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BUNDESAMT FÜR SEESCHIFFFAHRT UND HYDROGRAPHIE

Eisbericht Nr. 33

Amtsblatt des BSH

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Übersicht

In der Bottenwiek befindet sich in den nördlichen Schären bis 50 cm dickes, in den südlichen bis 25cm dickes Festeis. Weiter außerhalb kommt zuerst meist ebenes Eis vor und dann sehr dichtes, übereinandergeschobenes Eis, welches meist 5-20cm dick ist, aber im Nordwesten auch bis zu 40cm dick und aufgepresst ist. Im zentralen Teil treibt Neueis. An den Küsten von Norra Kvarken liegt bis 35cm dickes Festeis und auf See treibt bis 30cm dickes, dichtes bis sehr dichtes Eis. An den Küsten der Bottensee, des Finnischen Meerbusens, im nördlichen Teil des Rigaischen Meerbusen und dem Mälarsee kommt bis zu 20cm dickes Festeis und ebenes Eis vor und davor kommt meist Neueis und Neueisbildung vor. Im östlichen Finnischen Meerbusen liegt auch 10-30cm dickes Festeis. Neueis und örtlich dickeres Eis kommt auch in einigen geschützten Fjorden im Skagerrak vor.

Overview

In the Bay of Bothnia there is fast ice in the archipelagos, up to 50 cm thick in the north and up to 25cm thick in the south. Further out there is first level ice, followed by mostly 5-20cm thick, rafted, very close ice, but in the northwest the ice is up to 40cm thick and ridged. The central part is covered by new ice. In the Quark there is up to 35cm thick fast ice at the coasts and at sea there is up to 30cm tick, close to very close ice. At the coasts of the Sea of Bothnia, the Gulf of Finland, in the northern part of the Gulf of Riga and Lake Mälaren there is up to 20cm thick fast or level ice and outside there is mostly new ice and new ice formation. In the easternmost Gulf of Finland there is also 10-30cm thick fast ice. New ice and at places thicker ice is present in sheltered fjords of the Skagerrak.

Bay of Bothnia

In the archipelagos of the Bay of Bothnia there is fast ice; 20-40cm thick in the northwest, 30-50cm thick in the northeast and up to 25cm thick in the southern part. Off the fast ice there is mostly first a region with level ice, followed by very close ice; 15-40cm thick, ridged and rafted ice in the northwest and 5-20cm thick, rafted ice in the east and southwest. New ice covers the remaining central part.
With air temperatures around -30°C near the coasts and a mostly light southerly breeze, ice formation and growth will continue and the ice will drift slowly northwards.

The Quark

There is 10–35 cm thick fast ice in the Vaasa archipelago and further out to about Norra Gloppsten 5-20cm thick, very close ice. Farther out first thin level out to Norrskär and then new ice. Along the Swedish coast there is up to 20cm thick fast ice in inner bays and level ice further out. West and east of Holmöarne there is 5-30cm thick very close ice and further south 5-30cm thick close ice to about

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Sydostbrotten.
With temperatures reaching values down to -25°C ice formation and growth will continue. A slow westerly ice drift is expected.

Sea of Bothnia
Thin level ice or 5-20cm thick fast ice is present in bays along both coasts. Further out on the Finnish side there is a 5-18nm wide area with new ice and ice formation. Outside the Swedish coast north of 63°N there is 5-20cm thick close ice, further south new ice in places. On Ångermanälven, there is 10–20 cm thick fast ice on the upper part and new ice or thin level ice is present in the lower part.
With temperatures around -20°C in the northeast and -10°C in the southwest ice growth and formation will continue. Due to the westward ice drift, the ice covered region outside the eastern coast will continue to widen.

Archipelago Sea and Åland Sea
In the Archipelago Sea there is thin level ice and new ice in the archipelago and in bays of the Åland Sea there is new ice and thin level ice.

With severe frost in the east and moderate frost in the west, ice formation will continue.

Northern Baltic
In Lake Mälaren there is 5–15 cm thick fast and level ice in the west and new ice in the east with the central part being still ice free. New ice is present in sheltered places at the outer coast.
With mostly moderate frost in the north and light frost in the south new ice formation is expected.

Gulf of Finland
From St. Petersburg to Kotlin there is 20–30 cm thick fast ice. In the Bjerkesund there is level ice. In the top of Vyborg Bay there is 10–25 cm thick fast ice with level ice further out. At sea there is new ice east of the line Šepelevskij – Kotka. Along the northern coast there is 5–20 cm thick fast ice and thin level ice in the inner archipelago and farther out new ice and ice formation in places. Near the southern shore there is new ice in places. In Lake Saimaa there is 10-30cm thick fast ice.
With severe frost and a moderate breeze from the east ice formation and growth will continue and the ice will drift westwards.

