

**Seasonal Outlook  
Great Lakes  
Winter 2016-2017**



**Issued by the North American Ice Service**

**1 December 2016**

## **Lake Superior**

### **Winter temperature and ice forecasts.**

Above average air temperatures are forecast for the 2016-2017 winter season. Below normal ice coverage is expected.

### **Thunder Bay.**

Outlook for December... At the end of the month, very open drift to open drift new and thin lake ice along the shores.

Outlook for January... At mid-month, close pack to very close pack thin and medium lake ice. By the end of January, very close pack thin and medium lake ice except consolidated medium with some thick lake ice over the northern section.

Outlook for February... Consolidated medium lake ice becoming thick lake ice by mid-month.

### **Nipigon and Black Bays.**

Outlook for December... After mid-month, close pack to very close pack new and thin lake ice over northern Black Bay and western Nipigon Bay. By the end of the month, consolidated thin and medium lake ice over northern Black Bay and western Nipigon Bay. Open drift to close pack new and thin lake ice over southern Black Bay and eastern Nipigon Bay.

Outlook for January... By mid-month, consolidated medium lake ice will cover most of Black and Nipigon Bay. Consolidated lake ice thickening to predominately thick lake ice by the end of the month.

Outlook for February... Consolidated with thick lake ice.

### **From Grand Marais Minnesota to the entrance to Nipigon Bay.**

Outlook for December... Open water.

Outlook for January... By the end of the month, very open drift to open drift new and thin lake ice along the shore.

Outlook for February... By the fourth week, close pack thin with some medium lake ice north of Isle Royale. Elsewhere, a band of open drift new and thin lake ice within 20 nautical miles of the shore.

### **From Grand Marais to Duluth.**

Outlook for December... Open water.

Outlook for January... Open water except a band of close pack new and thin lake ice within 20 nautical miles of Duluth.

Outlook for February... By the third week, open drift to close pack new and thin lake ice within 20 nautical miles of the shore. Close pack to very close pack thin with some medium lake ice within 20 nautical miles of the shore near Duluth.

### **Southern Lake Superior west of Keweenaw Peninsula.**

Outlook for December... Open water. Very close pack thin lake ice in Chequamegon Bay at the end of the month.

Outlook for January... By the second week, very open drift new and thin lake ice along the shore. Consolidated thin lake ice in Chequamegon Bay. By the end of the month, open drift to close pack thin with some medium lake ice within 20 nautical miles of the

shore. Consolidated thin lake ice in the Apostle Islands and medium lake ice in Chequamegon Bay.

Outlook for February...By mid-month, close pack to very close pack thin with some medium lake ice up to 30 nautical miles from shore. Consolidated ice in the Apostle Islands increasing to medium lake ice and increasing to thick lake ice in Chequamegon Bay.

### **Southern Lake Superior east of the Keweenaw Peninsula.**

Outlook for December... Ice free to open water.

Outlook for January... Open water. Very open drift to open drift new and thin lake ice within 10 nautical miles of the shore by the end of the month.

Outlook for February... By mid-month, close pack to very close pack new and thin lake ice within 20 nautical miles of the shore. Open drift to close pack new and thin lake ice extending up to 30 nautical miles east of the Keweenaw Peninsula. Consolidated medium lake ice in isolated bays becoming thick lake ice by the end of the month.

### **Whitefish Bay.**

Outlook for December... Generally open water with patches of new and thin lake ice forming in the north-eastern section near the end of the month.

Outlook for January...By the third week, close pack to very close pack new and thin lake ice along the eastern and southern shores. Very open drift to open drift new and thin lake ice over the central section. Consolidated thin and medium lake ice in the north-eastern bays near the end of the month.

Outlook for February...In the first week, close pack to very close pack thin and medium lake ice with patches of thick lake ice along the southern and eastern shores. By the end of the month, consolidated thick lake ice over the southern and eastern sections and very close pack medium lake ice elsewhere.

### **From Whitefish Bay northwards to Michipicoten Bay.**

Outlook for December... Generally open water except patches of new lake ice in isolated bays at the end of the month.

Outlook for January... Generally open water. Close pack new lake ice along the shore by the end of the month.

Outlook for February... Close to very close pack new and thin lake ice by the second week in Whitefish Bay. Open drift to close pack new and thin lake ice along the shore north of Whitefish Bay by mid-month.

### **From Michipicoten Bay to the entrance to Nipigon Bay.**

Outlook for December... Ice free to open water.

