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## Climate change impact on the hydrological functioning of the mountain lakes: a conceptual framework

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Mountain lakes are distinctive water bodies that not only serve as a crucial water resource for the inhabitants of the upland regions but also as an important destination for millions of tourists who are attracted by their beauty. Mountain lakes are fragile water bodies that are experiencing changes in their hydrological processes owing to global warming. Understanding the consequences is important as it can help identify whether climate change causes degradations in lake hydrological functioning. The interactions of hydrological processes in mountain lakes with external drivers are usually hard to explain explicitly owing to their complexity. To deal with that problem, scholars develop conceptual frameworks. The focus was on the Canadian Rocky Mountains where 5155 lakes were identified using GIS. To identify factors influencing lake hydrological function and their sensitivity to changing climate, a literature review was undertaken. Identified in the literature review were 13 natural drivers that reflected climate change impacts to lake hydrological functioning and 38 additional sub-factors that characterize the drivers. Using these factors, a conceptual framework for mountain lake hydrological functioning was developed. The major limitation to thorough testing of the conceptual framework was a small number of observations for lakes in the research area. Nevertheless, the conceptual framework is flexible and should be tested across many mountainous regions worldwide. Overall, the conducted research stresses the problem of limited hydrological understanding of lakes in the Canadian Rockies and presents a useful framework of the complex interactions of natural drivers and intra-lake processes under rising temperatures.