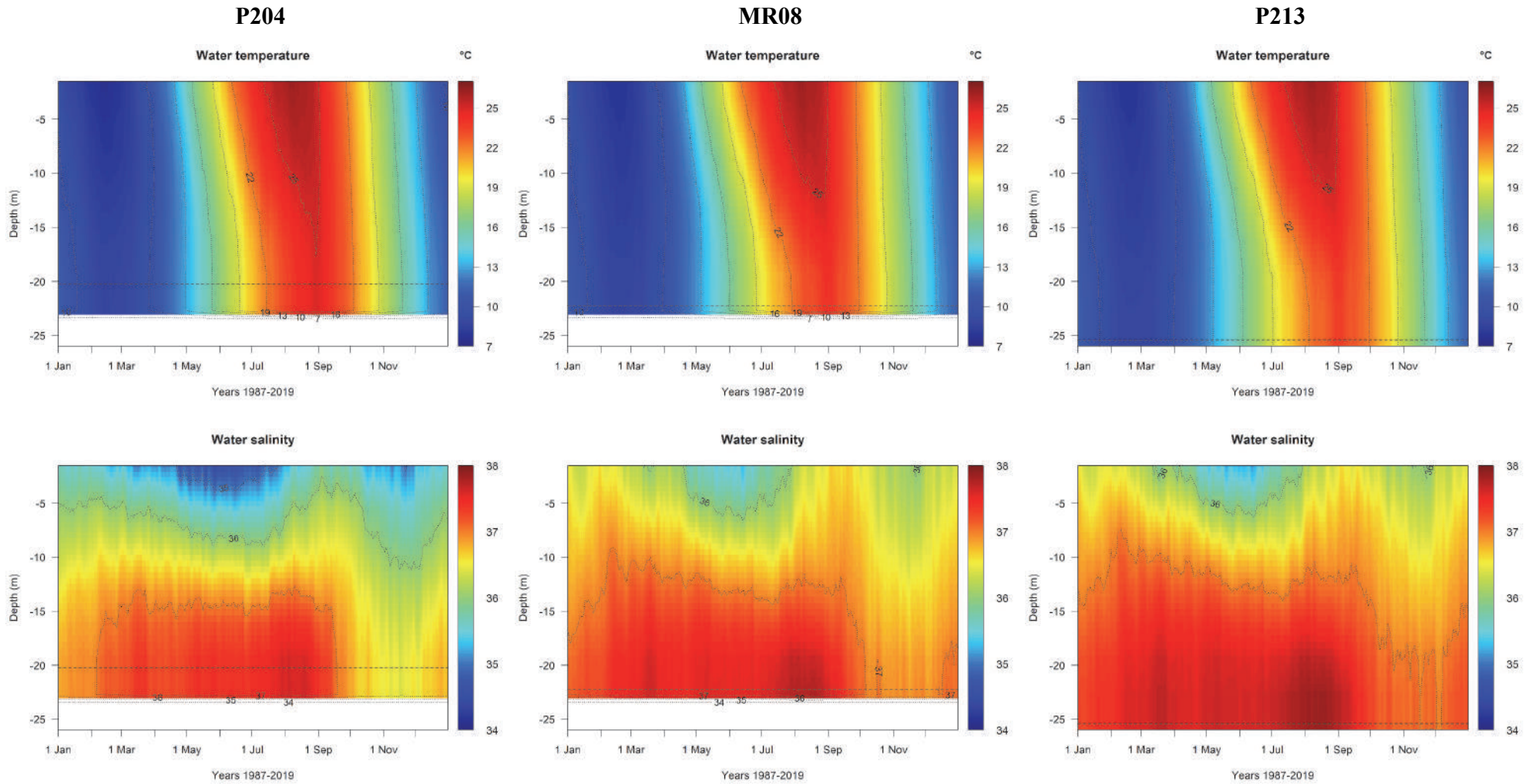
