



Seasonal Summary

Eastern Canada Winter 2012-2013

By



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Summary for the East Coast

During the 2012-2013 season air temperatures were generally above normal which contributed to below normal ice coverage.

Air temperatures were above normal from November to mid-January but turned colder in January. From January to mid-February the ice grew at a closer to normal rate with air temperatures near normal, but ice growth slowed at the end of February resulting in below normal coverage for the rest of the season. North-easterlies in February and March hindered the normal flow of the ice in the southern Gulf, resulting in the ice becoming relatively thick for a light ice year, and limited the usual southward drift of the ice in the East Newfoundland and Labrador waters. The onshore winds caused the ice to be packed along the Labrador coast, the Northern Peninsula and in Notre Dame Bay for most of March. Winds patterns were closer to normal in April. Clearing was one to two weeks later than normal in the southern Gulf and close to normal in the East Newfoundland waters.



Average temperatures were above normal during the season







Figure 4: Surface Air Temperature Anomaly, first 3 weeks of April





Figure 8: Weekly Ice Coverage for the East Coast - 12 November 2012 to 14 May 2013



Gulf of St Lawrence

2012-2013 Season temperatures and Weather: November to May.

Air temperatures were generally above normal during the 2012-2013 season even though air temperatures were average from January to mid-February. North-easterlies were frequent in February and March and that impacted the ice flow. Wind patterns were closer to normal in April and in the first three weeks of April average temperatures were near normal.

December ice conditions:

New ice started forming in the estuary near Sept-Îles, Baie Comeau and Mont-Joli in the second week of December, which was ahead of normal for ice formation in the eastern portion of the estuary. Around mid-December more new ice had developed and areas of up to 9 tenths new ice were present in the western portion of the estuary. New ice had also started to develop along the coast from Gaspé to Cape George, around portions of Prince Edward Island, the Îles de la Madeleine and Anticosti, and along the north shore.

Ice did not grow much after mid-December and at the end of the month there was less ice than normal.

January ice conditions:

In the first week of January, areas of 8 to 9 plus tenths of mostly new and grey ice developed in the estuary, in Chaleur Bay and in Northumberland Strait south and west of Prince Edward Island. New ice developed in the shallower coastal areas of the west coast of Newfoundland.

By mid-month, consolidated grey ice was present in Miramichi Bay, from Miscou Island to Caraquet and in shallower coastal areas along the New Brunswick coast and around Prince Edward Island. Consolidated grey ice was also found in shallower coastal areas of the Îles de la Madeleine and of the north shore, northeast of Harrington Harbour.

In the third week of January, new and grey ice was developing and drifting into the northeast gulf from the Strait of Belle Isle. Consolidated grey ice developed near Gaspé and in the western end of Chaleur Bay.

Rapid ice growth occurred in the last week of January and near the end of the month grey-white ice was predominant in Northumberland Strait and some first-year ice had developed. Grey-white ice was found in the estuary. 9 tenths new and grey ice had developed from the Îles de la Madeleine to Cape Breton Island. Some new ice had formed from Cape North to Sydney. The pack ice extended to about 60 nautical miles east of Miscou Island and up to 60 nautical miles northeast of Prince Edward Island. Ice coverage was below normal (Figure 10).



February ice conditions:

In first week of February, an area of 7 to 9 tenths new and grey ice developed in Honguedo Strait from Anticosti Island to east of Gaspé and greywhite ice was found in the pack from near Gaspé and southward. New and grey ice extended to 20 to 30 nautical miles off the north shore and along the Newfoundland coast north of Pointe Riche. New ice was in present around Cape St. George and near Stephenville. By the end of the week, most of the estuary became covered with new and grey ice and some grey-white ice. There was up to 1 tenth of first-year ice along the Gaspé Peninsula northeast of Gaspé.

In the second week of February, some medium first-year ice developed in Northumberland Strait, north of Prince Edward Island and along the coast of Cape Breton Island. A band of new and grey ice extended from Cape North to Scatarie Island. The pack ice extended to about 80 nautical miles east of Gaspé and up to 120 nautical miles northeast of Prince Edward Island. New and grey ice extended 20 nautical miles off the north shore, except up to 60 nautical miles off the north shore in the northeast gulf, and reached the west coast of Newfoundland north of Daniel's Harbour.