Outlook for January...Open water.

Outlook for February...Open water except patches of new and thin lake ice along the shore.

### **Elsewhere in Lake Superior.**

Outlook for December... Ice free to open water.

Outlook for January... Ice free to open water.

Outlook for February...Open water.

## **Lake Michigan.**

### **Winter temperature and ice forecasts.**

Above normal temperatures are expected from December to February. Below normal ice conditions are forecast.

### **Green Bay.**

Outlook for December...By the end of the month, close pack to very close pack new and thin lake ice over the southern section of the bay. Consolidated thin lake ice in the Bays de Noc.

Outlook for January... After mid-month, close pack to very close pack new and thin lake ice. Consolidated medium lake ice in the Bays de Noc. At the end of the month, consolidated medium lake ice over the southern section.

Outlook for February...Very close pack thin and medium lake ice except consolidated medium lake ice in the Bays de Noc and over the southern section of the bay. By the end of the month, consolidated thick lake ice over the southern section and in the Bays de Noc.

### **Northeastern Lake Michigan.**

Outlook for December... Ice free to open water. Patches of new lake ice along the northern shore near the end of the month.

Outlook for January... After mid-month, close pack to very close pack new and thin lake ice northeast of Beaver Island to the Straits of Mackinac. Very open drift to open drift new and thin lake ice along the northern shore near the entrance to Green Bay. Consolidated thin lake ice along the southern shore and near the Straits of Mackinac.

Outlook for February...By mid-month, close pack to very close pack thin and medium lake ice along the northern shore and northeast of Beaver Island to the Straits of Mackinac. Consolidated medium lake ice in isolated bays and near the Straits of Mackinac.

### **Elsewhere in Lake Michigan.**

Outlook for December... Ice free to open water.

Outlook for January... After mid-month, patches of new and thin lake ice along the shore.

Outlook for February...Patches of new and thin lake ice within 20 nautical miles of the shore.

## **Lake Huron and Georgian Bay.**

### **Winter temperature and ice forecasts.**

Above normal temperatures are expected over Lake Huron and Georgian Bay from December to February. Below normal ice conditions are forecast.

### **North Channel.**

Outlook for December... At the end of the month, new with some thin lake ice along the northern shore and in the extreme eastern and western sections.

Outlook for January...By mid-month close pack to very close pack new and thin lake ice. Consolidated thin lake ice in isolated bays. Channel will be consolidated medium lake ice by the end of the month.

Outlook for February... Consolidated medium lake ice becoming thick lake ice after the first week.

### **St Mary's River.**

Outlook for December... By mid-month, very open drift to open drift new and thin lake ice in shallow sections of the river. Near the end of the month, close pack to very close pack new and thin lake ice with consolidated thin lake ice in isolated sections.

Outlook for January... After mid-month, consolidated medium lake ice.

Outlook for February... Consolidated thick lake ice in the first week.

### **South of Manitoulin Island westward to North-western Lake Huron.**

Outlook for December... Open water.

Outlook for January... After mid-month, a narrow band of very open drift new and thin lake ice along the shore.

Outlook for February... After mid-month, open drift to close pack new and thin lake ice within 20 nautical miles of the shore.

### **North-western Lake Huron near the Straits of Mackinac.**

Outlook for December... By the end of the month, patches of new and thin lake ice in sheltered bays along the northern shore.

Outlook for January... By the second week, open drift new and thin lake ice near the Straits of Mackinac. By the fourth week, close pack to very close pack new and thin lake ice along the shore from the Straits of Mackinac to east of Bois Blanc Island. Consolidated thin lake ice with some medium lake ice south and west of Bois Blanc Island and consolidated medium lake ice in sheltered bays along the northern shore.

Outlook for February... By mid-month, Close pack to very close pack new and thin lake ice. Consolidated thick lake ice in sheltered bays along the northern shore and consolidated medium lake ice south and west of Bois Blanc Island.

### **From north-western Lake Huron to Saginaw Bay.**

Outlook for December... Isolated patches of new lake ice along the shore near the end of the month.

Outlook for January... By mid-month, open drift to close pack new and thin lake ice from Alpena to Saginaw Bay. Elsewhere, very open drift to open drift new and thin lake ice.

Outlook for February... Close pack to very close pack new and thin lake ice within 20 nautical miles of the shore from Alpena to Saginaw Bay. A narrow band of new and thin lake ice along the shore from Alpena and north-westwards.

