

Environment and  
Climate Change Canada

Environnement et  
Changement climatique Canada

## Newfoundland and Labrador

### Quarterly Climate Summary: Spring 2022

#### Summary & significant weather events (March-May):

Plenty of spring precipitation fell in Labrador's southeast, while a relatively balmy winter bled into a slightly warmer than normal season for the springtime in Newfoundland.

March had its typical share of storms for the province, bringing a typical spring mix of rain, snow and windy conditions. One storm in particular in the middle of the month bottomed out to a record-setting low pressure observed in the Cartwright area. It was too little, too late for much of eastern Newfoundland though, as a winter lacking in snow didn't allow for much late-season winter activity.

The typical Newfoundland and Labrador spring mix of rain and snow continued into April, as the month brought its own share of storms to the province, particularly during the last week or so.

March and April were the main contributors to above normal precipitation for southeastern Labrador and the Northern Peninsula for the spring period.

Looking at comparisons of temperature and precipitation to normal, nothing would really jump out at anyone for the month of May. However the month could be characterized by its fluctuations in both regards. For temperature, the early part of the month was quite cold, with record-setting low temperatures for some areas. This was followed by a warm spell mid month which, conversely, brought record high temperatures to a few parts of the province. Precipitation-wise, May was pretty benign, save for a lingering storm near the end of the month which brought wet conditions to the island, and a late-season snowfall to northern Labrador.

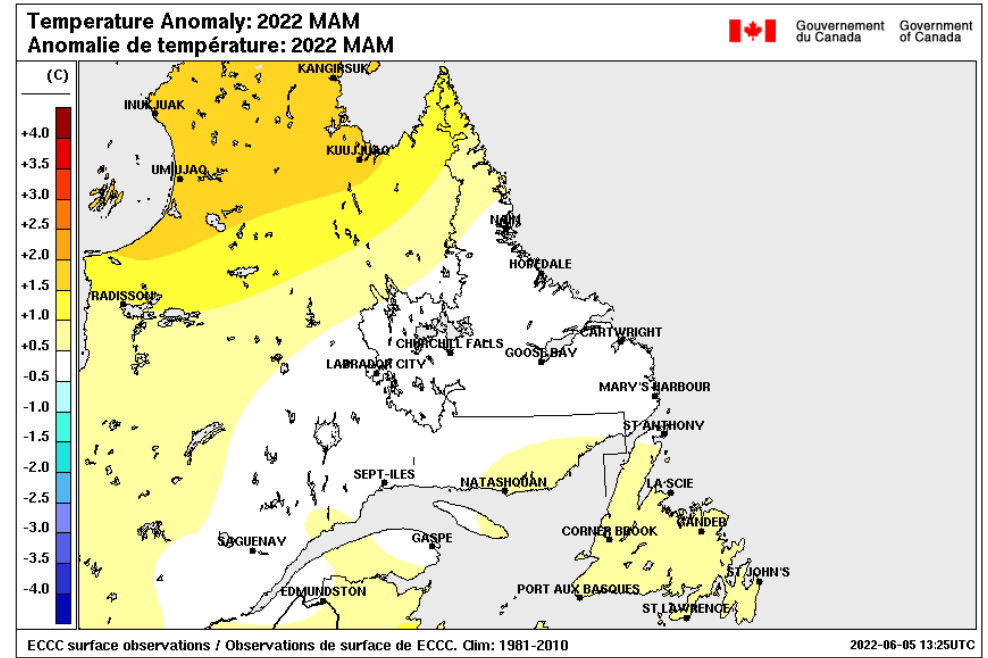
## Provincial Climate Overview (March-May):

### Temperature (Departure from Normal):

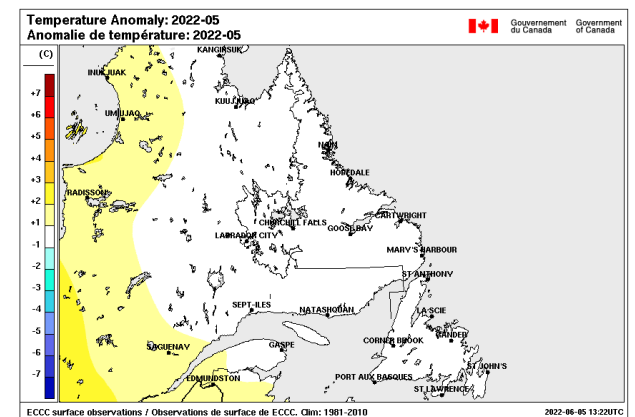
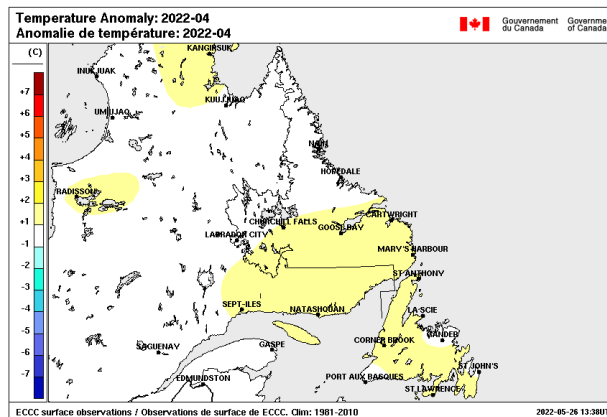
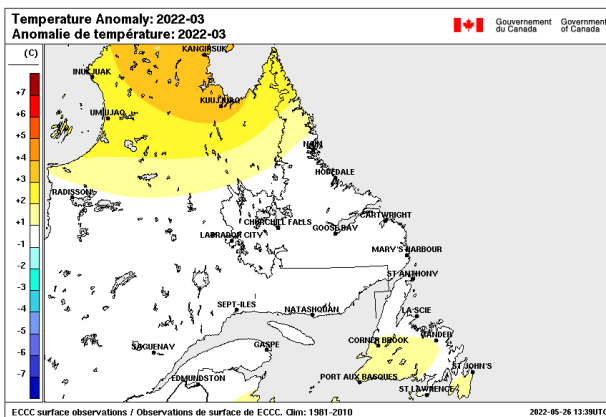
Temperatures for this Spring (averaged over March, April, and May) were slightly above normal across Newfoundland (1 to 2 C). Labrador had near to slightly above normal temperatures.

