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Commodity Intelligence Report

Canada: Seasonal Summary for MY 2022/23

The 2022 agricultural season was substantially improved for Canadian farmers in the Prairie provinces, as conditions in the region returned to normal or better, following the disastrous drought of 2021. A year ago, Prairie farmers saw yields at 34 percent below the 5-year average for major grains and oilseeds. Yields in the region rebounded this year and were above-average for all of these crops.

Precipitation was needed leading into the 2022 season throughout the Prairies to offset the soil moisture deficits that resulted from the 2021 drought. In the spring, however, dryness was again the storyline in the southwestern Prairies, while excessive moisture, and even flooding, plagued the agricultural zones in Manitoba and eastern Saskatchewan (see Figure 1). These early season moisture deficits or excesses resulted in two opposing early-season scenarios for the Priaries: delayed crop progress in the west and planting delays in the east. The results were crops generally running a week or two behind normal progress. In July, however, replenishing rainfall arrived in the western Prairies, while warm temperatures and dryness improved growing conditions in Manitoba, eastern Saskatchewan, and in the Peace River Valley in northwest Alberta, which had also experienced cool, wet conditions during the spring (see Figure 2). These ideal growing conditions rapidly advanced crops through the second portion of the season.

The return of normal conditions in the Prairies was especially welcomed by farmers, following the historic drought of 2021. Satellite imagery analysis highlights the substantial differences in conditions between this year and last (see Figures 3 and 4). In particular, the mid-season satellited-derived Normalized Difference Vegetation Index (NDVI) response indicated much-improved vegetation conditions over last season throughout the Prairie croplands (see Figure 4).

Precipitation was particularly ideal during the month of July, when most crops in the region reach their critical reproductive stages (see Figure 5). As noted previously, areas which had previously been too wet (Peace River Valley, eastern Saskatchewan and Manitoba) received warmer, drier conditions, while southern Alberta received badly-needed rainfall following the dry spring. The corresponding NDVI response indicated above-average vegetation health throughout most of the Prairies (see Figure 6), particularly in the major grain and rapeseed areas (see Figure 7). The exception to this pattern was in the primary durum wheat region of southwestern Saskatchewan, which did not receive rainfall in amounts adequate to offset the prolonged dryness of 2021 and the spring of 2022. Durum wheat yields were 20 percent below average in Saskatchewan this year, according to the

November Statistics Canada (StatCan) report. NDVI in this region indicated below-average crop conditions in many areas (see Figure 7). The satellite-derived Percent Average Seasonal Greenness (PASG) index, a cumulative measure of crop activity derived from NDVI, more-vividly highlights the below-average conditions in southwestern Saskatchewan compared to the relatively normal to above-average conditions elsewhere (see Figure 8). The PASG shows the cumulatively above-average crop conditions that resulted in above-average yields for most of Canadian Prairie crops.

Wheat

Increased planted area for wheat and oats offset year-to-year reductions in barley and rapeseed planting for 2022. Planted area for spring and durum wheat was up 11 and 9 percent, respectively, over MY 2021/22, as farmers sought to capitalize on high global demand. Spring varieties, including durum, account for over 90 percent of Canada's total wheat production, and are grown in the Prairie Provinces. Winter wheat planting was down 7 percent from last year. Winter wheat is primarily grown in Ontario; it accounts for less than 10 percent of Canada’s total wheat production. The reduction of winter wheat area was more than offset by increases in spring varieties.

Harvested area for wheat is estimated at 10.1 million hectares (mha), 10 percent above last year, and 6 percent above the 5-year average. Yield has rebounded substantially from last year and is estimated at 3.35 tons per hectare (t/ha), 38 percent higher. This yield estimate is also 5 percent above the 5-year average. Production is estimated at 33.8 million metric tons (mmt), 52 percent above last year and 10 percent above the 5-year average.

Feed Grains

Planted area for barley, which is largely grown in Alberta and Saskatchewan, was down 15 percent from 2021. Harvested area for barley is estimated at 2.6 mha, 12 percent below last year, but 1 percent above the 5-year average. Yield is estimated at 3.79 t/ha, 64 percent above last year, and 10 percent above the 5-year average. Production is estimated at 10.0 mmt, 44 percent above last year and 13 percent above the 5-year average.

Planted area for oats, primarily grown in the Prairies, was up 16 percent from last year. Harvested area for oats is estimated at 1.4 mha, 19 percent above last year, and 23 percent above the 5-year average. Yield is estimated at a record 3.73 t/ha, 56 percent above last year, and 13 percent above the 5-year average. Production is estimated at 5.2 mmt, 86 percent above last year and 39 percent above the 5-year average.

Canadian farmers planted 4 percent more area for corn in 2022. Corn is grown extensively in Ontario and Quebec, with a smaller amount in Manitoba. Despite some mid-season dryness reported in Ontario, vegetation health was largely positive in the province (see

Figure 9). The growing season for corn extends through September, and NDVI analysis revealed above-average crop conditions during the first week of the month (see Figure 10). Harvested area for corn is estimated at 1.4 mha, 4 percent above last year, and 2 percent above the 5-year average. Yield is estimated at 10.1 t/ha, unchanged from last year, but up 3 percent from the 5-year average. Production is estimated at a record 14.5 mmt, 4 percent above last year and 5 percent above the 5-year average.

Oilseeds

Oilseed planting was down in Canada, as farmers preferred grains in 2022. Canadian farmers planted 5 percent less area to rapeseed and 1 percent less area to soybeans this year.

Rapeseed yields recovered substantially from last year's drought, and are estimated at 2.21 t/ha, 44 percent higher. This yield is also 2 percent higher than the 5-year average. Harvested area is estimated at 8.6 mha, 4 percent below last year, and 3 percent below the 5-year average. Production is estimated at 19.0 mmt, 38 percent above last year but slightly below the 5-year average.

