

## **Monitoring the marine environment of Thermaikos Gulf (North Aegean Sea)**

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Thermaikos Gulf, located in the Northwestern Aegean Sea, is a marine ecosystem of major importance, not only environmentally, but also due to the various socioeconomic activities associated with the area. The present observational study aims to investigate the current (2017-2019) quality state of seawater and seabed in the Gulf. The quality of the marine environment of Thermaikos Gulf was appraised by measuring physical, chemical and biological parameters. Water and sediment samples were seasonally collected from three sampling stations located at the inner part of Thermaikos Gulf. Specific physical-chemical characteristics (temperature, salinity, density along with pH and dissolved oxygen) throughout the water column were evaluated by conducting in situ measurements during the sampling campaigns. In situ processing of the water density data enabled the determination of the water column stratification. Afterwards, water samples were collected from three levels of the water column (surface, pycnocline and bottom), in order to investigate the variations of the measured parameters over the water column depth. The studied parameters of water samples included chemical parameters, such as ammonium nitrogen, nitrites, nitrates, silicates, phosphates and total phosphorus and biological parameters focusing on phytoplankton and protozooplankton species composition, abundance and biomass. Sediment samples were collected with a standard VanVeen grab from each sampling station. The obtained results are discussed with regards to seasonal and spatial variability, and water column stratification. Satellite ocean color data were also used to discuss the in situ findings and confirm “Dirty” Sea and Red Tide phenomena that were detected and analyzed based on the physical dynamics and especially the renewal of the Gulf.