### Highlights:

- 8th season in a row for above normal temperatures in Newfoundland (since Spring 2020).
- Despite averaging out near normal across the province, May was characterized by wild fluctuations in temperature.



above: Temperature anomalies for Newfoundland and Labrador for March-May combined.



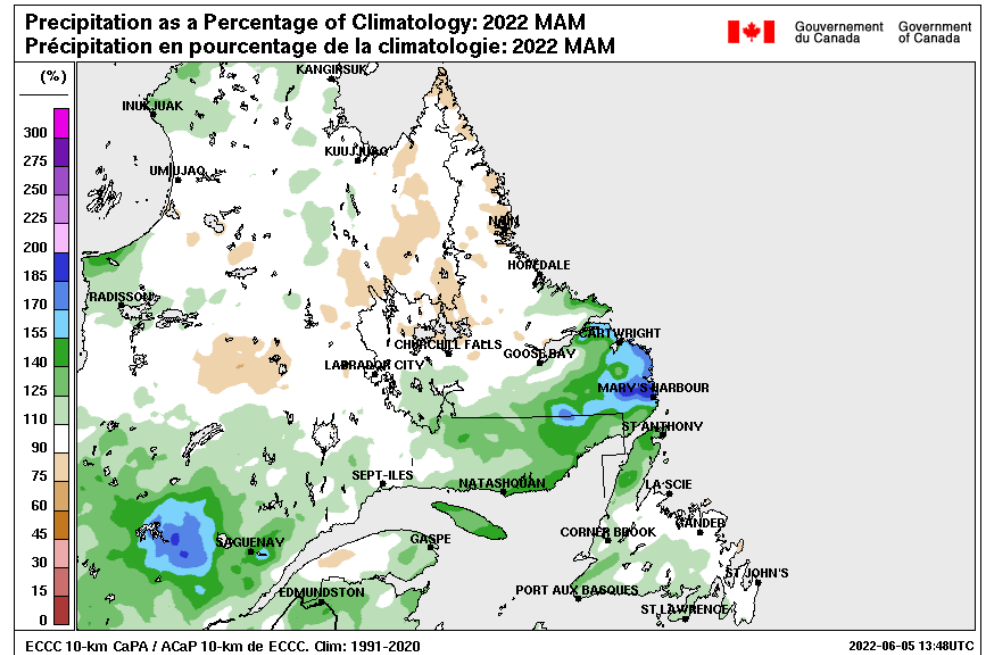
left to right: Temperature anomalies for Newfoundland and Labrador for March, April, May

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

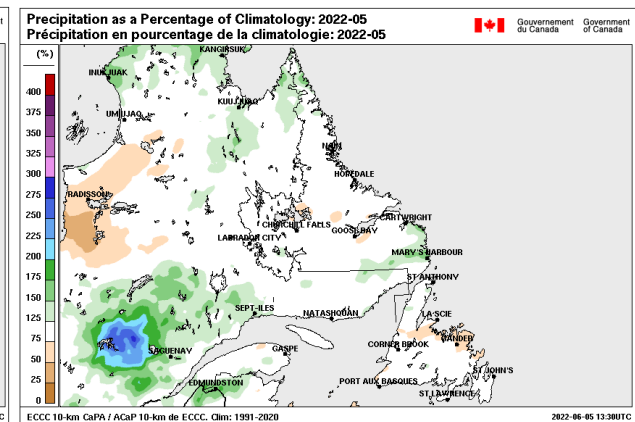
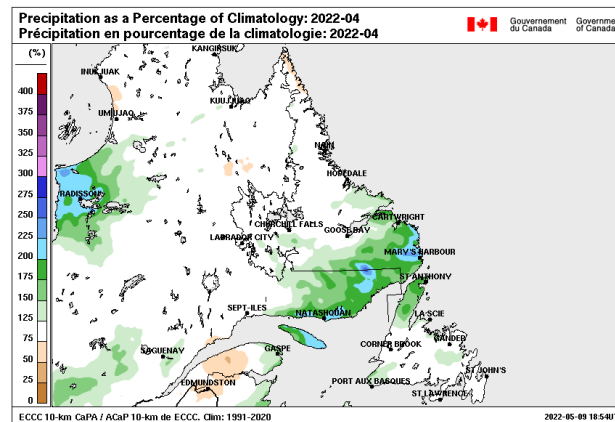
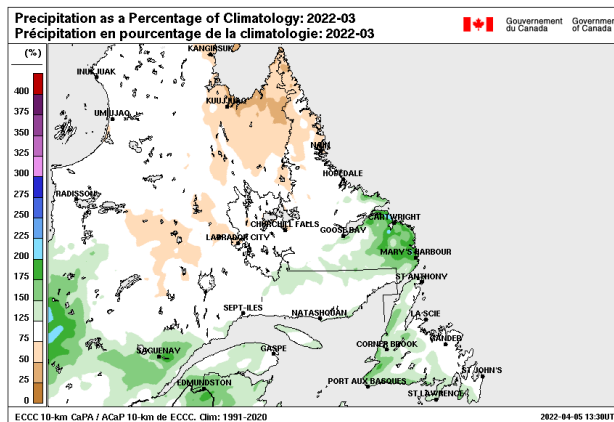
Precipitation this Spring (totaled over March, April, May) was above normal across western and parts of southern Newfoundland, and well above normal in southeastern Labrador. Eastern Newfoundland and northern Labrador had near to below normal precipitation.

### Highlights:

- L'Anse au Loup recorded more than double its normal precipitation for the month of April.
- May was the first month with near or below normal precipitation amounts on the west coast of Newfoundland since Fall 2021.



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



Above left to right: Precipitation anomalies for Newfoundland and Labrador for March, April, May.