Like corn, soybeans are later-developing crops grown in Ontario, Manitoba, and Quebec. Provincial reporting throughout the season consistently noted positive crop conditions. The 3-month PASG (July through September) substantiates this, indicating average to above-average conditions in the major soybean areas of the three provinces (see Figure 11). Harvested area for soybeans is estimated at 2.1 mha, 1 percent below last year, and 11 percent below the 5-year average. Yield is estimated at 3.09 t/ha, 5 percent above last year, and 8 percent above the 5-year average. Production is estimated at 6.5 mmt, 4 percent above last year, but 4 percent below the 5-year average.

The contributions of staff at the USDA-FAS office in Ottawa are gratefully acknowledged.

Croplands in the Canadian Prairies: Spring 2022 Percent of Normal Precipitation

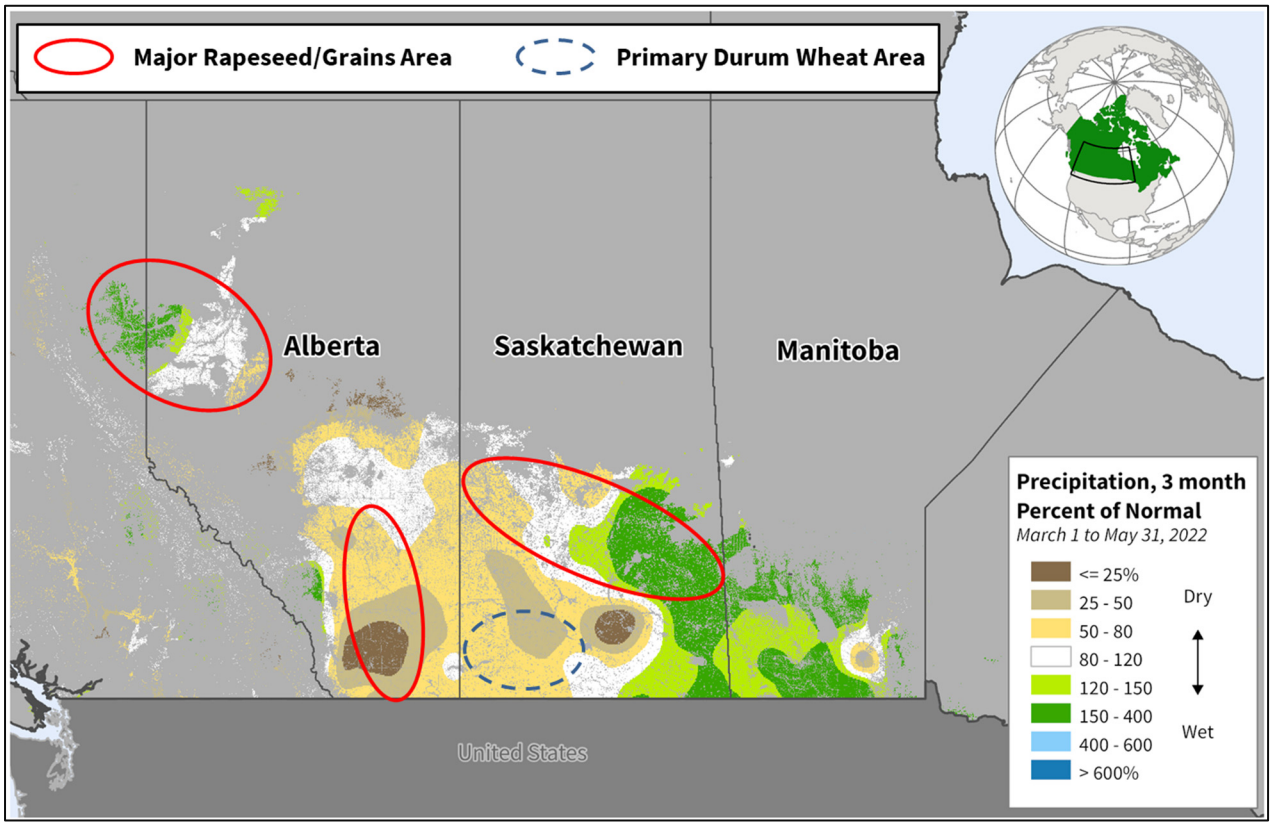

Figure 1. Spring precipitation (March through May) was varied. The Peace River Valley in Alberta, eastern Saskatchewan, and Manitoba received excessive moisture, which delayed planting. Dryness persisted from the previous year in southern Alberta and western Saskatchewan, which slowed early-season crop progress. Sources: NOAA Climate Prediction Center (CPC) Precipitation 3-Month Percent of Normal; Agriculture and Agri-Food Canada (AAFC), Annual Crop Inventory 2021 Crop Mask

