



Environment and  
Climate Change Canada

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Changement climatique Canada

## Newfoundland and Labrador

### Quarterly Climate Summary: Summer 2022

#### Summary & significant weather events (June-August):

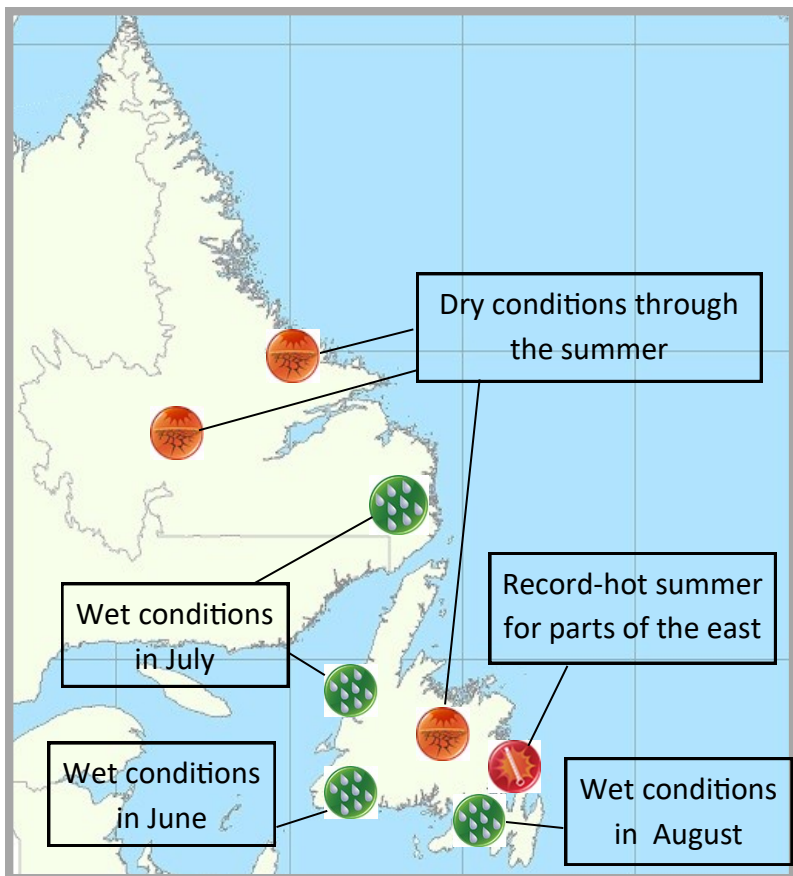
Despite a cold start in many areas of the province, it turned out to be a record-setting (or near-record-setting) warm summer for several areas of Newfoundland and Labrador. However with those warm temperatures also came very dry conditions, particularly for central and northeastern Newfoundland. This set the stage for a headline-grabbing forest fire season on the island.

June started cold across much of the province, but temperatures rebounded through the rest of the month. In the end, much of the province experienced above normal temperatures, which continued to be a big story for the province into the rest of the season. June was also characterized by several significant rainfall events in southwestern Newfoundland.

Many areas of the province were hit with at least one significant rainfall event in July, leading

to generally near to above normal monthly precipitation. One major exception to this was the central and northeastern portion of the island. This part of the province experienced much drier than normal conditions and this, combined with a few late-month thunderstorms, allowed for several forest fires to start and quickly burn out of control.

These forest fires would dominate headlines in the province well into August. Otherwise, several areas went on to have their top-3 warmest Augusts on record during a blistering hot month for the province. Save for a few areas, below normal monthly precipitation was generally observed in Newfoundland and Labrador.



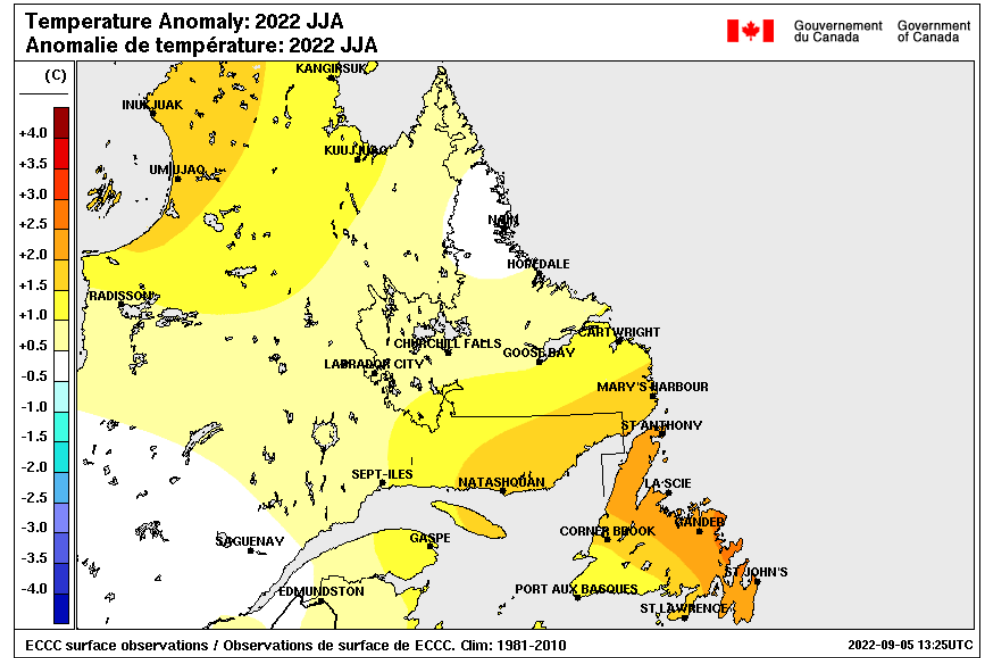
## Provincial Climate Overview (June-August):

