

Saskatchewan Irrigation Information 2022



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The province of Saskatchewan is committed to growing its irrigation sector. The Provincial Growth Plan has targets of 85,000 acres of new irrigation by the year 2030. In the three-year period from 2020 to 2022 the province experienced growth of over 35,000 acres of new irrigation.

Recent analysis has shown that irrigation increased the value of primary production by \$868.66 per acre annually in the Lake Diefenbaker Development Area. The purpose of this annual publication is to provide an overview of Saskatchewan's growing irrigation industry by detailing statistical information and data.

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Irrigation development in Saskatchewan has been a tool for rural development, diversification and crop production stabilization for over 100 years. As of 2023, approximately 407,000 acres have been developed for irrigation.

Table 1. Irrigated Acres in Saskatchewan

Irrigation Districts	118,500 ac
Private	193,500 ac
Non-Intensive, Backflood	95,000 ac
Total	407,000 ac

Non-Intensive and Intensive Irrigation

Irrigation can be classified as non-intensive or intensive. As defined in *The Irrigation Act, 2019*, an intensive irrigator owns or controls land that receives a prescribed allocation of water (12 inches per acre) from the Crown for irrigation purposes; is not restricted as to when the prescribed allocation of water may be applied; and does not have an existing water service agreement with an irrigation district.

As defined in *The Irrigation Act, 2019* a district consumer means a person who has an existing water service agreement with an irrigation district to receive irrigation services from the irrigation district.

Non-intensive back flood irrigation is the controlled application and release of water, at spring flood stage only, that increases soil moisture for crop use later in the year.

Irrigation Districts

An irrigation district consists of a group of irrigators who share common water supply infrastructure.

Irrigation districts in Saskatchewan are required to follow the legislation that is defined in *The Irrigation Act, 2019*. There are currently 22 irrigation districts in Saskatchewan representing approximately 118,500 acres of irrigation.