Croplands in the Canadian Prairies: Summer 2022 Percent of Normal Precipitation

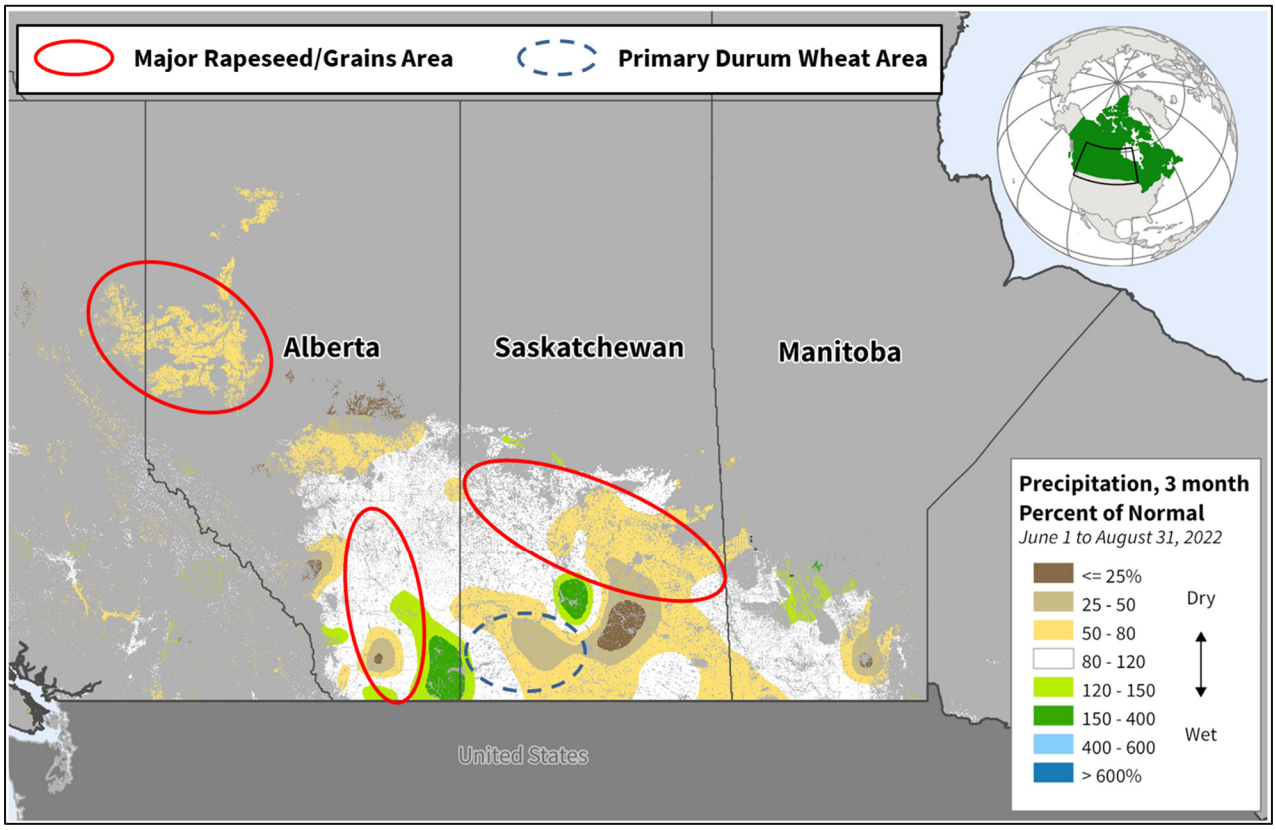

Figure 2. Summer precipitation amounts were largely beneficial, improving growing conditions in most areas. The excessive moisture in key agricultural areas of the Peace River Valley in Alberta, northeastern Saskatchewan, and Manitoba abated, giving way to warmer, dryer weather. Dryer areas in southern Alberta received replenishing rainfall. Southwestern Alberta was the lone exception to this pattern, receiving below-average rainfall following early season dryness. Sources: NOAA Climate Prediction Center (CPC) Precipitation 3-Month Percent of Normal; Agriculture and Agri-Food Canada (AAFC), Annual Crop Inventory 2021 Crop Mask

Saskatchewan Crop Conditions: 2021 versus 2022

True color satellite imagery from late July depicts much better crop conditions in 2022 than in 2021.

July 30, 2021

July 29, 2022

Figure 3. True color satellite imagery depicts the improved, late-July 2022 crop conditions in eastern Saskatchewan, versus the poor conditions in the same fields during the drought in 2021. Sources: PlanetScope, Dove Classic Satellite (2021) and Super Dove Satellite (2022) Imagery