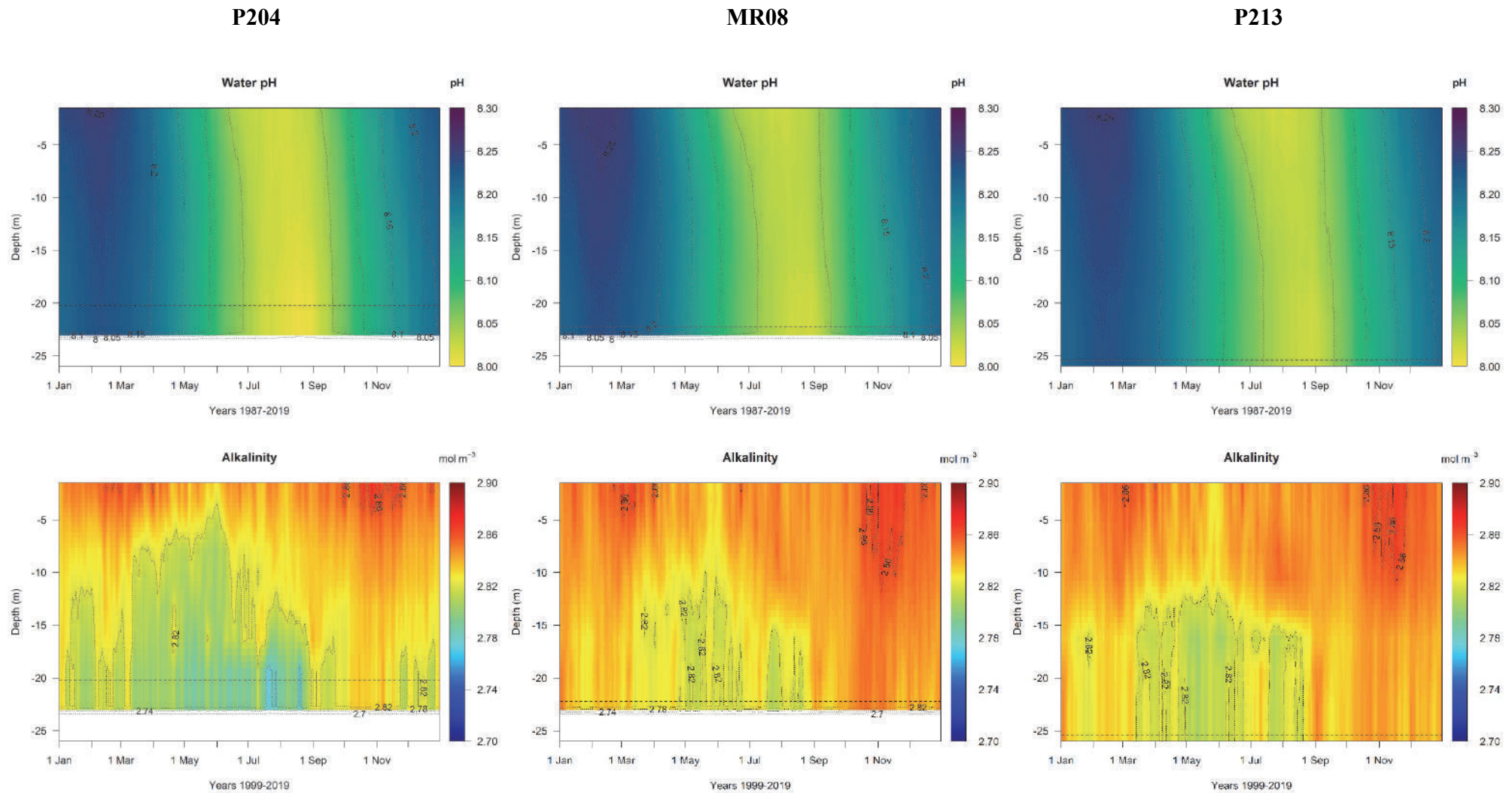