SASKATCHEWAN IRRIGATION DISTRICTS & RURAL MUNICIPALITIES

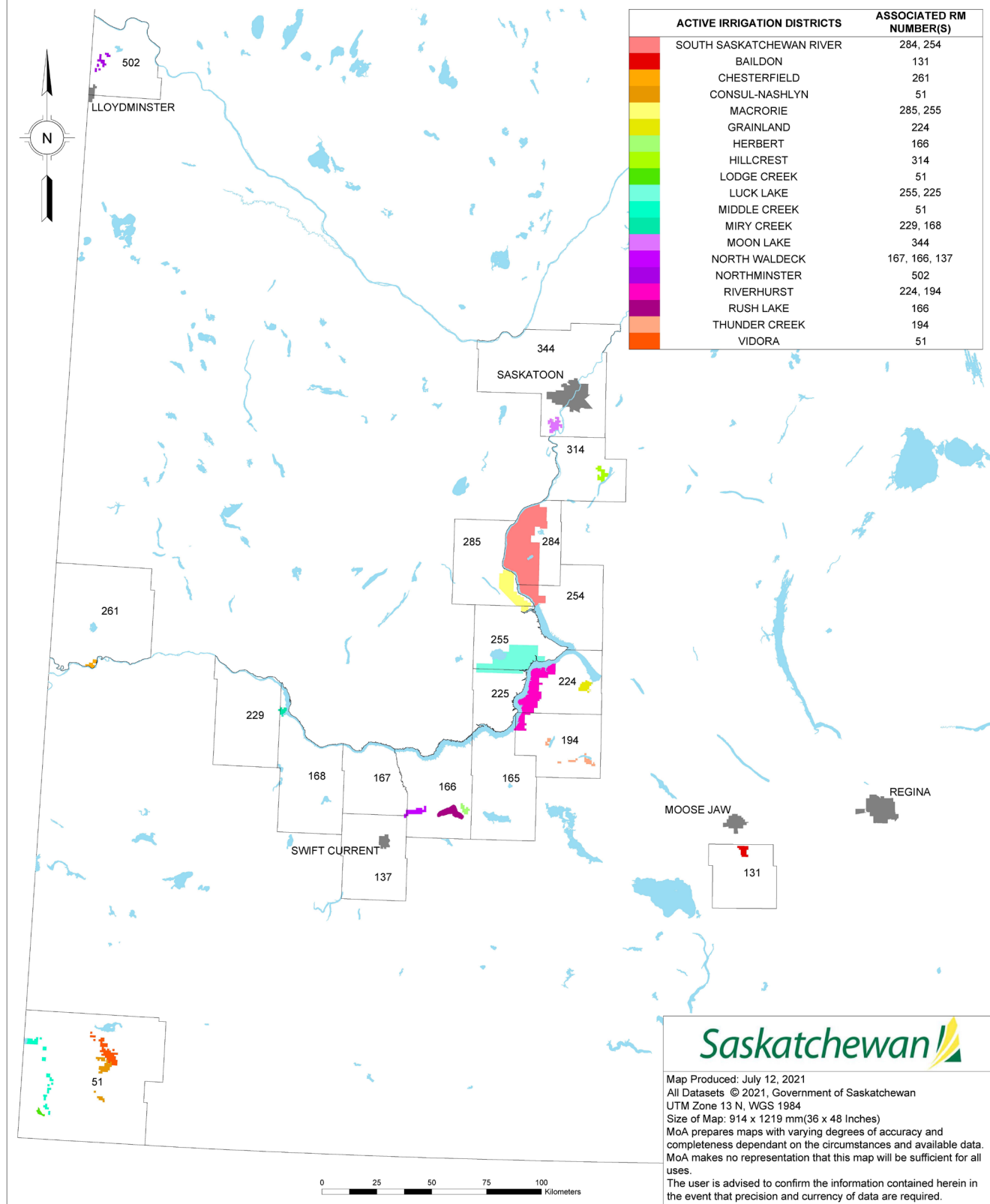


Figure 1. Saskatchewan Irrigation Districts and Rural Municipalities

Table 2. Saskatchewan Irrigation Districts and Acres in 2022

Irrigation District	Acres
SSRID	45,678
Riverhurst	19,255
Luck Lake	13,426
Rush Lake	5322
Hillcrest	3866
Consul-Nashlyn	3464
Baildon	3260
Macrorie	2964
Moon Lake	2817
Grainland	2322
Vidora	1813
Herbert	1671
Miry Creek	1618
North Waldeck	1592
Thunder Creek	1425
Lodge Creek	970
Middle Creek	913
Chesterfield	629
Northminster	157
Ponteix *	0
Vanguard **	0
Qu'Appelle ***	0



Lake Diefenbaker

*has been decommissioned due to deteriorating water quality. The irrigators in the area currently have individual projects from Notukeu creek.

**both the district and ministry agreed that the district should be wound up, and the irrigation will continue as individual irrigation projects.

***established as a district but currently have not developed irrigated acres.

Lake Diefenbaker Development Area

The Lake Diefenbaker Development Area is defined as the irrigated land base supplied out of Lake Diefenbaker (Figure 2). There are approximately 125,000-150,000 acres of irrigation in this area. This is the part of the province where the largest districts exist. These include South Saskatchewan River, Luck Lake and Riverhurst. With the abundance of water from Lake Diefenbaker and the short growing season, irrigation thrives in this area.

