Supplemental Table 1. Volume of water filtered (L) for POM analyses.

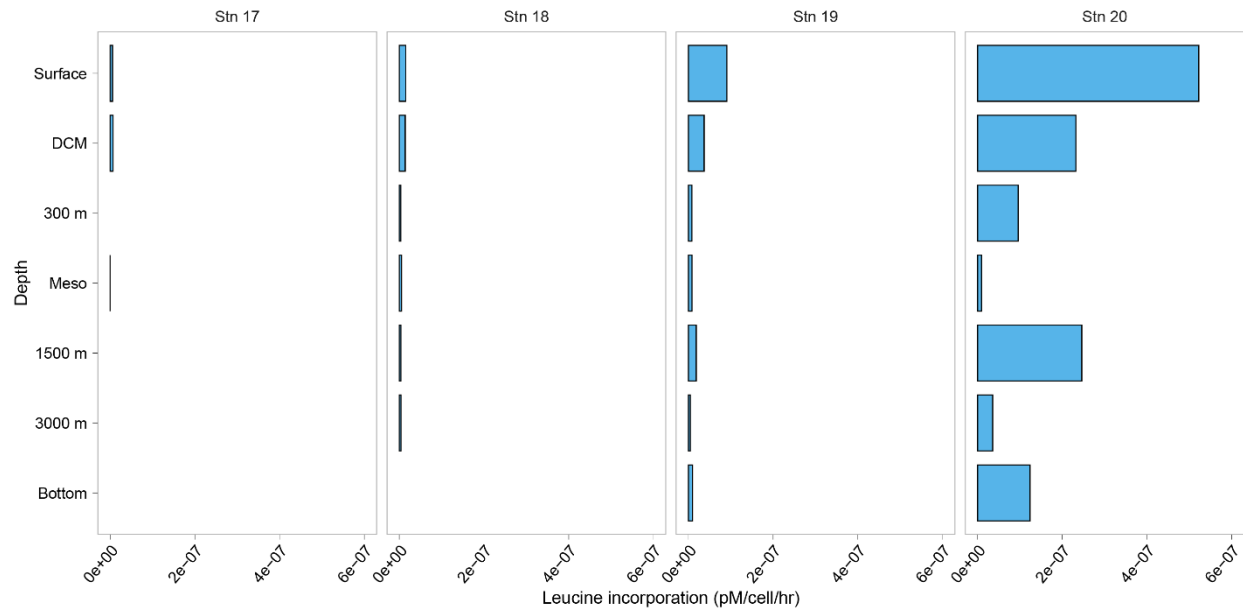| Depths	Stn. 17	Stn. 18	Stn. 19	Stn. 20
Surface	6.0	9.5	5.0	13.5
DCM	5.5	8.5	5.5	12.5
300 m	-	13.5	15.0	14.5
Meso	9.0	11.0	14.5	12.5
1500 m	-	14.0	14.0	15.0
3000 m	-	-	13.7	13.5
Bottom	-	13.5	12.5	13.0
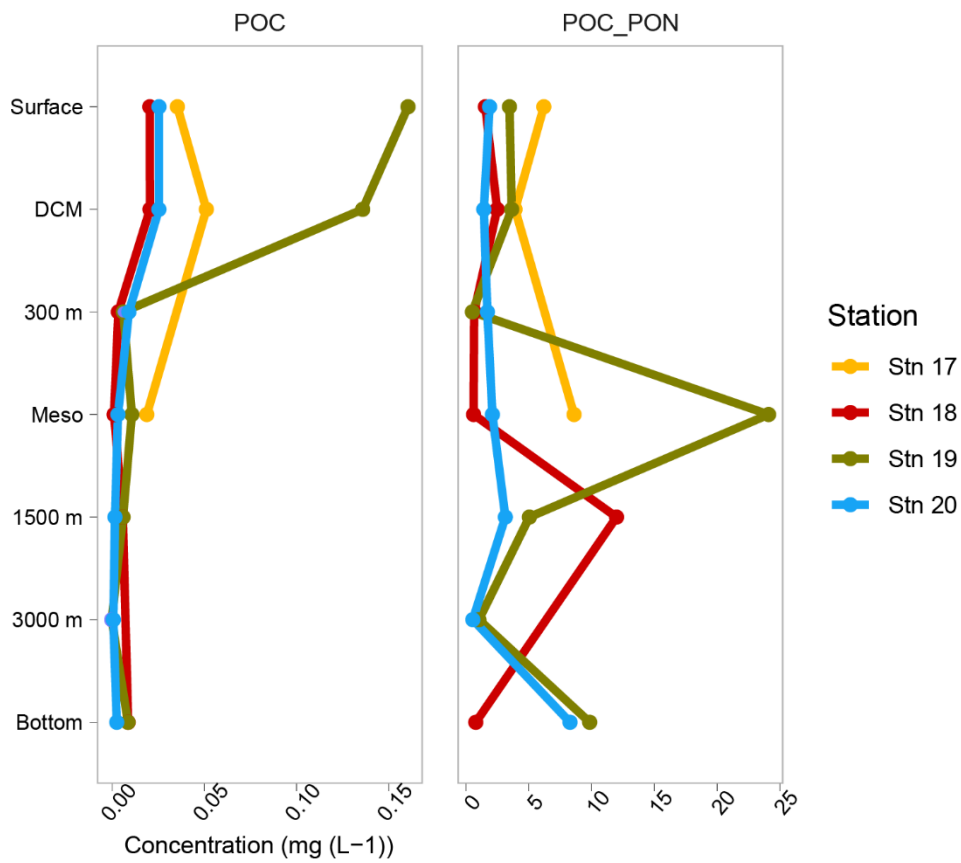
Supplemental Figure 1. Particulate organic carbon and the POC:PON ratio for each station and depth. Stations are separated by color.

