



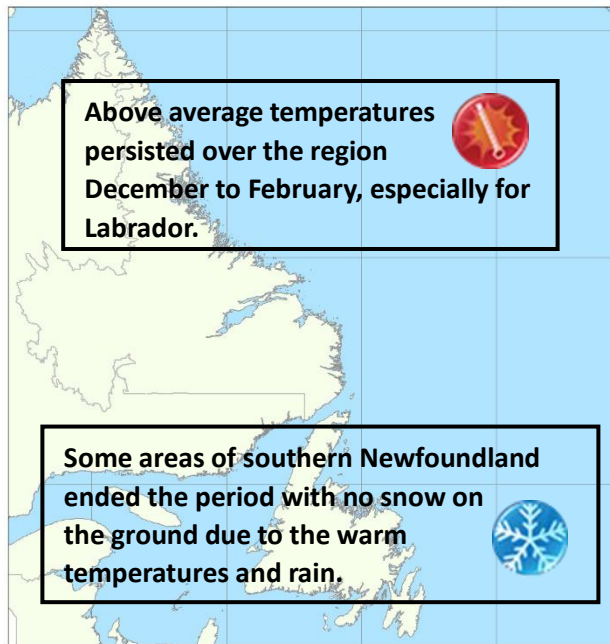
Environment and
Climate Change Canada

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Newfoundland and Labrador

Quarterly Climate Summary: Winter 2024

Summary & significant weather events (December – February)



Anomalously warm temperatures dominated the winter months, leading to well above average temperatures for the period over Labrador. Several locations in Labrador ranked within their top five warmest Decembers on record, and some locations set new December high temperature records. 20 new daily high temperature records were broken over NL on February 29, some dating back to the 1920/30s. Warm temperatures and rain events also led to a lack of snow on the ground along southern Newfoundland, even in regions which saw near 100 cm over the period.

