

WATER BULLETIN

Summer to Winter 2016

Drought conditions have abated across most of western Canada with the exception of the Edmonton area and Red Deer region south towards the international border, the northern portion of British Columbia into the Yukon and Northwest Territories, and northern Saskatchewan. The excess of moisture from frequent storm events this summer is the reason, which has led to anything but “average” conditions.

► Six-month average precipitation (as % of normal) is now in the normal range for most of Alberta, extending into the Fort St. John region of BC. Exceptions include the Upper Athabasca and North Saskatchewan River basins.

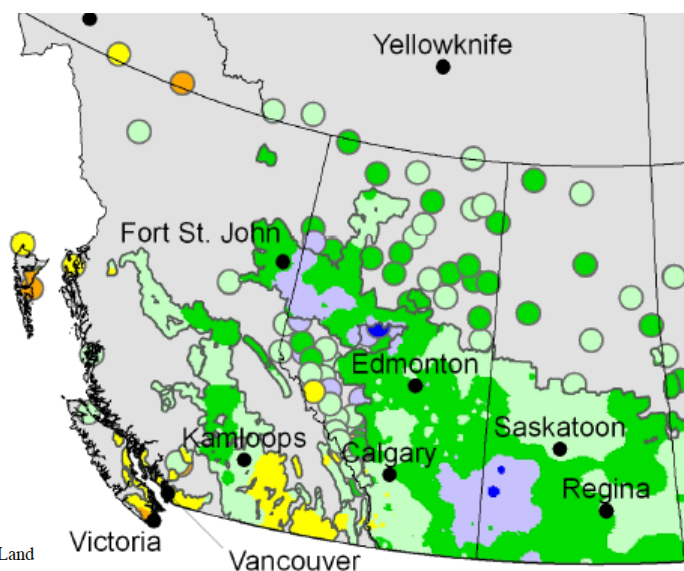
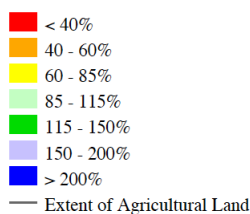


Figure 1. Percent of average precipitation for the last 6 months extending up to August 22, 2016 (Source: Agriculture & Agri-Food Canada)

River flows have remained erratic in character since the early spring freshet and rapid transition to lower flow volumes in May and June. Most of the variability in flow is being noted in the smaller order streams, making access to reliable volumes of water challenging from those supply sources.

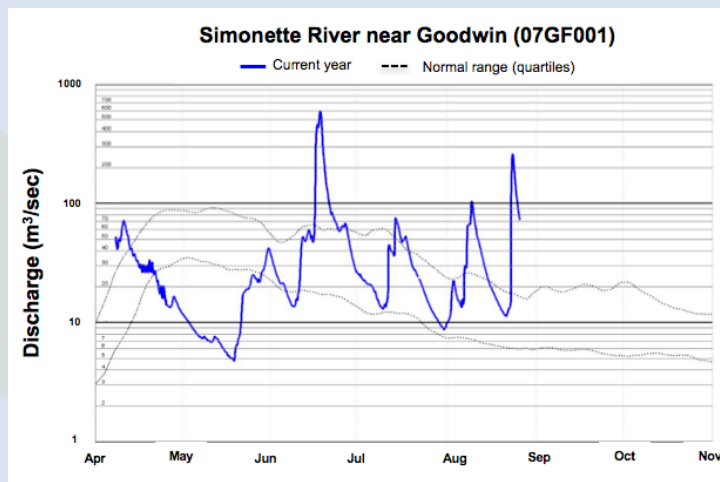
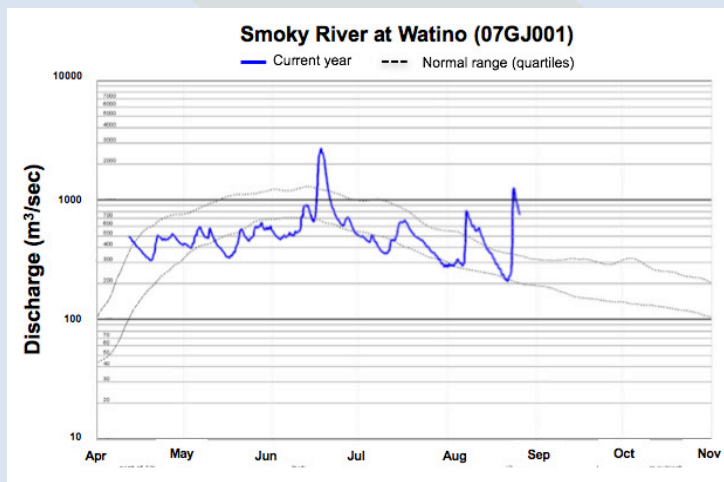


Figure 2. Streamflow hydrographs for selected larger and smaller rivers in NW Alberta. (left panel = Smoky River at Watino; right panel = Simonette River near Goodwin; Source: Alberta Environment and Parks)

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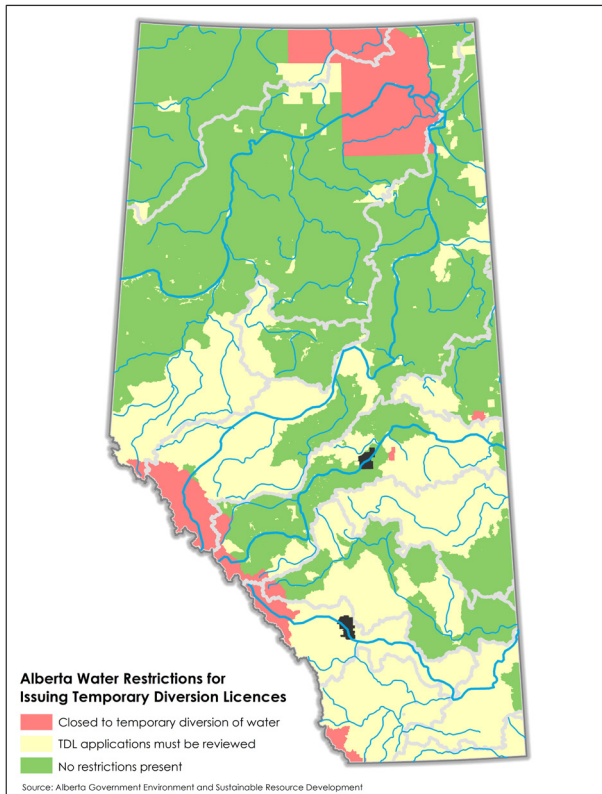


Figure 3. Map of areas currently under a water restriction by AER
(Source: Government of Alberta)

Regardless of the positive shift in the moisture regime of western Canada, large portions of Alberta remain under an AER Water Restriction due to the erratic flow conditions (i.e., yellow areas shown in Figure 3). This includes a majority of the region currently under development for unconventional oil and gas resources.

Expectations are that conditions will remain much the same for the remainder of 2016 as we head towards late season low flow conditions. Updates from the National Oceanic and Atmospheric Administration (NOAA) are indicating a 55-60% chance of a La Nina phase of the El Nino Southern Oscillation (or cool phase of the ENSO) developing over the next few months. Cooler and wetter phases of the ENSO favour above average snowpacks and streamflows (5-10% above average – Figure 4), which may bring a bit more “water reliability” in the coming year. As for the Pacific Decadal Oscillation (PDO), index values remain positive (warm phase) and have been so since January 2014. If they remain positive, this could reduce any positive effects on water supplies that may transpire.

