

ABSTRACT

NUTRIENT TRANSPORT SCENARIOS IN THE BUYUK MENDERES RIVER BASIN

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In this study, Büyük Menderes River Basin that lies in the Southwestern part of Turkey in Aegean Region was analyzed using the PolFlow model in order to investigate the changes in flow and nutrient fluxes and conducting sensitivity analysis to examine the effect on one of the parameters on the results at the watershed outlet. For this purpose, the study of Durdu and Cvetkovic (2009) "Modelling of Water and Nutrient Flows Büyük Menderes River Basin" where the PolFlow model had been applied to Büyük Menderes River Basin was used and the climate change, population and life style scenarios generated in this study were applied. MAROV Indexes were applied to realize the sensitivity analyses for model parameters.

The results for the Büyük Menderes River Basin indicate that nutrient loads at the outlet of the watershed would decrease according to the climate change scenario; they would increase according to the population scenarios and phosphorus loads at the watershed outlet would be more affected than the nitrogen loads according to the "urban life" scenario. Nutrient loads at the watershed outlets are lower in the "rural life" scenario than in the "urban life" scenario. Sensitivity analyses of model parameters indicated that pms (a parameter that is used to estimate the maximum storage capacity of soil) affected more watershed outlets for nitrogen and phosphorus comparing to other parameters.

Key words: Nutrients, PCRaster–PolFlow, climate change scenario, population scenario, life-style scenario, MAROV Indexes