



## Physical oceanographic features of the Cilician Basin and wastewater dumping at the coastal zone of Kyrenia

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### ABSTRACT

To investigate the physical oceanographic features, their temporal and spatial variabilities, the interactions between coastal and open water masses, and the seawater quality, ocean sub-mesoscale study with a relatively high frequency conducted in the Cilician Basin and particularly in the neritic zone of the Kyrenia region. The study carried out between November 2015 and June 2018 on a five nautical mile zonal section offshore of Kyrenia. The results revealed that the general circulation of the Cilician Basin is a highly complex and dynamic system with meandering and reversing currents and reappearing cyclonic/anti-cyclonic energetic mesoscale eddies with temporal variabilities. The dominating driving mechanism of the general circulation appears to be the temporarily and spatially change between the currents (Cilician Current and Asia Minor Current) and the cyclonic and anti-cyclonic eddies with temporal variabilities observed offshore of Kyrenia. Throughout the study, the upper 25 m of the water column observed to be well mixed and uniform. However, the seasonal stratification, thermocline, and halocline formation ranged between 25 and 80 m in all seasons except winters where the water column observed to be well mixed and uniform from the sea surface to the depth of *circa* 200 m, especially between January and March. The physical features and physical oceanographic characteristics should be taken into consideration for the determination of their effects on the marine ecosystems, furthermore for the planning and implementation of wastewater treatment and coastal management.

*Keywords:* Kibris time series; Physical oceanographic properties; Neritic systems; Wastewater dumping; Cilician Basin

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