



Caution in using the hydrologic similarity concept in volcanic areas. Practical recommendations for management based on Andean watersheds

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Mountain watersheds can normally be assumed as similar (in a hydrological sense) since they are small and look similar in terms of land cover, slope and morphology, among others. However, mountainous and volcanic watersheds regularly have diverse geologic characteristics. Their spatial variability of geologic formations and topography is often high due to diversity of the deposits, and due to the difference in time when they were deposited. All these factors affect the water movements within, and among watersheds, making them a very complex system to understand and moreover simulate, mainly because they have several potential hydrological connections within and with neighboring watersheds. The present study shows the dissimilar behavior of three groups of watersheds in the Chilean Andes. Although these basins look similar, they behave dissimilar. Based on hydrological, morphological and geological data analyses a few recommendations are performed to deal with hydrologic studies in volcanic watershed for water management and for hydrological and design studies.