Dry conditions over eastern Labrador through the period and most of Newfoundland January and February lead to below average precipitation for much of the region by period's end.

Precipitation that was received often came within short periods of time, with some storms creating washout conditions and others giving over 100 cm from single storm events.

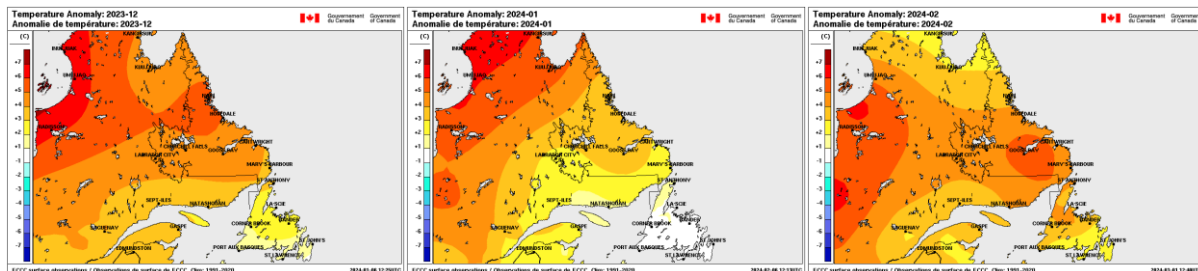
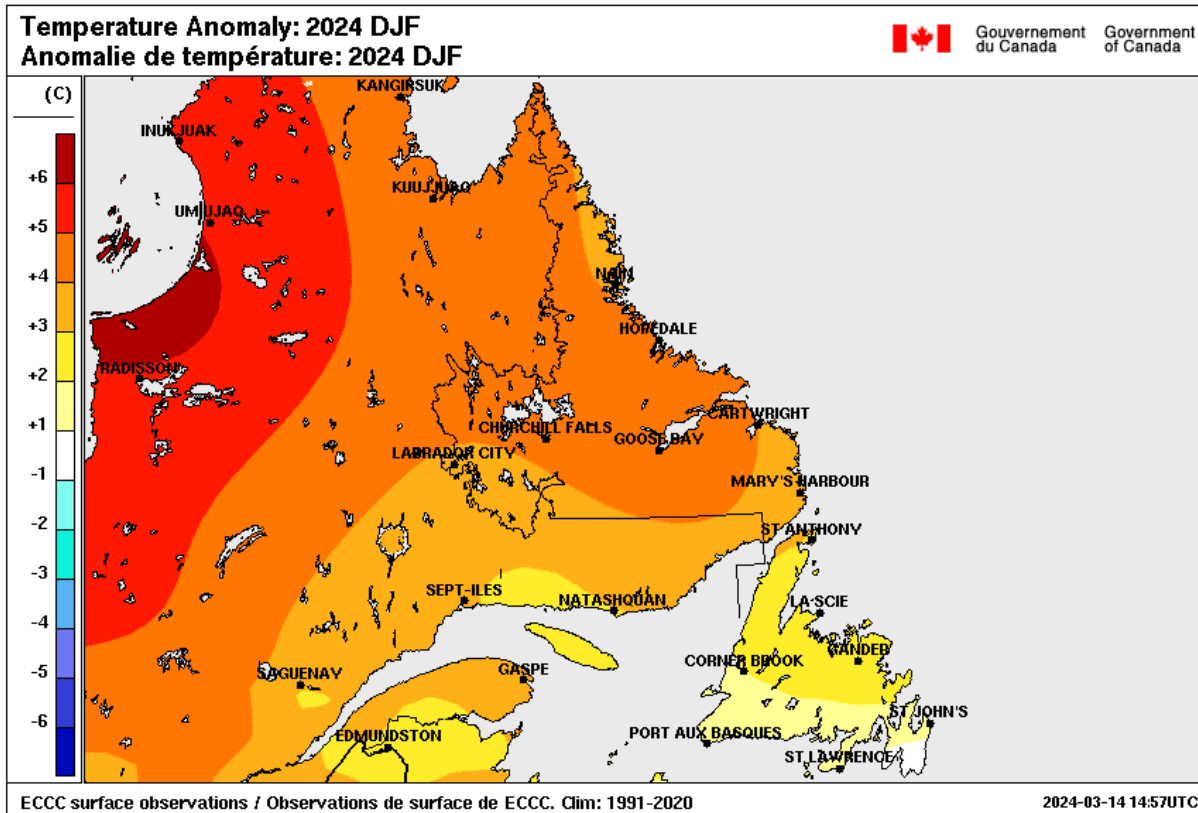
The ice coverage along the Labrador coast and around Newfoundland has been below normal this season. Warm, above normal temperatures, particularly along the Labrador coast have been the primary cause of the slow start to the season and subsequent below normal ice coverage across the region.