### Temperature (Departure from Normal):

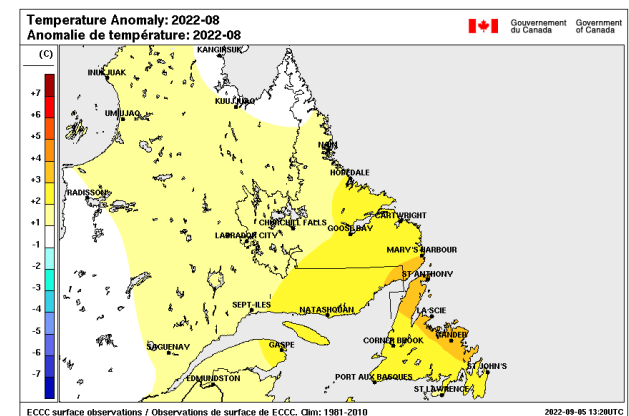
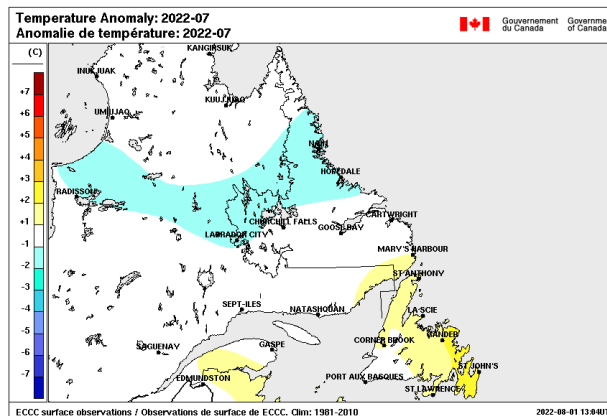
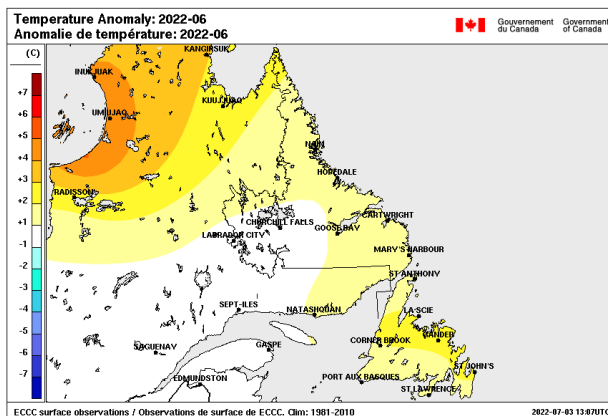
Temperatures for this Summer (averaged over June, July and August) were above normal across most of the province (1 to 3 C). However, temperatures were near normal in northern Labrador.

### Highlights:

- Warmest summer on record for Bonavista, Gander, St. John's, and St. Lawrence.
- Warmest August on record for the previously mentioned sites, as well as in L'Anse au Loup.
- 2nd warmest summer on record for Port aux Basques and L'Anse au Loup.
- 2nd warmest August on record for Port aux Basques and Hopedale.
- 3rd warmest July on record for L'Anse au Loup and 3rd warmest August on record for Cartwright.



above: Temperature anomalies for Newfoundland and Labrador for June-August combined.



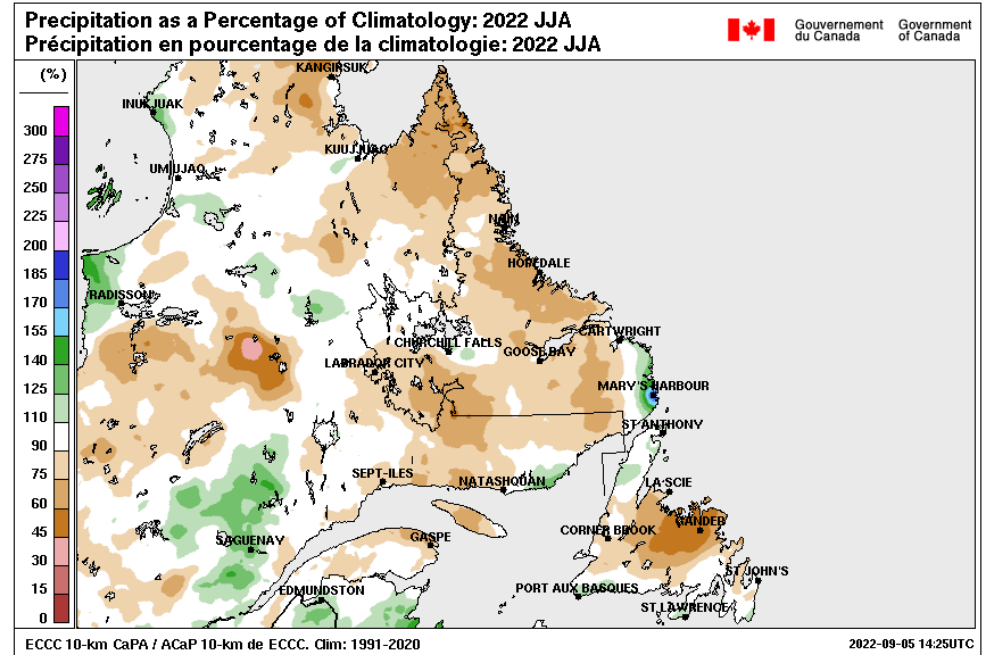
left to right: Temperature anomalies for Newfoundland and Labrador for June, July, August