### **Saginaw Bay.**

Outlook for December... Near the end of the month, close pack to very close pack new and thin lake ice.

Outlook for January... Near mid-month, consolidated thin lake ice. Consolidated thin lake ice becoming predominantly consolidated medium lake ice by the end of the month.

Outlook for February... Consolidated medium lake ice becoming predominantly consolidated thick lake ice near mid-month.

### **The southern and eastern shore of Lake Huron.**

Outlook for December... Generally open water with patches of new ice in isolated bays along the Bruce Peninsula.

Outlook for January... Near mid-month, open drift to close pack new and thin lake ice within 10 nautical miles of sections of the shore.

Outlook for February... By mid-month, close to very close pack new and thin lake ice within 30 nautical miles of the southern shore. Elsewhere, close pack to very close pack new and thin lake ice within 20 nautical miles of the shore.

### **Georgian Bay.**

Outlook for December...After mid-month, new and thin lake ice in sheltered bays along the northern and eastern shores.

Outlook for January... In the first week, consolidated thin lake ice in sheltered bays along the shore. By mid-month, close pack to very close pack new and thin lake ice within 20 nautical miles of the northern and eastern shores. By month end, consolidated medium lake ice along the northern and eastern shores.

Outlook for February... By the second week, close pack to very close pack thin and medium lake ice over the northern section. Near the end of the month, consolidated thick lake ice along the shore and in sheltered bays.

### **Elsewhere in Lake Huron.**

Outlook for December... Ice free.

Outlook for January... Ice free to open water.

Outlook for February...Generally open water with patches of thin and new lake ice over the south-central section after mid-month.

## **Lake Erie and Lake St. Clair**

### **Winter temperature and ice forecasts.**

Above normal temperatures are expected from December to February. Below normal ice conditions are forecast.

### **Lake St Clair and the Western Basin.**

Outlook for December...Near the end of the month, patches of new and thin lake ice over eastern Lake St Clair and in isolated bays in the Western Basin.

Outlook for January...By the second week, close pack to very close pack new and thin lake ice. By the fourth week, consolidated medium lake ice in Sandusky Bay and the eastern portion of Lake St Clair.

Outlook for February... Near mid-month, close pack to very close pack medium lake ice with some thick lake ice. Consolidated thick lake ice in Sandusky Bay and eastern Lake St Clair.

### **The rest of Lake Erie.**

Outlook for December...Generally open water except open drift new and thin lake ice in Long Point Bay near the end of the month.

Outlook for January...By mid-month, patches of new and thin lake ice along sections of the shore. Consolidated medium lake ice in Long Point Bay. By the fourth week, close pack to very close pack thin and medium lake ice over the western section. Close pack new and thin lake ice near Buffalo.

Outlook for February...By the second week, close pack to very close pack thin and medium lake ice with some thick lake ice from Long Point and westward. Open drift thin

and medium lake ice from Long Point and eastward. Near the end of the month, consolidated thick lake ice in Long Point Bay and near Buffalo.

## **Lake Ontario.**

### **Winter temperature and ice forecasts.**

Above normal temperatures are expected from December to February. Below normal ice conditions are forecast.

### **Northeastern Lake Ontario.**

Outlook for December...Near the end of the month, patches of new and thin lake ice in isolated bays.

Outlook for January...Near mid-month, open drift to close pack new and thin lake ice along the shore from Trenton and eastward. Consolidated thin lake ice in sheltered bays. By the end of the month, close pack to very close pack thin and medium lake ice over the north-eastern section. Consolidated medium lake ice in the St Lawrence River and in isolated bays.

Outlook for February...By mid-month, consolidated thick lake ice in the St Lawrence River and in sheltered bays.

### **Bay of Quinte.**

Outlook for December...At the end of the month, close pack to very close pack new and thin lake ice.

Outlook for January...By the second week, consolidated thin lake ice. After mid-month, consolidated medium lake ice.

Outlook for February...By mid-month, consolidated thick lake ice.

### **Elsewhere in Lake Ontario.**

Outlook for December... Ice free to open water.

Outlook for January... Ice free to open water. Near mid-month, isolated patches of new and thin lake ice forming along the shores.

Outlook for February... Patches of open drift to close pack new and thin lake ice along the shore.