## Seasonal Temperature and Precipitation Tables:

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

Location	Mean Temperature (°C)			Total Precipitation (mm)		
	Seasonal Mean	Average of Monthly Normal Means	Diff.	Seasonal Total	Total of Monthly Normals	Seasonal Total as % of "Normal"
Bonavista	2.2	1.3	0.8	248.4	262.2	95
Channel-Port aux Basques	2.3	1.2	1.1	346.8	365.3	95
Corner Brook	3.0	2.4	0.6	361.2	260.0	139
Gander	2.1	1.5	0.6	231.3	297.2	78
St. John's	2.3	1.9	0.5	374.9	367.7	102
St. Lawrence	3.3	1.8	1.5	419.5	373.7	112
Stephenville	0.9	0.2	0.7	293.7	261.3	112
Terra Nova Nat Park				318.9	276.8	115
Cartwright	-2.1	-2.4	0.3			
Happy Valley-Goose Bay	-1.4	-1.7	0.3	191.8	198.2	97
Hopedale	-4.1	-4.1	-0.1			
L'anse au Loup (Lourdes de Blanc Sablon)						
Nain	-4.9	-5.2	0.3			
Wabush	-4.5	-4.5	0.0			

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:

## March

### March 6 to 8

Two low pressure systems crossed Newfoundland in the span of two days. The first moved south of the Island with precipitation amounts of 10-15cm of snow along the south coast before snow mixed with rainfall. Generally under 5 cm of snow fall across the rest of the Island. The second low crossed the Island on the second day and brought snowfall to the West Coast of Newfoundland and southeastern Labrador as well as bringing significant winds. Snowfall amounts of up to 17 cm were observed with higher amounts likely in the higher elevations on the Great Northern Peninsula. Winds gusted above 100 km/h at many coastal locations in Newfoundland with the highest reported gusts of 130-141km/h.

ECCC Weather Summary - [Newfoundland](#)

### March 12 to 14

A major winter storm moved through the Strait of Belle Isle. Heavy rain and snow, record breaking low pressure, and Hurricane force winds were observed. Cartwright, NL set a new record low pressure at this location in the storm. It reported a mean sea level (MSL) pressure of 945.1 mb on March 13, 2022, breaking its previous lowest MSL pressure record of 950.7 mb, set on December 2, 1972. Archived atmospheric pressure data records at this location begin in 1955. Snowfall was heaviest in southern central Labrador where Goose Bay reported 44cm of snow. Rainfall amounts were highest in southern Newfoundland with measured amounts of 30-50 mm with an unofficial station in Bay D'Espoir reporting 118mm. South of the low daily temperature records were broken across a lot of southern and eastern Newfoundland.

ECCC Weather Summary - [Newfoundland](#) / [Labrador](#)

[Winds Reach Category One Hurricane Force in Some Areas During Weekend Storm | VOCM](#)

[The Weather Network - Strongest low on Earth last weekend was a record-breaker in Canada](#)

### March 20 to 23

A broad low slowly crossed the region and stalled over southeastern Labrador. The initial band of snow, freezing rain, and rain moved across Newfoundland on the 20<sup>th</sup> with a pause in precipitation after that. Rain moved across Newfoundland on the 21 and 22<sup>nd</sup> before changing to flurries behind the stalled low. For Labrador, precipitation remained snow most of the period with greatest amounts in eastern and southeastern areas. Schools were closed due to weather in Western Newfoundland and parts of Labrador. Winds gusted above 100 km/h in coastal Labrador. Measured snowfall amounts were generally 13-32cm and total precipitation amounts varied, but were generally in the 15-30 mm range.

[Spring kicks off with messy weather as 'unsettled' mix hits Newfoundland | CBC News](#)

### March 26 to 30

The end of the month featured another long lasting low with waves of precipitation moving across Newfoundland and Labrador, similar to the previous week. Waves of precipitation, both rain and snow, crossed the province with totals varying widely. Stations on the south coast reported amounts of up to 66 mm. Total measured snowfall of 13-30 cm was also reported.

## **Significant Weather events:**

### **April**

#### **April 4-5**

A storm crossed the eastern part of Newfoundland, bringing mainly rain east of the low and snow west of the low. Snowfall amounts were measured at 10-18 cm. Total precipitation varied across the Island but general amounts were 20-40 mm total. Winds were strongest along the southwest coast where winds gusted to 100 km/h in Burgeo with some other coastal locations seeing strong winds as well. Daily record warm temperatures were observed in the St. Lawrence area above 10 degrees C.

[Snow for Some, Rain for Others as Spring Storm Takes Aim at Island | VOCM](#)

#### **April 10-11**

Similar to the previous week's low, a messy low crossed Newfoundland with a mix of rain, snow, and a period of freezing rain as the low crossed. Eastern Newfoundland saw more of an extended freezing precipitation event before changing back to rain as the low crossed the Avalon while central and western Newfoundland saw a more snow event with snow continuing behind the low, especially for coastal areas along the north coast. Snowfall amounts of up to 15 cm and precipitation of 10-18mm.

#### **April 17-18**

A low brought snowfall to southern Labrador as it moved across the Strait of Belle Isle. Snowfall amounts were estimated at 15 to 20 cm in parts of eastern Labrador. Winds gusted to 107 km/h in Cartwright and above 90 km/h in Hopedale and Mary's Harbour.

#### **April 20**

A very broad low pressure system tracked across Labrador bringing snow and some mixed precipitation while its warm front pushed rainfall across Newfoundland. Rainfall and wind were most pronounced along the west and southwest coasts of Newfoundland where winds were strongest, gusting above 80 km/h at many locations with rainfall amounts of up to 33mm. Wreckhouse winds reached 128-139 km/h for 2 consecutive days.

#### **April 23-24**

A stalled low southeast of the island provided 2 days of rain to Newfoundland, with a little snow mixed into central Newfoundland for some late April snowfall amounts of up to about 10 cm. Rainfall amounts were heaviest closest to the low on the Avalon Peninsula. Two-day rainfall in St. John's totaled 51-59 mm while Gander totaled 33 mm of precipitation including 11 cm of snow. Lower rainfall amounts were observed across the rest of the Island.

#### **April 27-30**

A low pressure system stalled south of Nova Scotia brought waves of unsettled weather to both Newfoundland and Labrador through the last 4 days of the month. Total precipitation from the long-lasting storm was highest in the area between southwestern Labrador and the Great Northern Peninsula with storm totals of 46 mm in Cartwright, 44 mm in St. Anthony, and 37 mm in Daniel's Harbour. Although coastal areas generally saw rain or wet snow, Goose Bay reported 22 cm of snow from the event.

## **Significant Weather events:**

### **May**

**May 6** – A ridge of high pressure west of Labrador kept northern arctic flow over Labrador. Record low daily maximum temperatures were set in many Labrador stations with most stations not seeing temperatures rise above zero. Wabush reached only minus 4.5 C during the day.

**May 8** – Record daily low temperatures were recorded at select stations in Newfoundland (Badger -7.6 C, Winterland -3.0 C) as the cold ridge continued to build in from the west over Labrador, flooding cold air across the Island.