## Precipitation (Percent of 1991-2020 average):

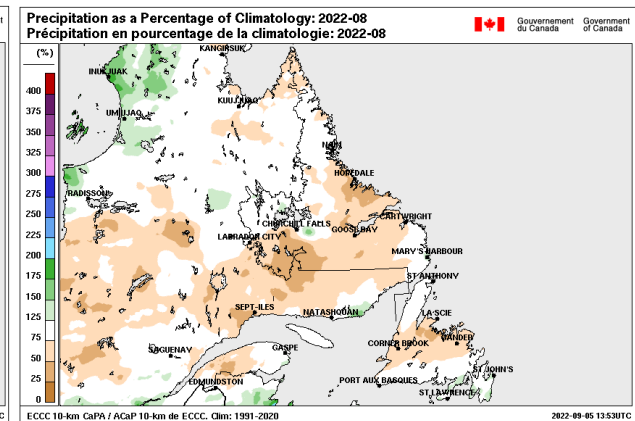
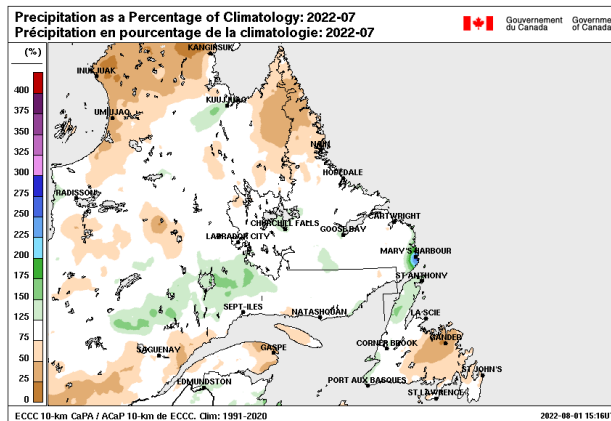
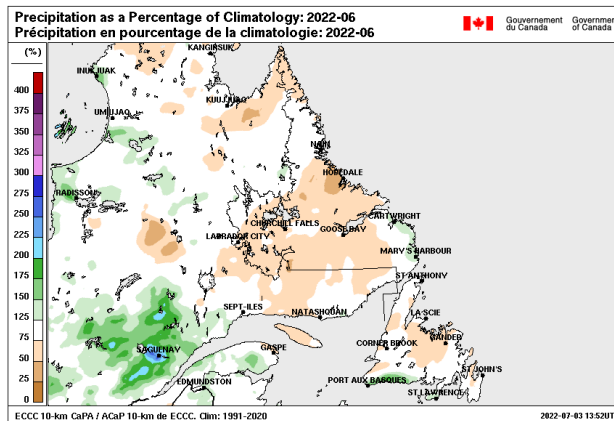
Precipitation this Summer (totaled over June, July, August) was near to below normal across most of the province. There were a few pockets of above normal precipitation noted in a few areas though. Note the large anomaly in the Mary's Harbour area for the season and for July may not be as high as it appears. The analysis was influenced by some data that are still under review.

### Highlights:

- 3rd wettest June on record for Cartwright.



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



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

## Seasonal Temperature and Precipitation Tables:

Seasonal temperature averages and precipitation totals compared to seasonal normals for June to August 2022, for selected locations in Newfoundland and Labrador

	Mean Temperature (°C)				Total Precipitation (mm)		
Location	Seasonal Mean	Average of Monthly Normal Means	Diff.	Rank (Warmest)	Seasonal Total	Total of Monthly Normals	Seasonal Total as % of "Normal"
Bonavista	15.8	13.2	2.7	1	120.5	251.1	48
Channel-Port aux Basques	15.0	13.0	1.9	2	374.9	358.5	105
Corner Brook					266.6	286.0	93
Gander	17.3	14.7	2.5	1	192.9	287.9	67
St. John's	16.9	14.3	2.6	1	299.6	289.2	104
St. Lawrence	15.5	13.0	2.5	1	399.1	354.5	113
Stephenville	16.4	15.1	1.4	6	320.1	352.9	91
Terra Nova Nat Park	16.8	14.7	2.0	8	200.8	289.1	69
Cartwright	12.4	11.2	1.2	>10	389.1	293.5	133
Happy Valley-Goose Bay	14.9	14.0	1.0	>10	309.8	312.0	99
Hopedale							
L'anse au Loup (Lourdes de Blanc Sablon)	13.1	11.0	2.1	2	215.8	290.3	74
Nain	9.5	9.2	0.3	>10			
Wabush							

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

## **Significant Weather events:**

### **June**

**June 1-4:** A low off the coast of NL since the end of May continued to produce wet and cold conditions to many areas of the province into the first days of June. Cartwright Airport reported 154 mm of total precipitation (mix of rain and snow) starting near the end of May. Mary's Harbour ended up with 81 mm, La Scie picked up 66 mm and Twillingate reported 38 mm during this event.

**June 9-11:** A frontal system associated with a low tracking through Labrador brought significant rainfall to southern Newfoundland. Burgeo received 73 mm of rain, while St. Lawrence picked up 69 mm. Stations elsewhere along the south coast reported 27-38 mm. Wreckhouse winds peaked at 94 km/h.

**June 17-20:** A frontal system stalled over the province, giving heavy rainfall to southwestern Newfoundland. Late season snowfall also occurred in parts of Labrador. Burgeo reported 102 mm of rain, Goose Bay 44 mm, and Port aux Basques 43 mm. Stations elsewhere in southern & western Newfoundland, as well as the Labrador Strait, received 27-38 mm.