## Supplementary Material



**Supplementary Figure 1.** Mean climatic conditions (from 1987 to 2019) of water temperature and salinity at each site (P204, MR08, P213; bottom depth marked by horizontal dashed line) according to the Mediterranean Sea Physics Reanalysis (Escudier et al., 2020).

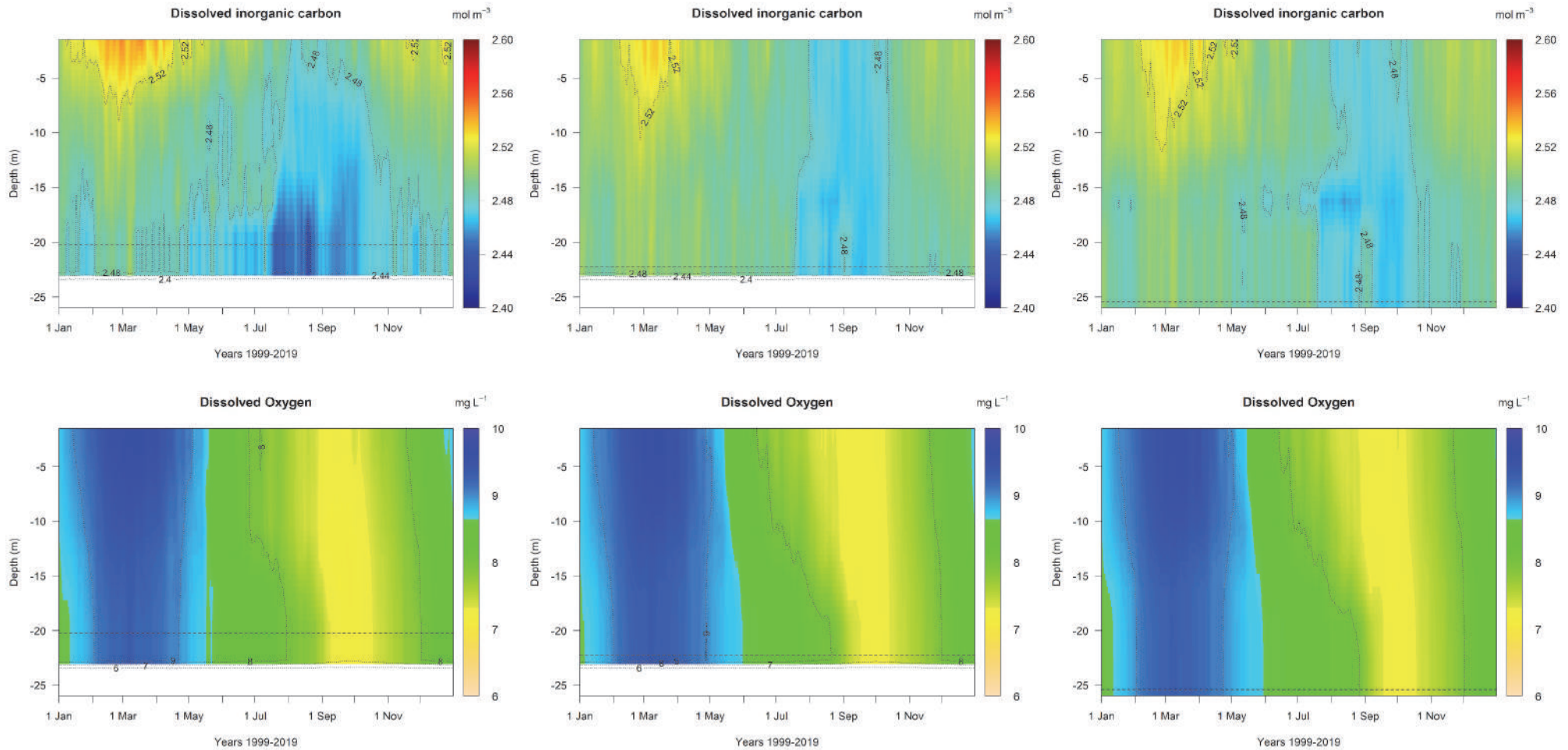


**Supplementary Figure 2.** Mean climatic conditions (from 1999 to 2019) of pH and alkalinity at each site (P204, MR08, P213; bottom depth marked by horizontal dashed line) according to the Mediterranean Sea Biogeochemical Reanalysis (Teruzzi et al., 2021).

