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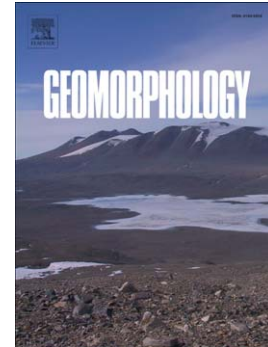
What do you mean, 'resilient geomorphic systems'?

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What do you mean, 'resilient Geomorphic Systems'?

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Abstract

Resilience thinking has many parallels in the study of geomorphology. Similarities and intersections exist between the scientific discipline of geomorphology and the scientific concept of resilience. Many of the core themes fundamental to geomorphology are closely related to the key themes of resilience. Applications of resilience thinking in the study of natural and human systems have expanded, based on the fundamental premise that ecosystems, economies, and societies must be managed as linked social-ecological systems. Despite geomorphology and resilience sharing core themes, appreciation is limited of the history and development of geomorphology as a field of scientific endeavor by many in the field of resilience, as well as a limited awareness of the foundations of the former in the more recent emergence of resilience. This potentially limits applications of resilience concepts to the study of geomorphology. In this manuscript we provide a collective examination of geomorphology and resilience as a means to conceptually advance both areas of study, as well as to further cement the relevance and importance of not only understanding the complexities of geomorphic systems in an emerging world of interdisciplinary challenges but also the importance of viewing humans as an intrinsic component of geomorphic systems rather than just an external driver. The application of the concepts of hierarchy and scale, fundamental tenets of the study of geomorphic systems, provide a means to overcome contemporary scale-limited approaches within resilience studies. Resilience offers a framework for geomorphology to expand its application into the broader social-ecological domain.

Keywords: resilience thinking; interdisciplinary; post-normal science; frameworks

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