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9 **Supplemental Figure 2.** Bacterial protein production per cell as measured by incorporation of

10 tritiated leucine (^{3}H-Leu).

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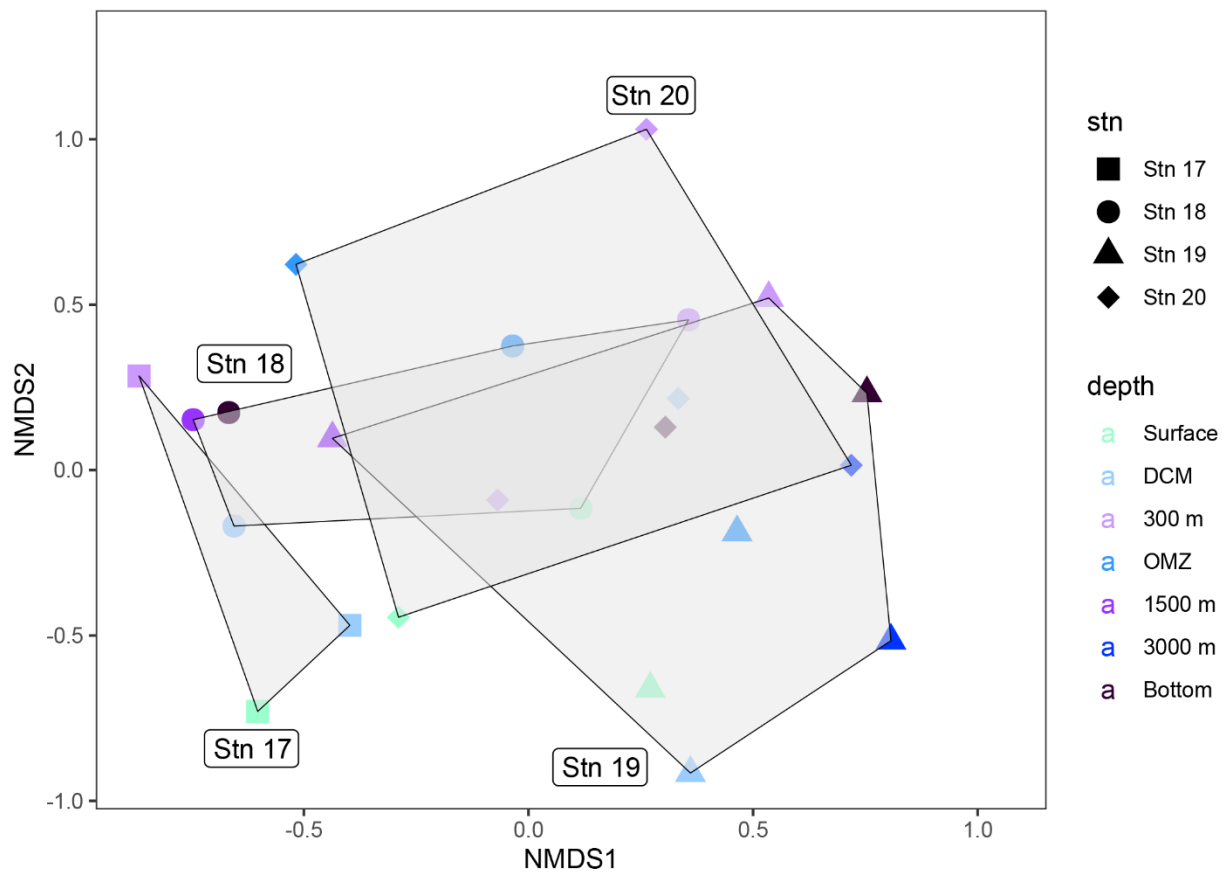
Supplemental Figure 3. Non-metric multidimensional scaling (NMDS) plot based on Bray-
Curtis dissimilarity shows glucosidase and peptidase activities clustered by station.

