

Effect of Transport Capacity Formula on Spatial Distribution of Soil Erosion

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Abstract

Soil erosion due to climate change is one of the global environmental issues. Especially, Korea is vulnerable to soil erosion as the frequency of extreme rainfall events and rainfall intensity are increasing. Soil erosion causes various problems such as reduced farmlands, deterioration of water quality in rivers, etc. To these severe problems, understanding the process of soil erosion is the first process. Then, it is necessary to quantify and analyze soil erosion using an erosion model.

Soil erosion models are divided into empirical, conceptual, and physics-based models according to the structures and characteristics of models. This study used GSSHA (Gridded Surface Subsurface Hydrologic Analysis), the physics-based erosion model, running on WMS (Watershed Modeling System) to analyze soil erosion vulnerability of the CheonCheon watershed. In addition, we compared the six sediment transport capacity formulas provided in the model and evaluated the equations for on this study site. Therefore, this result can be as a primary tool for soil conservation management.

Keywords : soil erosion, GSSHA, WMS, transport capacity formula

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