

FLOOD DISASTERS NEW AND OLD OF THE SHINANO RIVER

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Extreme events of rivers discussed in this paper are the flood event with the probability far exceeding the value for the design flood discharge. The occurrence of these extreme events is discussed with the record of the Niigata, Japan area. That record shows that the extreme events occurred four times in the past ten years with the small spatial scale, with rain cloud of some 100km².

Turning to the Shinano River, the Japan's longest, the historic 1896 flood is shown to be such a case. In those years of before 1900, river discharge was not gauged. Only data available is the daily rainfall data. Using this data, the flood discharge of 1896 flood is restored to be of the scale of the probability exceeding 1/120 to 1/200 ayear. Therefore, the paper shows that the extreme events eventually occur in a river basin.

The effective countermeasure to the extreme events is shown to be a flood evacuation plan aided with the inundation chart and it is pointed out that the people's involvement is essential in compiling such a plan. The paper concludes emphasizing the importance of people's involvement to the river management.

Keywords: Flood Discharge, Runoff Analysis, Inundation analysis, Statistical Property of Flood Data

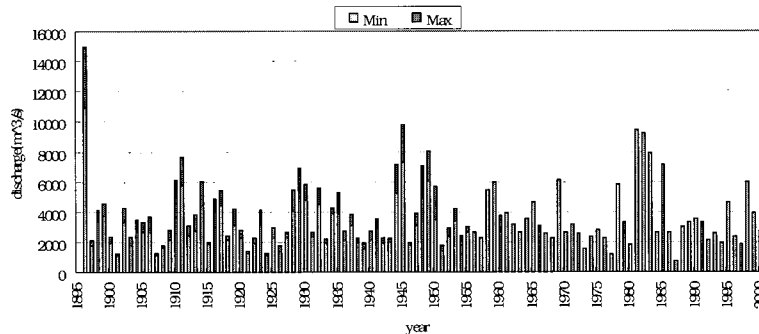


Fig. 6 Annual Maximum Discharge of the Shinano River from 1896 to 2000
(Darkened portion of columns represent range of estimation)