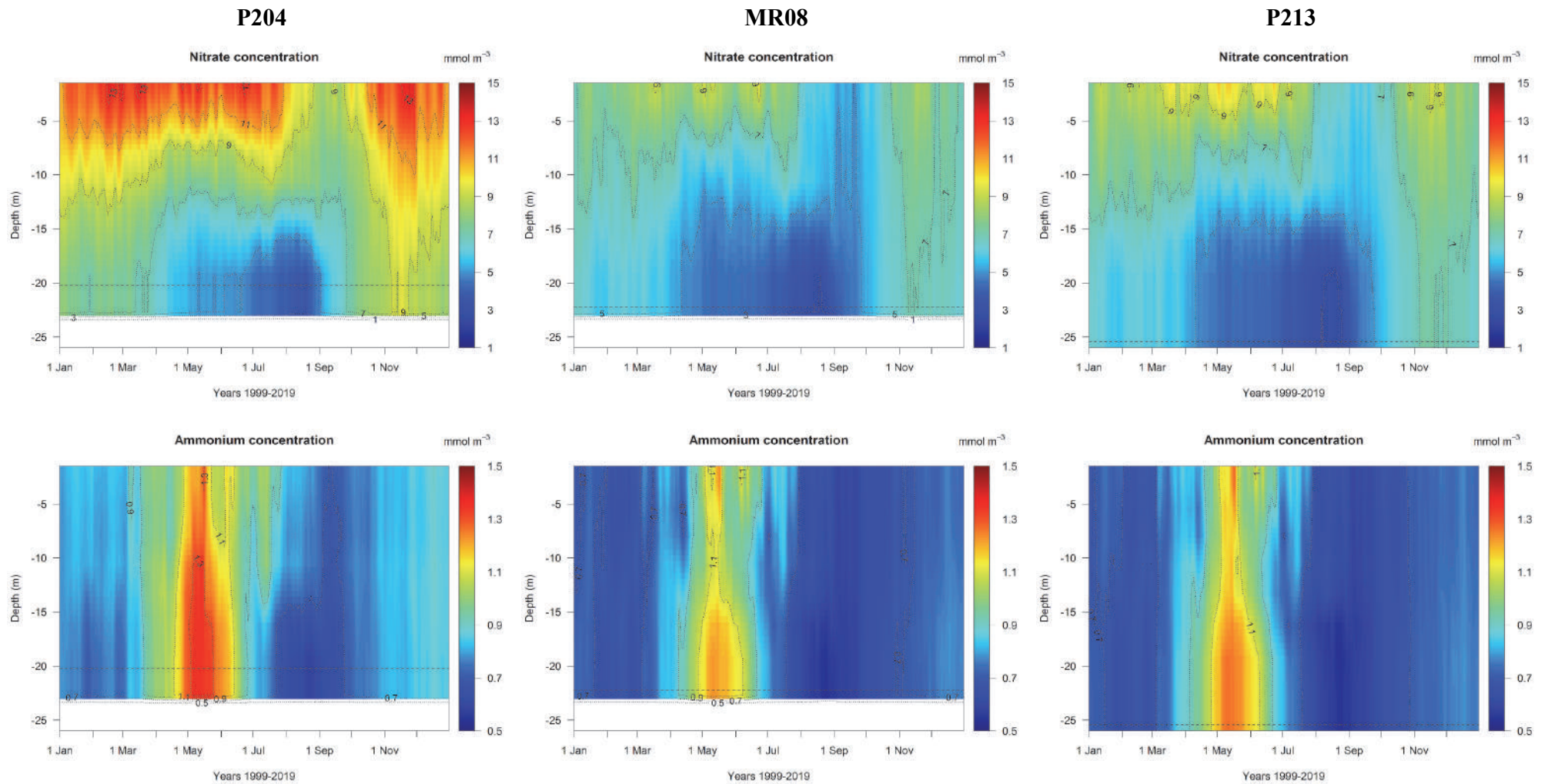
P204

MR08

P213



**Supplementary Figure 3.** Mean climatic conditions (from 1999 to 2019) of dissolved inorganic carbon and oxygen at each site (P204, MR08, P213; bottom depth marked by horizontal dashed line) according to the Mediterranean Sea Biogeochemical Reanalysis (Teruzzi et al., 2021).