The outlook for the upcoming spring shows that warm conditions are expected to continue, with all of Atlantic Canada having a strong signal of above average temperatures.

Regional Climate Overview (December - February)

Temperature

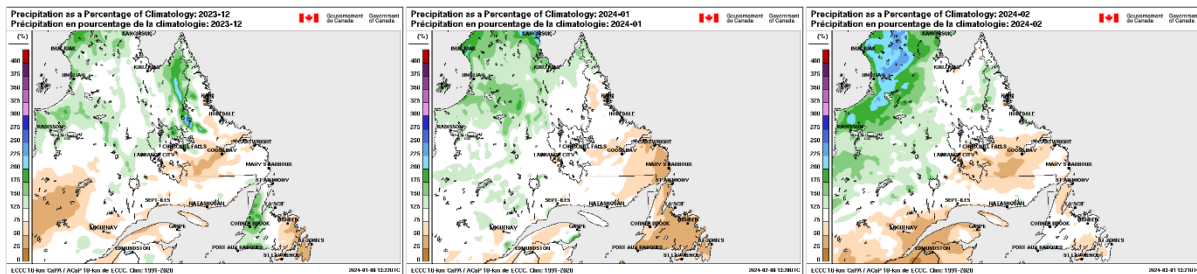
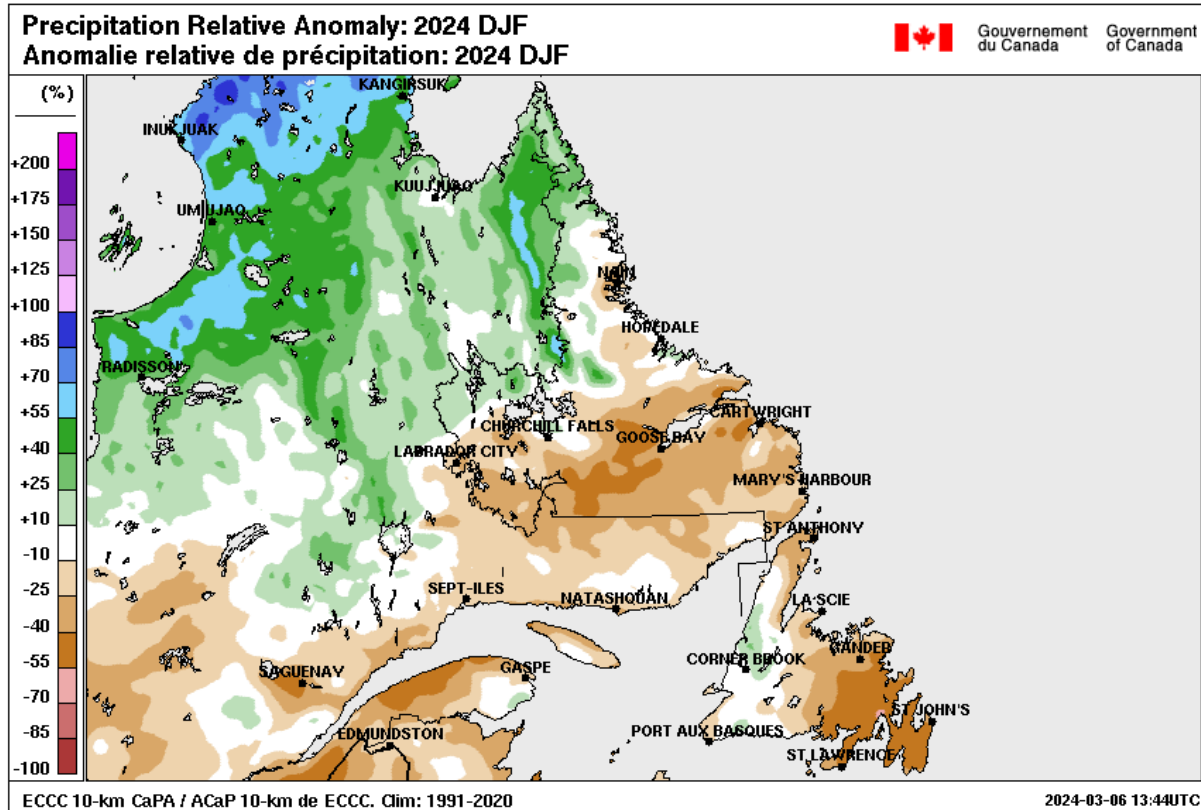
Temperatures were much warmer than the long-term average over Labrador this winter, with every month showing above average temperatures. Newfoundland was above average overall, with January being mostly near the long-term average. Several locations in Labrador ranked within their top five warmest Decembers on record this winter, and some locations set new December high temperature records. Nain had its 3rd warmest winter since 1984. At the end of February, 20 new daily high temperature records were broken over NL due to a large low pressure system drawing up warm air over all of eastern Canada.