Croplands in the Canadian Prairies: NDVI Difference between 2021 and 2022

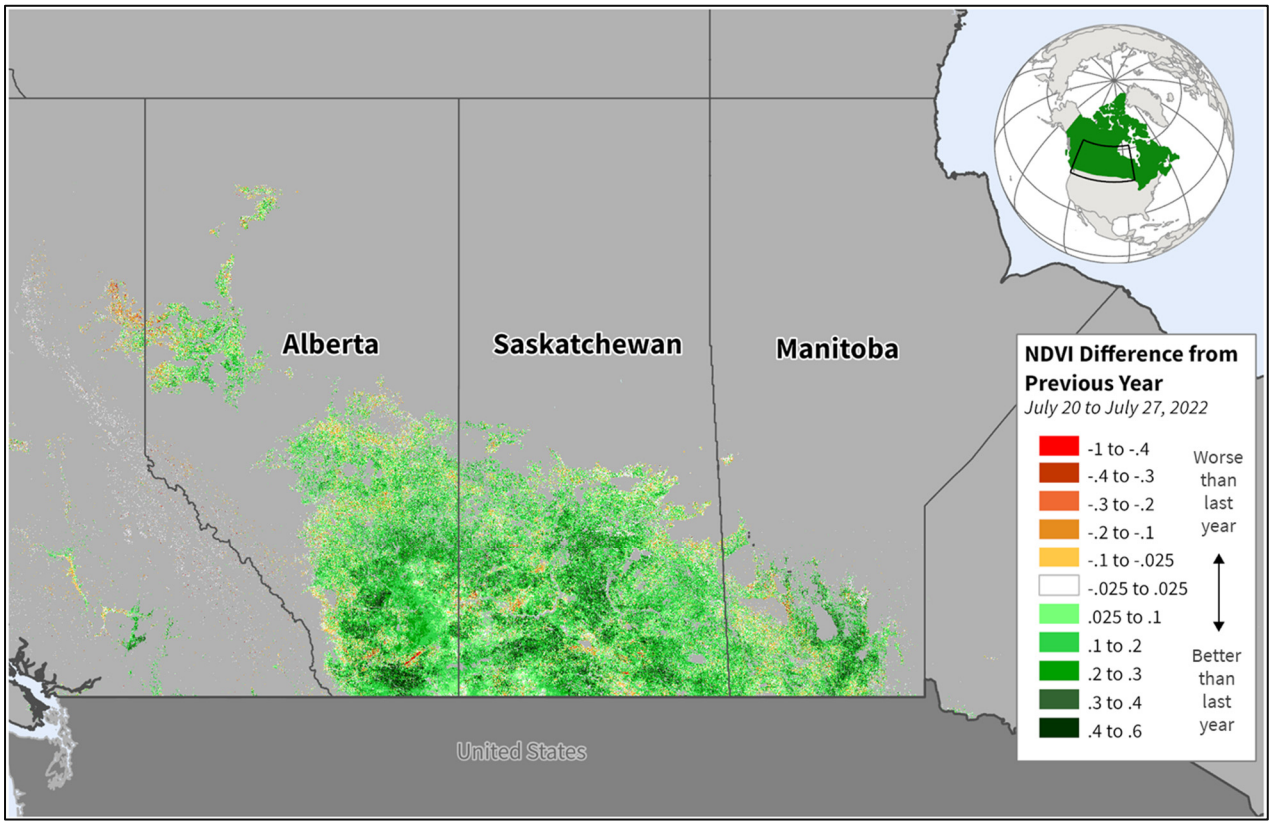

Figure 4. NDVI difference from last year shows crop conditions during reproductive stages (late July) in the Prairies were substantially better in 2022 than in 2021. Sources: USDA/NASA, MODIS 8-day NDVI Difference (or Percent Change) from 2021, Global Agricultural Monitoring (GLAM) System; Agriculture and Agri-Food Canada (AAFC), Annual Crop Inventory 2021 Crop Mask

Croplands in the Canadian Prairies:
July 2022 Percent of Normal Precipitation

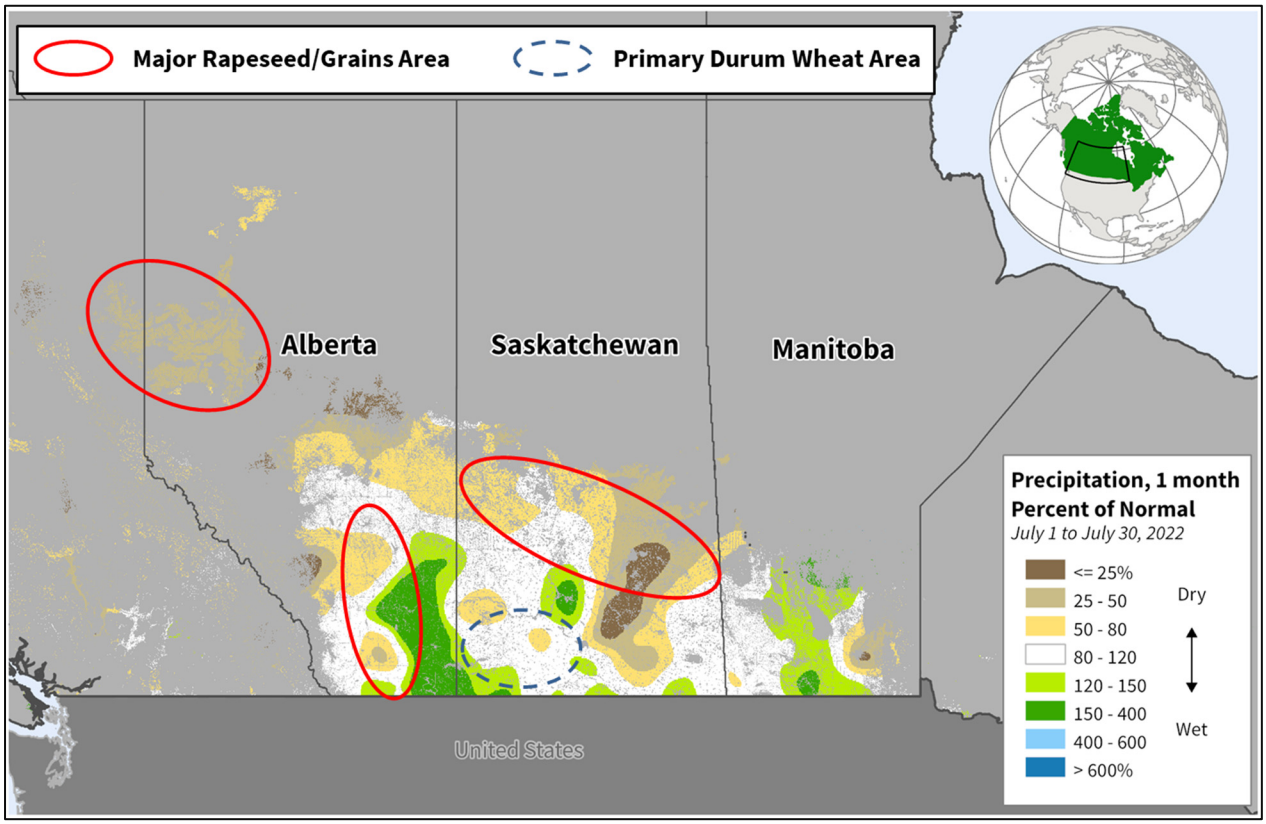

Figure 5. July precipitation patterns were particularly beneficial, which produced ideal conditions as crops matured and reached reproductive stages in the latter half of the month. Areas that had been too dry in the spring received beneficial rainfall, while areas that had been too wet, received warm temperatures and needed dryness. Sources: NOAA Climate Prediction Center (CPC) Precipitation 1-Month Percent of Normal; Agriculture and Agri-Food Canada (AAFC), Annual Crop Inventory 2021 Crop Mask