Lake Diefenbaker Development Area

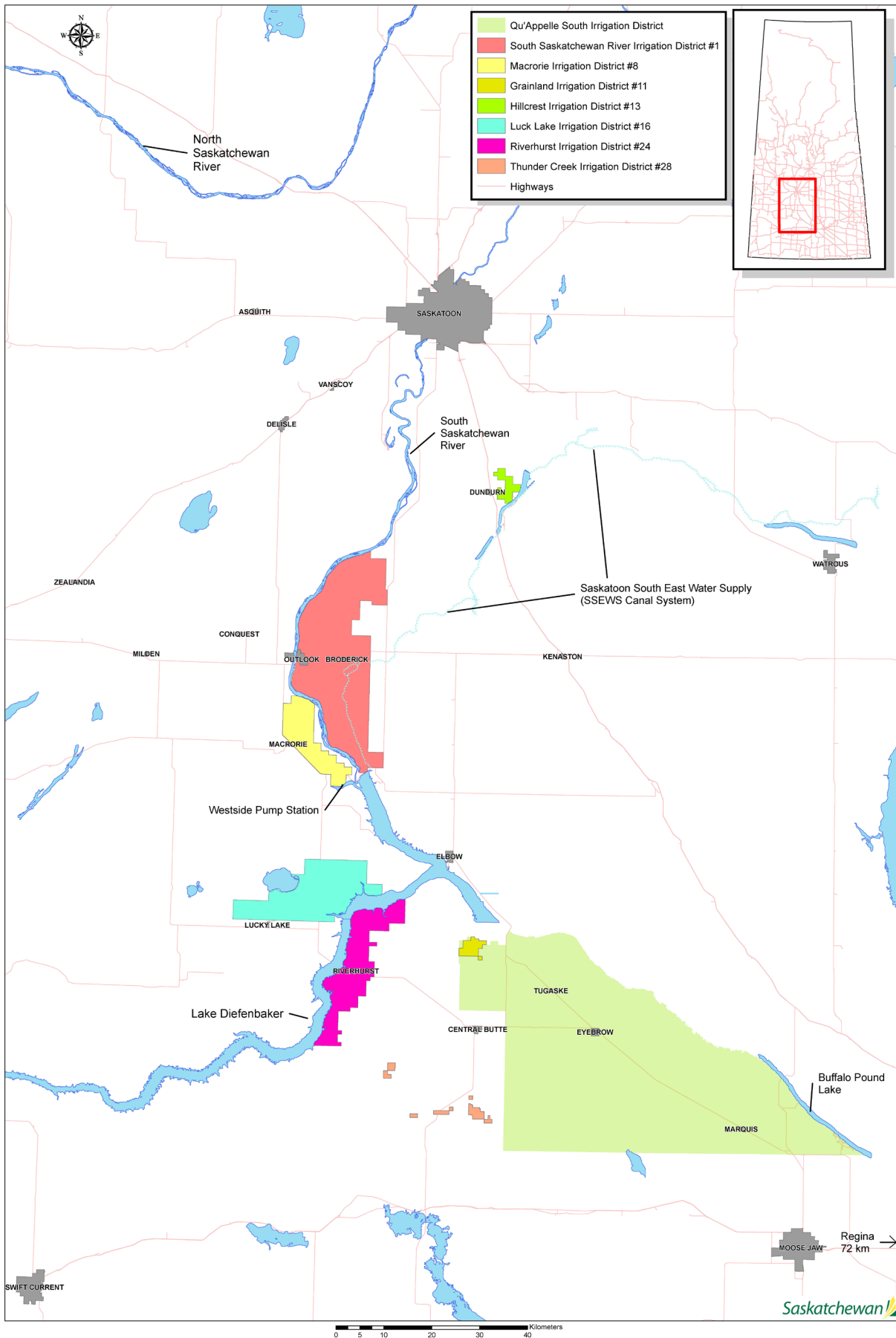


Figure 2. Lake Diefenbaker Development Area

Crop Types Grown Within the Lake Diefenbaker Development Area

The irrigated acres are gathered annually through an infield survey. There are five different classes of crops that are surveyed: cereals, oil seeds, pulses, forage and specialty crops. Cereals include wheat/durum, barley/oats and grain/silage corn. Canola and flax were surveyed for oil seeds. Specialty crops include potato, hemp, sunflower, fruit, vegetables and cover crops. Pulse crops surveyed were dry beans, field peas, lentil and faba beans. Lastly, forage crops that are surveyed are alfalfa and grass.