Above top: Temperature anomalies for Newfoundland and Labrador for December - February, combined.
Above bottom, left to right: Temperature anomalies for Newfoundland and Labrador for Dec., Jan., and Feb..

Precipitation

Dry conditions persisted through the period for most of the region, with the exception of western Newfoundland due to rain in December and to strong snowsqualls in January. Some storms which provided higher amounts of precipitation in certain areas, were followed by long stretches of dry conditions.

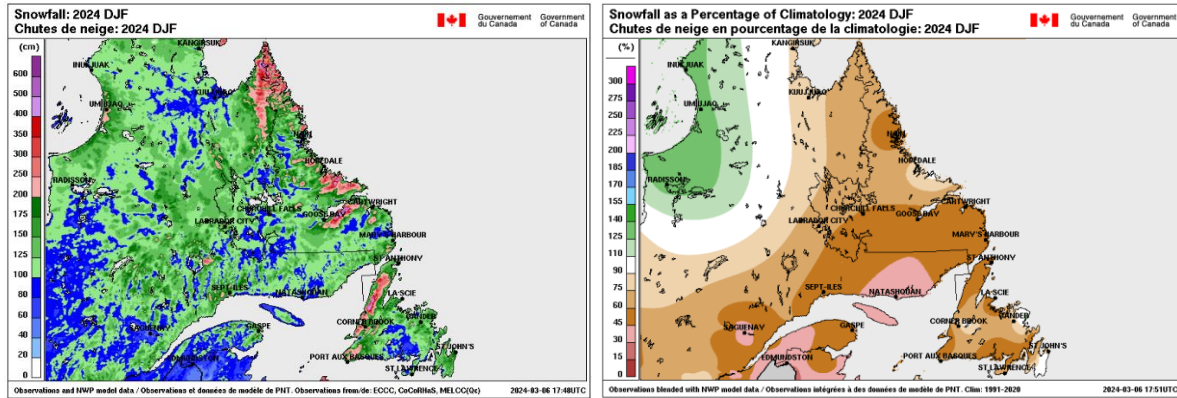


Above top: Precipitation as a percentage of 1991-2020 average for Newfoundland and Labrador for Dec.-Feb. combined.

