



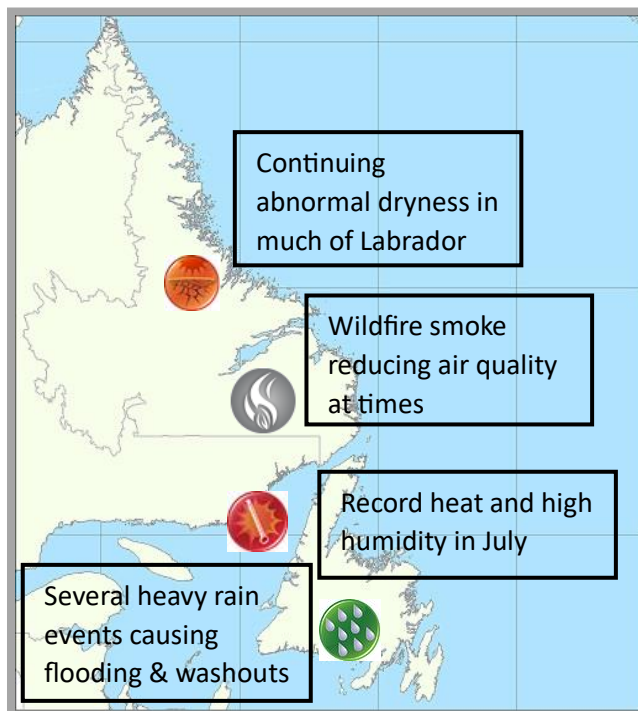
Environment and
Climate Change Canada

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Newfoundland and Labrador

Quarterly Climate Summary: Summer 2023

Summary & significant weather events (June – August)



Summer got off to a slow start with temperatures a little cooler than normal in parts of the province in June, but July more than made up for that with record high monthly mean temperatures, along with high humidity. August saw a return to more normal temperatures.

Less rain than normal fell over Labrador, following a dry spring, leading to abnormal dryness or even moderate drought in some areas.

Several heavy rain events in Newfoundland over the summer brought localized flooding and road washouts but ended the abnormal dryness or moderate drought seen in some areas in June.

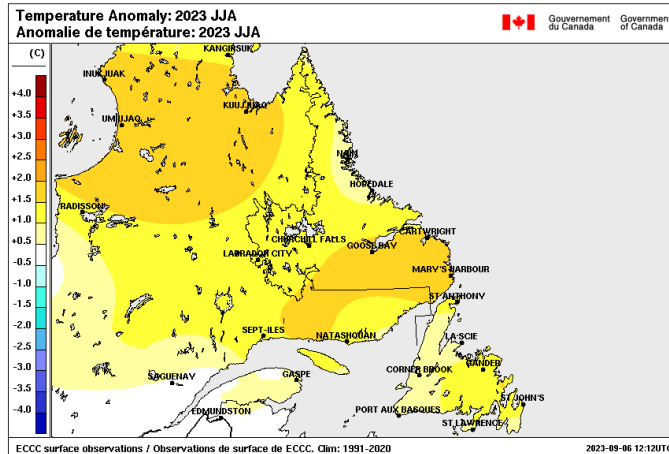
Along with the high heat and humidity July saw the most lightning activity for the month in the province based on data since 2002.

Regional Climate Overview (June – August)

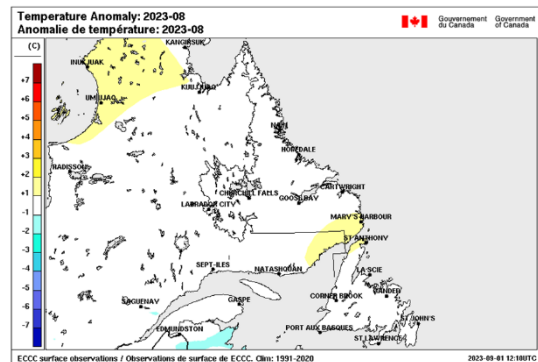
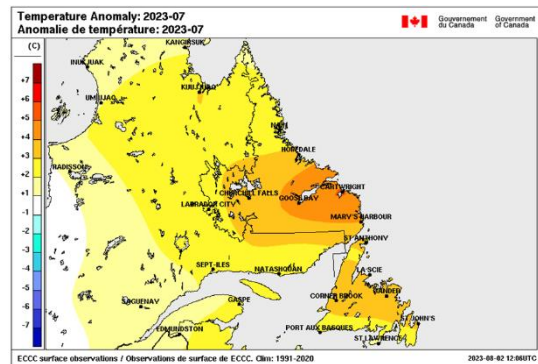
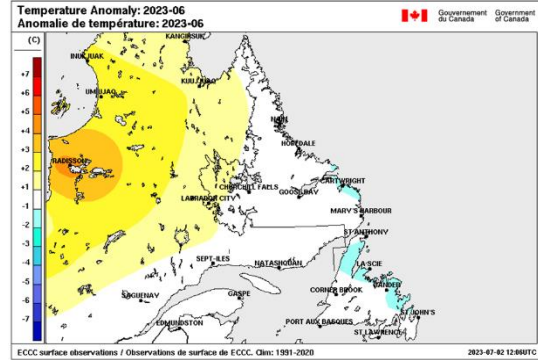
Temperature (Departure from Normal)

