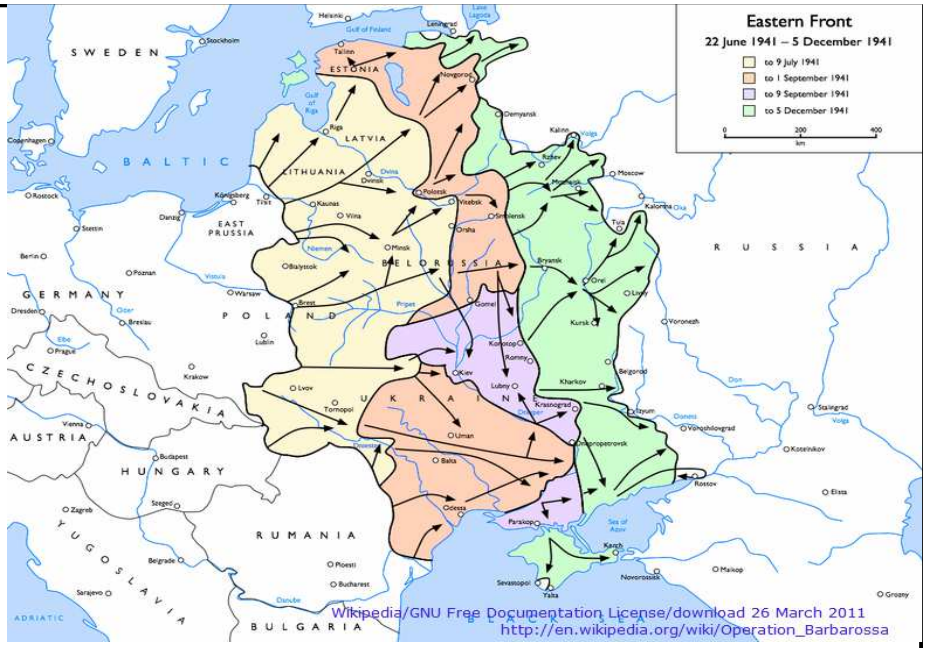
Worst weather forecast ever
finished Blitzkrieg on
5th December 1941!
How Hitler shot himself in the foot!
Failure of meteorology – a boon to mankind!
By
Dr. Arnd Bernaerts
October 2013
Subject to changes
Map (wikipedia/ Barbarossa
Archangel
Onega
White Sea
FINLAND
Finnish Army
Helsinki
Baltic Sea
18A
16A
PG4
Volga R.
9A
Army Group North
Vilnius
PG3
Orsha
Smolensk
Moscow
Minsk
WHITE RUSSIA
4A
Warsaw
Brest-
Army Group Center
6A
L'vov
17A
Kiev
Kharkov
Don R.
Volga R.
Bug R.
Dniester R.
PG1
Army Group South
CARPATHIAN MTNS
Pruth R.
UKRAINE
Donets R.
Stalingrad
Kishinev
11A and Romanian Army
Odessa
Sea of Azov
Black Sea
Danube R.
CAUCASUS MTNS

4 ½ million German soldiers marched east like a flash (Blitz) since 22. June 1941, and five months later the worst winter commenced in the Baltic region, in early December 1941 with ice, snow and record cold.



Below: The drama is illustrated by Tallinn/Estonia – Nov.41 to April 1942 – T°C

Thesis:

By high naval activities in the Baltic & North Sea since June 1941, heat stored during summer was released more quickly – as usual – in fall, which severely reduced the moderating effect these water have on Europes climate

during the winter season.

NOTE:

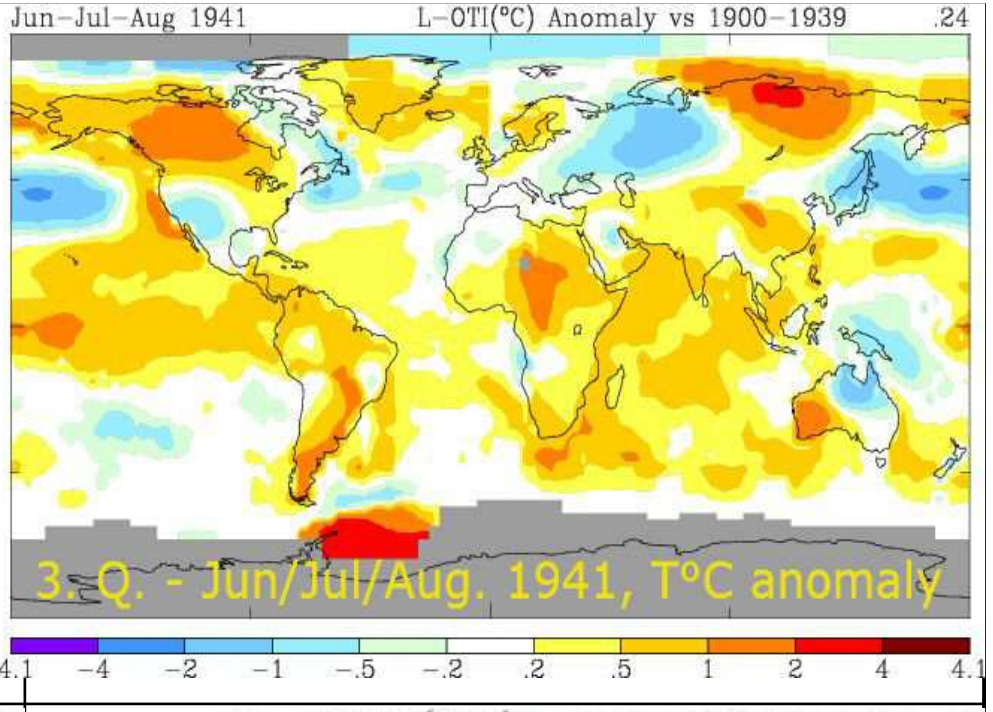
Actually, all sea areas around Europe, from the North Cape to the Black Sea, may – by different physical processes – have contributed to 1941/42 winter temperatures in Europe.