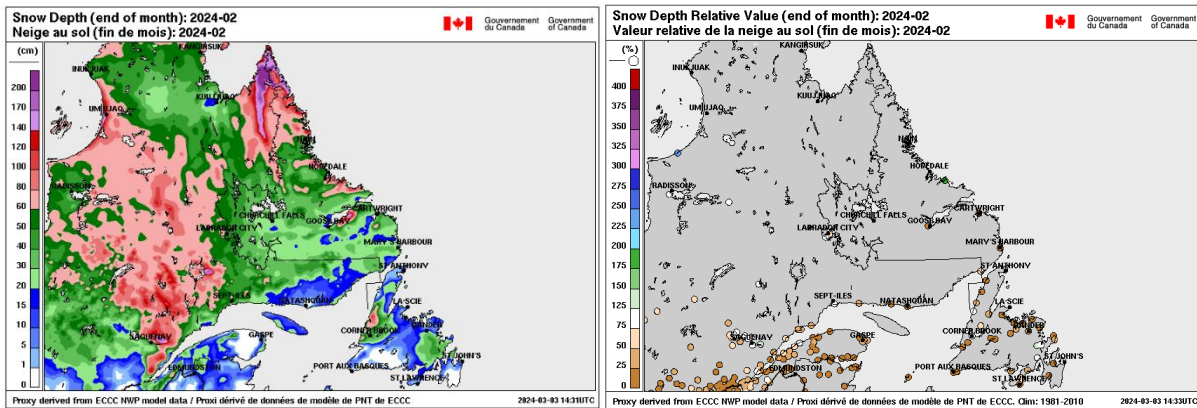
Above bottom, left to right: Precipitation anomalies for Newfoundland and Labrador for December, January, and February.

Total Snowfall and Snow Depth

Total snowfall amounts near 100 cm or more were widespread over the region, with the highest amounts dictated by the higher terrain areas. Despite the snowfall amounts, warm temperatures and rain created rapid snow melt over southern Newfoundland, which left southern regions with little to no snow on ground by the end of February.



Total snowfall (estimated) for December 2023, January 2024, and February 2024 combined based on a blend of observations and modelled data (left); snowfall as a percentage of climatology (1991 – 2020) (right).



Snow depth (estimated – end of the month) for Newfoundland and Labrador at the end of February 2024 derived from model data (left); snow depth (estimated - end of the month) derived from model data as a percentage of climatology (1981-2010) for February 2024 (right)

Seasonal station data compared to 1981-2010 normals

Seasonal temperature averages and precipitation totals compared to seasonal normals (1981 - 2010) for December 2023 to February 2024 for selected locations in Newfoundland and Labrador.

Location	Mean Temperature (°C)				Total Precipitation (mm)			
	Seasonal Mean	Average of Monthly Normal Means	Diff.	Rank ³ (Warmest)	Data Start Year	Seasonal Total	Total of Monthly Normals	Seasonal Total as % of Normal
Bonavista	-1.3	-4.2	2.8	5	1956	228.7	312.2	73
Channel-Port aux Basques	N/A		N/A	N/A		N/A		N/A
Corner Brook	-2.7	-5.3	2.6	10*	1933	487.4	399.6	122
Gander	-3.5	-5.9	2.4	9	1937	180.9	343.2	53
St. John's	-2.2	-3.6	1.5	>10	1874	276.4	443.5	62
St. Lawrence	-1.1	-3.6	2.4	6	1966	280.2	428.4	65
Stephenville	-2.7	-5.0	2.3	10	1889	376.3	353.3	107
Terra Nova Nat Park	-3.2	-5.8	2.6	9	1962	283.0	345.2	82
Cartwright	-7.8	-12.2	4.3	7*	1934	N/A	N/A	N/A
Happy Valley-Goose Bay (Goose A)	-10.1	-15.3	5.2	7	1941	118.2	185.8	64
Hopedale	N/A		N/A	N/A		N/A		N/A
Labrador City (Wabush)	-15.6	-20.1	4.6	5	1960	N/A	N/A	N/A
L'anse au Loup (Blanc Sablon)	-6.5	-10.9	4.4	6	1965	227.6	280.6	81
Nain	-11.3	-15.6	4.3	3	1984	N/A	N/A	N/A