Near to below normal temperatures in June gave way to a record warm July, along with high humidity. Many locations reported their hottest July on record. With July typically being the warmest month of the year, this was also the warmest month on record at some of these sites. Monthly mean temperatures returned to more normal values in August.

The hot weather in July pushed summer (June-July-August) averages up above normal. Some sites in Labrador and on the south coast of Newfoundland reported their third or fourth warmest summer on record.



Above left: Temperature anomalies for Newfoundland and Labrador for June – August combined.



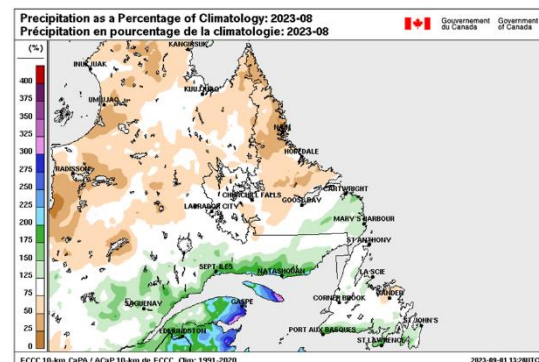
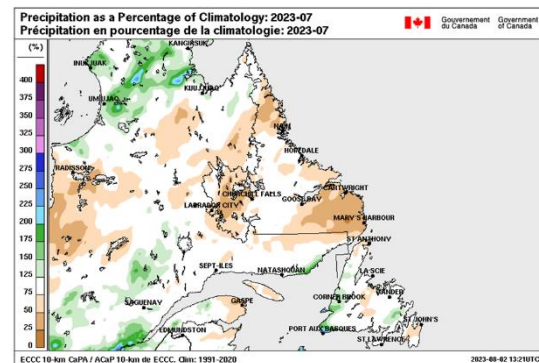
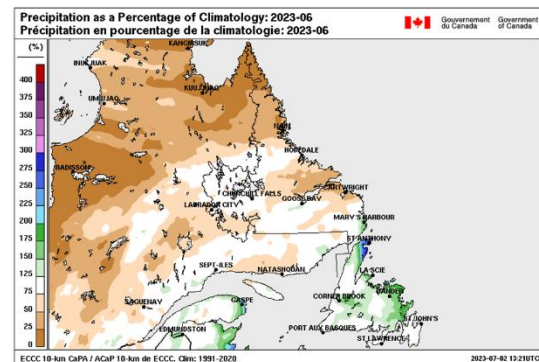
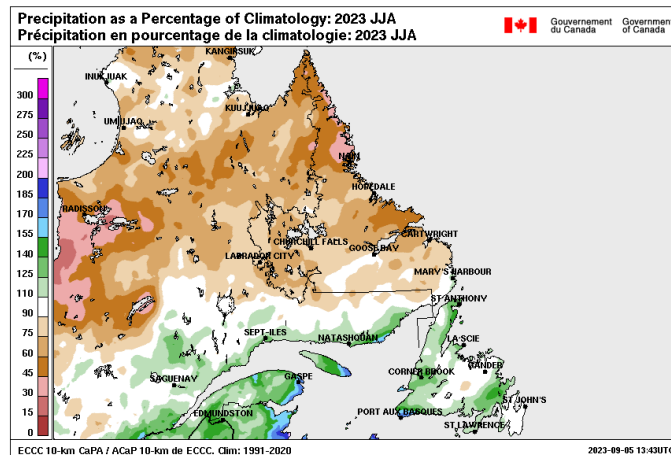
Above right, top to bottom: Temperature anomalies for Newfoundland and Labrador for June, July and August.

Precipitation (Percent of 1991-2020 average)

The summer months continued to be near or below normal for precipitation in Labrador (continuing the pattern set in spring), although southeastern sections did see some heavy rain events.

Several heavy rain events in Newfoundland brought monthly precipitation totals and the summer (June-July-August) totals well above normal in some areas. Channel-Port aux Basques and Stephenville areas had their wettest July months on record.

