

HYDROLOGICAL CHANGE OF THE MIN RIVER IN THE UPPER YANGTZE: SEARCH FOR CONTRIBUTION FROM LAND SURFACE DISTURBANCE USING SATELLITE IMAGES

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Abstract

There is a growing concern on change in hydrological processes in mountain areas and its impact downstream in the face of rapid environment changes. Previous study identified that most of major tributaries in mountain areas of the upper Yangtze experienced significant changes in water discharge and sediment yields due to in large part land use alteration, hydropower project and water utilization over the past decades (Lu and Higgitt, 1998; Lu and Higgitt, *in press*). However, contribution of the change from land surface disturbance remains unclear due to the lack of information on land use change. The present study attempts to determine land use change and land surface disturbance in the Min river of the upper Yangtze using satellite images in combination with field investigation. The Min river, located in the between of the Shichuan basin and the Tibet plateau, consists of the Dadu and the Min tributaries. The river, providing water for agriculture through the Dujiangyan Irrigation Systems over 2000 years, is being threaten by water discharge decrease and sediment transport increase. Determination of land use change in the mountainous areas is difficult due to a variety of reasons such as obvious vertical variations in vegetation types and frequent snow covers.