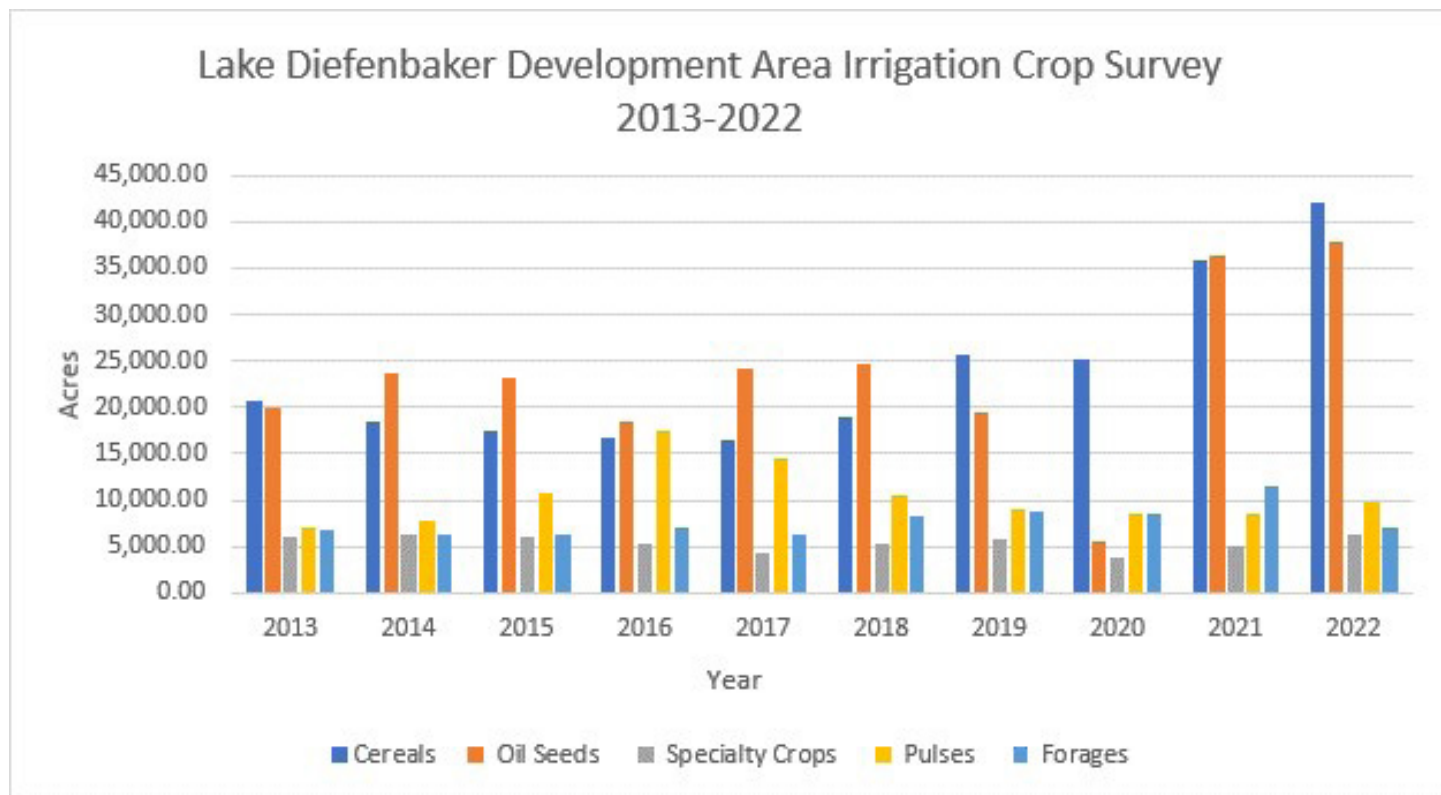


Figure 3. Irrigated Crops in Lake Diefenbaker Development Area

Figure 3 is a representation of the acreage changes in the crop survey over the years of 2013-2022. Over the last three years there has been a steady increase of specialty crops being grown under irrigation.

Table 3. 2022 Irrigated Crop Acres in Lake Diefenbaker Development Area

	RID	LLID	SSRID	GID	MID	SSEWS	TOTAL	CROP %	CLASS%
Cereals:									
Wheat/Durum	6999	4641	16211	626	824	5448	34749	33.7%	40.8%
Barley/Oats	1592	621	2483	439	0	698	5834	5.7%	
Grain/Silage Corn	0	250	951		0	266	1467	1.4%	
Oil Seeds:									
Canola	7019	3700	11524	453	629	9512	32837	31.8%	36.7%
Flax	1811	1817	1177	0	0	249	5054	4.9%	
Pulses:									
Dry Bean	1902	399	136	604	0	441	3482	3.4%	9.5%
Field Peas	83	1154	2456	0	340	1042	5075	4.9%	
Lentil	133	394	342		265	0	1134	1.1%	
Faba Bean	0	0	119		0	0	119	0.1%	
Forage:									
Alfalfa/Grass	122	779	4948	550	0	641	7039	6.8%	6.8%
Specialty Crops:									
Potato	782	231	4279			0	5292	5.1%	6.2%
Hemp			0			0	0	0.0%	
Sunflower						0	0	0.0%	
CSIDC			294			0	294	0.3%	
Fruit			20			0	20	0.0%	
Vegetables	84		658			0	742	0.7%	
Cover Crop			0			0	0	0.0%	
Total Acres	20529	13985	45597	2671	2058	18296	103136		

Table 3 details the crops grown in 2022 by irrigation district within the Lake Diefenbaker Development Area. Cereals and oilseeds make up a large percentage of the irrigated crop rotation.

Riverhurst Irrigation District, (RID), Luck Lake Irrigation District (LLID), South Saskatchewan River Irrigation District (SSRID). Grainland Irrigation District (GID) Macrorie Irrigation District (MID) and Saskatoon Southeast Water Supply (SSEWS).

