

Changes in watershed environments and water balance of Lake Kasumigaura from 1970s to present

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Water balance of Lake Kasumigaura was estimated by Muraoka (1981) for 1970s. Since then, watershed environments have been changed drastically; also human interventions to the water balance have been made in various forms. However, systematic and comprehensive estimation of water balance has not been carried out. Thus in the present study, first the same methods of Muraoka (1981) were applied to the present measurements to estimate water balance. Next, some of the water balance components which have become available with advent of better measurements technology were employed. Among them is the lake surface evaporation.

As a result, annual inflow and outflow of Lake Kasumigaura increased by about 30%. Main cause of this increase was the increase of artificial flow (both intake and outflow) such as service water, industrial water, and treated sewage. Natural hydrologic flow such as river and groundwater discharge also increased but by smaller amount of 5 - 35%.

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