Temperature difference: cells shaded pink if ≥ 1 °C, blue if ≤ -1 °C. Precipitation as a percent of normal: cells shaded green if $\geq 125\%$ of normal, yellow if $\leq 75\%$ of normal

Rank provides a ranking of mean temperature (eg. 1 warmest, 2 second warmest etc.) for the season against long-term data for the season, based on a selection of stations reporting daily data through the period of record, not adjusted or homogenized. *tied with an earlier year.

Seasonal rainfall and snowfall totals (December 2023 to February 2024), and February 2024 end of month snow on ground compared to 1981-2010 normals (for same or nearby station).

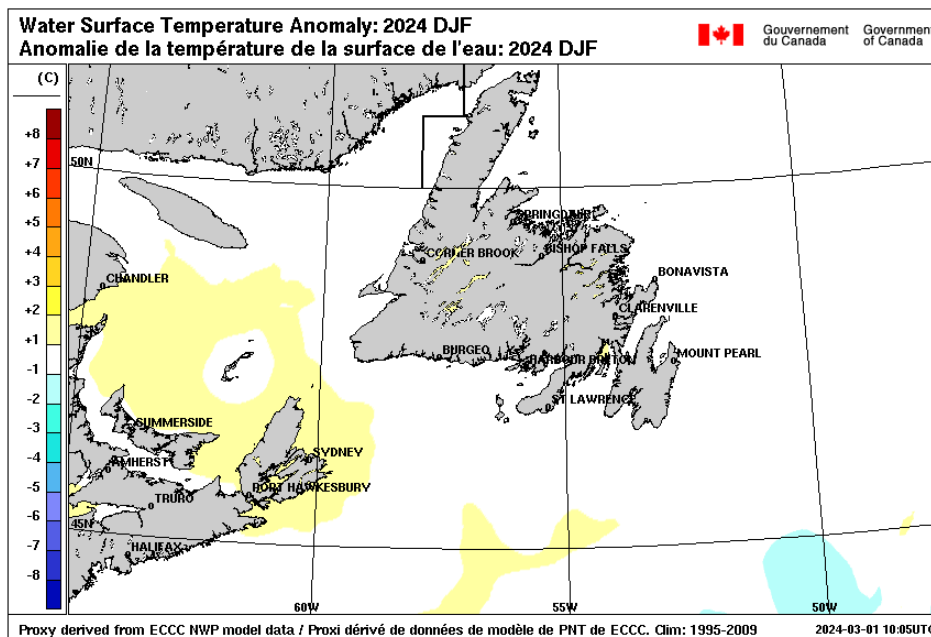
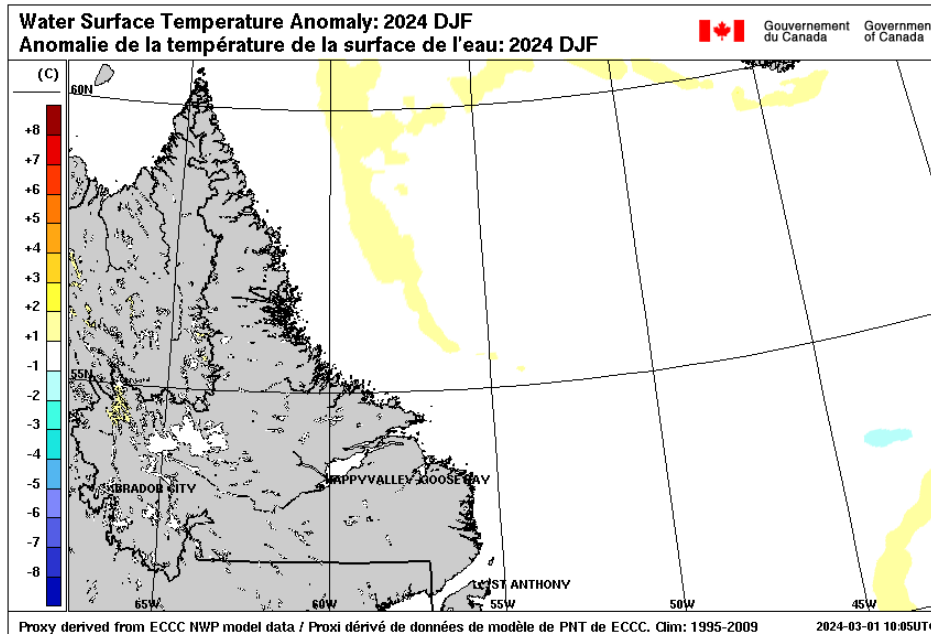
Location	Prov	Total Rainfall (mm)			Total Snowfall (cm)			Last Month, Snow on Ground (SOG) (cm)		
		Seasonal Total Rainfall	Sum of Monthly Normal Rainfall	Seas. Tot. Rainfall as % of Normal	Seasonal Total Snowfall	Sum of Monthly Normal Snowfall	Seas. Tot. Snowfall as % of Normal	End Month SOG	Norm End Mo SOG	End Mo as % Normal
Corner Brook	NL	246.4	122.6	201	241.0	277.1	87	24	57	42
Deer Lake (Airport)	NL	121.9	60.8	201	198.3	292.1	68	40	73	55
Gander (Airport)	NL	N/A		N/A	226.2	262.5	86	44	54	81
Gander	NL	N/A		N/A	N/A		N/A	54	54	100
St. John's (Airport)	NL	129.6	230.4	56	209.3	223.1	94	28	30	94
Stephenville (Airport)	NL	162.5	104.7	155	213.8	289.4	74	36	64	57
Happy Valley-Goose Bay	NL	2.0	12.4	16	175.3	212.4	83	42	75	56
Labrador City (Wabush (Airport))	NL	N/A		N/A	188.0	183.3	103	N/A		N/A
L'anse au Loup (Lourdes de Blanc Sablon A)	QC	105.9	43.8	242	144.4	236.6	61	26	39	67
L'anse au Loup	NL	N/A		N/A	137.5	236.6	58	N/A		N/A
Makkovik (Airport)	NL	N/A		N/A	321.0	208.0	154	N/A		N/A
Nain (Airport)	NL	N/A		N/A	100.0	212.6	47	N/A		N/A

