

## OBSERVATIONAL STUDY OF THE MARINE ENVIRONMENT IN THE NORTHERN THERMAIKOS GULF

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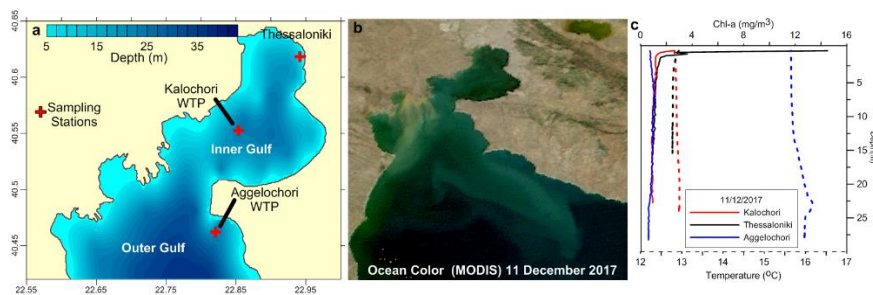
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**Key words:** Physical, Biological, Chemical, Measurements, Quality

**Introduction/Aim:** 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 (Krestenitis et al. 2012). The present observational study aims to investigate the quality state of seawater and seabed in the Gulf in summer, autumn and winter of 2017.

**Methods:** Water and sediment samples were seasonally collected from three sampling stations located at the northern part of Thermaikos Gulf: two stations at the outfall areas of the Thessaloniki's Wastewater Treatment Plants (WTP) and one very close to the city's seafront (Fig. 1a). The measurements include the physical (CTD), chemical and biological characteristics of the water column (phytoplankton and protozooplankton community) and seabed (macroinvertebrates). Satellite data (Fig. 1b) were also used to discuss the in situ findings.

**Results:** Remarkable temperature and chl-a differences were observed between Thessaloniki (inner) and Aggelochori (outer) Gulf in December (Fig. 1c). Very high surface concentrations of phosphates and total phosphorus were also measured, especially in Thessaloniki. The phytoplankton biomass was extremely high in the inner Gulf in July after the "dirty" Sea phenomenon and in December when an intense *Mesodinium rubrum* red tide was observed in the inner Gulf. Polychaetes and molluscs dominated in the sediment fauna. The density of macro-invertebrates was found higher close to the seafront of Thessaloniki.



**Figure 1:** (a) Bathymetry and stations, (b) satellite ocean color and (c) vertical profiles on 11/12/17

**Main Conclusions:** Significant differences were detected in physical and biochemical characteristics between the inner and outer Gulf. More brackish waters were observed in summer than in fall and winter.

**Acknowledgments:** We thank Chuanmin Hu (University of South Florida) for the high-resolution ocean color images. Funding by the Thessaloniki Water Supply & Sewerage Co. S.A.

### References:

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