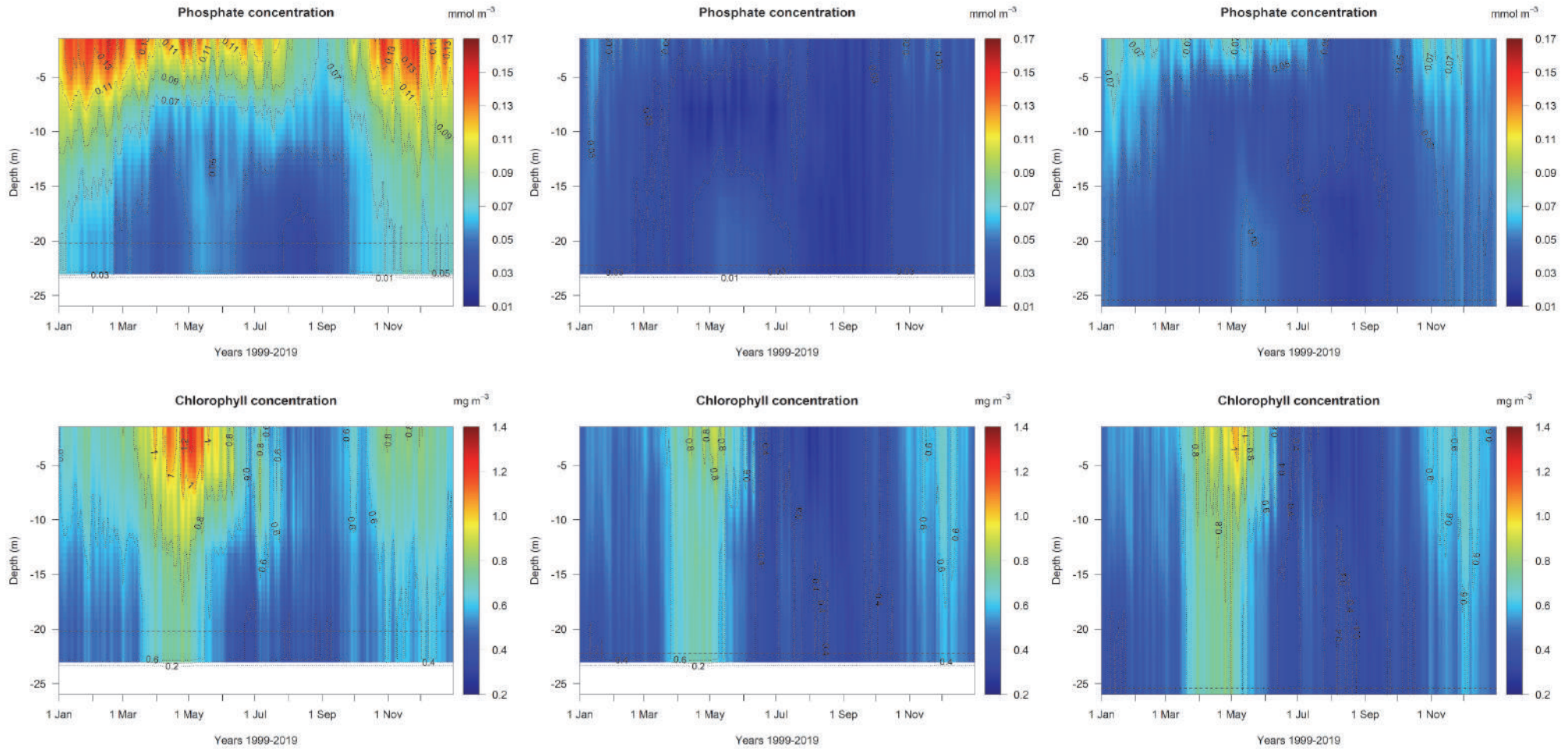


**Supplementary Figure 4.** Mean climatic conditions (from 1999 to 2019) of nitrate and ammonium concentration at each site (P204, MR08, P213; bottom depth marked by horizontal dashed line) according to the Mediterranean Sea Biogeochemical Reanalysis (Teruzzi et al., 2021).

