Flow Requirements of Endangered Fishes and Water Supply Forecasting: Use of Physical Characteristics of Streamflows in Snowmelt-Dominated Rivers

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Temperature and precipitation settings associated with specific hydroclimatic conditions influence seasonal and daily hydrograph development in snowmelt dominated rivers in the Western United States. Some features observed in hydrographs of two rivers in the Colorado River basin, between fall and spring, reflect driving hydroclimatic conditions and relate directly to the relative runoff magnitude and the timing of peak flows of the upcoming snowmelt runoff.

Early and reasonably reliable indicators of magnitude and timing of upcoming snowmelt runoff may help water resource managers and stakeholders plan and use water resources more efficiently. These streamflow features may also serve as cues for aquatic organisms and thus may be used to better understand habitat requirements of indigenous fishes, which is among the most challenging issues confronting Western water resource management. As a result, this information may facilitate water allocation planning that is congruent with water supply demands for both human and endangered species.