**June 24-25:** Another frontal system tracked across the island and brought with it another bout of heavy rainfall for southwestern Newfoundland. Rainfall totals of 67 mm and 44 mm were observed at Port aux Basques and Wreckhouse respectively, while Stephenville received 34 mm.

## Significant Weather events:

### July

**July 6-7:** A low pressure system tracked across Atlantic Canada. This continued the trend established in mid-June of heavy rain makers for southwestern Newfoundland, though heavy rainfall extended northward across much of western Newfoundland as well. Cormack picked up 71 mm of rain, while stations across western and southwestern Newfoundland received 45-65 mm.

ECCC Weather summary: [Newfoundland](#)

**July 12-13:** A low moved through central Labrador, providing significant rainfall to parts of the region. Churchill Falls recorded 61 mm while Goose Bay reported 44 mm. Cartwright and Wabush Lake received 27 mm and 24 mm respectively.

**July 18:** Lines of thunderstorms moved through central and northeastern Newfoundland, as well as central and southeastern Labrador. Mary's Harbour received 24 mm of rain, with the bulk of that coming in roughly one hour in the afternoon. This station also reported a peak gust of 63 km/h. One station in Gander reported 21 mm of rain in two hours while another reported 15 mm. Goose Bay recorded 13 mm, also in a short period.

**July 19-20:** A low pressure system crossed the Northern Peninsula, and with it came heavy rainfall across portions of the island. Total rainfall was in the 30-70 mm range across much of southern and western Newfoundland, as well as on the Avalon Peninsula. Two stations in Stephenville recorded 83 and 74 mm for the event, while Kippens received 82 mm. Peak rainfall rates were measured generally in the 7-17 mm/hr range across the aforementioned regions of the island; though Cape Race, Winterland and Stephenville each picked up 24 mm in one hour. St. Lawrence recorded a peak hourly amount of 22 mm.

**July 22-25:** A warm, humid air mass persisted over the island for several days. Daytime high temperatures in the 28-32 degree Celsius range were observed across much of central, northeastern and eastern Newfoundland during the period. Humidex values peaked in the mid-30s across these regions, maxing out at 38 in Terra Nova. Several daily record high temperatures were established during this period, and severe thunderstorms on July 24 produced hail and set off several forest fires in the central region.

ECCC Weather summaries – Newfoundland: [July 22](#), [July 23](#), [July 24](#), [July 25](#)

[Hot Weather Breaks Temperature Records Across Island | VOCM News](#)

[Tely 10 Postponed Due to Heat Warning | VOCM News](#)

[St. John's Pride Parade Postponed Due to Heat Warning | VOCM News](#)

[Bay d'Espoir Highway Closed after Lightning Sparks Forest Fires in Central | CBC News](#)

## Significant Weather events:

### August

**August 9-10:** A low pressure system skirting south of the island brought some much-needed rainfall to combat the forest fires in central Newfoundland. Rain was heavy at times though over the Avalon, Burin and Connaigre Peninsulas. Stations in these areas reported 35-55 mm of rain, with Flat Rock receiving 59 mm.

**August 17-20:** A broad area of low pressure produced periodic rainfall across much of the island, with high amounts reported on the Avalon Peninsula. St. John's Airport, Cape Race, and Mount Carmel received 72-76 mm of rain over several days. Elsewhere on the peninsula, multi-day rainfall totals of 34-57 mm were observed. During this time, a warm airmass set up over Labrador, with daytime highs in the 24 to 29 degree C range. Daily high temperature records were set or tied for at least one location in Labrador each day, with several stations establishing new daily high records on August 18.

ECCC Weather summary: [Labrador](#)

**August 23-24:** A frontal wave tracked across the island, and with it came rain at times heavy for parts of southern and eastern Newfoundland. St. Lawrence and Winterland received 43 mm and 36 mm of rain respectively. Rainfall totals were highly variable across the Avalon Peninsula, with as little as 8 mm reported at St. John's Airport to as much as 39 mm reported at Cape Race. Heavy showers occurred in northeastern Newfoundland in the wake of this system, with several stations in Gander picking up 31-49 mm of rain, the bulk of which occurring the evening of the 24<sup>th</sup>.