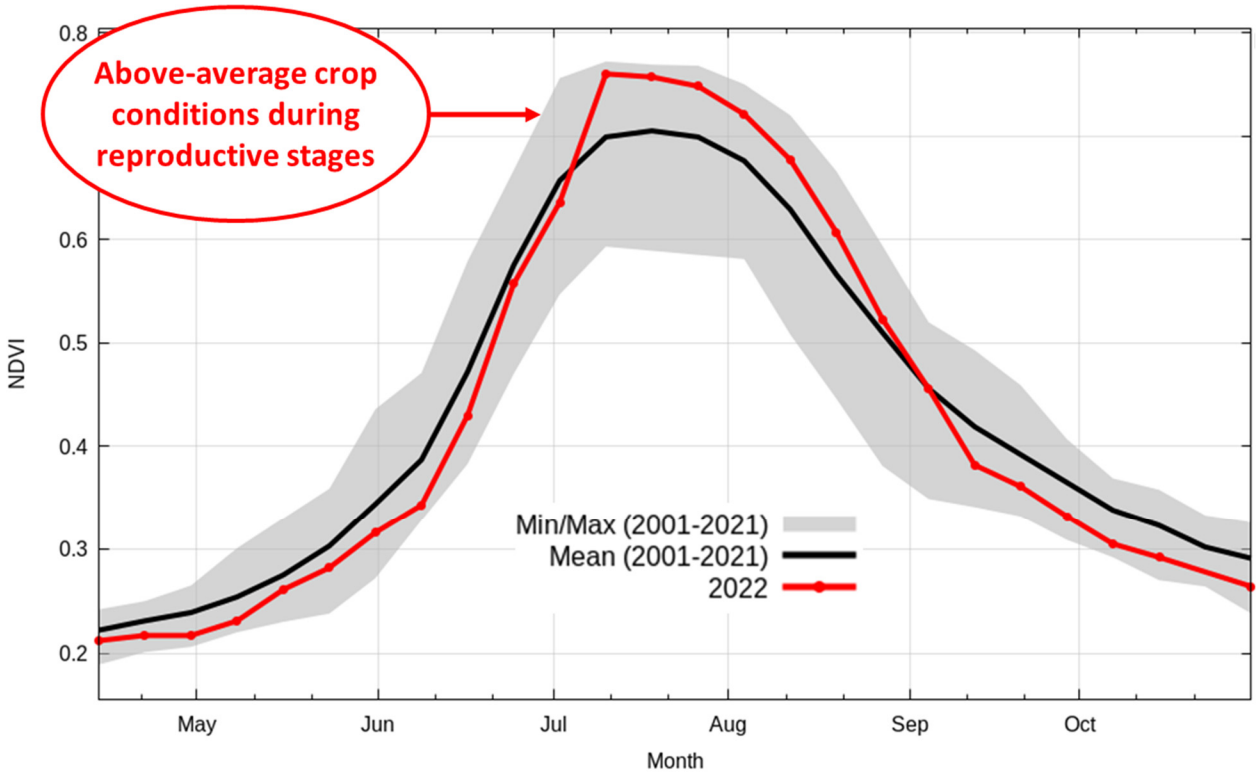

Figure 6. NDVI at the peak of the season is a strong indicator of yield potential. In 2022, the NDVI time series chart illustrates above-average crop conditions, overall, in the Prairie Provinces, during these peak reproductive stages for crops in mid- to late-July. Sources: USDA/NASA, Global Agricultural Monitoring (GLAM), MODIS Terra 8-day NDVI; Agriculture and Agri-Food Canada (AAFC), Annual Crop Inventory 2019 Crop Mask