The maximum ice coverage was reached at the end of February. At that time, mostly open water with some areas of new ice were found in the estuary east of Les Escoumins while areas of grey-white ice persisted west of Les Escoumins. 9 tenths new and grey ice was present in Honguedo Strait and the pack ice extended up to 150 nautical miles northeast of Prince Edward Island. 9 tenths of grey-white and first-year ice was present within 10 to 20 nautical miles of the shore from Cape North to Sydney. Medium first-year ice prevailed in the southern gulf near Prince Edward Island. A large area of grey-white and first-year ice had drifted into the northeast gulf from the Strait of Belle Isle (Figures 12 and 14). The ice coverage was still below normal as there was less ice than normal in the estuary and in the eastern gulf (Figure 11).





March ice conditions:

Ice coverage diminished drastically in the first week of March. The estuary became clear of ice except for grey-white and first-year ice near Quebec City. First-year ice was packed in Chaleur Bay and along the New-Brunswick coast from Miramichi Bay and southward. Medium first-year ice with some thick firstyear prevailed in Northumberland Strait south of Prince Edward Island and along the north coast of Prince Edward Island. First-year ice was packed in the area between Prince Edward Island and Cape Breton Island, and within 10 to 20 nautical miles of the shore from Cape North to Scatarie Island. First-year and grey-white ice were present in the northeast gulf. Open water prevailed elsewhere except for fast ice in shallower coastal waters and bergy water in the northeast gulf.

Frequent north-easterlies hindered the normal ice flow in the southern gulf and caused the ice coverage to diminish slowly in March. They also caused the iceberg limit to extend westward all the way to Anticosti Island.

At the end of the month, first-year ice was still packed in Chaleur Bay, south of Prince Edward Island and along the west coast of Cape Breton Island. First-year ice was still present from Cape North to Sydney. Normally in late March early April there is less ice in Chaleur Bay, south of Prince Edward Island and near Sydney and the ice is packed along the west coast of Cape Breton Island. Patches of first-year ice remained in the northeast gulf. The iceberg limit extended south to Cape Anguille. Late March ice coverage was below normal (Figure 13).



April – May ice conditions:

Prevailing winds changed and the ice started to clear in the southern and north-eastern gulf and in Chaleur Bay in the first week of April. Fast ice started to break-up. Only some fast ice remained in the northeast gulf in the second week of April.

Most of the ice, including the fast ice, was gone from the southern gulf at the end of the third week of April. The few tenths of first-year ice that remained on the west coast of Cape Breton Island melted rapidly. Clearing was one to two weeks later than normal in the southern gulf.

Fast ice in the northern gulf melted in the first week of May, one to two weeks faster than normal.



Figure 15: Gulf of St. Lawrence Total Accumulated Ice Coverage - November 12 to May 14

Newfoundland and Labrador waters

2012-2013 Season temperatures and weather: November to May.

Air temperatures were generally above normal during the 2012-2013 winter season even though air temperatures were average from January to mid-February. North-easterlies were frequent in February and March. Wind patterns were closer to normal in April.

November - December ice conditions:

New ice started developing in Lake Melville around mid-November, one to two weeks faster than normal. By the end of November, new ice was forming along the Labrador coast and up to 9 tenths of new ice was present in Lake Melville. New ice developed near Cape Bauld around mid-December.

Lake Melville became consolidated with grey-white ice by the last week of December. At that time, consolidated grey ice had developed along the Labrador coast north of Hopedale and areas of new and grey ice extended up to 20 nautical miles off the Labrador coast. New ice had formed in shallower Newfoundland waters north of Cape Freels. At the end of December, ice coverage was below normal (Figure 16).



January ice conditions:

In the first week of January, ice coverage along the Labrador coast expanded to 8 to 9 tenths of new and grey ice within up to 40 nautical miles of the Labrador coast from about Cartwright and northward. Areas of new ice were present in shallower coastal waters from about Battle Harbour and southward, including the Newfoundland waters.