Gulf of Riga
In Väinameri there is 10-15 cm thick fast ice near the coasts. Farther out there is very close ice, on the fairway there nilas and new ice. In the Gulf of Riga itself there is new ice and open water along the northern and northeastern coast. In the Bay of Pärnu there is fast ice at the coast followed by very close ice up to the line Liu – Cape Suurna. Farther out there is nilas and new ice out to the port of Kihnu. In the port of Riga very open ice is present and further on the fairway to Irben strait there is open water.
With air temperatures down to about -20°C in the north and -10°C in the south ice formation and growth will continue. A gentle to moderate breeze from the northeast will push the ice southwestwards.

Southeastern Baltic
The area is almost ice-free. With light to moderate frost new ice formation is expected.

Skagerrak and Kattegat
New ice is present in sheltered places of inner Norwegian Fjords. At places thicker ice is possible in inner bays. Along the Swedish coast, there is new ice in few sheltered areas.

With strong frost ice expected in the northern fjords ice formation and ice growth is expected, and with light frost some ice formation may occur also in the more southerly regions.

Swedish Lakes
Thin level ice and new ice is present in in bays and along the coast of Lake Vänern.

With moderate frost ice formation and ice growth is expected,

Dr. J. Holfort

Restrictions to Navigation

	Harbour/District	At least dwt/hp/kW	Ice Class	Begin
Estonia	Pärnu	1600 kW	1C (Lloyd's)	22.12.
Finland	Tornio, Kemi and Oulu	2000 dwt	IB	17.12.
	Tornio, Kemi and Oulu	**2000 dwt**	**IA**	**07.01.**
	Raahe, Kalajoki, Kokkola, Pietarsaari and Vaasa	2000 dwt	IB	02.01.
	Raahe, Kalajoki, Kokkola and Pietarsaari	**2000 dwt**	**IA**	**07.01.**
	Kristiinankaupunki, Pori and Rauma	2000 dwt	II	01.01.
	Kaskinen and Uusikaupunki	2000 dwt	II	17.12.
	Taalintehdas, Förby, Koverhar, Lappohja, Inkoo, Kantvik, Helsinki, Sköldvik, Loviisa, Mussalo, Kotka and Hamina	2000 dwt	II	09.12.
	Loviisa, Kotka and Hamina	**2000 dwt**	**I**	**07.01.**
	Lake Saimaa	2000 dwt	IB	13.12.
	Lake Saimaa	**2000 dwt**	**IA**	**08.01.**
	Saimaa Canal	2000 dwt	IB	13.12.
	Saimaa Canal	**2000 dwt**	**IA**	**08.01.**
Russia	Vyborg	-	Ice 1	30.12.
	Vysotsk	-	Ice 1	30.12.
	Ust-Luga	-	Ice 1	29.12.
Sweden	Karlsborg and Lulea	2000 dwt	IB	18.12.
	Haraholmen and Skelleftehamn	2000 dwt	IB	20.12.
	Rundvik and Husum	2000 dwt	II	12.12.
	Rundvik and Husum	**2000 dwt**	**IC**	**04.01.**
	Holmsund and Örnsköldsvik	2000 dwt	IC	18.12.
	Holmsund	**2000 dwt**	**IB**	**04.01.**
	Angermanälven	2000 dwt	IB	18.12.
	Härnösand, Söråker, Sundsvall, Stocka, Hudiksvall, Iggesund, Söderhamn, Orrskär, Norrsundet, Gävle, Skutskär	2000 dwt	II	18.12.
	Härnösand, Söråker, Sundsvall, Stocka, Hudiksvall, Iggesund, Söderhamn, Orrskär and Norrsundet	**2000 dwt**	**IC**	**04.01.**
	Gävl	**2000/4000 dwt**	**IC/II**	**04.01.**
	Skutskär, Öregrund, Hargshamn, Hallstavik and Grisslehamn	**2000 dwt**	**IC**	**04.01.**
	Kappelskär, Stockholm, Nynäshamn and Södertälje	**2000 dwt**	**II**	**04.01.**
	Köping and Västeras	2000 dwt	IC	18.12.
	Köping and Västeras	**2000 dwt**	**IB**	**04.01.**
	Balsta	**2000 dwt**	**IC**	**04.01.**
	Oxelösund, Norrköping, Västervik, Oskarshamn, Mösteras, Kalmar, Degerhamn, Berkvara and Karlskrona	**2000 dwt**	**II**	**04.01.**
	Stenungsund and Uddevalla	**2000 dwt**	**II**	**04.01.**
	Trollhätte Canal and Göta Älv	1300/2000 dwt	IC/II	05.12.
	Trollhätte Canal and Göta Älv	**2000 dwt**	**IC**	**04.01.**
	Vänern	1300/2000 dwt	IC/II	05.12.
	Vänern	**2000 dwt**	**IC**	**04.01.**

Estonia
Icebreaker: EVA-316 assists to the port of Pärnu.