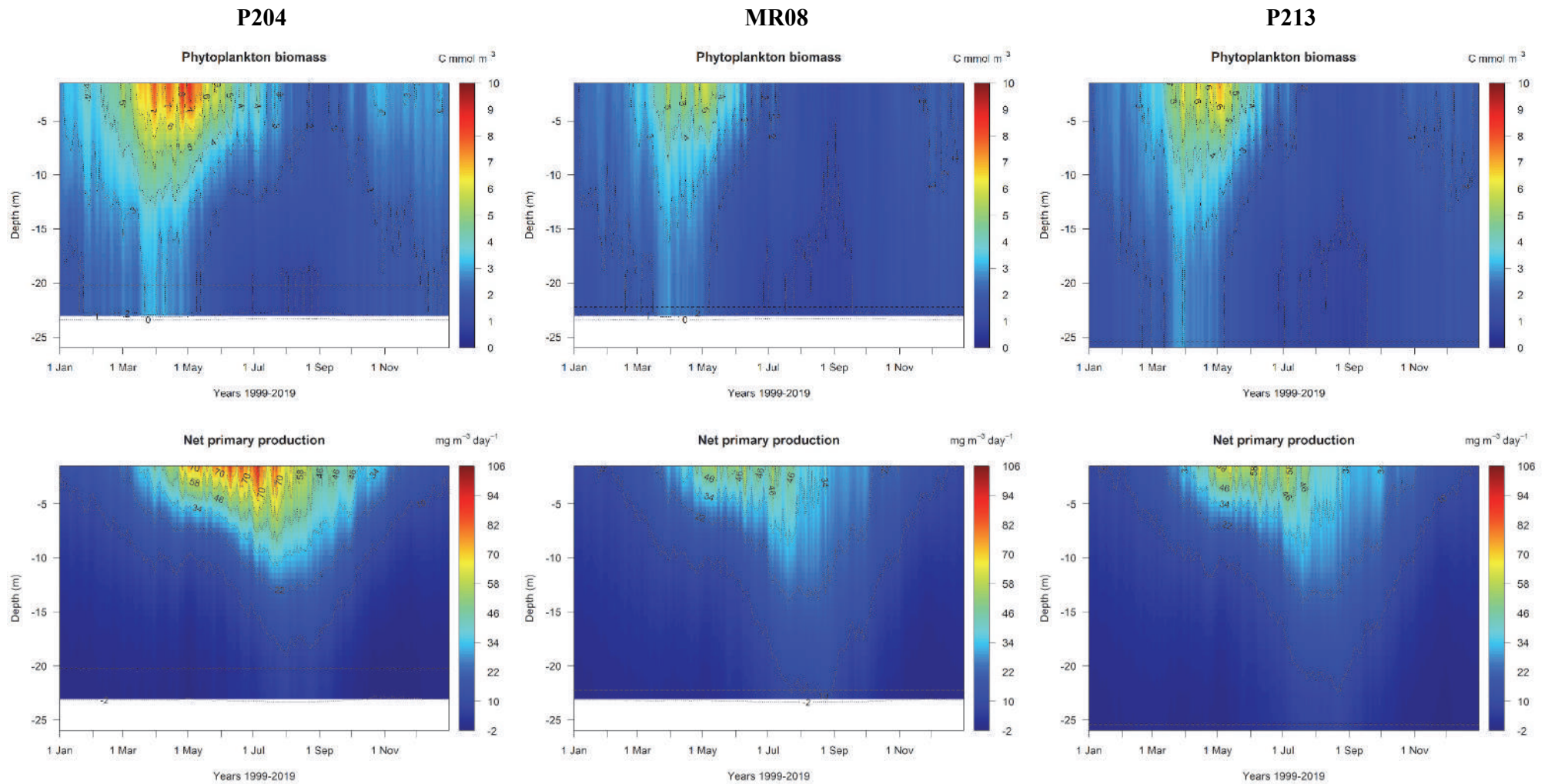
P204

MR08

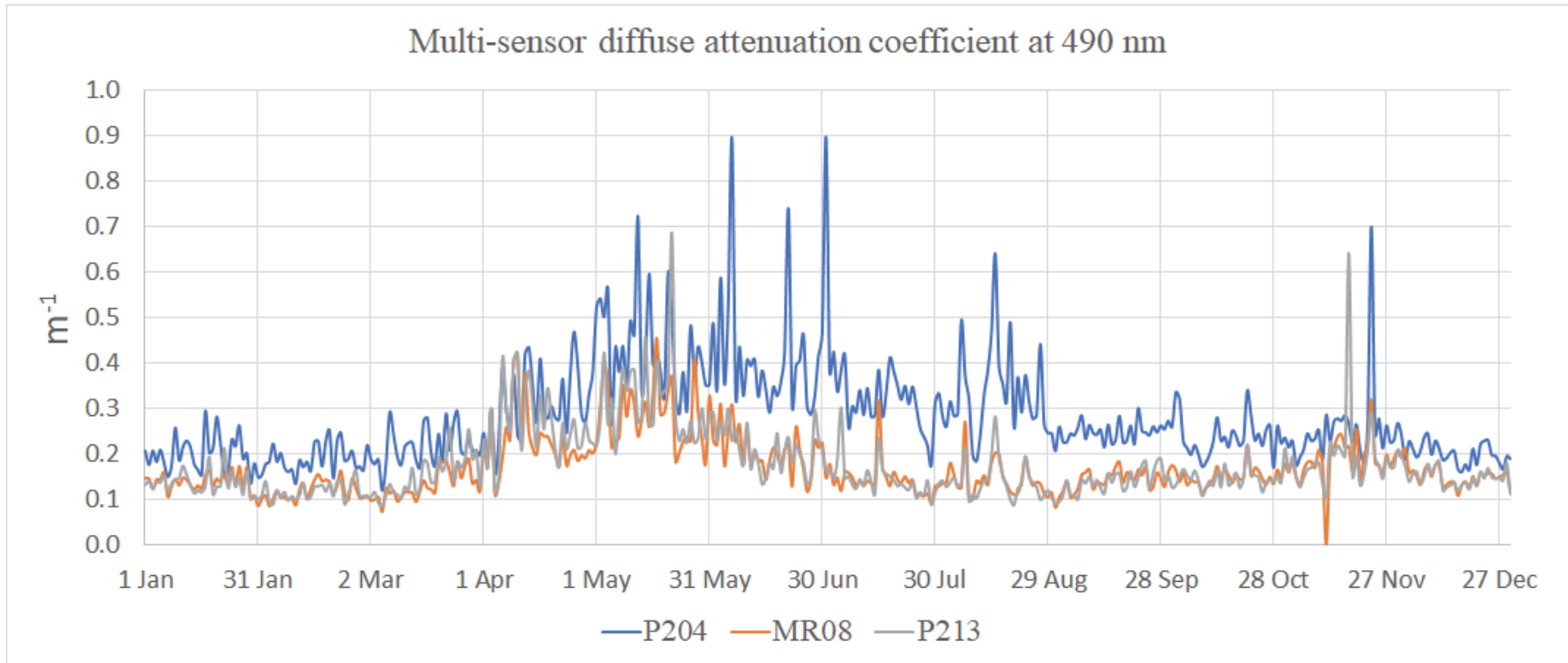
P213



**Supplementary Figure 5.** Mean climatic conditions (from 1999 to 2019) of phosphate and chlorophyll concentration at each site (P204, MR08, P213; bottom depth marked by horizontal dashed line) according to the Mediterranean Sea Biogeochemical Reanalysis (Teruzzi et al., 2021).



**Supplementary Figure 6.** Mean climatic conditions (from 1999 to 2019) of phytoplankton biomass and net primary production at each site (P204, MR08, P213; bottom depth marked by horizontal dashed line) according to the Mediterranean Sea Biogeochemical Reanalysis (Teruzzi et al., 2021).



**Supplementary Figure 7.** Mean climatic conditions (from 1997 to 2020) of the attenuation coefficient of light at 490 nm at each site (P204, MR08, P213; bottom depth marked by horizontal dashed line) according to the Mediterranean Sea Reprocessed Remote Sensing Multi Satellite observations (GOS group, 2021). This is a measure of the turbidity of the water column, i.e., how visible light in the blue-green region of the spectrum is attenuated by penetrating the water column.

**References**

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- Teruzzi, A., Di Biagio, V., Feudale, L., Bolzon, G., Lazzari, P., Salon, S., et al. (2021). Mediterranean Sea biogeochemical reanalysis (CMEMS MED-Biogeochemistry, MedBFM3 system) (Version 1) set. *Copernicus Monitoring Environment Marine Service (CMEMS)*. doi: 10.25423/CMCC/MEDSEA\_MULTIYEAR\_BGC\_006\_008\_MEDBFM3.