**Assessing the hydrological impact of land cover change on** **the Cumberland River at Williamsburg, Kentucky**

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Land use and land cover change alters various factors, including hydrology and environment. This leads to change in flow pattern due to temporal variation in discharge distribution and accelerates various negative consequences. The objective of the research is to explore the potential change in the hydrologic property (streamflow) in the Cumberland River at Williamsburg between 2001 and 2016, and the extent to which they are associated with the observed past land cover change. This study discusses the hydrological impact of land cover change on the Cumberland River at Williamsburg, Kentucky, by using the Soil and Water Assessment Tool (SWAT). Two land cover scenarios for the year 2001 and 2016 were used to simulate the hydrology of the Cumberland River at Williamsburg. Land cover was classified into four classes: agriculture, urban, forest, and water. Evaluation of the impacts of land cover change on streamflow was done by comparing the average annual basin values of streamflow for each of the land cover scenarios. Preliminary results show that an increase in agricultural and urban areas lead to increase in surface runoff generation. The output of this paper provides a robust approach of evaluating the impact of land cover change on water resources such as streams and rivers. Understanding the impact of land cover change on the hydrological properties is important for water engineers, town planners, and local authorities to make better decisions in planning and management.

Keywords: streamflow; land use change; SWAT model.