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## Comparison of the Revised and Modified USLE models for prediction of sediment yield from grazing land in Central Queensland, Australia

Jagriti Tiwari<sup>1</sup>, Bofu Yu<sup>1</sup>, D Mark Silburn<sup>2</sup>, Rebecca Bartley<sup>3</sup>, Craig M Thornton<sup>4</sup>, Jo Owens<sup>5</sup>, and Andrew Brooks<sup>1</sup>

<sup>1</sup>Australian Rivers Institute, School of Engineering and Built Environment, Griffith University, Nathan, Queensland, 4111, Australia (jagritit27@gmail.com)

<sup>2</sup>Agricultural Production Systems Research Unit, Department of Environment and Resource Management, Toowoomba, Qld 4350, Australia

<sup>3</sup>CSIRO, Brisbane, Queensland 4068, Australia

<sup>4</sup>Department of Resources, Mines, and Energy, PO Box 1762, Rockhampton, Queensland, 4700, Australia

<sup>5</sup>Centre for Agricultural Engineering, University of Southern Queensland, Toowoomba, Queensland

One of the major issues of the grazing land ecosystem is high sediment yield linked to extensive land clearing and conversion of native vegetation into grazing. It is essential to model hillslope sedimentation for improved prediction of sediment yield in grazed catchments. This study evaluated the performance of Revised Universal Soil Loss Equation (RUSLE) and Modified Universal Soil Loss Equation (MUSLE) models in predicting sediment yield from grazed catchments and analyzed the effects of runoff, peak runoff rate and the RUSLE/MUSLE factor on annual sediment yield. Springvale, Brigalow, and Weany Creek catchments from Fitzroy and Burdekin Basins in Queensland, Australia, were selected as study areas. The MUSLE models performed better as compared to the RUSLE model for all three catchments. Compared to the RUSLE model, the MUSLE1 model with factors runoff and peak runoff rate was able to predict sediment yield for Weany creek and Brigalow catchment and the MUSLE2 with factors rainfall-runoff erosivity ( $EI_{30}$ ), runoff, and peak runoff rate performed well for Springvale and Brigalow catchment. The study found rainfall and runoff factors in Springvale and Brigalow catchments, and runoff factor and peak runoff rate in Weany catchments contributed to the variation of sediment yield. The estimated soil erodibility factor (K) was found 14%, 24%, and 60% higher for Springvale, Brigalow, and Weany Creek catchments, respectively, compared to K-factor from the Australian Soil Resource Information System (ASRIS). This study recommends using the MUSLE model to improve hillslope sediment yield prediction in grazing lands in Central Queensland.