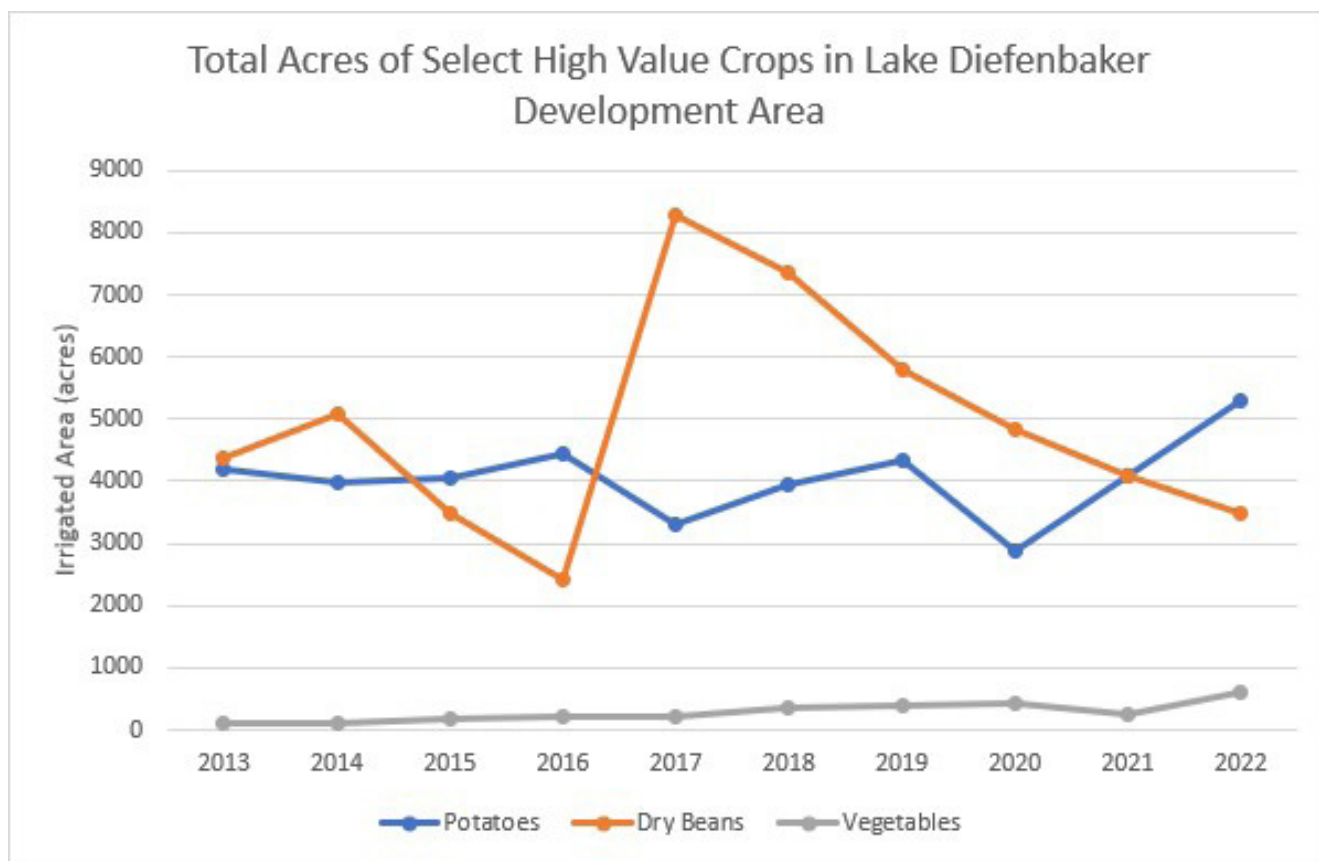


Figure 4. Total Acres of Select Niche Crops in Lake Diefenbaker Development Area

Figure 4 illustrates select high value crops grown in the Lake Diefenbaker Area from 2013-2022. These crops include potatoes, dry beans and vegetables. As shown in the graph, there has been a 1,209 acre increase in potatoes and a 370 acre increase in vegetables. Dry bean acres have been shown to fluctuate over the years and are generally correlated with price fluctuations.

Outlook Heat Accumulation (Corn Heat Units) 2000-2022

The growing season climate in the Outlook region is represented through Corn Heat Units. The average corn heat units over the past 22 years is 2389. Lake Diefenbaker Development Area has the one of the highest average corn heat units relative to other parts of the province. The average growing season is 115 frost free days. In combination with the heat units and frost-free days, this area has ideal conditions for growing longer season crops such as high value vegetable crops.