## Sea Surface Temperature (SST) (Departure from Normal—last week of each month):

### June

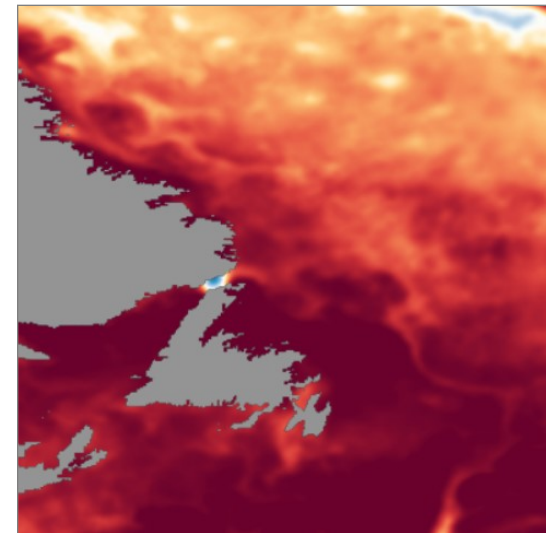
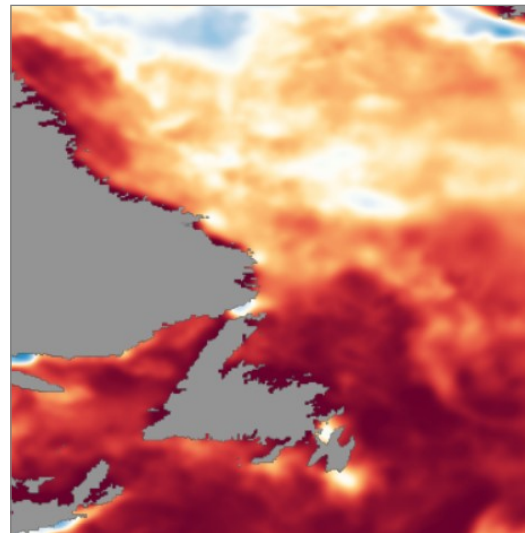
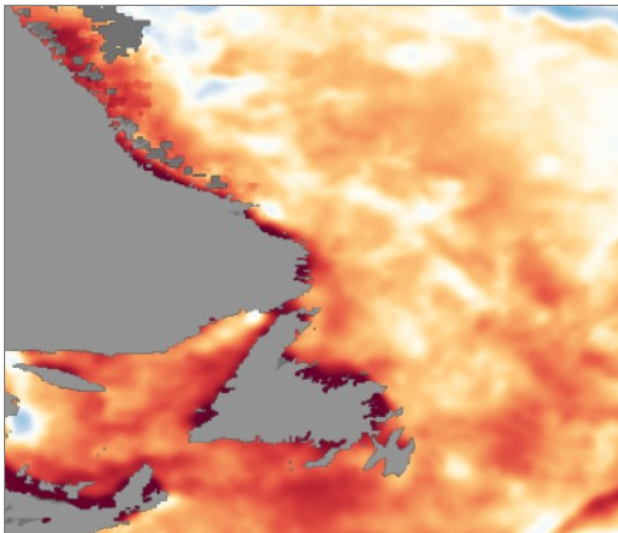
- \* Little ice cover remaining off coast of Labrador
- \* Most SST warmer than normal (2-4 C), up to 5 C above normal along parts of the coast
- \* Northern sections of Labrador Sea near normal to 2 C below normal.

### July

- \* Temperatures well above normal (4-5 C) offshore of Newfoundland.
- \* Areas of 1-2 C below normal near parts of the Newfoundland coast
- \* SST 1-2 C above normal in most of Labrador Sea, 3-5 C above normal along the Labrador coast
- \* Still 1-3 C below normal in northern section of Labrador Sea

### August

- \* Temperatures mainly above to well above normal offshore of Newfoundland and Labrador
- \* Strait of Belle Isle still below normal by 1-3 C



Degrees C / degrés C



NOAA weekly mean SST anomaly map (based on 1981-2010 Normals) for the last week of June 2022 (left), July 2022 (middle), and August 2022 (right)  
<https://www.nnvl.noaa.gov/view/globaldata.html#SSTA>

**Note:** Grey areas along much of the coast may represent either gaps in data or presence of sea ice.



## River Flows:

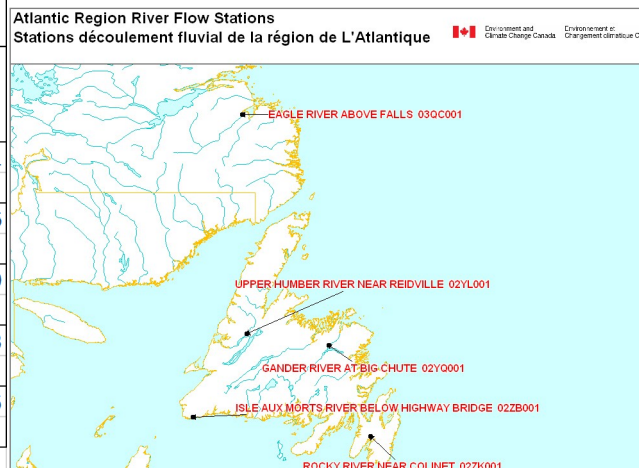
In **June**, excessive flow was reported for the second consecutive month in Eagle River (likely due to continued spring melt) and Isle aux Morts River (due to above normal precipitation for the month). Otherwise flow rates were near to slightly above median values.

A couple more heavy rainfall events in southwestern Newfoundland in **July** meant a second consecutive month of excessive flow rates for Isle aux Morts River. The Upper Humber River also had excessive flow for the month, while very dry conditions in the northeast led to deficient flows in the Gander River. Elsewhere, river flow rates were around normal.

Continued dry conditions in **August** caused the Gander River to run at deficient rates once again. Elsewhere, flow rates were generally near normal.

All rivers listed reported cumulative run-off exceeding median values. This includes the Gander River despite reporting deficient flow rates the last two months.

River Flow Station		Jun 2022		Jul 2022		Aug 2022		Cumulative Run-off from Oct 1
Station Number	Drainage Area (km <sup>2</sup> )	Mean Flow (m <sup>3</sup> /s)	% of Median	Mean Flow (m <sup>3</sup> /s)	% of Median	Mean Flow (m <sup>3</sup> /s)	% of Median	% of Median
<b>EAGLE RIVER ABOVE FALLS</b> 03QC001	10900	980 E	156	359	130	172	85	131
<b>GANDER RIVER AT BIG CHUTE</b> 02YQ001	4400	79.2	99	26.7 D	51	11.2 D	24	116
<b>ISLE AUX MORTS RIVER BELOW HIGHWAY BRIDGE</b> 02ZB001	205	25.8 E	246	14.2 E	207	3.61	53	159
<b>ROCKY RIVER NEAR COLINET</b> 02ZK001	301	8.4	140	4.59	85	5.75	124	123
<b>UPPER HUMBER RIVER NEAR REIDVILLE</b> 02YL001	2110	136	125	71.6 E	172	27.3	77	145
* Runoff accumulates from October 1st								
E - Excessive (> 75th percentile (based on 30-years, 1981-2010))								
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)								
Jun analysis produced Jul 26, 2022								
Jul analysis produced Aug 30, 2022								
Aug analysis produced Sep 26, 2022								