17
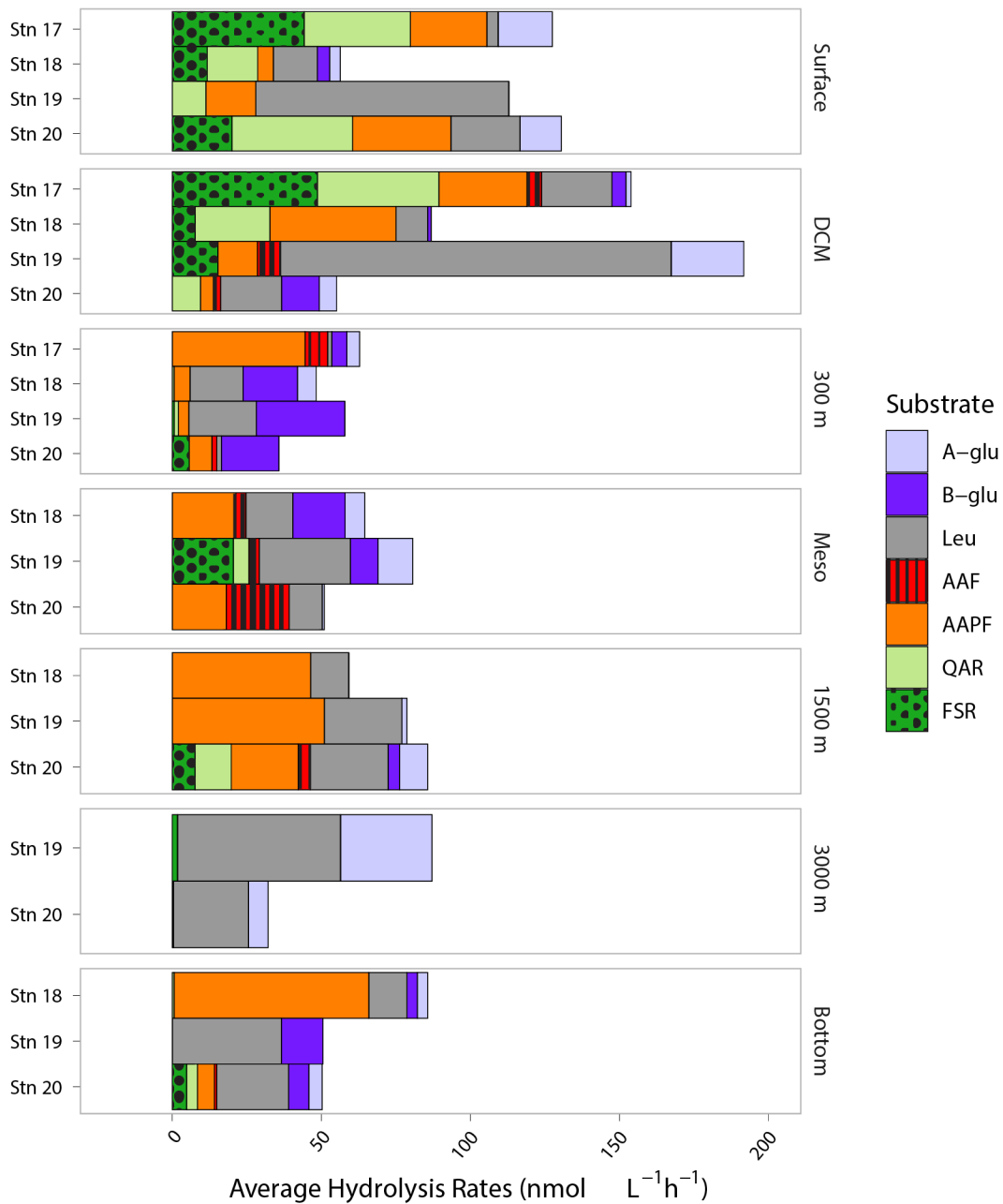
Supplemental Figure 4. Summed glucosidase and peptidase activities for each station and depth. Bars represent the average hydrolysis rate calculated over 12 hours. A-glu: alpha-glucosidase; B-glu: beta-glucosidase; Leu: leucine aminopeptidase; AAF: alanine-alanine-phenylalanine; AAPF: alanine-alanine-proline-phenylalanine; QAR: glutamine-alanine-arginine; FSR: phenylalanine-serine-arginine.