Some notable extreme rain events: June 6-9, causing flooding and road washouts to eastern sections of the Northern Peninsula; July 22-24, causing flooding and partial washout of the Trans Canada east of Port aux Basques; August 30-31 (from an intense low tapping into tropical moisture from Hurricane Franklin).



Above left: Precipitation as a percentage of 1991-2020 average for Newfoundland and Labrador for June – August combined.

Above right, top to bottom: Precipitation anomalies for Newfoundland and Labrador for June, July and August.

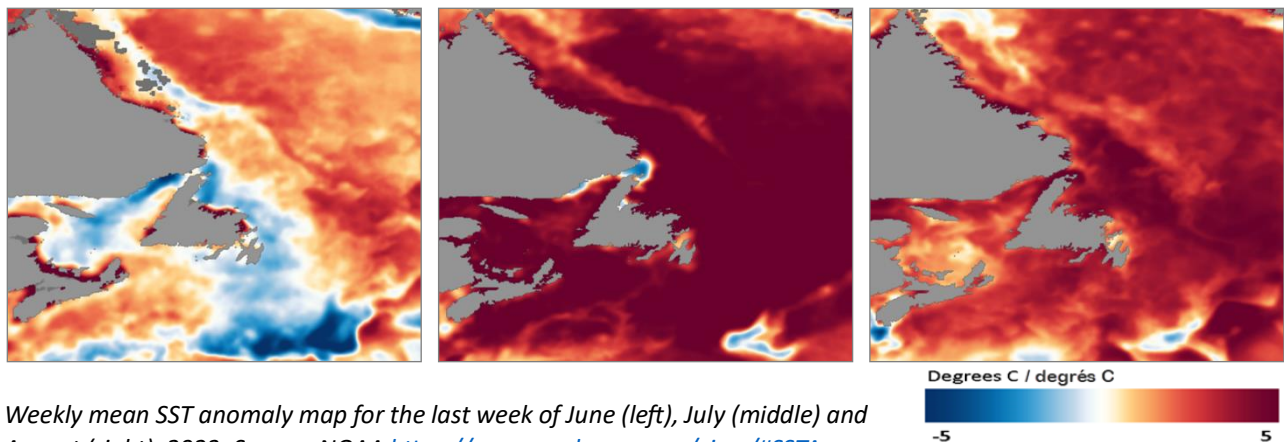
Seasonal Temperature and Precipitation Tables

Seasonal temperature averages and precipitation totals compared to seasonal normals (1981 - 2010) for June – August, 2023 for selected locations in Newfoundland and Labrador.

Location	Mean Temperature (°C)				Total Precipitation (mm)		
	Seasonal Mean	Average of Monthly Normal Means	Diff.	Rank (Warmest)	Seasonal Total	Total of Monthly Normals	Seasonal Total as % of Normal
Bonavista	N/A	N/A	N/A	N/A	311.1	251.1	124
Channel-Port aux Basques	14.6	13.0	1.6	4	611.0	358.5	170
Corner Brook	17.1	15.8	1.3	10	385.5	286.0	135
Gander	16.1	14.7	1.4	8	293.6	287.9	102
St. John's	15.3	14.3	1.0	>10	345.1	289.2	119
St. Lawrence	15.0	13.0	2.0	3	N/A	N/A	N/A
Stephenville	16.7	15.1	1.7	4	464.0	352.9	131
Terra Nova Nat Park	15.5	14.7	0.8	>10	N/A	N/A	N/A
Cartwright	13.2	11.2	2.0	3	243.6	293.5	83
Happy Valley-Goose Bay (Goose A)	16.0	14.0	2.1	3	300.9	312.0	96
Hopedale	10.9	9.9	1.1	>10	165.0	236.9	70
L'anse au Loup (Lourdes de Blanc Sablon)	12.9	11.0	1.9	3	275.0	290.3	95
Nain	10.0	9.2	0.8	10	153.8	253.4	61
Wabush	13.8	12.2	1.6	4	259.3	300.1	86

Above: Temperature difference: cells shaded pink if $\geq 1^\circ\text{C}$, blue if $\leq -1^\circ\text{C}$. Precipitation as a percent of normal: cells shaded green if $\geq 125\%$ of normal, yellow if $\leq 75\%$ of normal

Sea Surface Temperatures (SST)



Sea surface temperatures in the last week of June were near to below normal around parts of the Island and off parts of the Labrador coast where some sea ice still remained. Near the end of July, SSTs had warmed to be significantly above normal in most areas. SSTs remained above normal by the end of August.