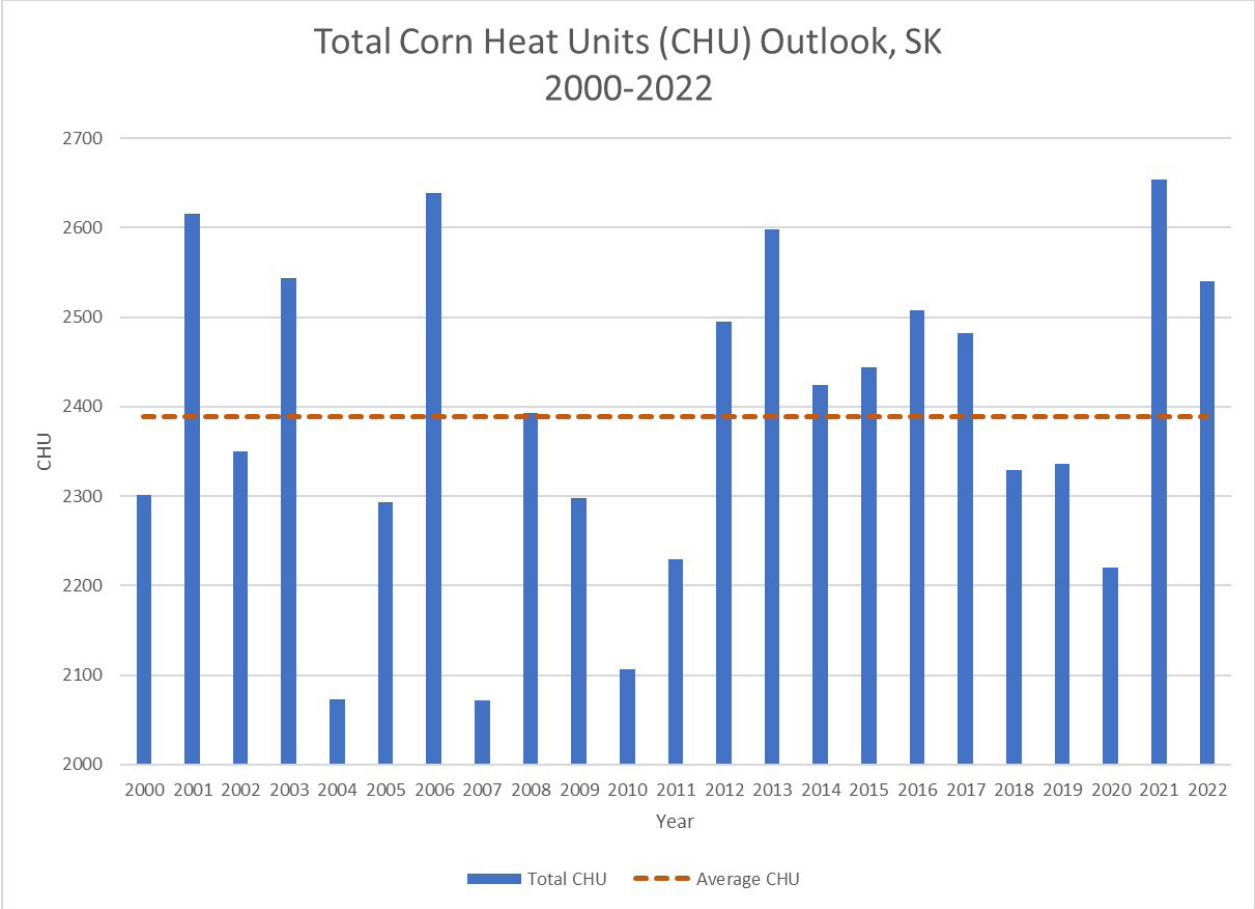


Figure 5. Corn Heat Units In The Outlook Region from 2000-2022

Outlook First Frost and Killing Frost 1965-2020

In the graph below, the first frost and killing frost for the Outlook region is represented from the years 1965-2022. The following graph represents that even though there was a frost in that year, it may not actually have been a killing frost.