**May 11-12** – As the ridge over the region finally pushed southeastwards warm temperatures flooded northwards over Newfoundland and Labrador. Record high daily temperatures were set across much of the region. Temperatures reached into the low 20's with Goose Bay having the highest temperature on May 11 of 23.3 C. On May 12<sup>th</sup> temperatures cooled in Labrador but remained record setting across the Island. Terra Nova recorded the Island max temperature of 24.7 C with many stations enjoying above 20 degrees for the second day in a row.

**May 28-31** – A low pressure system crossed southern Labrador before stalling east of the province through the end of the month. Rainfall across Newfoundland was brief as the warm front pushed across the Island. Although starting as rain, precipitation changed over to snow for central and northern Labrador and continued over a multi-day period. Snowfall was highest in Nain where 23 cm was reported between the 29<sup>th</sup> and 30<sup>th</sup>. Meanwhile, Cartwright received 45 mm of mixed precipitation up to the 31st. Rainfall of 30-54 mm was reported in Newfoundland with wind gusts above 80 km/h in exposed coastal areas during the frontal passage. Winterland picked up 70 mm by month's end.

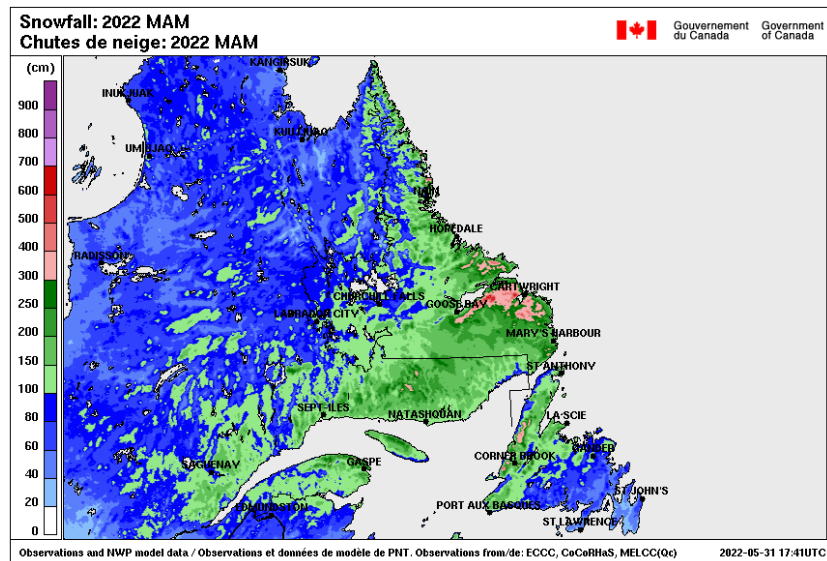


## Total Snowfall and Snow Depth:

Snowfall this Spring was heaviest in southeastern Labrador and western Newfoundland. Total snowfall was highest in the region, over 300 cm for the season, in the area south of Lake Melville Labrador with lesser amounts further west and north where amounts of 100cm and under were observed. Across Newfoundland snowfall of up to 200 cm was observed in the west with little snowfall over eastern parts of the Island. Total snowfall in May was near zero across the Island.

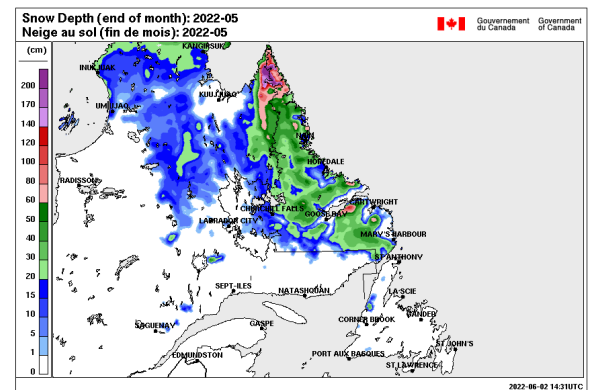
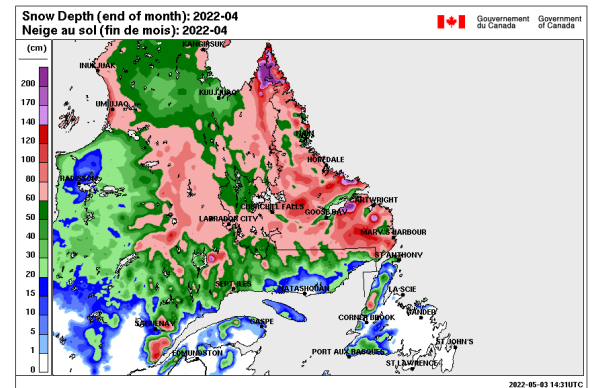
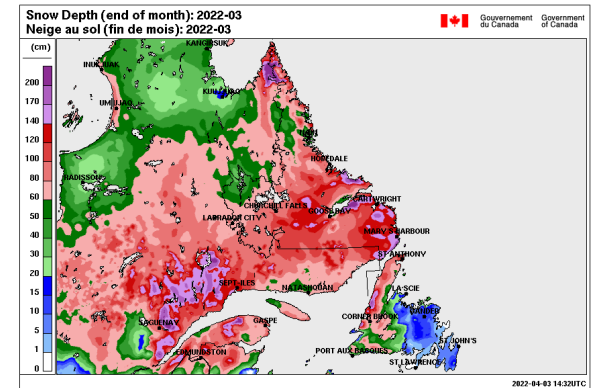
Snow depths decreased through the Spring months. Snow depths in Labrador as deep as 1.5m in March decreased slightly in April with a steep decrease in May to generally under 50 cm. By the end of May little snow was present in southern coastal and in southwestern areas of Labrador.

On Newfoundland, snow depths in March were highest along the west coast with over 1.0 m of snow in the higher elevations. At the same time, less than 20 cm of snow was present in the central and eastern parts of the Island. By April little snow remained outside of the west coast high elevations, and no significant snow remained by the end of May.



Left: Total snowfall (estimated) for March, April, and May combined.