Ice coverage expanded quickly in the second half of January. In the third week of the month, the Strait of Belle Isle became covered with new and grey ice. Grey-white ice was present along the southern shore of the Strait. The pack ice edge was found up to 100 nautical miles off the Labrador coast and about 60 nautical miles east of Cape Bauld. Grey and grey-white ice with a trace of first-year ice was found inside the pack. Consolidated grey ice formed near Botwood and south of Fogo Island and areas of new ice were present along the shore in Notre Dame Bay.

At the end of the month, the pack ice edge was about 20 nautical miles north of Fogo Island and ice extended up to 150 nautical miles east of Cartwright and 120 nautical miles east of the Northern Peninsula. Some new and grey ice was present in the northern portion of Bonavista Bay, near Cape Freels.





February ice conditions:

The maximum ice coverage of the season over the southern Labrador coast was reached in the first half of February, as the ice edge expanded to up to 180 nautical miles off the coast. This was a near normal ice coverage (Figure 27).

In the second week of February the pack ice edge moved to within a few nautical miles off shore in Notre Dame Bay and close pack grey and grey-white ice was present in White Bay. Grey, grey-white with some first-year ice was inside the pack.

At about mid-month, the pack of grey-white and first-year ice was near Fogo Island and had reached Cape Freels. A bergy water area was present in south-western Notre Dame Bay. The ice edge was about 60 nautical miles east of Cape Freels and 120 nautical miles east of Cape Bauld. This was the maximum ice coverage of the season over the East Newfoundland waters (Figures 26 and 30). At that time the ice edge was up to 120 nautical miles east of the Labrador coast. At the end of the month, a few tenths of grey and greywhite ice had moved into Bonavista Bay, and north-easterly winds had packed most of the ice in southern Notre Dame Bay and along the Northern Peninsula. First-year ice was the predominant ice inside the pack.





March ice conditions:

North-easterlies became more prevalent in March. In the first week of March, the ice north of Cape Freels was packed within less than 50 nautical miles of the shores. A few tenths of mobile first-year ice in southern Bonavista Bay melted before the end of the first week of March, but some ice would remain near Cape Freels.

Around mid-March, there was a trace of old ice in the pack north of Groswater Bay.

The ice remained packed along portions of the northeast Newfoundland coast during most of March and was frequently packed within less than 30 nautical miles of the southern Labrador Coast.





April ice conditions:

Wind patterns changed in early April and ice started moving off the shores of Notre Dame Bay, the Northern Peninsula and the southern Labrador coast. At the end of the first week of April, there was an area of 9 plus tenths thick firstyear ice with a trace of old ice in White Bay and from Baie Verte Peninsula to Fogo Island. Bergy water was found in south-western Notre Dame Bay. Bands of 9 plus tenths first-year ice with a trace of old ice were extending south-eastward from Cape Bauld and Cartwright. 9 plus tenths first-year ice with a trace of old ice was present within up to 100 nautical miles of the Labrador coast north of Cartwright. The Strait of Belle Isle was mostly bergy water.

At mid-month, first-year ice with a trace of old ice was still found in Notre Dame Bay and White Bay and a few tenths of first-year ice had moved to around Baccalieu Island. 9 plus tenths of first-year ice with a trace of old ice had drifted back into the Strait of Belle Isle.

Ice along the shores of Notre Dame Bay and White Bay cleared in the third week of April. At the end of the month, the Strait of Belle Isle was mostly bergy water again and the ice edge had retreated to north of the Grey Islands.





May ice conditions:

Break-up in Lake Melville started in the first week of May. At that time, rotten first-year ice with a trace of old ice drifted south of the Grey Islands. By mid-May most of it had melted but a patch of ice remained north of the Baie Verte Peninsula. It would melt rapidly afterwards. Around mid-May, the main ice edge was north of Battle Harbour and bergy water prevailed in the Strait of Belle Isle. The ice in Lake Melville cleared in the last week of May. At the end of the month, the ice edge was about 30 nautical miles south of Cartwright. Bergy water prevailed south of the ice edge. Clearing of the Newfoundland waters occurred close to the climate normal.