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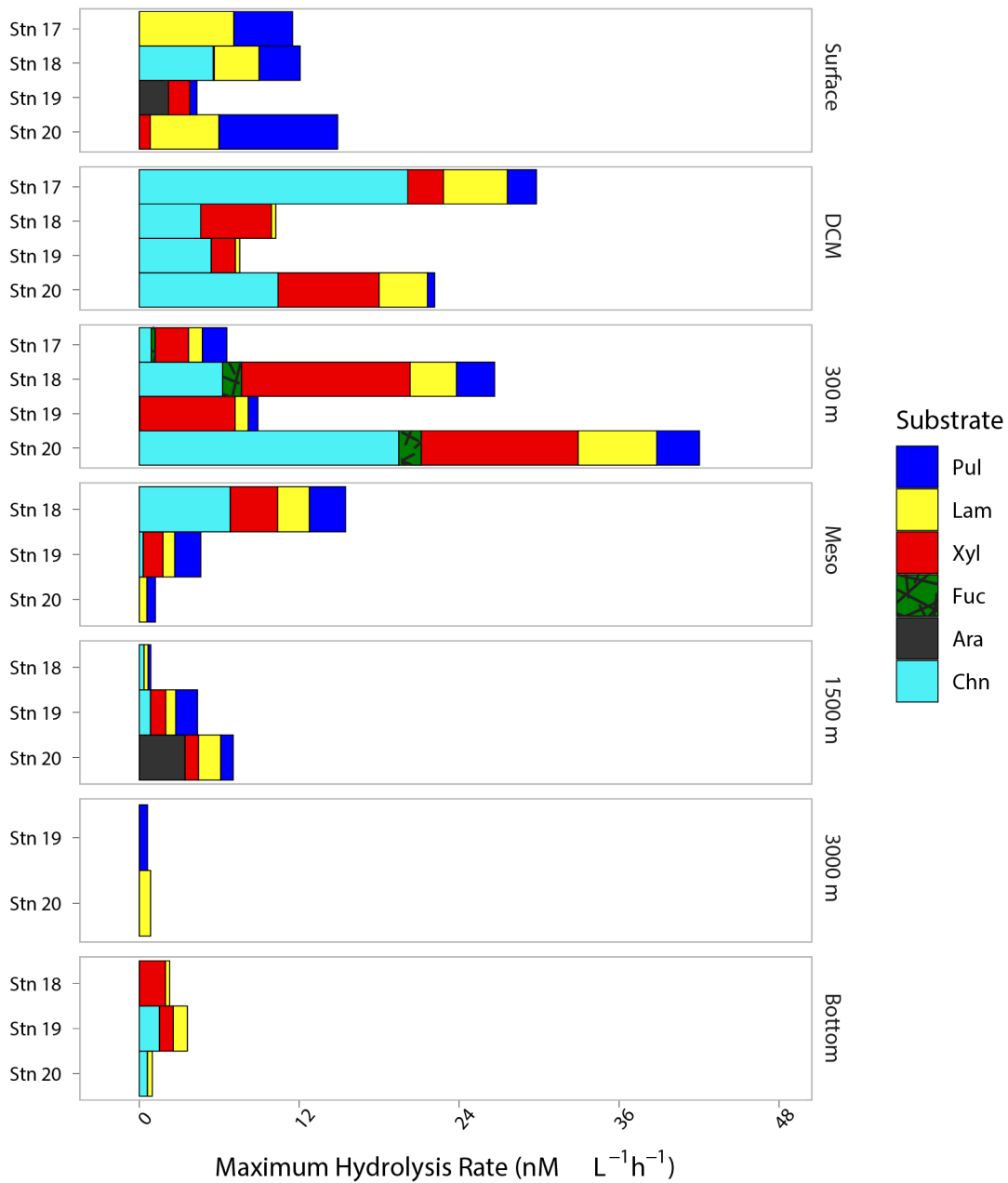
Supplemental Figure 5. Summed polysaccharide hydrolase activities for each station and depth. Bars represent the maximum hydrolysis rate calculated. Pul = pullulan; Lam = laminarin; Xyl = xylan; Fuc = fucoidan from *Fucus vesiculosis*; Ara = arabinogalactan; Chn = chondroitin sulfate.