Right: Snow depth (estimated) for Newfoundland and Labrador at the end of March, April, and May





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

### March

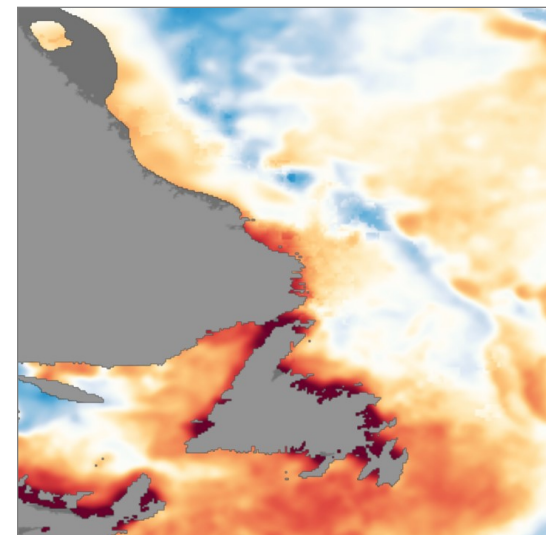
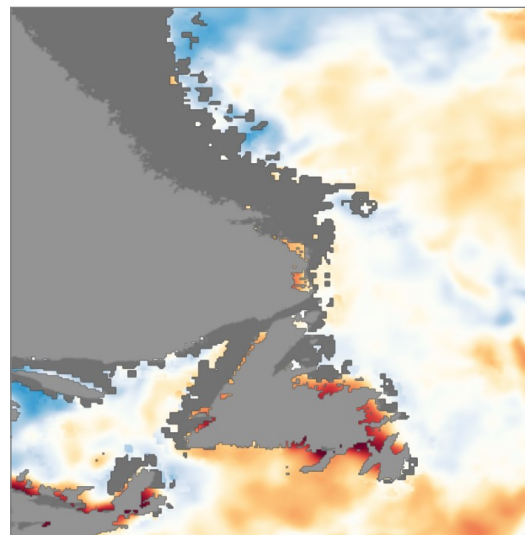
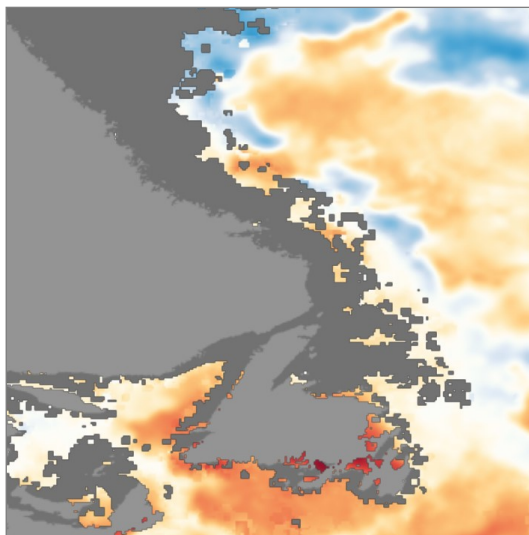
- \* Significant ice cover
- \* South of Newfoundland SST was slightly warmer than normal (1-3 C)
- \* East of Newfoundland on the Grand Banks SST were near normal.

### April

- \* Less ice cover northeast of Newfoundland than in March. SST cooled in the area to return to normal at the end of April.
- \* Temperatures remained above normal (1-3 C) south of Newfoundland.
- \* Waters in the Gulf of St Lawrence cooled to near normal to slightly below normal.

### May

- \* Most sea ice melted for the season.
- \* Most coastal SST in Labrador and Newfoundland showing warmer than normal (1-3 C) except along the near shore of Newfoundland where temperatures were much above normal (5+ C).
- \* Temperatures on the Grand Banks and in the Gulf of St Lawrence warmed to slightly above normal.



Degrees C / degrés C

-5

5

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

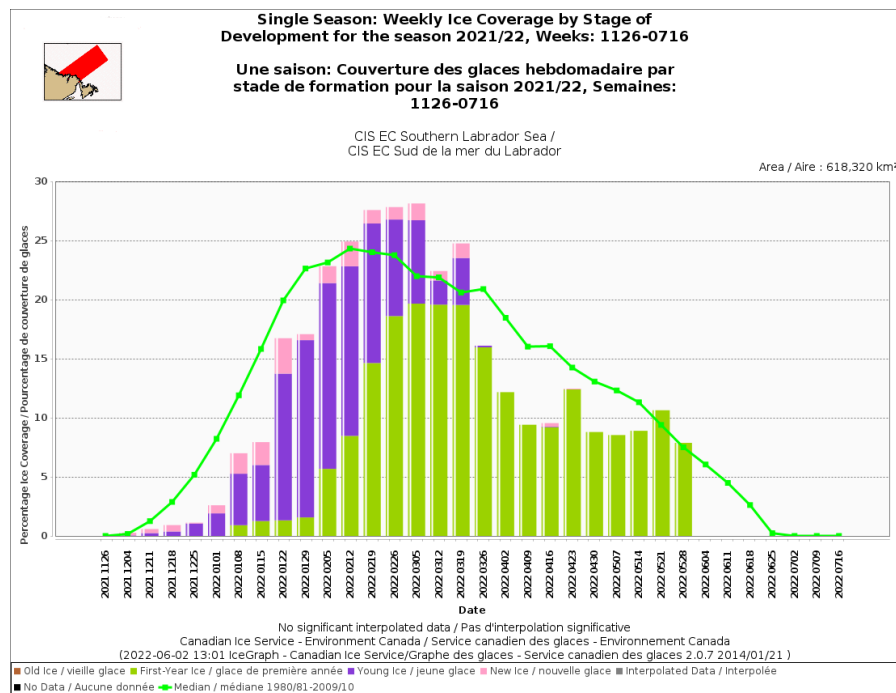
**Note:** Grey areas along much of the coast may represent either gaps in data or presence of sea ice.

