

## The Relationship between Land Use Change and Runoff

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**Abstract :** Many problems are occurred in watershed due to human activity and economic development. The purpose is to determine the effects of the land use change on surface runoff using land use map on 1980, 2001 and 2008 and daily weather data during January 1, 1979 to September 30, 2010 applied to SWAT. The results can be presented that the polynomial equation is suitable to display that relationship. These equations for land use in 1980, 2001 and 2008 are consisted of  $y = -0.0076x^5 + 0.1914x^4 - 1.6386x^3 + 6.6324x^2 - 8.736x + 7.8023$  ( $R^2 = 0.9255$ ),  $y = -0.0298x^5 + 0.8794x^4 - 9.8056x^3 + 51.99x^2 - 117.04x + 96.797$ ; ( $R^2 = 0.9186$ ) and  $y = -0.0277x^5 + 0.8132x^4 - 8.9598x^3 + 46.498x^2 - 101.83x + 81.108$  ( $R^2 = 0.9006$ ), respectively. Moreover, if the agricultural area is the largest area, it is a sensitive parameter to concern surface runoff.

**Keywords :** land use, runoff, SWAT, upper Mun River basin

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