**Preliminary monthly runoff summary for selected River sites in Newfoundland and Labrador (location map above) for June, July and August courtesy of ECCC Water Survey of Canada. Note: Record values provisional and may change after the data is reviewed.**

## Canadian Drought Monitor (produced by Agriculture and Agri-Food Canada):

### June

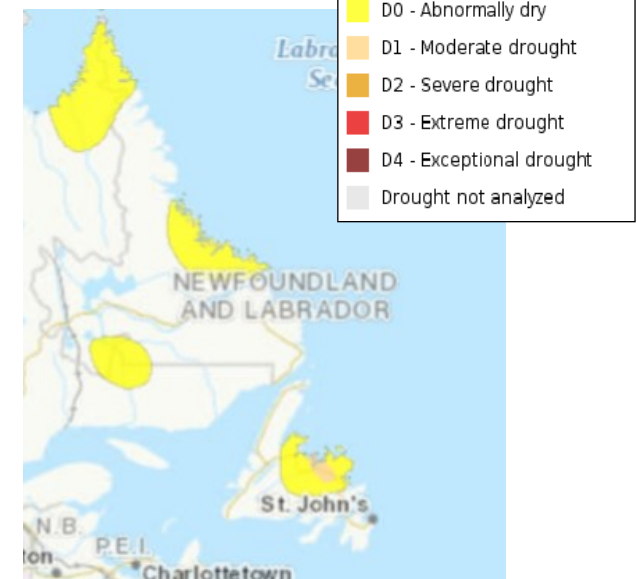
- \* Area of abnormally dry conditions stretching from western to northern Labrador
- \* No drought conditions elsewhere

### July

- \* Abnormally dry conditions across northeastern Newfoundland, as well as the northern Avalon Peninsula
- \* Another area of abnormally dry conditions highlighted over northern Torngat Mountains
- \* No drought conditions elsewhere

### August

- \* Abnormally dry conditions in central and northeastern Newfoundland, with a small area of moderate drought
- \* Abnormally dry conditions in northern Labrador
- \* No drought conditions elsewhere



Canadian Drought Monitor Map for June 2022 (left), July 2022 (middle), and August 2022 (right). Drought maps courtesy of Agriculture and Agri-Food Canada- <https://agriculture.canada.ca/en/agriculture-and-environment/drought-watch-and-agroclimate/canadian-drought-monitor>

## Provincial Impacts (June-August):

### Record heat

The latter half of the summer was marked by a few extreme heat events in the province. One such stretch in late-July prompted the postponement of the [Tely10 Race](#) and the [St. John's Pride Parade](#). This period of warm weather was also marked with a lack of precipitation over many areas of the province, leading to [forest fires in the eastern and central regions](#) of the island (more on that below), as well as in extreme western Labrador. Speaking of Labrador, the Big Land wasn't spared from the heat, as a prolonged warm spell occurred in mid-August, causing several daily temperature records to fall. All in all, the 2022 summer season (and particularly the month of August) was [record-breaking](#) in terms of high temperatures for several areas of the province.

