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## Indicators of hydrological dDroughts

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Droughts typically are caused by precipitation deficits which impact agricultural crops, water resources and socio-economic activities depending on their location, timing and duration. While precipitation deficits are relatively easy to track, it is harder to monitor changes caused by these deficits in agricultural production and, arguably, even more difficult to assess their impacts on water resources due to the time lags and spatial averaging that are inherent in hydrological data. This presentation reports on an analysis of hydrological drought indicators undertaken during a multi-year drought in western Canada. In particular, drought impacts on water resources are assessed and characterized using (1) characteristics of hydrographs derived from actual and "naturalized" flows, (2) deficit flow volumes, and (3) time variations of runoff coefficients. These techniques are used to characterize the development of the 1999-2005 drought in western Canada. A comparative analysis is also presented which provides insights regarding hydrological drought processes and identifies some of the limitations of "naturalized" flows and hydrologic indicators for drought monitoring.