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## USING CLIMATE DATA TO UNDERSTAND THE RESPONSE BY WILDLIFE AND FISHERIES

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Montana's water supply varies from about 40 to 160 percent average. This is due to a large variability in the mountain snowpack, spring and summer precipitation and temperature. Nearly all of these parameters that determine the runoff will impact fish and wildlife throughout the year. Time of various climatic events in Montana, such as when snowpack starts to accumulate, when it reaches its season's maximum, when it melts out, winter temperatures, when streams reach their annual peak flow, and when plants break dormancy (spring green-up), forage production, whether or not there is fall green-up and the time of fall green-up all have had a historical variation spanning about eight weeks. In addition, there is annual variation in climatic conditions across the state. Wildlife and fisheries managers need to take this variability into account when managing wildlife. Tools to help assess the potential variability and timing of various climatic, hydrologic and phenological parameters will be presented. Using observed climatic and hydrologic data collected over the past 100 years can be further interpreted to help understand and predict the response and effects on fish and wildlife. Relating these responses to these parameters provide better relationships than by using calendar dates.