Rainfall, snowfall, end month SOG as a percent of normal: cells shaded green if $\geq 125\%$ of normal, yellow if $\leq 75\%$ of normal; *snowfall for Makkovik, Nain, and Labrador City (Wabush) estimated from remarks

Note: station data preliminary, archived values may change subject to further review (see Notes on [Data Quality](#))

Sea Surface Temperature

Sea surface temperatures averaged over December to February were near the long-term average along the coast of Labrador and around Newfoundland. Above average sea surface temperatures within the Labrador Sea were observed January and February, which led to above average overall for the winter.



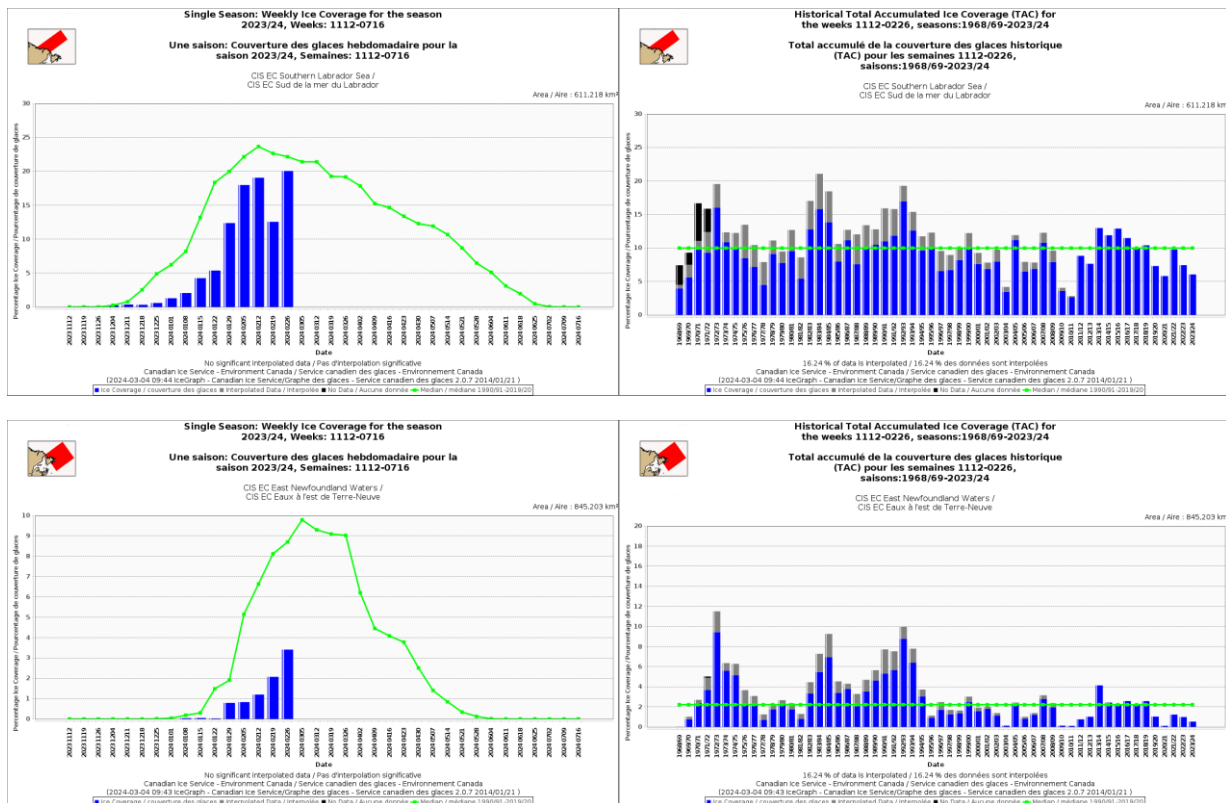
Water surface temperature anomaly (departure from average) maps for Dec. 2023-Feb. 2024 combined, based on ECCC numerical weather prediction (NWP) model data, with climatology based on 1995 to 2009, for Labrador (top) and Newfoundland (bottom) marine areas.

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

A slow start to the ice season, partly due to above normal temperatures, led to below normal ice coverage across the region for the winter season.

Sea ice had been very slow to form along the Labrador coast through December and early January, leaving the freeze-up along the Labrador coast nearly 4 weeks behind normal by mid-January. Ice coverage began to expand at an increased rate in the second half of January and early February before slowing through mid and late February. Despite ice coverage nearly reaching the climatological normal by the end of February, total ice coverage along the Labrador coast this season only reached 6.1% compared to the normal of 10%.

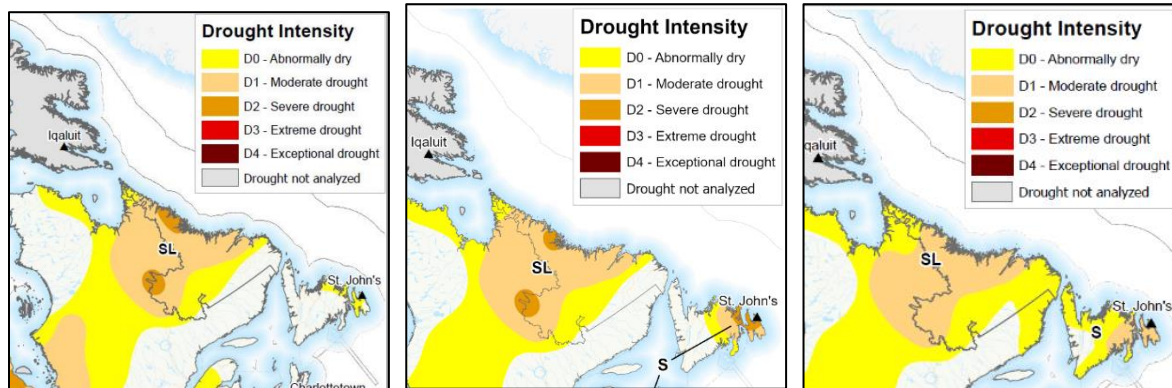
The slower than normal ice formation was also noticed around Newfoundland. The delay in ice formation along the Labrador coast also meant that little to no ice drifted into Newfoundland waters from Labrador through January. Sea ice began to form more significantly at the end of January and through February; however, it remained well below normal. By the end of February, the total ice coverage around Newfoundland this season has reached just 0.5% as opposed to the normal of 2.2%.