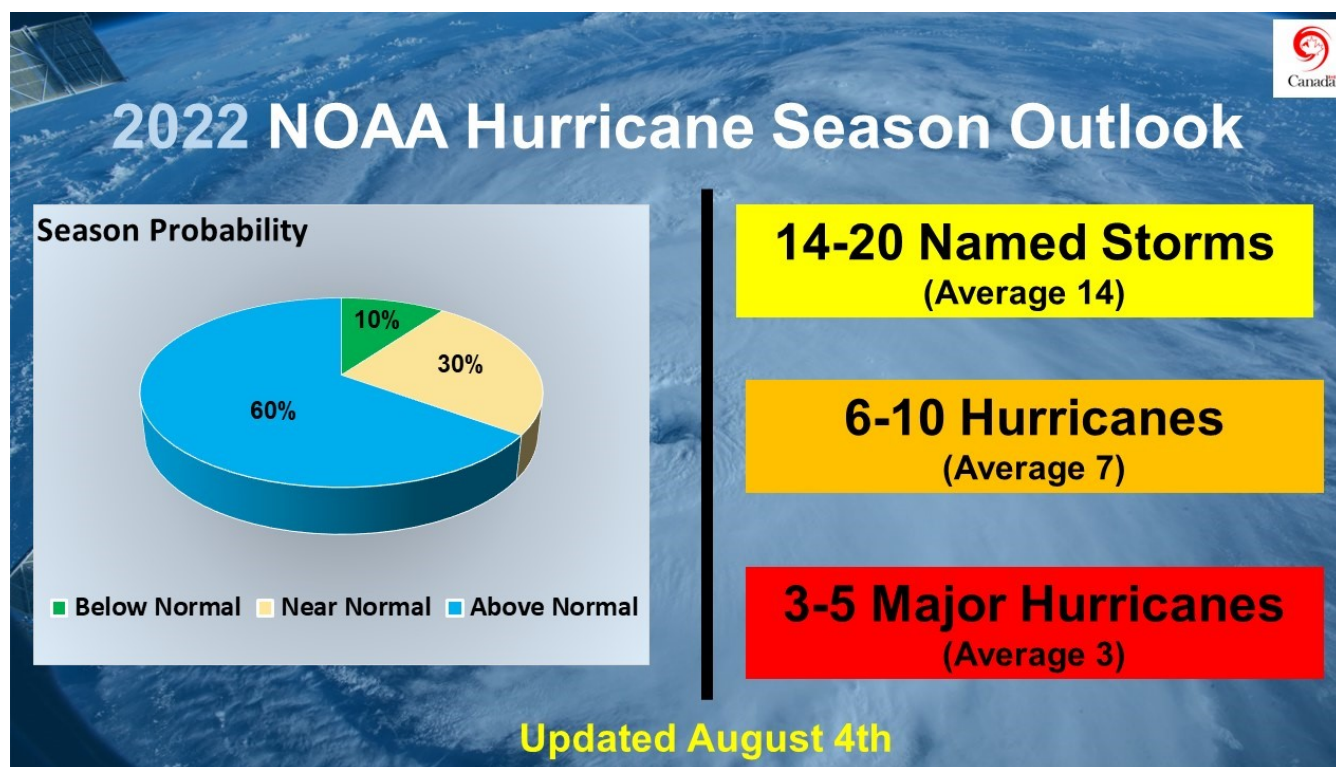
### A very active forest fire season

Forest fire season proceeded normally enough during the early part of the summer. Aside from [a few smaller fires and the need for scattered fire bans](#), it looked to be a relatively quiet season. All that changed in late-July, as a warm, humid air mass set up over the island for several days. This culminated in severe thunderstorms on July 24, setting off [several forest fires in central Newfoundland](#). These fires continued into August, causing [periodic closures of the Bay d'Espoir Highway](#). Health care facilities in the region were evacuated and people were bussed from communities in central to an emergency shelter in Deer Lake. A [state of emergency](#) was declared for several regions in central Newfoundland on August 7, remaining in effect for roughly a week. Smoky conditions were observed at times across much of central and western Newfoundland throughout early August, with Air Quality Health Index values peaking at 8 in Corner Brook. Mother Nature did not help much in fighting the fires, withholding any significant rainfall until the second week of August. Eventually the central fires were contained.

# Atlantic Hurricane Season Update (as of August 31)

While the 2022 Atlantic Hurricane Season was very quiet through the summer, the U.S. National Oceanic and Atmospheric Administration (NOAA) continues to predict an above-normal season. NOAA did slightly reduce the probability of this occurring to 60% (down from 65% at the start of the season) though. By the end of August, several areas of potential formation were identified in the Tropical Atlantic. On average about 1/3 of tropical storms in the Atlantic enter the Canadian Response Zone. (Note: more information on Post-Tropical Storm Earl and Hurricane Fiona will be included in the Fall 2022 bulletin.)

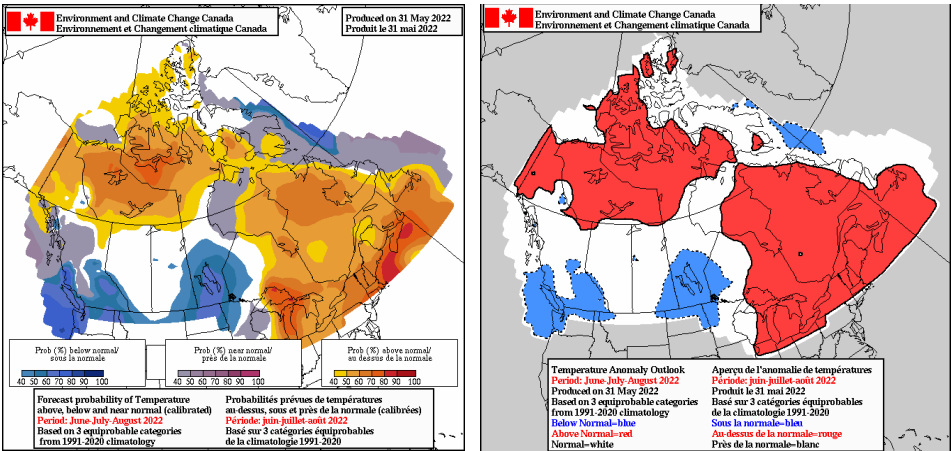
2022 marked the first time since the 2013 season in which a tropical storm did not form in the Atlantic basin prior to the official start of the Hurricane Season. More information is available from NOAA at their [website](#).



*Updated infographic showing hurricane season probability and numbers of named storms predicted from NOAA's 2022 Atlantic Hurricane Season Outlook. (Source: NOAA/Canadian Hurricane Centre (CHC))*

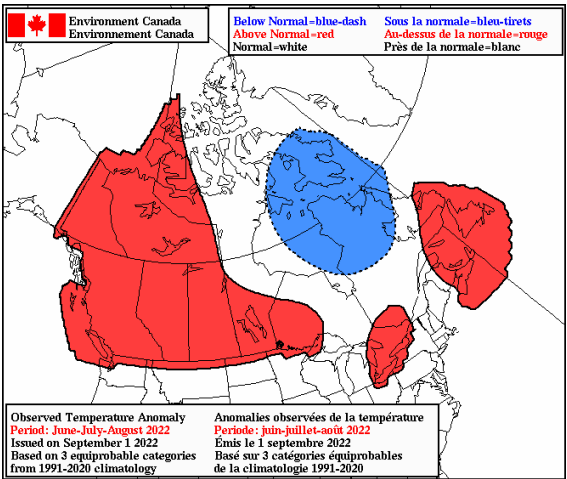
# **Summer Season (Period: June-July-August) Temperature Outlook Performance:**

The summer temperature forecast called for warmer than normal temperatures across most of the province, except near normal along the Labrador coast.