Croplands in the Canadian Prairies: NDVI Anomaly

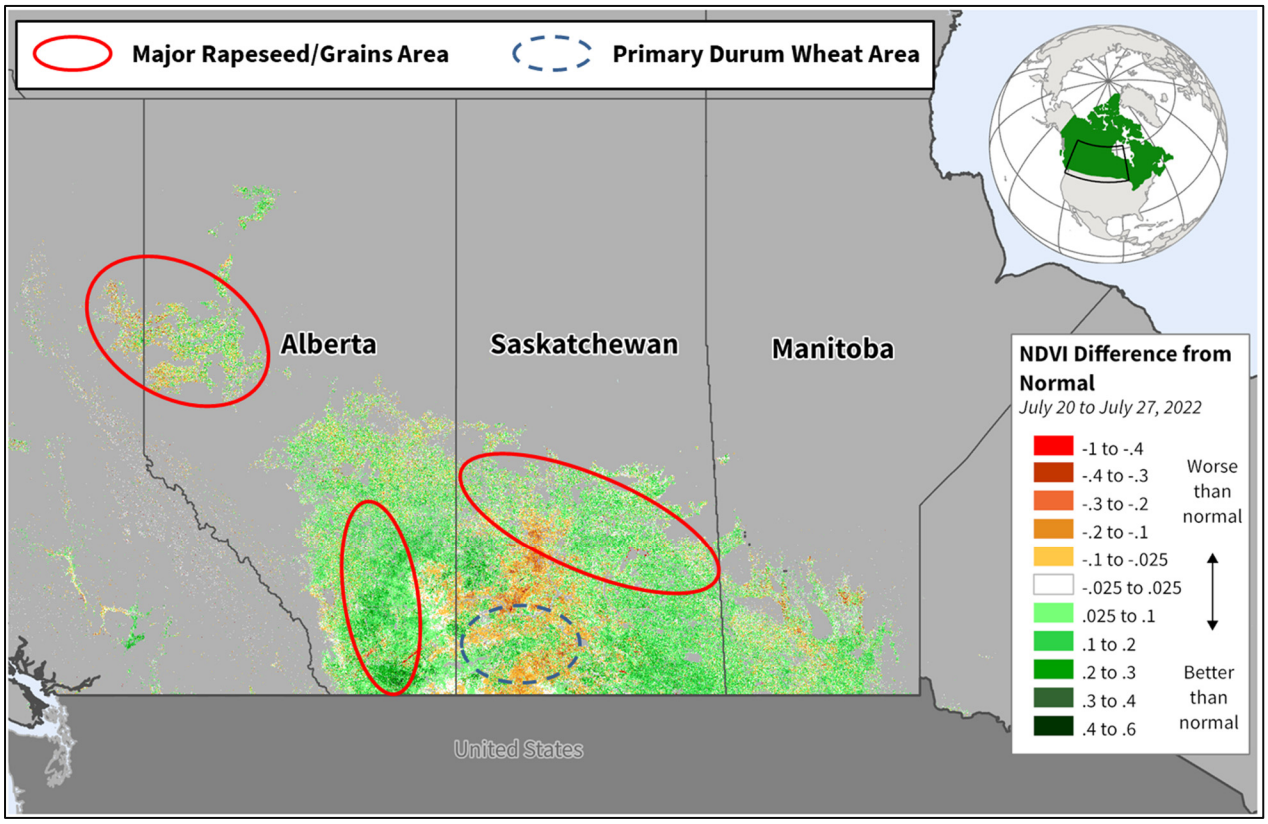

Figure 7. NDVI in late July shows above-average crop conditions throughout croplands in the Prairies, except for portions of southwestern Saskatchewan, a substantial durum wheat producing area, which did not receive as much rainfall in July. Sources: USDA/NASA NDVI Anomaly, Global Agricultural Monitoring (GLAM) System; Agriculture and Agri-Food Canada (AAFC), Annual Crop Inventory 2021 Crop Mask

Croplands in the Canadian Prairies: Summer 2022 Percent of Average Seasonal Greenness (PASG)

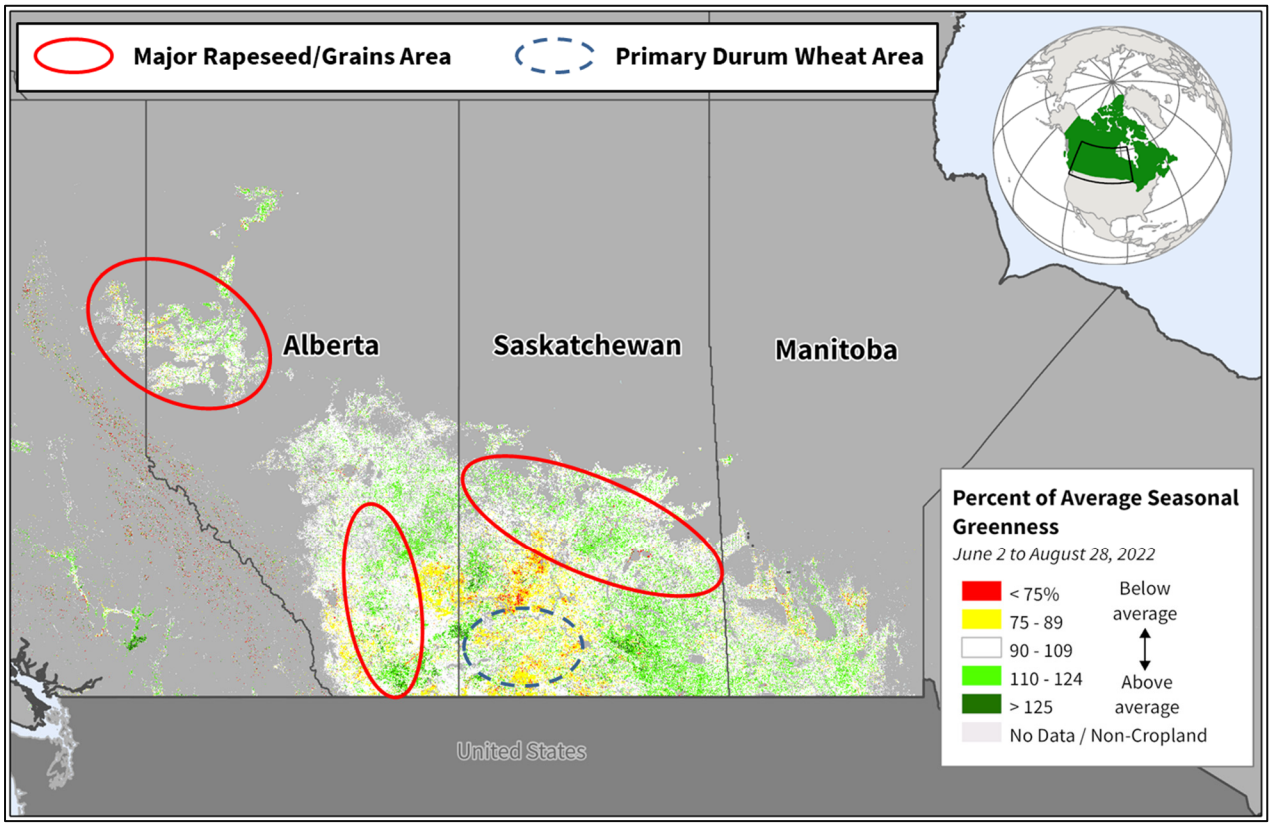

Figure 8. The PASG map illustrates cumulative vegetation health in croplands in the Prairies through the primary growing season. Crop conditions were average (white) to above-average (green) throughout most of the Prairie croplands. However, below-average conditions were prevalent in southwestern Saskatchewan, a heavy durum wheat area. Sources: USDA/NASA, Percent of Average Seasonal Greenness (PASG) derived from MODIS NDVI, Global Agricultural Monitoring (GLAM) System; Agriculture and Agri-Food Canada (AAFC), Annual Crop Inventory 2021 Crop Mask

