The 36th International Symposium on Remote Sensing of Environment,
11 – 15 May 2015, Berlin, Germany, ISRSE36-519

THE GROWTH RATES OF HYDROBIONTS IN THE ARGICHI AND VARDENIS RIVERS UNDER THE CONDITIONS OF THE IMPACT OF SMALL HYDROPOWER PLANTS

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THEME: Marine and coastal environment, resources and dynamics.

KEY WORDS: Armenia, river ecosystem, hydrobionts, impact, small hydropower plant.

ABSTRACT:

The aim of the present study was to assess the impact of the small hydropower plants on the growth of aquatic organisms in the Argichi and Vardenis rivers which are situated in the eastern part of Armenia. Observations, measurements and samplings were done in the sites situated in upstream and downstream from the small hydropower plants located on the rivers in October-December 2013, January, February and May 2014. The hydrobiological studies showed that a decrease in the quantitative and qualitative parameters of benthic macroinvertebrates, a reduction in the quantity and species composition of fishes were observed in the Argichi river according to the observation sites situated in upstream and downstream from the small hydropower plant (SHP) which was due to the impact of the SHP. During the investigation period, the quantitative and qualitative parameters of benthic macroinvertebrates in the upstream from the Vardenis river SHP were the following: the quantity ranged from 311 to 2616 individuum/m^2; the biomass ranged from 380 to 5337 mg/m^2, the number of species ranged from 17 to 29. Only fish species hooked from this site was *Salmo trutta fario (Linnaeus 1758)* the quantity of which ranged from 0 to 3 specimen/site. In the site situated in the downstream from the Vardenis river SHP, the ecosystem was destroyed due the intake of all quantity of water by the SHP. The operation of the SHPs also blocks the movement of the Lake Sevan endemic fish species to the sources of the rivers which are the most favorable places for their spawning.

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