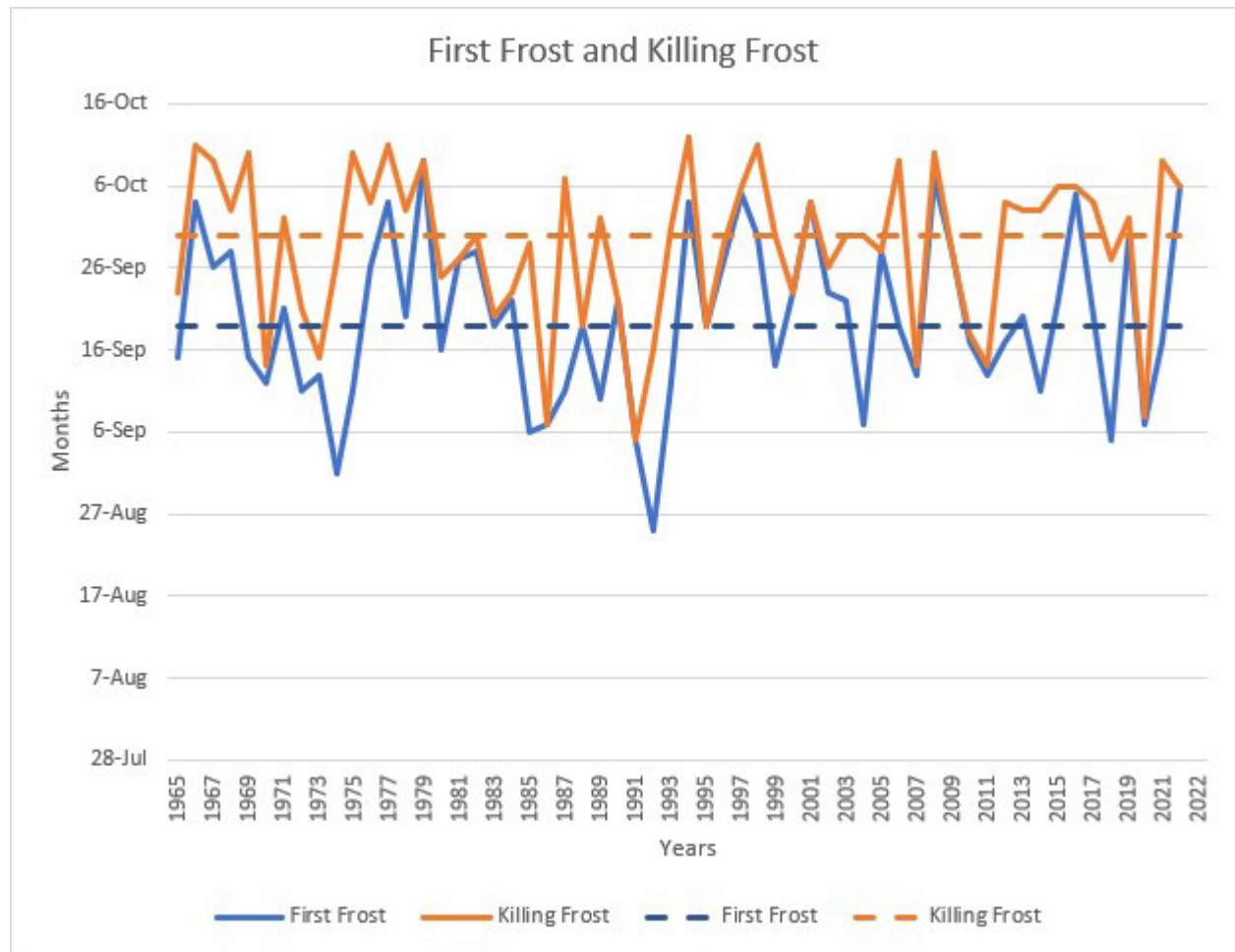


Figure 6. First Frost and Killing Frost in the Outlook Region from 1965-2022

The average first frost date over the last 57 years is September 19. Nine out of 10 years the first frost occurs after September 6. Killing frost is defined as a frost that is -2 degrees Celsius or lower. The average first killing frost date is September 30. Nine out of 10 years the first killing frost occurs after September 14.

Crop Water Requirement (mm) Outlook 2012-2022

In this section, the crop water requirement for alfalfa, wheat, canola, potato, drybean and corn silage will be listed in millimeters from 2012-2022.

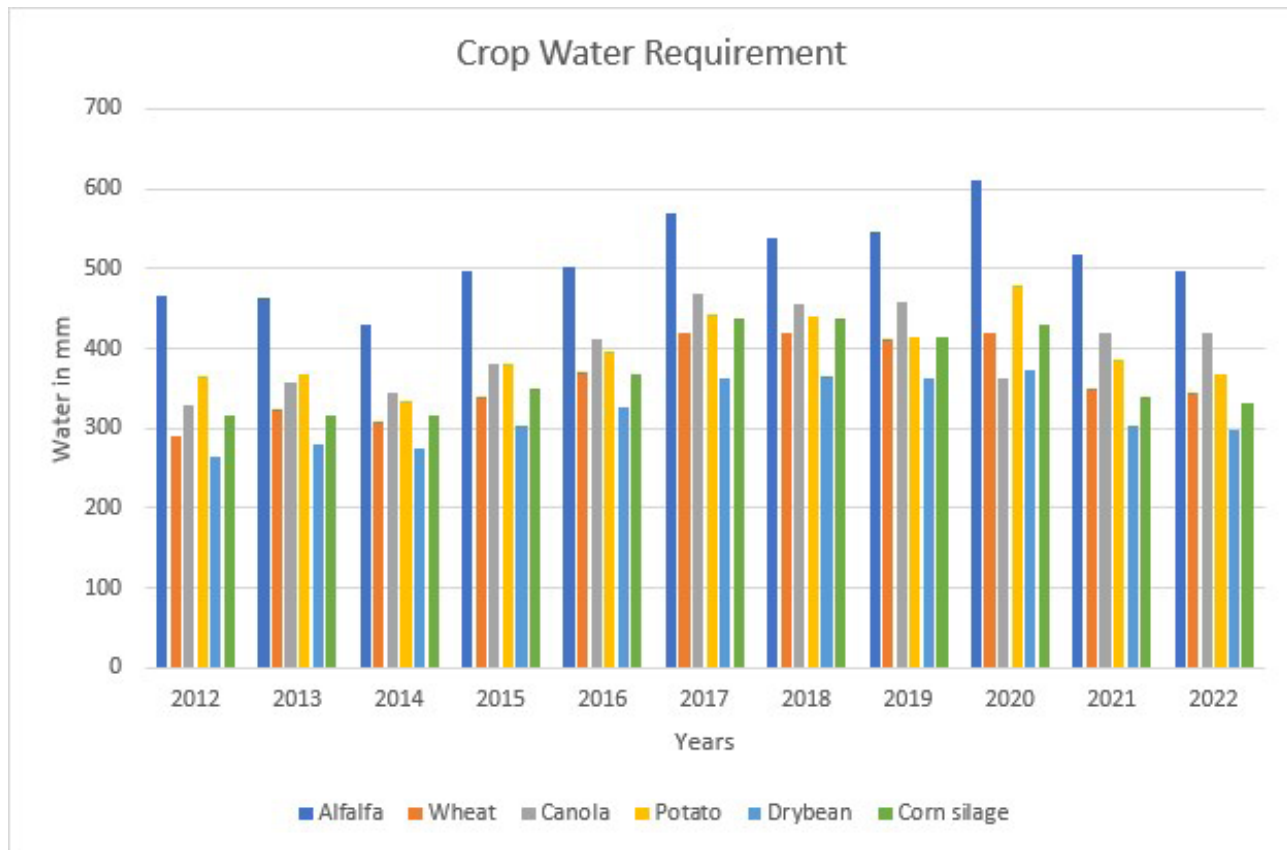


Figure 7. Crop Water Requirement for Alfalfa, Wheat, Canola, Potato, Drybean and Corn Silage

Figure 7 shows the range of required water for each crop over the last 10 years. Alfalfa used 429-612 mm, wheat used 290-420 mm, canola used 329-468 mm, potatoes used 335-480 mm, dry beans used 265–373 mm and corn silage used 315-438 mm.

