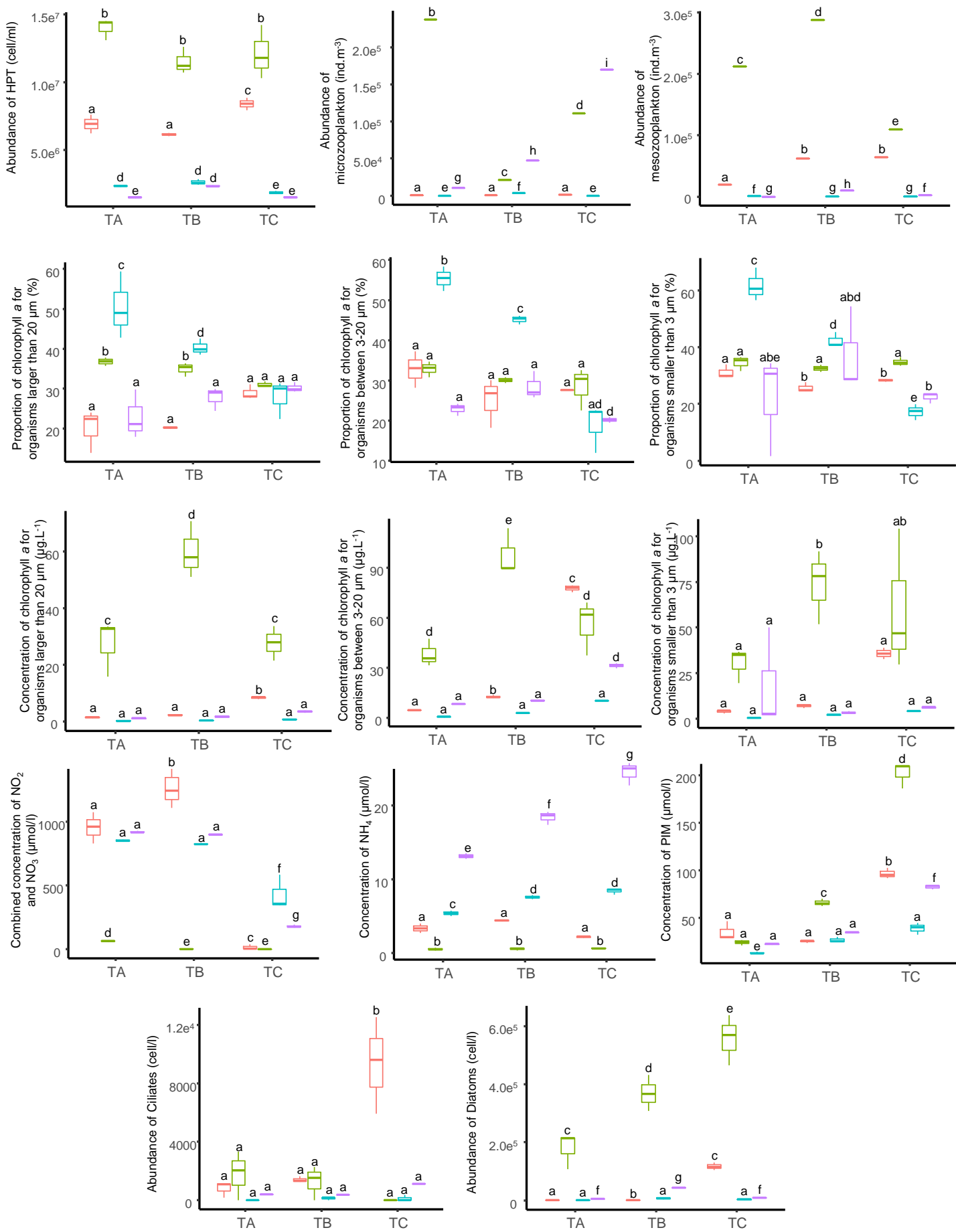


Fig 8: Boxplot showing the median per group for abiotic and biotic parameters per station on the Tasdon freshwater marsh (TA, TB, TC) for each sampling season (red: spring, green: summer, blue: autumn, purple: winter). Results of PerMANOVA analysis for each station per season, showing the significance of differences in values, are represented by the lettering above each box. Boxes for micro- and mesozooplanktonic concentrations are shown as straight lines because the counts were made on the average of the pulled samples (triplicates). [Size: double column]

	Spring	Summer	Autumn	Winter
FA				
FB				
TA				
TB				
TC	Weak	Strong		

- FW1  Herbivorous food web
- FW2  Multivorous food web
- FW3  Microbial loop
- FW4  Biological winter
- FW5  Biological winter with high nutrient concentration

Fig 9: Summary of the five different types of food webs (FW1, FW2, FW3, FW4, FW5) determined by the method of Masclaux et al. (2014) in spring, summer, autumn and winter 2019 in the Fier d'Ars marsh (FA, FB) and the Tasdon marsh (TA, TB, TC). [Size: single column]