

A study on the effectiveness of flood prevention projects in the Nakagawa basin, central Japan

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The purpose of the present study is to verify the effectiveness of flood prevention projects for a certain river and to convey the information to citizens. To fulfill the objective, the past and current recorded data relating to the Nakagawa River were compared. Three past observation points of pre-projects and two current observation points after the projects were selected. Firstly, the latitude and longitude of these points were investigated by Google Earth. The location of the five points was then placed on the map by using GIS software. Secondly, change in the water level of every 12-h interval after a rainfall of the present river and the past river was examined and the rate of the change in water levels during and after rainfalls were also compared. These investigations revealed increasing of water levels of the past river during the rainfall and decreasing gradually after the rainfall, whereas decreasing of water levels of the present river even during the rainfall and also decreasing the level with noticeable fluctuation after the rainfall. It is considered that the flow discharges and water levels of the present river can be effectively controlled not only by natural way but also by flood prevention projects such as retarding reservoirs and drainage canals.

Keywords: Nakagawa river, GIS, flood prevention projects