

River water change after the 2016 Kumamoto earthquake

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River water changes after the 2016 Kumamoto earthquake were investigated at totally 174 hydro-stations in Kumamoto and Oita prefectures. Averaged river levels before and after the quakes were compared and classified their changes into 8 patterns. River levels increased and decreased after the foreshock at around 4 and 10 sites near the epicenter, respectively. However, river levels increased and decreased after the main shock at about 10 and 40 sites, respectively. Most sites which river levels increased were located at more than 200m altitude in Kumamoto and Oita prefectures.

In the Shirakawa, river discharges just after the main shock showed increase and decrease trends at the Yoshihara bridge (upstream) and the Yotsugi bridge (downstream), respectively. Difference in river discharge between these bridges was estimated approximately 100,000 m³ during 12 hours just after the main shock. A new fault fracture zone (Suizenji faults) was found between these bridges, so there is a possibility that huge volume of river water was flowing into the faults.

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