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# Groundwater flooding vulnerability assessment in riverside alluviums of Nakdong River, South Korea

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Soil wetting or inundation due to rising groundwater table can cause groundwater flooding in the riverside alluvium and also affect the scale of surface water flooding. There is possible to occur the flooding of lowland by falling the groundwater level at heavy rain and is important to evaluate the vulnerability and the prediction of groundwater problem. Three groups (safe, intermediate, and vulnerable) are classified by using groundwater flooding vulnerability index(FVI) which is calculated using groundwater level's time series measured at each monitoring well. A prediction model for the classification is developed by using a discriminant analysis based on the correlation between the original groups and physical features (topography, soil, sediment layer distribution, soil drainage, and groundwater level-related features). And we have created a groundwater flooding vulnerability GIS Map.
This research results is possible to policy support of establishment of flooding providing the flooding vulnerability technique using the groundwater occurring the damage came from the fluctuation of groundwater level by the water level change of river and the effect of rainfall. Also, in conjunction with the existing flooding/drought map, it improve the accuracy of groundwater flooding/drought prediction, and it becomes possible to respond the water sources, water level down by using the evaluation system in flooding/drought.