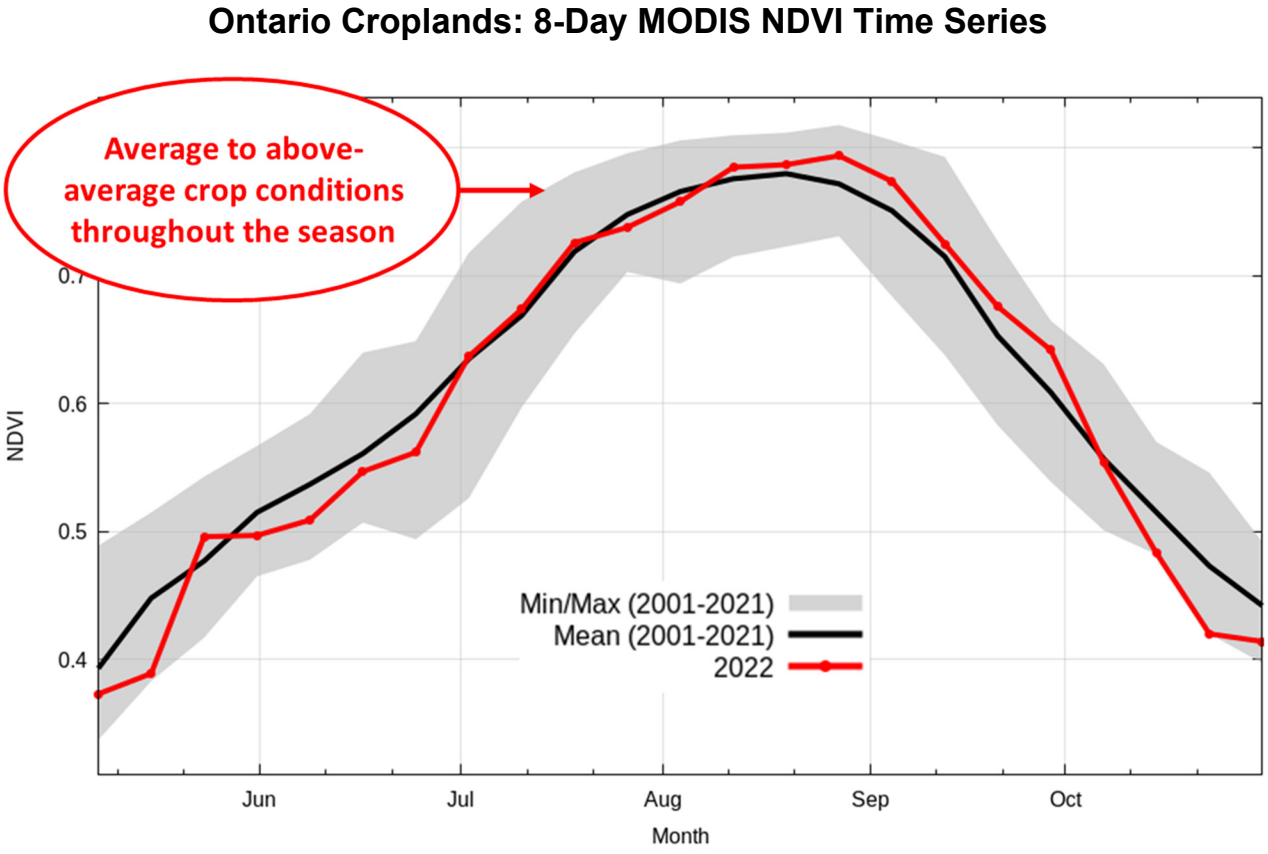

Figure 9. The NDVI time series chart illustrates average to slightly above-average crop conditions throughout most of the season in Ontario. Peak NDVI, a strong predictor of yields, was above average in August, during reproductive stages for corn. Sources: USDA/NASA, Global Agricultural Monitoring (GLAM), MODIS Terra 8-day NDVI; Agriculture and Agri-Food Canada (AAFC), Annual Crop Inventory 2019 Crop Mask