## Sea Ice Coverage: (Analysis / Concentration departure from normal/seasonal coverage charts)

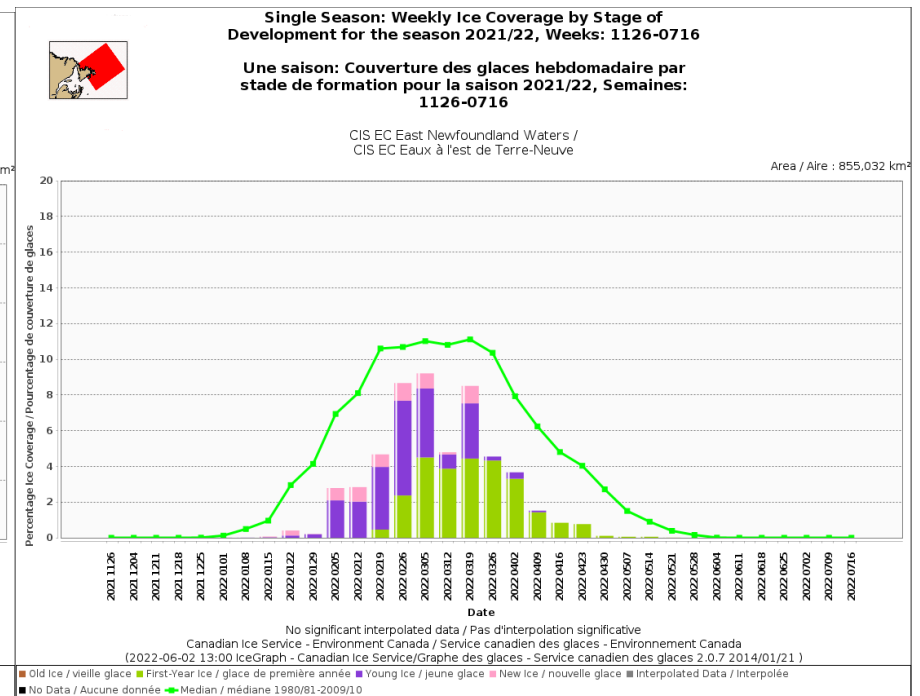
For Newfoundland waters, peak ice coverage occurred in March at 9% cover, near the long-term median of 10%. March ended with ice cover of 5% and marked the beginning of the Spring ice melt, roughly one week earlier than normal. Ice gradually decreased through April before fully melting in May. The 2021-2022 ice season ranked as the 11th lowest ice season since 1968-1969, starting one week later than normal and ending 2 weeks earlier.

In the waters of the south Labrador Sea, sea ice reached its maximum extent in the first week of March at 28% before fluctuating through the rest of the month due to weather systems. Ice coverage ended the month at 16% and fell below the long-term median for the first time since early February. April ice conditions started out normally with a gradual decrease in ice cover, however in the second half of the month sea ice extent increased. Ice cover at the end of April, unusually, ended up being higher than at the start of the month. Persistent southeasterly winds prevented the southward drift of ice to the Newfoundland waters, allowing ice to accumulate in Groswater bay and the surrounding areas.

May continued the unusual trend and coverage remained nearly static through mid month. Some offshore winds spread the ice out in the 3rd week, increasing extent above the long term normal. The last week saw ice cover return to near normal.



Ice coverage South Labrador Sea



Ice Coverage East Newfoundland waters

## River Flows:

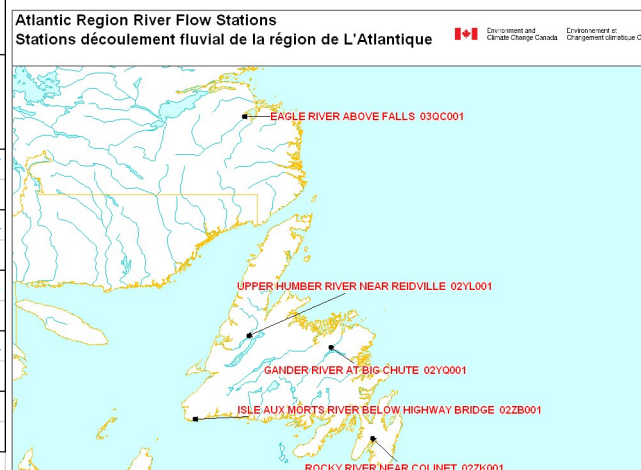
In **March** river flows for the month excessive flow was reported again in the western Newfoundland stations, including the 5th month in a row for Isle aux Morts as higher than normal precipitation continues in that region. For the first month since Nov 2021 rivers in eastern and central Newfoundland reported near normal flows.

**April**, with its near normal precipitation amounts in southwestern Newfoundland, reported near normal flows across many rivers. Rocky River reported deficient flow with only 69% of the median mean flow for the month, the first river to report below normal flow since the fall. With higher precipitation amounts on the Great Northern Peninsula, the Upper Humber river reported its 5th month of excessive flow with 171% of the median.

The month of **May** was feast or famine for river flows in the province. Relatively dry conditions combined with a lack of snow to melt resulted in deficient flow rates for Rocky and Gander rivers. In contrast, Eagle, Isle aux Morts, and the Upper Humber rivers each reported excessive flow mostly thanks to spring melt.

All rivers but the Rocky River had at least one month with excessive flow. Regardless, all rivers listed reported cumulative run-off exceeding median values.

River Flow Station		Mar 2022		Apr 2022		May 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	29.1	87	41.3	86	1000	123	127
<b>GANDER RIVER AT BIG CHUTE</b> 02YQ001	4400	176	163	290	109	129	54	124
<b>ISLE AUX MORTS RIVER BELOW HIGHWAY BRIDGE</b> 02ZB001	205	9.29	176	31.3	129	38.4	129	183
<b>ROCKY RIVER NEAR COLINET</b> 02ZK001	301	12.4	86	11.2	69	4.9	55	124
<b>UPPER HUMBER RIVER NEAR REIDVILLE</b> 02YL001	2110	54.4	171	142	142	289	116	151
* 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)								
Mar analysis produced Apr 26, 2022								
Apr analysis produced May 26, 2022								
May analysis produced Jun 21, 2022								



**Preliminary monthly runoff summary for selected River sites in Newfoundland and Labrador (location map above) for March, April, and May 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):

### March

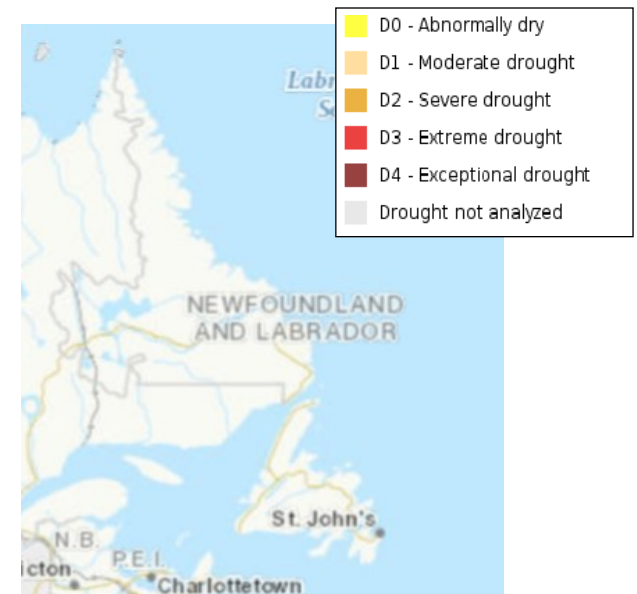
- \* Abnormally dry conditions continued from February in northern Labrador as below normal precipitation amounts continued for the third month in a row
- \* No drought conditions elsewhere