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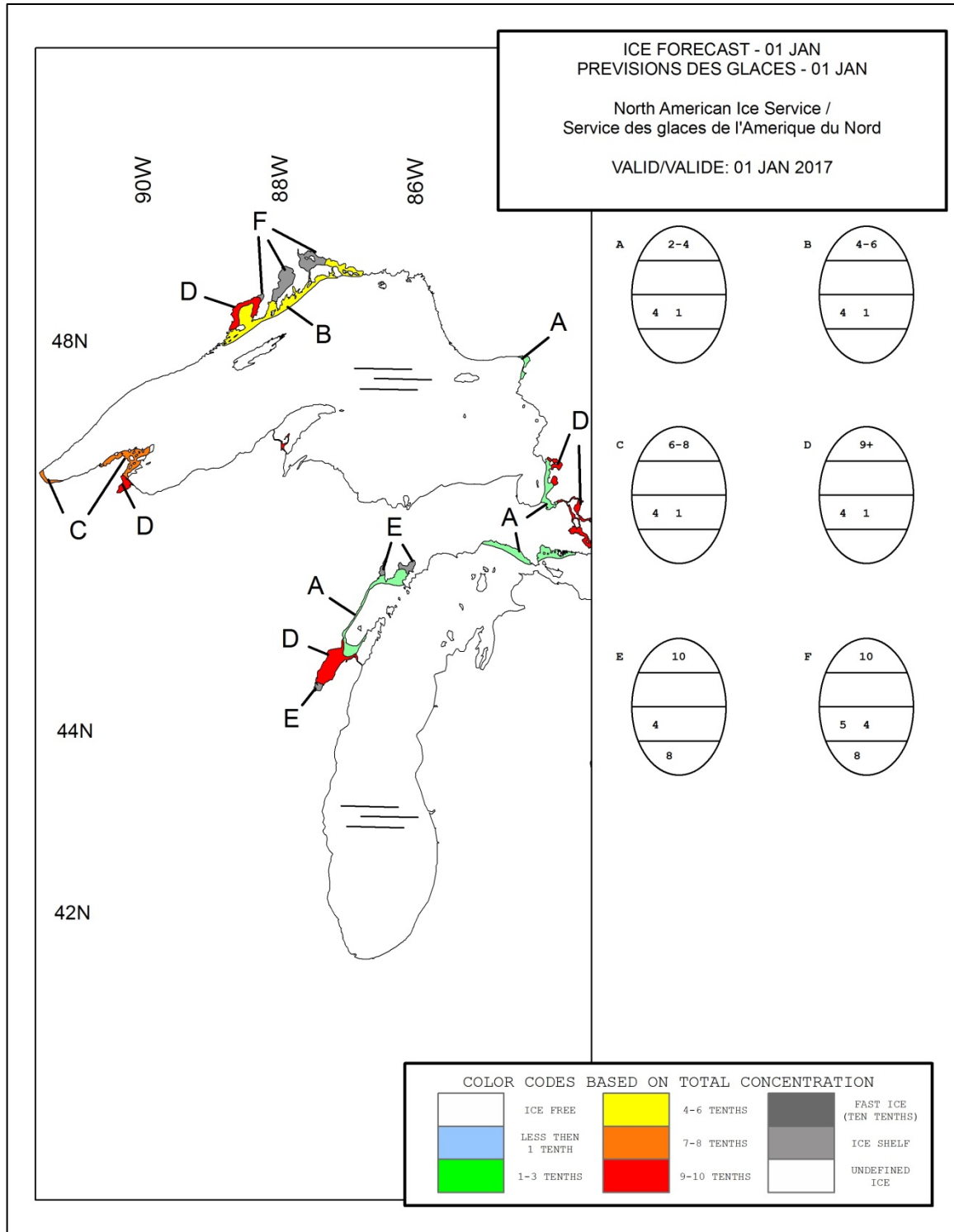
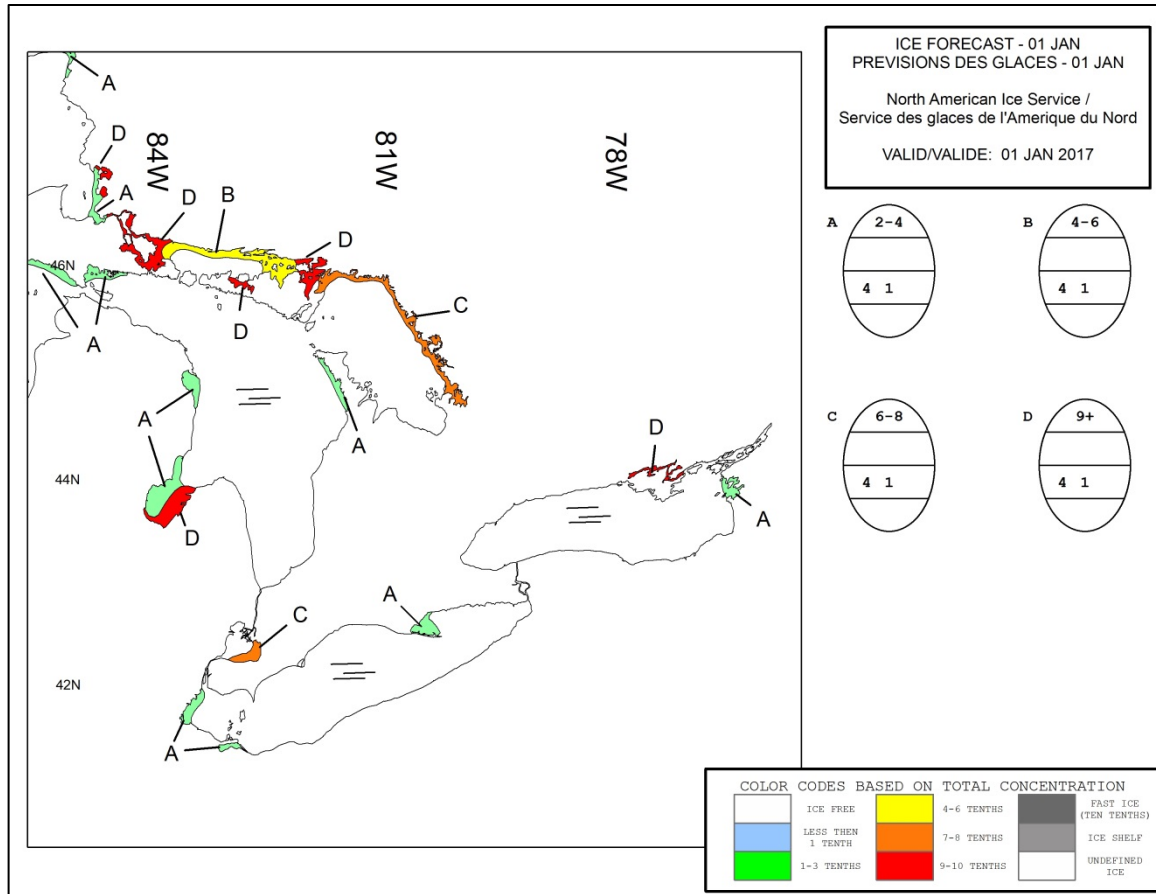