Finland/Sweden
The traffic separation schemes in the Quark are temporarily out of use from 20 December due to ice conditions.

Vessels bound for Gulf of Bothnia ports in which assistance restrictions apply, shall when passing latitude 60° 00' N report their nationality, name, destination, ETA and speed to ICE INFO on VHF channel 82. This report can also be given directly by telephone to +46 10 492 7600.

Vessels bound for Finnish or Swedish ports with assistance restrictions in the Quark or the Bay of Bothnia shall, 20 nautical miles before Nordvalen Lighthouse (63° 32.15' N 20° 46.60' E), report in accordance with the instructions for winter navigation to Bothnia VTS on VHF channel 67.

Icebreakers: ATLE, KONTIO, OTSO, POLARIS and YMER assist in the Bay of Bothnia. ALE and **ZEUS** assist in the Quark. VOIMA is heading for the Gulf of Finland.

Russia
There are restrictions for small crafts going to St. Petersburg, Vyborg, Vysotsk, Primorsk and Ust-Luga.

Icebreakers: Several icebreakers assist vessels to the port of St. Petersburg, Vyborg, Vysotsk, Primorsk and Ust-Luga.

Baltic Sea Ice Code

First number:
A_B Amount and arrangements of sea ice
0 Ice free
1 Open water – concentration less than 1/10
2 Very open ice - concentration 1/10 to 3/10
3 Open ice – concentration 4/10 to 6/10
4 Close ice – concentration 7/10 to 8/10
5 Very close ice – concentration 9/10 to 9+/10
6 Compact ice, including consolidated ice – concentration 10/10
7 Fast ice with drift ice outside
8 Fast ice
9 Lead in very close or compact drift ice or along the fast Ice edge
/ Unable to report

Second number:
S_B Stage of ice development
0 New ice or dark nilas (less than 5 cm thick)
1 Light nilas (5 - 10 cm thick) or ice rind
2 Grey ice (10 - 15 cm thick)
3 Grey-white ice (15 - 30 cm thick)
4 White ice, first stage (30 - 50 cm thick)
5 White ice, second stage (50 - 70 cm thick)
6 Medium first year ice (70 - 120 cm thick)
7 Ice predominantly thinner than 15 cm with some thicker ice
8 Ice predominantly grey-white ice (15 – 30 cm) with some thicker ice
9 Ice predominantly thicker than 30 cm with some thinner ice
/ No information or unable to report

Third number:
T_B Topography or form of ice
0 Pancake ice, ice cakes, brash ice – less than 20 m across
1 Small ice floes – 20 to 100 m across
2 Medium ice floes – 100 to 500 m
3 Big ice foes – 500 to 2000 m across
4 Vast or giant ice floes – more than 2000 m across – or level ice
5 Rafted ice
6 Compact slush or shuga, or compacted brash ice
7 Hummocked or ridged ice
8 Thaw holes or many puddles on the ice
9 Rotten ice
/ No information or unable to report

Fourth number:
K_B Navigation conditions in ice
0 Navigation unobscured
1 Navigation difficult or dangerous for wooden vessels without ice sheathing
2 Navigation difficult for unstrengthened or low-powered vessels built of iron or steel. Navigation for wooden vessels even with ice sheathing not advisable
3 Navigation without icebreaker assistance possible only for high-powered vessels of strong construction and suitable for navigation in ice
4 Navigation proceeds in lead or broken ice-channel without the assistance of an icebreaker
5 Icebreaker assistance can only be given to vessels suitable for navigation in ice and of special size
6 Icebreaker assistance can only be given to vessels of special ice class and of special size
7 Icebreaker assistance can only be given to vessels after after special permission
8 Navigation temporarily closed
9 Navigation has ceased
/ Unknown

Estonia, 03.01.2024

Shipping route from Narva-Jõssuu	2000
Kunda, port and bay	2000
Paernu, port and bay	5245
Moonsund	5143