Left: Probability of above, below and near normal: Produced May 31, 2022 – Right: Forecast Temperature Anomaly: Produced May 31, 2022

Aside from western Labrador, where temperatures ended up near normal, the prediction of a warmer than normal summer generally verified quite well.



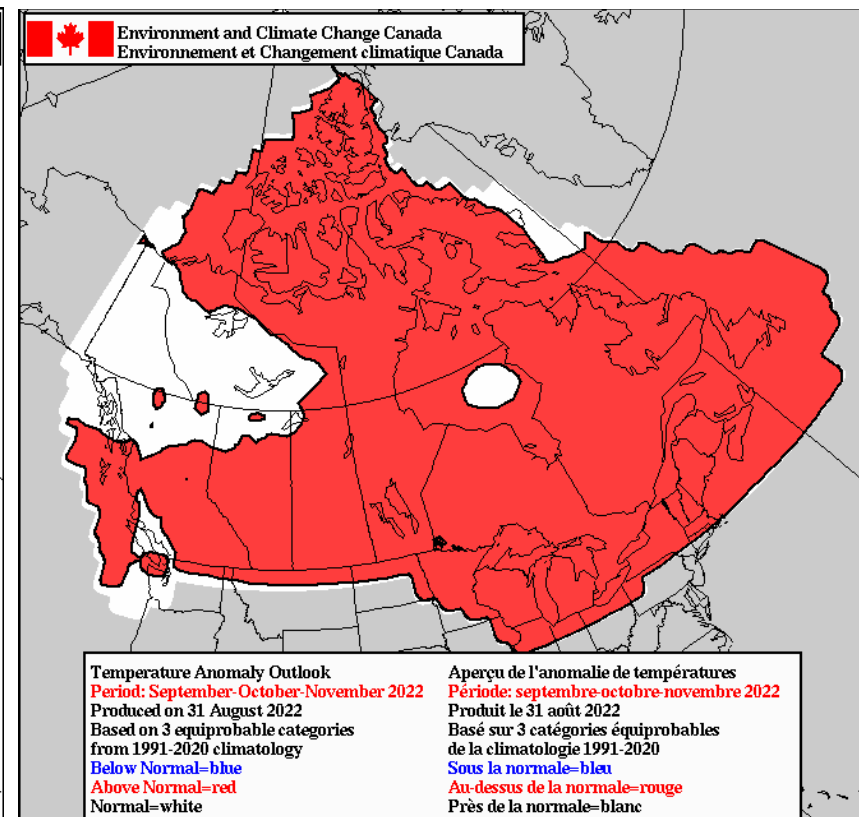
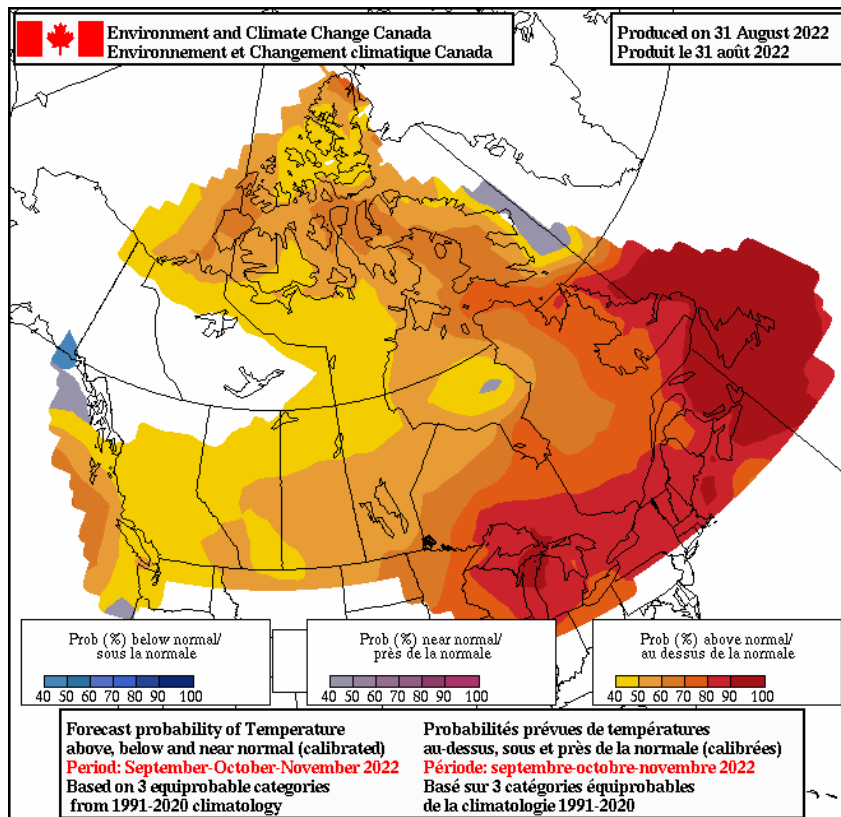
Above: Observed Temperature Anomaly – Issued on September 1, 2022



## Fall Season (Period: September-October-November) Temperature / Precipitation Outlook:

For the Fall season, there is a moderate to high chance of above normal temperatures across the province.

With regards to precipitation, guidance shows a low chance of above normal precipitation for western and extreme northern Labrador. Otherwise, there is no clear signal in terms of precipitation. Once again, we are excluding the precipitation maps as they typically verify less than 40% of the time.



Left: Probability of above, below and near normal temperature: Produced August 31, 2022 – Right: Temperature Anomaly Outlook: Produced August 31, 2022

[https://weather.gc.ca/saisons/index\\_e.html](https://weather.gc.ca/saisons/index_e.html)

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