### April

- \* With a return to normal precipitation in Labrador drought conditions improved in northern areas after 2 months of abnormally dry conditions
- \* No drought conditions elsewhere

### May

- \* No abnormally dry or drought conditions observed



Canadian Drought Monitor Map for March 2022 (left), April 2022 (middle), and May 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 (March-May):**

### **Winter ends with a whimper in eastern Newfoundland**

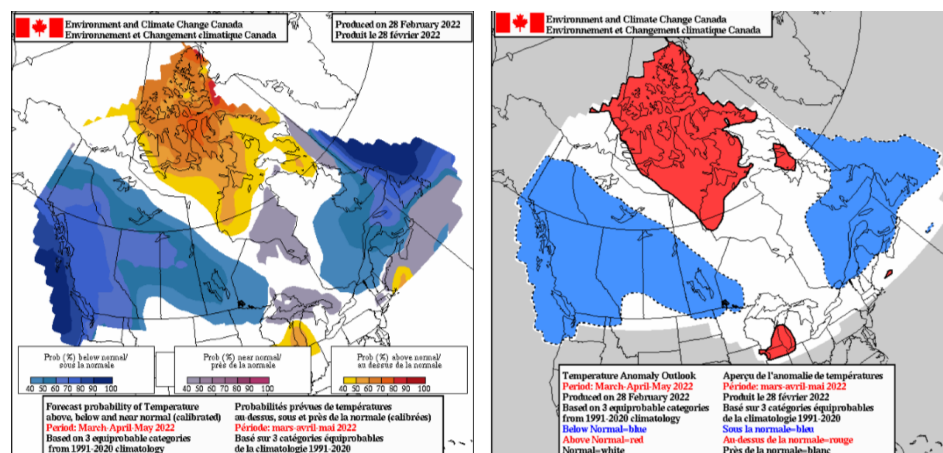
While there were no shortage of storms throughout the month of March, a lack of snow accumulation in eastern Newfoundland meant a rather unspectacular end for winter sports enthusiasts this past season. A winter which saw a mix of rain and snow for this part of the province couldn't be saved during the early portion of the spring.

### **Sea ice and a hopeful return for the tourism season**

The prolonged cold in Labrador through January and February allowed ice formation to reach coverage levels it hasn't seen in years at the end of February/early March. Coverage in early March in the southern Labrador Sea sat at 28%, 6% higher than the long term median. The amount of sea ice was almost double that of the previous year, was the highest since 2016, and the second highest amount since 1996. Fluctuations in sea ice cover were noted throughout the spring season, though the above-normal coverage provides hope for iceberg tour operators for a good tourism season this year after a couple of pandemic-impacted years.

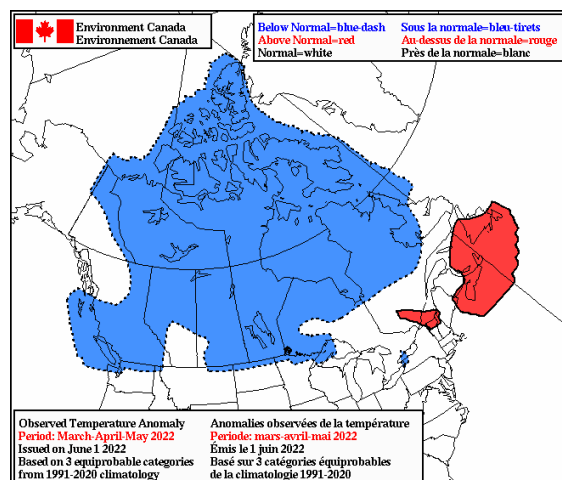
## Spring Season (Period: March-April-May) Temperature Outlook Performance:

The spring temperature forecast called for colder than normal temperatures across the province, with varying probabilities.



Left: Probability of above, below and near normal: Produced February 28, 2022 – Right: Forecast Temperature Anomaly: Produced February 28, 2022

Aside from western Labrador, the temperature outlook for the spring did not verify well. The rest of Labrador, as well as the Northern Peninsula and the northeast coast of Newfoundland experienced a near normal spring season. The remainder of the island ended up with a warmer than normal season despite a forecast of colder than normal.



