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Editorial

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Emergent Groundwater Springs

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Introduction

Emergent groundwater springs (dots) and associated wetlands (gray shading) within the Fool Creek catchment at the Fraser Experimental Forest, Colorado. The chemical composition of springwater reflected distinct groundwater sources and varied with elevation and among catchment zones. Acid neutralizing capacity (see Figure) and other inorganic constituents were more concentrated in springwater emerging from several springs during a geologically faulted portion of the catchment, and these had a predominant effect on downstream ion concentrations.

Monitoring at the Marcell Experimental Forest (MEF) catchments in northern Minnesota, USA, is exclusive from typical mountainous research catchments. we offer an summary of obtainable data and metadata that are archived and available through community repositories. The research programme fills a crucial role in environmental monitoring and research on hydrology, ecology, biogeochemistry, and environmental change.

No-till (NT) may be a conservation system that improves the hydrological regime of agricultural slopes by providing greater surface protection and benefits to the physical and hydrological properties of soils. However, the isolated use of NT isn't enough to regulate runoff and its associated degradation processes. Therefore, this study aimed to guage the runoff of agricultural slopes under NT under different runoff control conditions by monitoring 63 rainfall events in two 2.4-ha zero-order catchments and 27 rainfall events in four 0.6-ha macroplots.

The catchments are paired and similar in terms of the sort of soil and relief, but different regarding the presence of terraces. The macroplots have different soil and crop management systems. By using monitoring techniques, the hyetographs and hydrographs revealed the influence of the various sorts of management on the catchments and macroplots and allowed rainfall characteristics, runoff volume, runoff coefficients, water infiltration, peak runoff, response times, and curve number to be analysed. The terraces positively affected the NT and controlled runoff and related variables, additionally to infiltration significantly increasing and runoff reducing within the terraced catchment. All the hydrological information assessed pointed to the positive effects provided by the presence of the terraces. The leads to the macroplots showed that prime amounts of phytomass and/or chiselling don't control runoff and its correlated variables in medium and high magnitude events. The study concludes by underlining the necessity for extra measures to regulate runoff (terraces), even in areas under NT and with high phytomass production. Additionally, the study emphasizes the importance of monitoring at the catchment scale to raised understand the hydrological behaviour of agricultural areas and supply the required parameters to effectively control runoff.

Local community interest in better understanding regional global climate change impacts has motivated the establishment of a long-term soil moisture and weather observation network within the Roaring Fork catchment of the Colorado River Headwaters. This catchment-wide suite of 10 stations, installed between 2012 and 2020, collects frequent, fixed-interval data on soil moisture, soil temperature, rain, air temperature, ratio , and (at some stations) snow across an elevational gradient from 1800 to 3680 m. during this paper we offer an outline of the info this network provides, how data are accessed, and the way this community-supported effort has resulted in data that support mountain hydrology research with applications for resource management and global climate change adaptation deciding . All data from this network are publicly available.

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