Regional Impacts

River Flows

Monthly mean flow on the Eagle River near Cartwright was consistently below the long-term monthly median over the summer months, continuing the pattern set in spring. The June and August flows at this site were less than the 25th percentile of the long-term distribution. The cumulative runoff from October 1 to August 31 is just 71% of the long-term median value. This reflects the generally dry conditions experienced in southeastern Labrador.



The month-to-month pattern at the 4 sites on the island was more mixed. Gander River started out well-above the median flow in June but by August the flow had dropped to 63% of the median. The cumulative runoff from October 1 to August 31 at these 4 sites was generally near the long-term normal (91 to 103% of median).

Preliminary monthly runoff summary for selected river sites in Newfoundland and Labrador for June, July and August, courtesy of ECCC Water Survey of Canada. Record values are provisional and may change after review.

River Flow Station		June 2023		July 2023		August 2023		Cumulative Run-off from Oct 1 to Aug 31
Station Number	Drainage Area (km ²)	Mean Flow (m ³ /s)	% of Median	Mean Flow (m ³ /s)	% of Median	Mean Flow (m ³ /s)	% of Median	% of Median
EAGLE RIVER ABOVE FALLS 03QC001	10900	334 D	53	227	82	144 D	71	71
GANDER RIVER AT BIG CHUTE 02YQ001	4400	135 E	169	50.7	97	29.7	63	91
ISLE AUX MORTS RIVER BELOW HIGHWAY BRIDGE 02ZB001	205	6.58 D	63	25.4 ER	370	17 E	251	103
ROCKY RIVER NEAR COLINET 02ZK001	301	5.45	91	2.91 D	54	4.75	103	97
UPPER HUMBER RIVER NEAR REIDVILLE 02YL001	2110	142	130	72.7 E	174	39.6	112	93

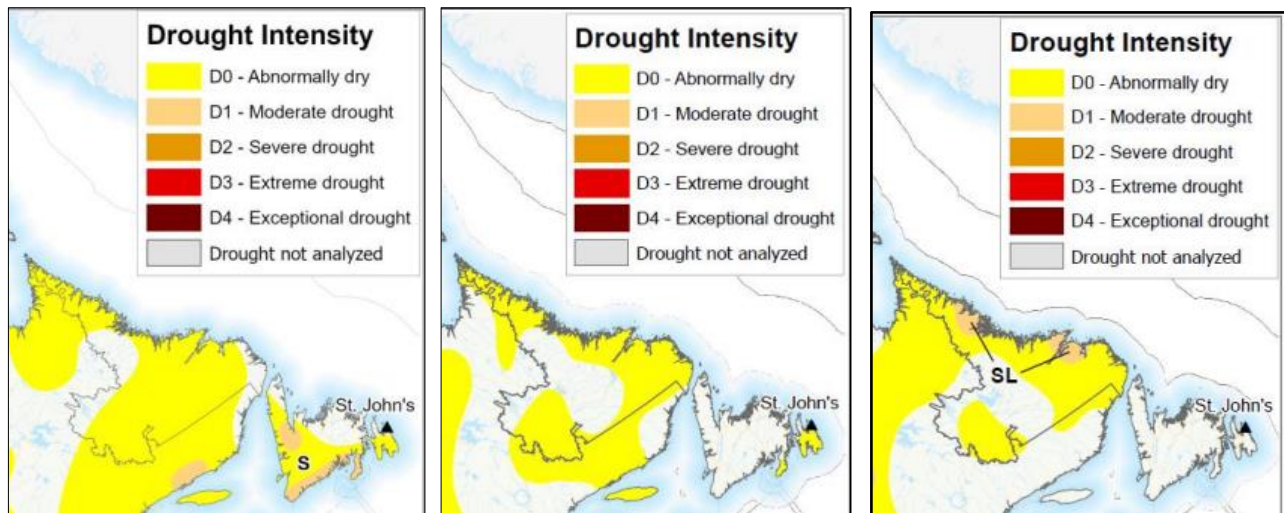
E - Excessive (> 75th percentile), D - Deficient (< 25th percentile), based on 30-years, 1981-2010);

R - Record (provisional new extreme, preliminary data subject to review), compared to period of record up to 2010)

Forestry/Wildland Fires

The NRCan Canadian Wildland Forestry Information Service (CWFIS) [weekly Fire Situation Report](#) indicates that the number of fires in the province was near the 10-year average, but the estimated area burned was more than twice the 10-year average, as of September 22, 2023.