Weekly ice coverage for the season up to the week of March 4 2024: East Newfoundland waters (bottom) and Southern Labrador Sea (top)

Regional Impacts

Canadian Drought Monitor (Agriculture and Agri-Food Canada)



Canadian Drought Monitor Map for Dec. 31 2023 (left), Jan. 31 2024 (middle) and Feb. 29 2024 (right). S = Short-Term, impacts typically less than 6 months (e.g. agriculture, grasslands); L = Long-Term, impacts typically greater than 6 months (e.g. hydrology, ecology) Source: <https://agriculture.canada.ca/en/agricultural-production/weather/canadian-drought-monitor>

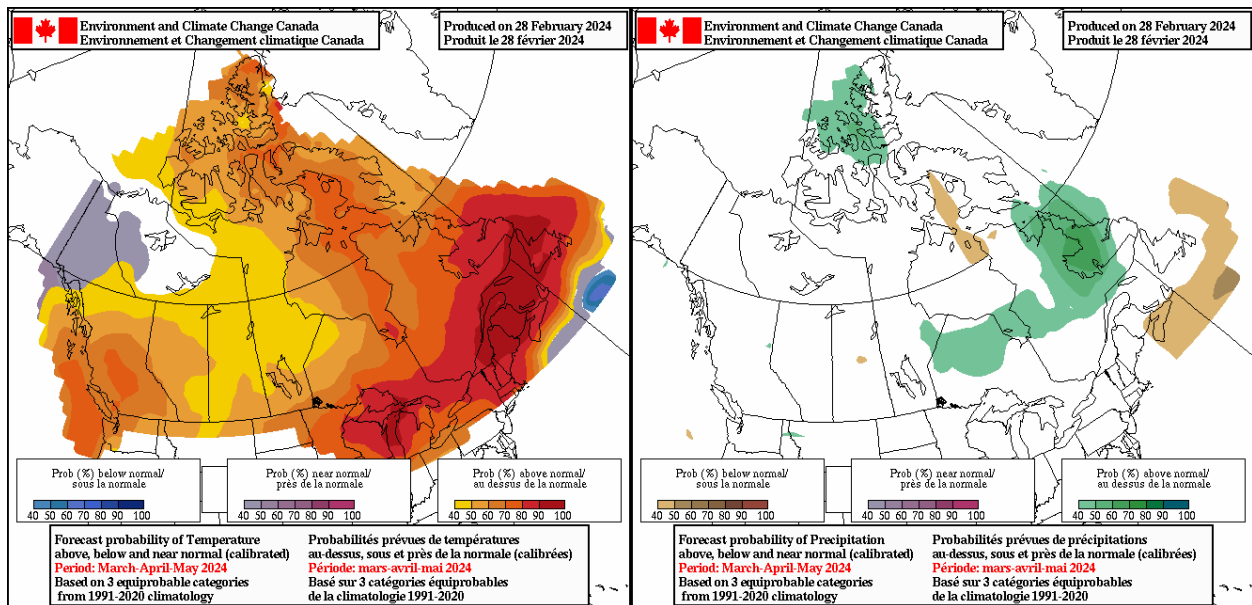
By the end of **December**, areas of severe short and long term drought and abnormally dry conditions in Labrador remained in place from November with little change. A slight increase in abnormally dry conditions occurred on the Avalon Peninsula from November.

By the end of **January**, the area of short and long term drought and severe drought continued in Labrador. Due to a significant lack of precipitation in eastern Newfoundland in January short term drought conditions expanded to all areas of eastern Newfoundland with an increase into severe range for the Northern Avalon and parts of northeast Newfoundland.

By the end of **February**, severe drought conditions had ended over the region though most areas are still in abnormally dry to moderate drought conditions. Abnormally dry conditions had increased to eastern Labrador and northern and southern Newfoundland.

Temperature & Precipitation Seasonal Forecast

The seasonal forecast shows above average temperatures for all of Atlantic Canada, with most of Newfoundland and Labrador with a 80 – 90 % chance of above average temperatures. For precipitation, most of Labrador has a 40 – 70 % chance of above average precipitation with other areas in the province and Newfoundland showing no signal of above or below normal.



Probability of above, below and near normal temperature (left) and precipitation (right) for Winter (Mar 2024 – May 2024). Produced Feb. 28, 2024. Source: [Seasonal forecasts for Canada](https://www.ec.gc.ca/meteo/eng/seasonal-forecasts-for-canada)

Contact Information

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