Figure 1: Expected ice conditions – western Great Lakes – 1 January 2017





**Figure 2: Expected ice conditions – eastern Great Lakes – 1 January 2017**

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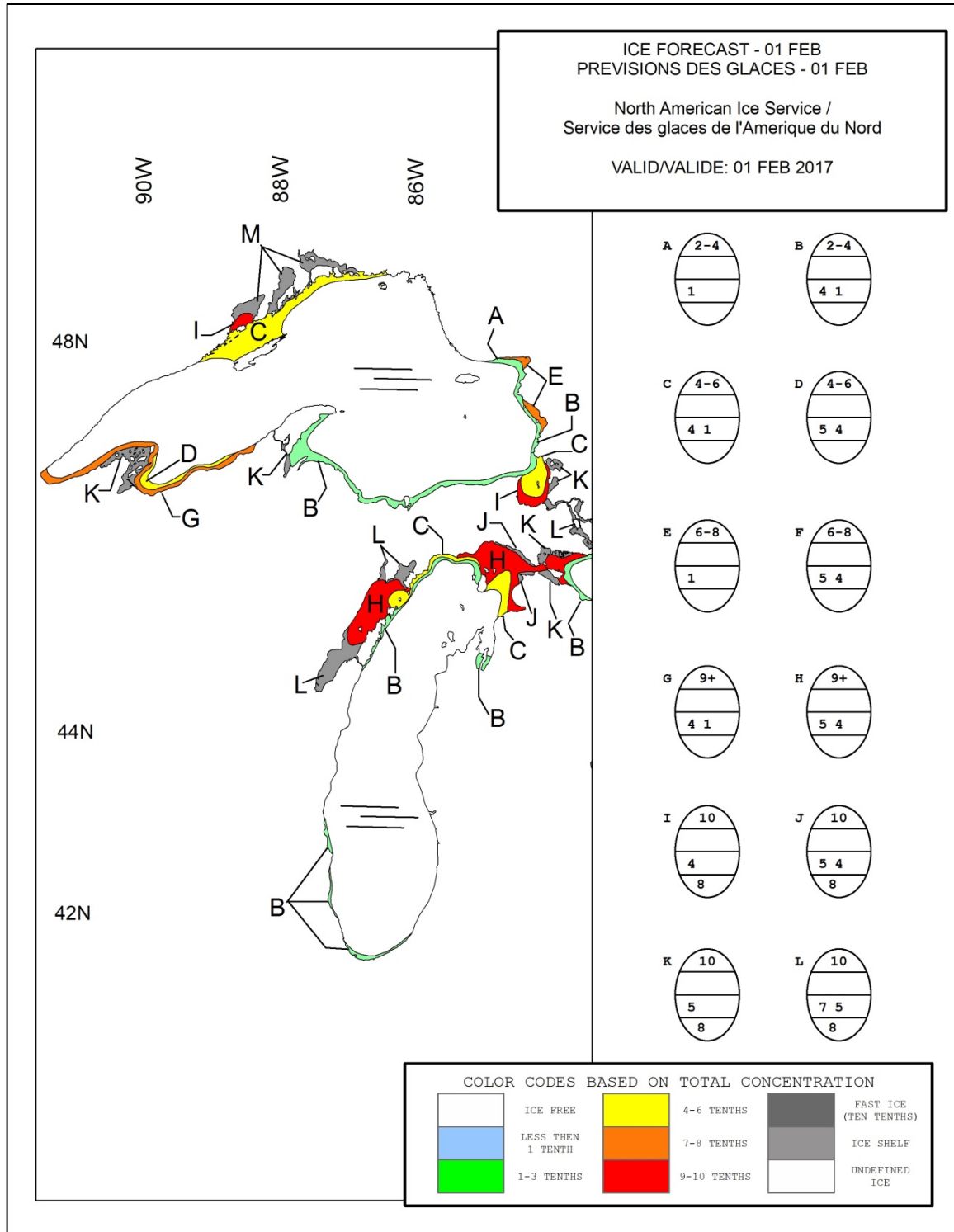