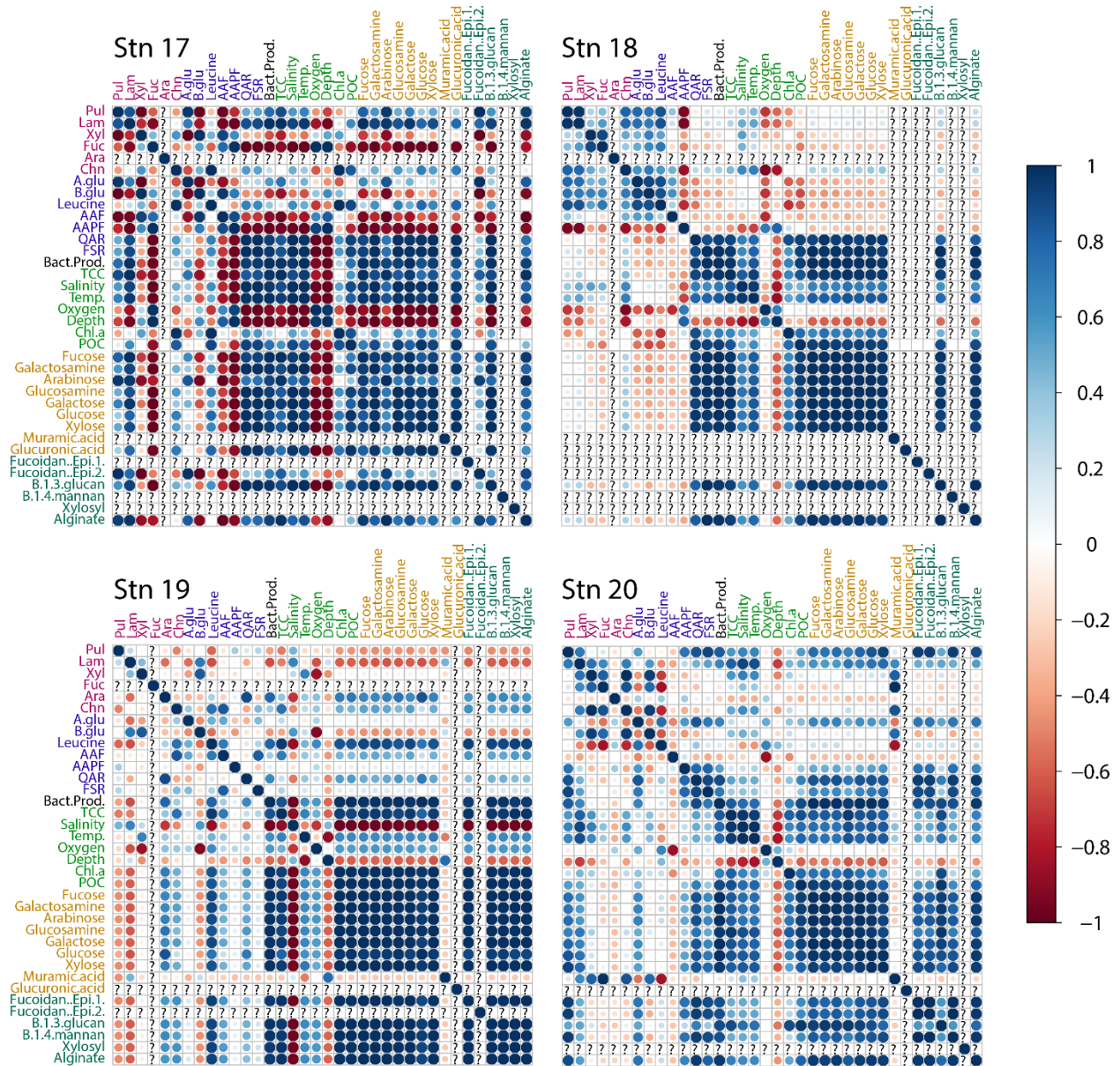
Supplemental Figure 6. Combined correlation plot displaying Pearson's correlations between (a) environmental parameters and enzymatic activity measurements at all stations. (b) Break down of correlations between just the enzyme activity measurements for all stations and depths. Blue denotes positive correlations while red denotes negative correlations. The shade and size of the circle emphasizes the intensity of correlation between environmental parameters and enzymatic activities.