Corn and Soybean Areas: NDVI Anomaly

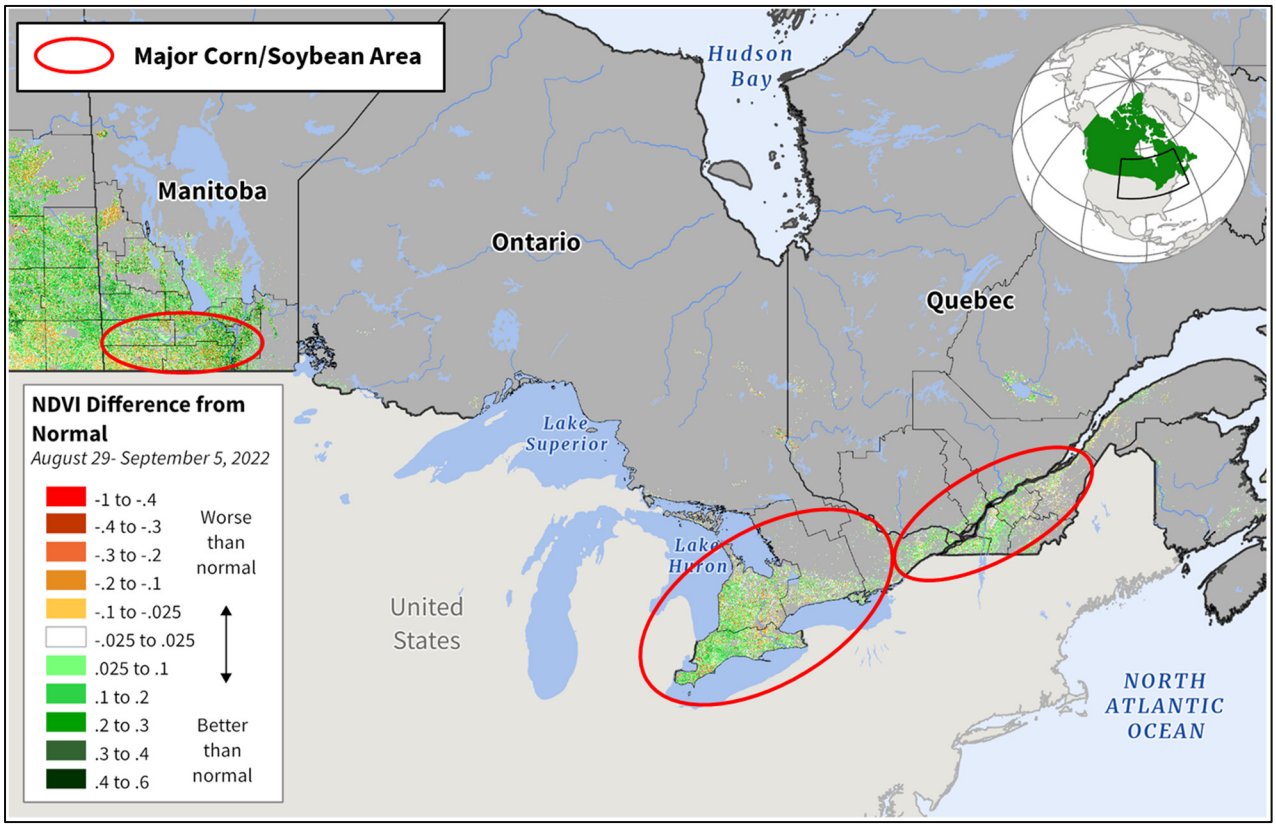

Figure 10. Corn and soybeans, grown largely in southern Ontario, Quebec, and southern Manitoba, are later-developing crops, generally maturing in the months of August and September. NDVI during the first week of September indicates above-average crop conditions in the major corn and soybean areas. Sources: USDA/NASA NDVI Anomaly, Global Agricultural Monitoring (GLAM) System; Agriculture and Agri-Food Canada (AAFC), Annual Crop Inventory 2021 Crop Mask

Corn and Soybean Areas:
Summer 2022 Percent of Average Seasonal Greenness (PASG)

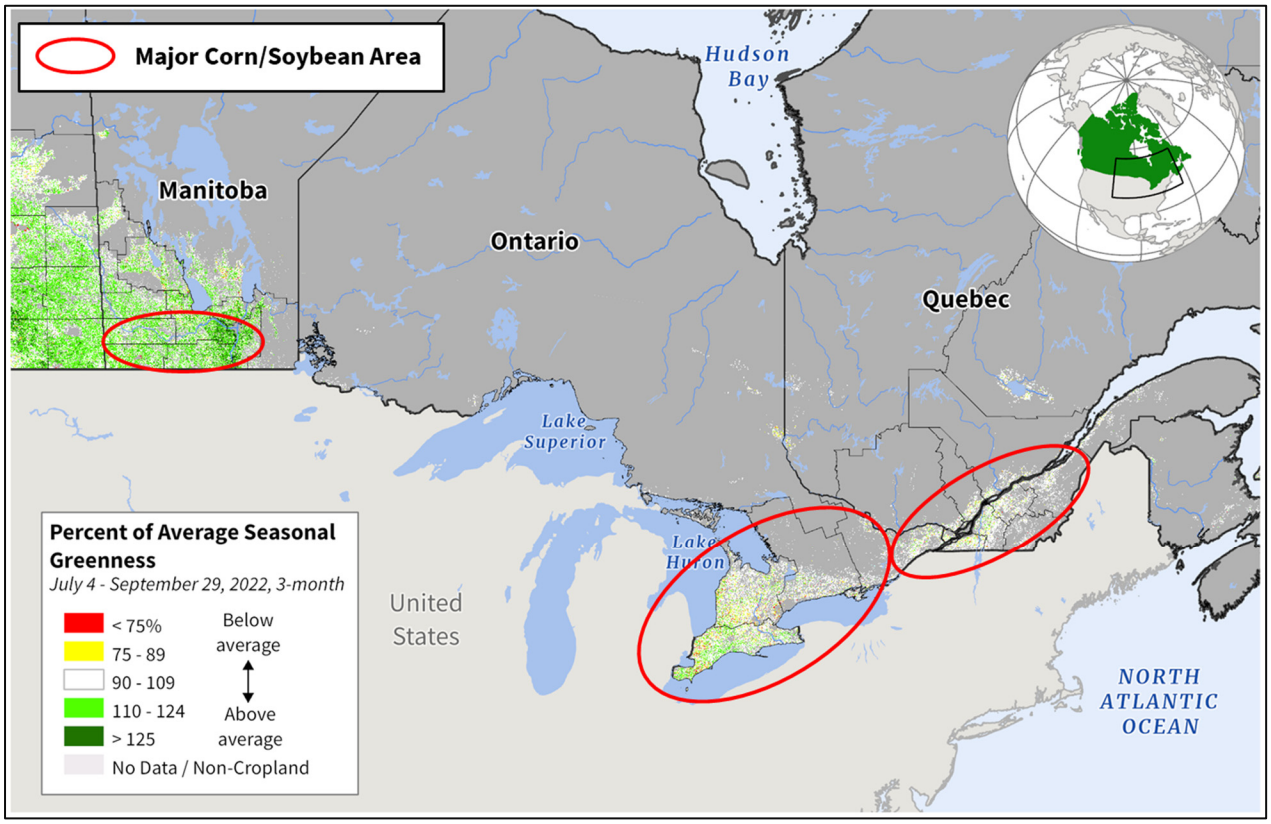

Figure 11. A cumulative (seasonal) look at crop conditions from NDVI-derived PASG indicates average (white) to above-average (green) crop conditions in the major corn and soybean growing areas of southern Ontario, Quebec, and southern Manitoba. Sources: USDA/NASA, Percent of Average Seasonal Greenness (PASG) derived from MODIS NDVI, Global Agricultural Monitoring (GLAM) System; Agriculture and Agri-Food Canada (AAFC), Annual Crop Inventory 2021 Crop Mask

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