**Transition season evapotranspiration from alpine and subalpine environments in the Canadian Rockies**

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A better understanding of soil-vegetation-atmosphere interactions in the spring snowmelt and fall freeze-up transition seasons is needed in high mountain environments as they are increasingly subject to climate warming and weather extremes. A previous study by Langs et al (2020) identified the winter-spring transition period and subsequent snowmelt as the most important period for subalpine forest season productivity. Understanding when different vegetation types start transpiring in the spring and enter senescence in the autumn is important to predicting headwater basin water balances as influenced by variable weather and precipitation patterns. To explore how recent interannual variability has affected evapotranspiration, multi-year observations of precipitation, snowmelt, soil moisture and evapotranspiration were made from an alpine tundra ridgetop and a sub-alpine forest hilltop in Fortress Mountain Research Basin, Alberta. Understanding when different vegetation types start transpiring in the spring and enter senescence in the fall is additionally important to understanding the impacts on forest health under changing weather and precipitation patterns. Tundra vegetation was able to take advantage of earlier snowfree conditions to initiate transpiration, but then quickly depleted available soil moisture. Subalpine forests were able to initiate transpiration early in the snowmelt period and take advantage of infiltrating snowmelt water, and so transpired larger volumes of water in years with deeper and more slowly melting snowpacks. Senescence was driven by cool nights and shorter direct solar radiation periods as mountain shading increased in late summer and autumn. Comparing and contrasting the observed evapotranspiration and water use for the tundra and subalpine forest vegetation types in these transition seasons will inform the development of improved hydrological models of high mountain basins and estimations of how these environments might respond to future climate change.