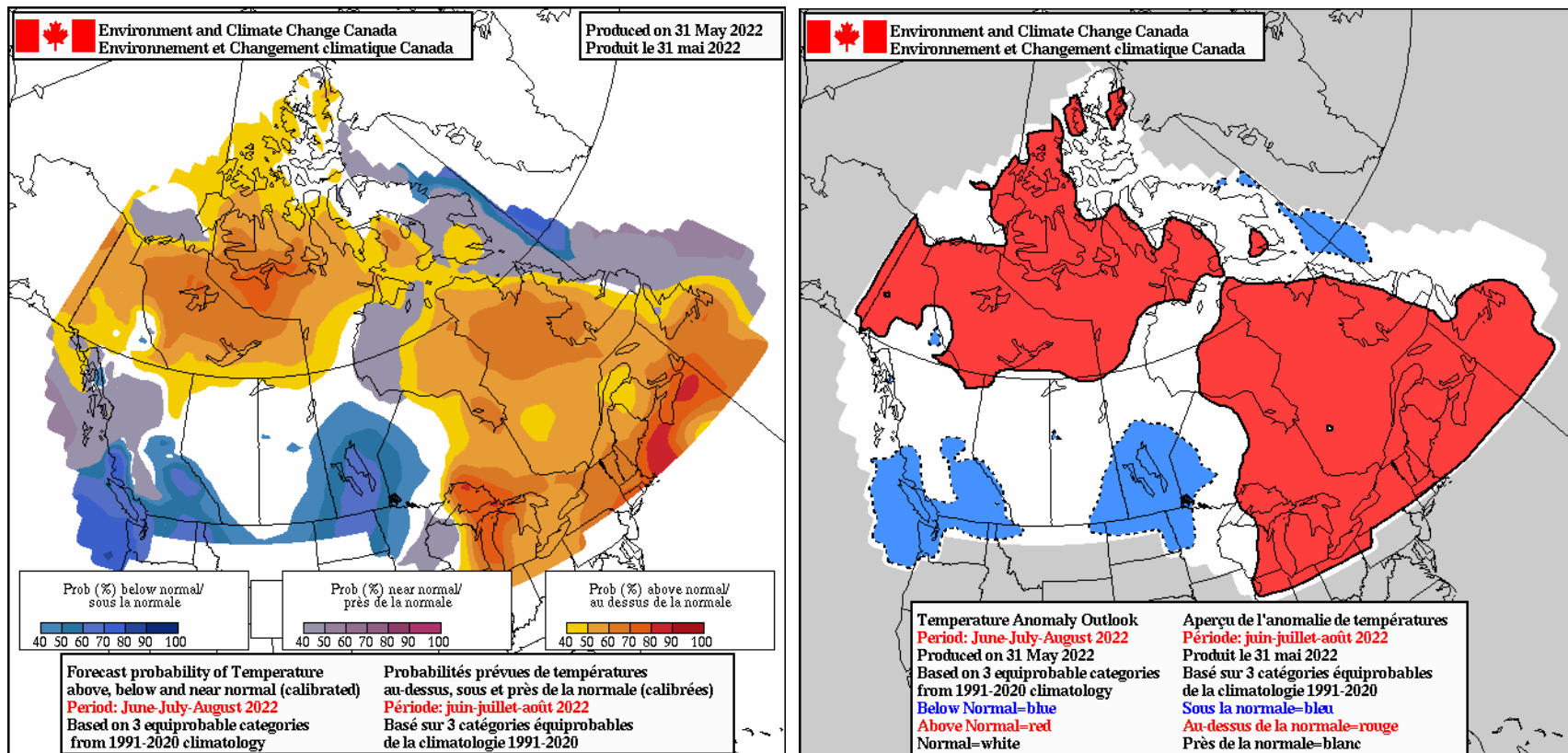
Above: Observed Temperature Anomaly – Issued on June 1, 2022



## Summer Season (Period: June-July-August) Temperature / Precipitation Outlook:

Looking ahead to summer, there is a low to moderate chance of above normal temperatures across most of the province. The only exception appears to be across much of the Labrador coast, where there is a low probability of near normal temperatures.

With regards to precipitation, guidance shows a low chance of drier than normal conditions for southwestern Newfoundland and western 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.



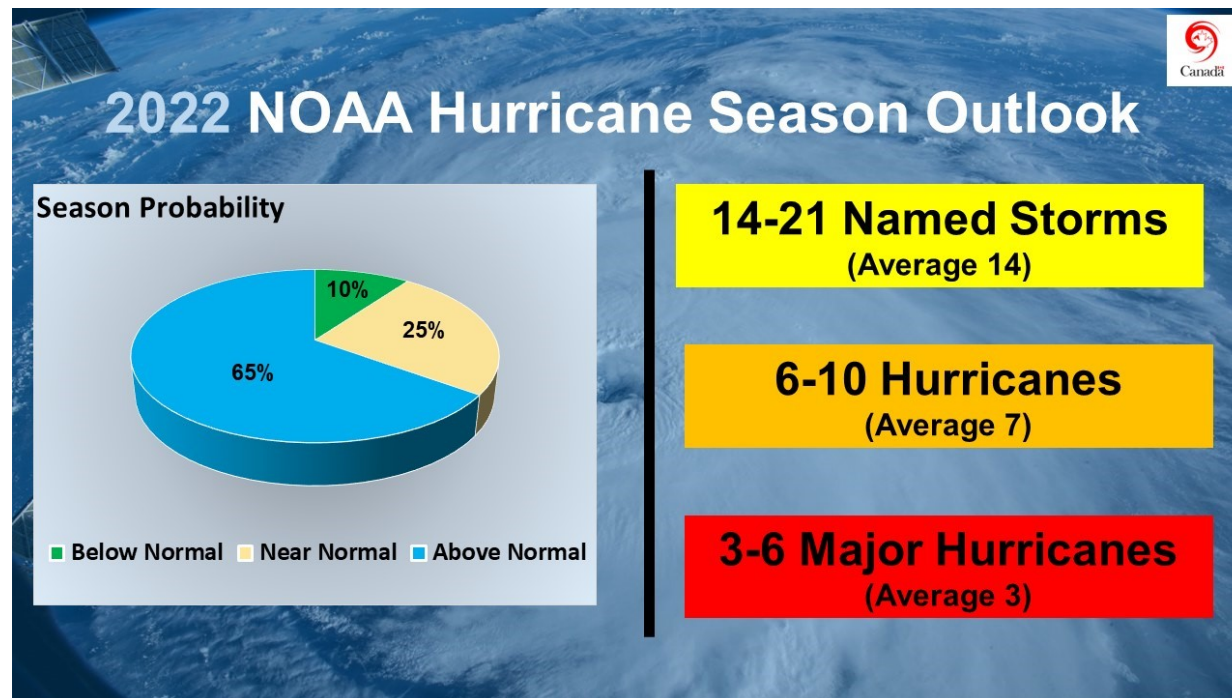
Left: Probability of above, below and near normal temperature: Produced May 31, 2022 – Right: Temperature Anomaly Outlook: Produced May 31, 2022

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



# Atlantic Hurricane Season Outlook

For the 2022 Atlantic Hurricane Season (June 1-November 30), the U.S. National Oceanic and Atmospheric Administration (NOAA) is again predicting another above-normal season (65% probability) for Tropical Storm formation in the Atlantic although once again it is not expected to be as active as the record 2020 season. On average about 1/3 of tropical storms in the Atlantic enter the Canadian Response Zone. 2022 marks 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: <https://www.noaa.gov/news-release/noaa-predicts-above-normal-2022-atlantic-hurricane-season>.



*Summary 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))*

# **Contact Information:**

**David Neil** - Warning Preparedness Meteorologist

Email: David.Neil@ec.gc.ca

Phone: (Office) 709-256-6631

**MSC PSO-Atlantic Ice:**

Email: [climatatlantique-climateatlantic@ec.gc.ca](mailto:climatatlantique-climateatlantic@ec.gc.ca)

Twitter: [@ECCCWeatherNL](https://twitter.com/ECCCWeatherNL)

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