Figure 3: Expected ice conditions – western Great Lakes – 1 February 2017

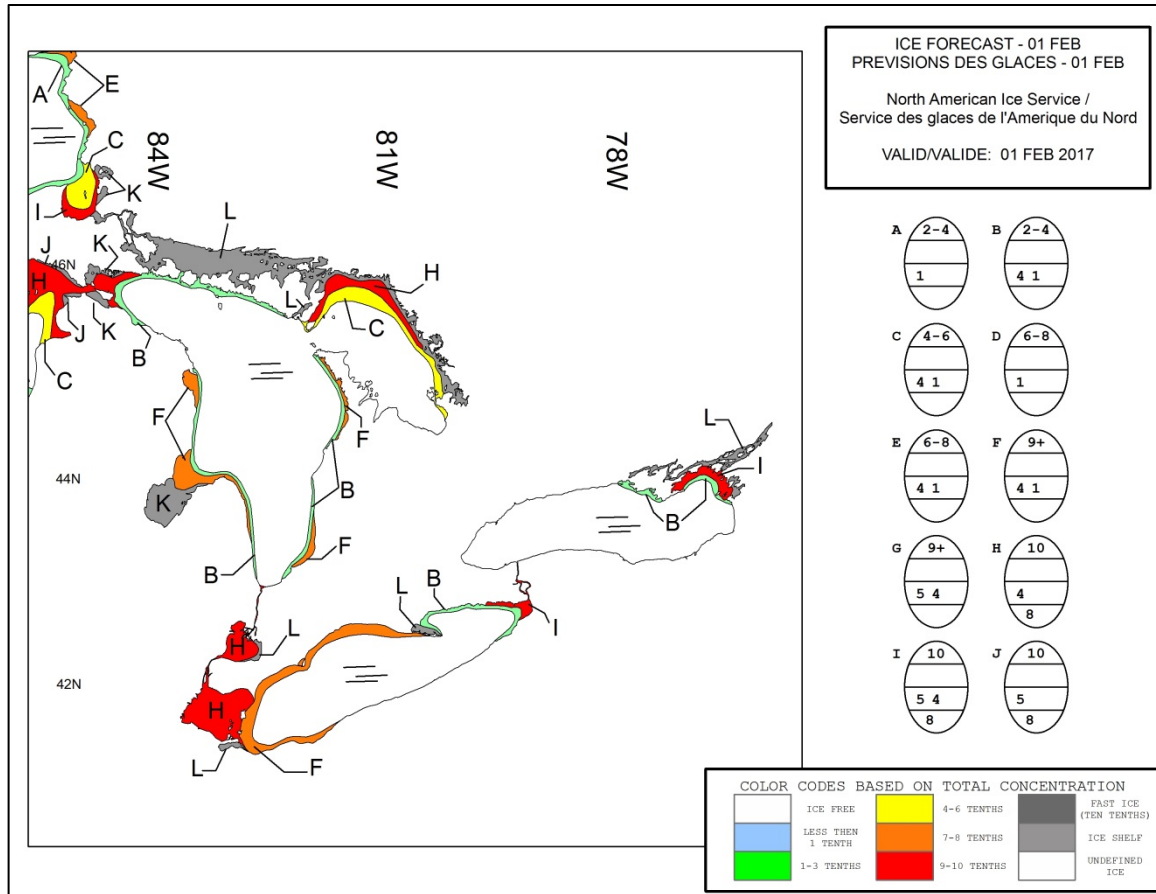


Figure 4: Expected ice conditions – eastern Great Lakes – 1 February 2017