Canadian Drought Monitor (Agriculture and Agri-Food Canada)



Canadian Drought Monitor Map for June 30 (left), July 31 (middle) and August 31 (right), 2023. S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands); L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology) Source: <https://agriculture.canada.ca/en/agricultural-production/weather/canadian-drought-monitor>

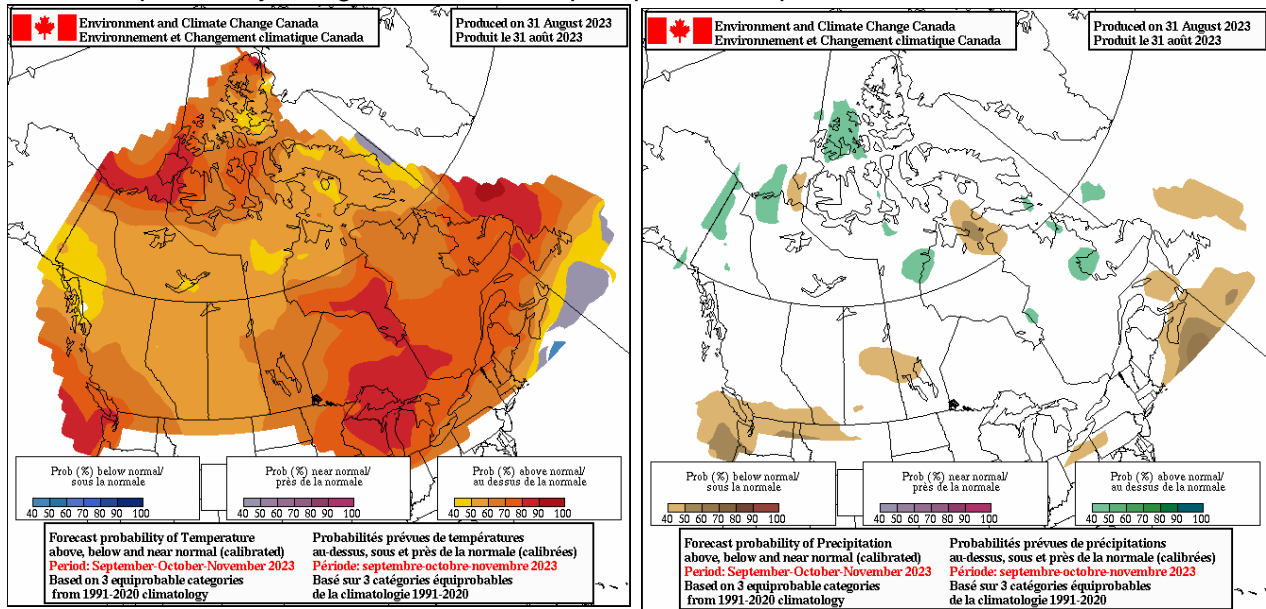
In **June**, abnormally dry conditions continued for much of Newfoundland and Labrador after a dry end to the spring. Western and southern sections of the island had moderate drought.

In **July**, abnormally dry conditions remained in much of Labrador after below-normal precipitation for the month. Drought conditions improved for most of the island, with the Avalon and Burin Peninsulas the only remaining abnormally dry areas.

In **August**, persistent dryness led to moderate drought for eastern sections of Labrador, with abnormally dry conditions remaining for most of the rest of Labrador. Near to above normal precipitation resulted in drought being erased from any remaining areas in Newfoundland.

Temperature & Precipitation Seasonal Forecast

The seasonal forecast showed a moderate to high probability of warmer-than-normal temperatures in fall (September-October-November) for Newfoundland and Labrador. For precipitation, there was no signal for Newfoundland or most of Labrador, but there was a moderate probability of higher-than-normal precipitation for parts of western Labrador.



Probability of above, below and near normal temperature (left) and precipitation (right) for Fall (September-October-November), 2023. Produced August 31, 2023. Source: [Seasonal forecasts for Canada](#)

Atlantic Hurricane Season Update

NOAA's [updated 2023 Atlantic hurricane season outlook](#) favors an above-normal season. Factors such as record-warm Atlantic sea surface temperatures are expected to counterbalance El Niño, which tends to limit storm development. There were four tropical cyclones by June 30, three more than average. It was the first time since 1968 that the Atlantic had two named storms in June simultaneously. The season's first hurricane, Don, was July's only storm, formed nearly a month earlier than average, and was the third longest-lived named storm in July. In August, there were six named storms (average is 3-4), with two becoming major hurricanes (average is 1-2). There were 11 named storms as of August 31, which is around a month earlier than average. The season runs from June 1–November 30, peaking from mid-August to late October (Source: [Gulf of Maine Region Quarterly Climate Impacts and Outlook Report](#)).

Contact Information

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Previous summaries can be found here: <https://www.arctic-rcc.org/>