Finland, 02.01.2024

Röyttä – Etukari	8446
Etukari – Ristinmatala	6356
Ajos – Ristinmatala	6356
Ristinmatala – Kemi 2	5146
Kemi 2 – Kemi 1	5756
Sea area SW of Kemi 1	5756
Kemi 2 – Ulkokrunni – Virpiniemi	7346
Oulu harbours – Kattilankalla	8846
Kattilankalla – Oulu 1	6356
Sea area SW of Oulu 1	5756
High Sea N of the latitude of Marjaniemi	5356
Raahe harbour – Heikinkari	7346
Heikinkari – Raahe lighthouse	5246
Raahe lighthouse – Nahkiainen	5756
Latitude Marjaniemi – Ulkokalla, Sea	5356
Rahja harbour – Välimatala	5146
Vaelimatala to line Ulkokalla – Ykskivi	5756
Sea betw. lat. of Ulkokalla –Pietarsaari	5756
Ykspihlaja – Repskär	8746
Repskär – Kokkola lighthouse	5146
Sea area off Kokkola lighthouse	5256
Pietarsaari – Kallan	8746
Sea area off Kallan	4046
Sea lat. Pietarsaari – NE Nordvalen	5756
Sea area ENE of Nordvalen	5756
Sea area Nordvalen to W of Norrskär	4756
Vaskiluoto – Ensten	7746
Ensten – Vaasa lighthouse	5746
Vaasa lighthouse – Norrskär	5146
Sea area SW of Norrskär	3036
Kaskinen – Sälgrund	8745
Sea area off Sälgrund	4045
High sea from N to latitude Yttergrund	4045
Pori harb. to line Pori lighth. – Säppi	4745
Sea W of line Pori lighthouse – Säppi	4045
Rauma, Harbour – Kylmäpihlaja	5245
Kylmäpihlaja – Rauma lighthouse	4045
Sea area W of Rauma lighthouse	2005
Uusikaupunki harbour – Kirsta	8145
Kirsta – Isokari	4045
Naantali and Turku – Rajakari	5142
Rajakari – Lövskär	4041
Lövskär – Korra	4041
Hanko harbours – Hanko 1	2001
Koverhar – Hästö Busö	4045
Inkoo a. Kantvik – sea area Porkkala	5145
Helsinki harbours – Harmaja	4045
Vuosaari harbour – Eestiluoto	4045
Valko Harbour – Täktarn	5145
Archipelago fairway Boistö – Glosholm	3015
Kotka – Viikari	3115
Viikari – Orrengrund	3015
Orrengrund – Tiiskeri	3015
Hamina – Suurmusta	5155
Suurmusta – Merikari	3015
Merikari – Kaunissaari	2015

Latvia, 02.01.2024

Port of Riga	2000
Riga to the Cape of Mersrags, fairway	1000
Mersrags to Irben Strait, fairway	1000

Sweden, 03.01.2024

Karlsborg – Malören	6456
Sea area off Malören	6456
Luleå – Björnklack	8446
Björnklack – Farstugrunden	5476
E and SE of Farstugrunden	5476
Sandgrönn fairway	6346
Rödkallen – Norströmsgrund	5476
Haraholmen – Nygrån	6336
Sea area off Nygrån	5246
Skelleftehamn – Gåsören	8346
Sea area off Gåsören	5476
Sea area off Bjuröklubb	5476
NE of Nordvalen	4356
SW of Nordvalen	4356
Western Quark (W of Holmöarna)	5356
Umeå – Väktaren	5356
SE of Väktaren	4356
NE and SE of Sydostbrotten	4046
Fairway to Husum	4356
Örnsköldsvik – Hörnskaten	8346
Hörnskaten – Skagsudde	8346
Sea area off Skagsudde	4356
Fairway W of Ulvöarna	4356
Ångermanälven north Sandö Bridge	8344
Ångermanälven south Sandö Bridge	5244
Härnösand – Härnön	5244
Sundsvall – Draghällan	5246
Draghällan – Åstholmsudde	4046
Hudiksvallfjärden	5246
Iggesund – Agö	5246
Sandarne – Hällgrund	5146
Ljusnefjärden – Storjungfrun	5146
Gävle – Eggegrund	5146
Öregrundsgrepen	4041
Hallstavik – Svartklubben	5142
Köping – Kvicksund	8244
Västerås – Grönsö	5244
Norrköping – Hargökalv	5142
Fairway to Gruvön	4046
Fairway to Karlstad	5146
Fairway to Kristinehamn	5146