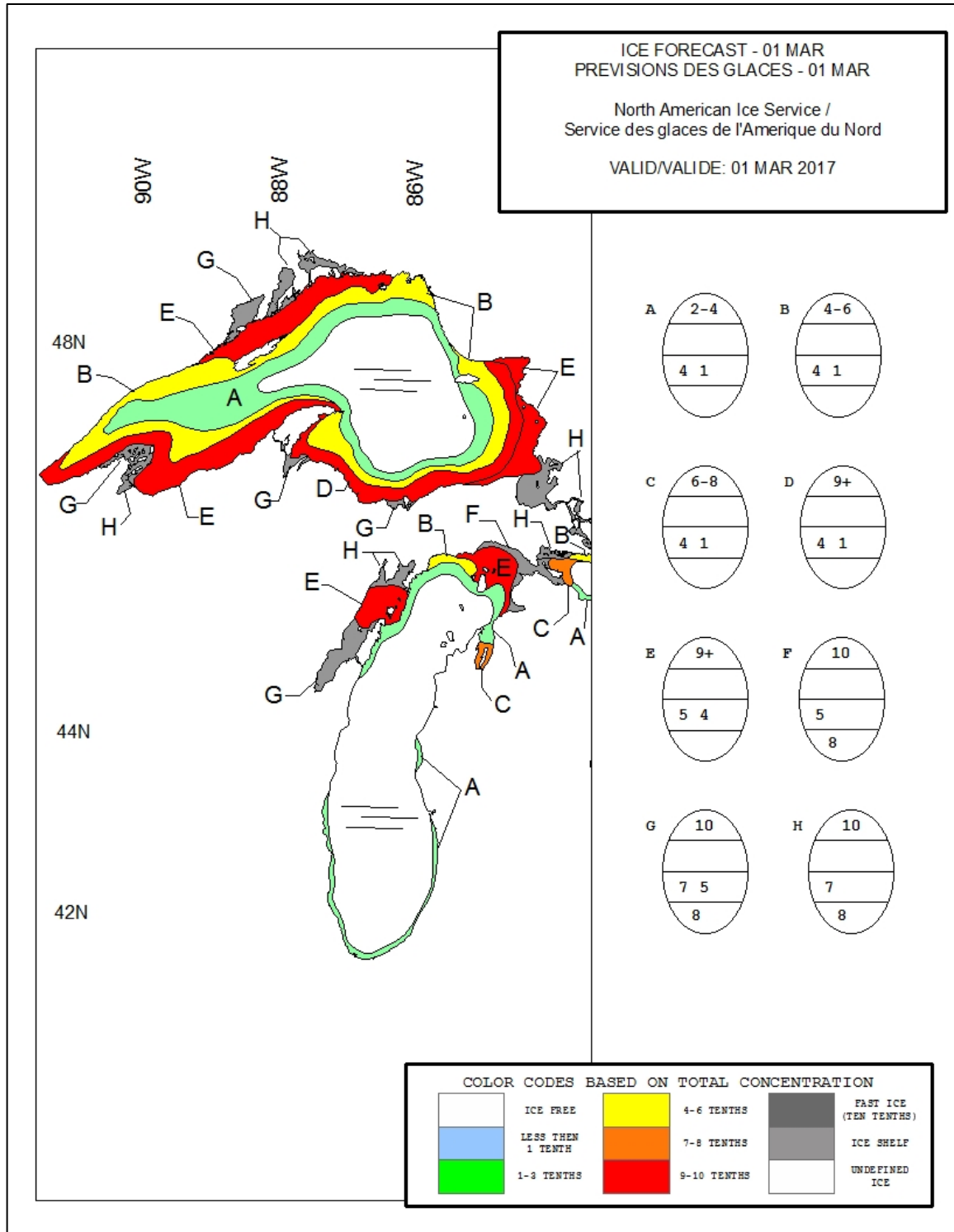


Figure 5: Expected ice conditions – western Great Lakes – 1 March 2017

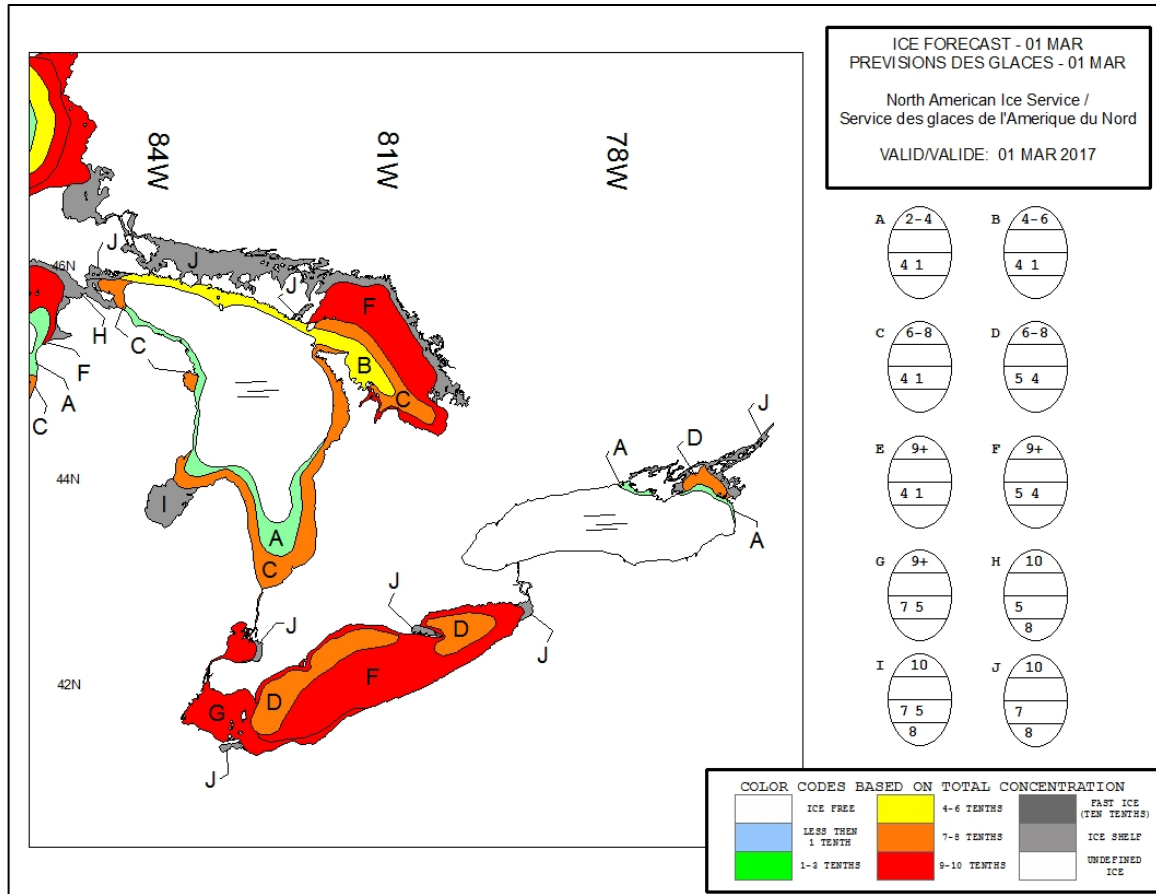


Figure 6: Expected ice conditions – eastern Great Lakes – 1 March 2017