Annual Precipitation in the Outlook Region from 1967-2022

Annual precipitation in the Outlook region from the years 1967-2022 is represented in the graph below. Throughout the trends, it is visible as to when the region experienced drought and when they received ample amount of precipitation.

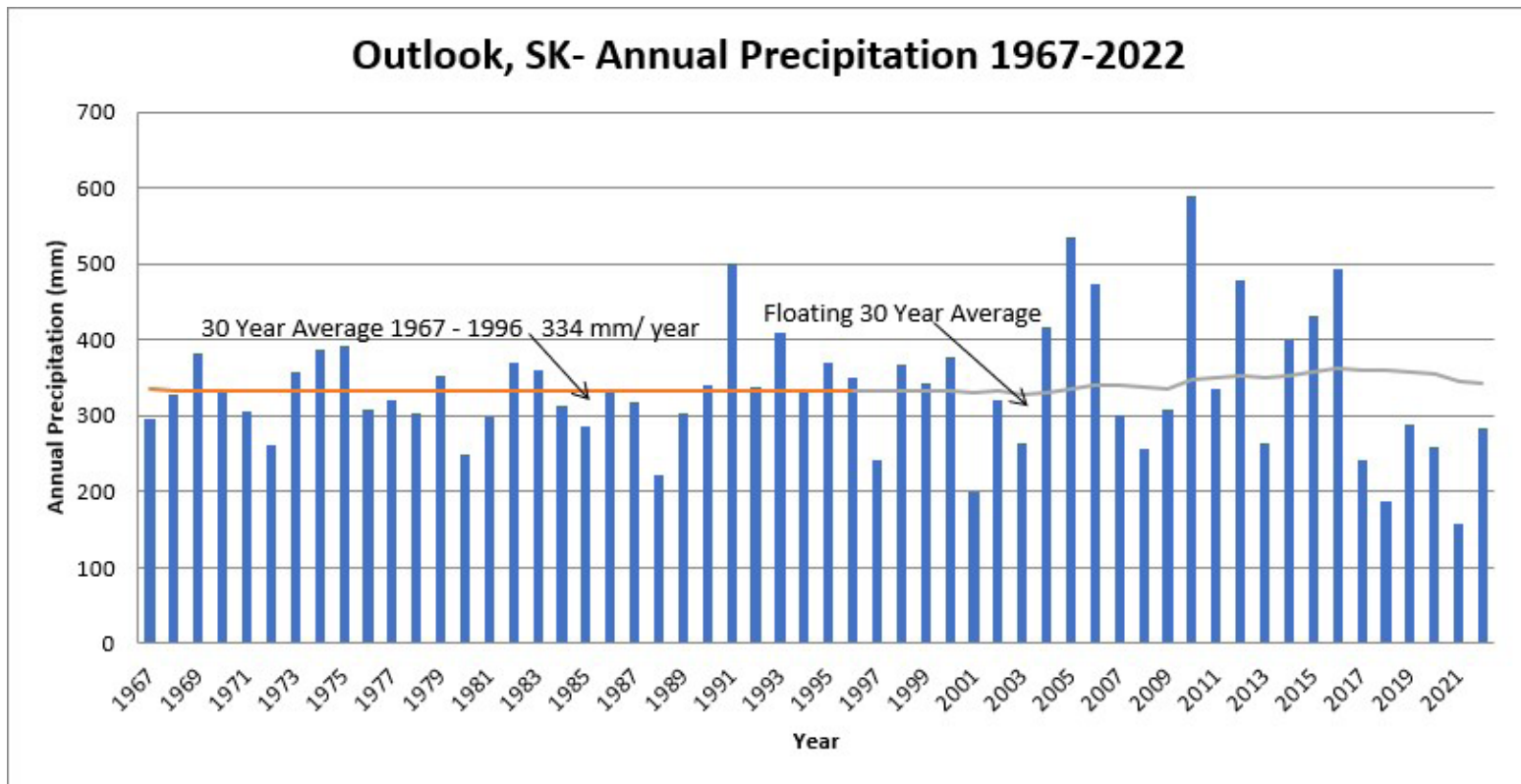


Figure 8. Annual Precipitation in the Outlook Region from 1967- 2022

As shown above, the three years with the highest annual precipitation in millimeters were the years 2010, 2005 and 1991. 2010 had a total of 590mm, 2005 had a total of 534mm and 501mm. The three years with the lowest annual precipitation in millimeters were the years 2021, 2018 and 2001. 2021 had a total of 159mm, 2018 had a total of 189mm and 2001 had a total of 199mm. The Outlook area has been experiencing below average precipitation levels since 2017.

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Crop (corn) heat units. Open Government Portal. (n.d.). Retrieved April 28, 2023, from <https://open.canada.ca/data/en/dataset/07875f11-c342-4450-bdaa-0cdeaf43c0c9>

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