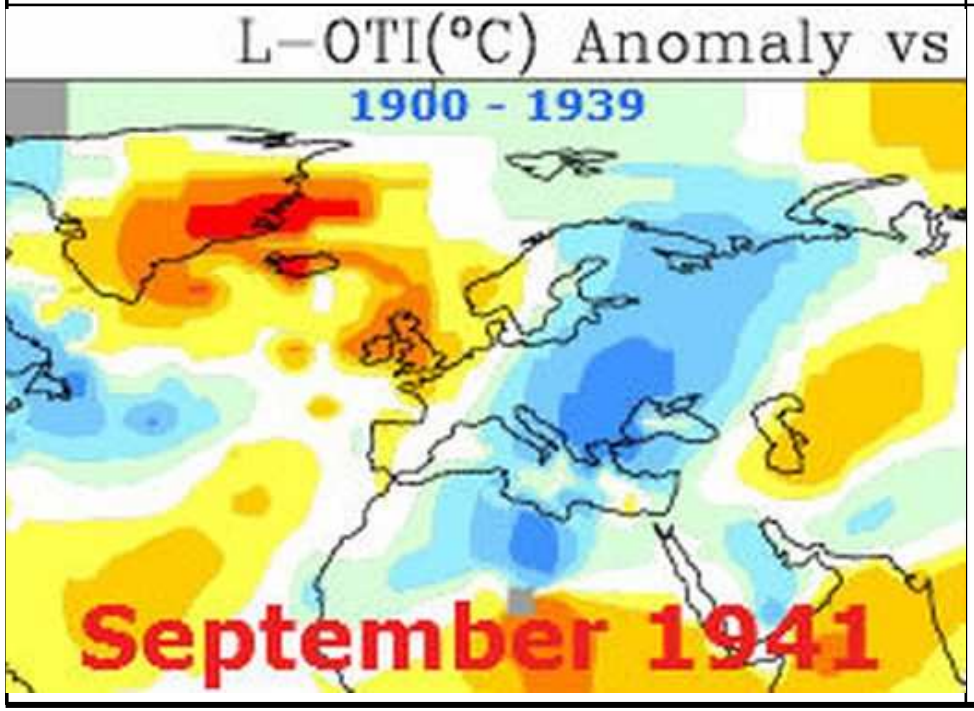
The frist months were:

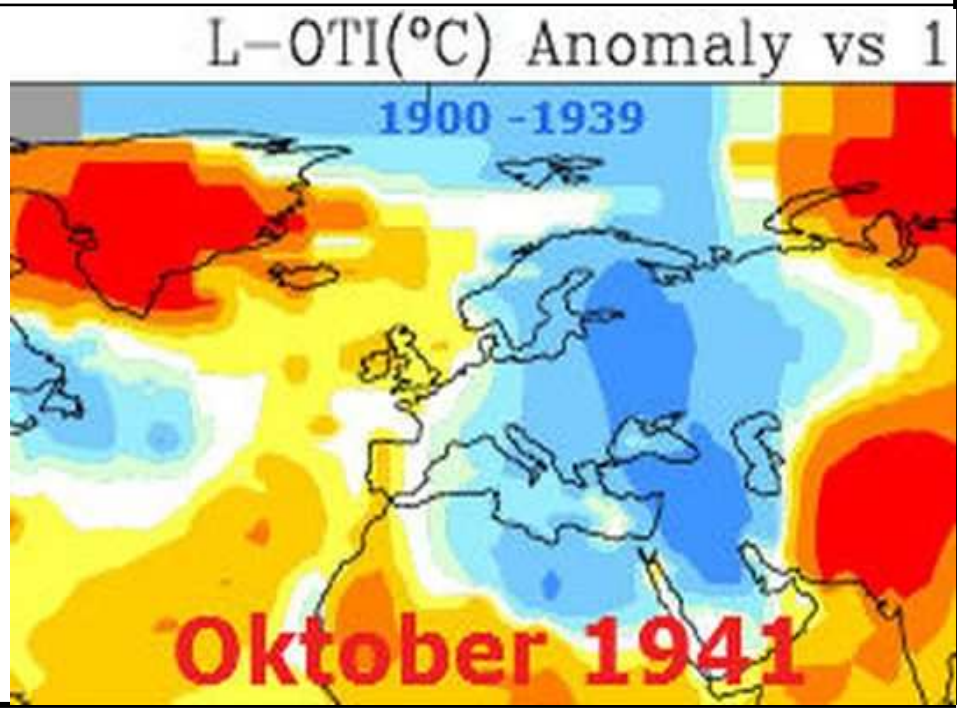
_Jul.-mid Oct.: very dry, sunny and warm.

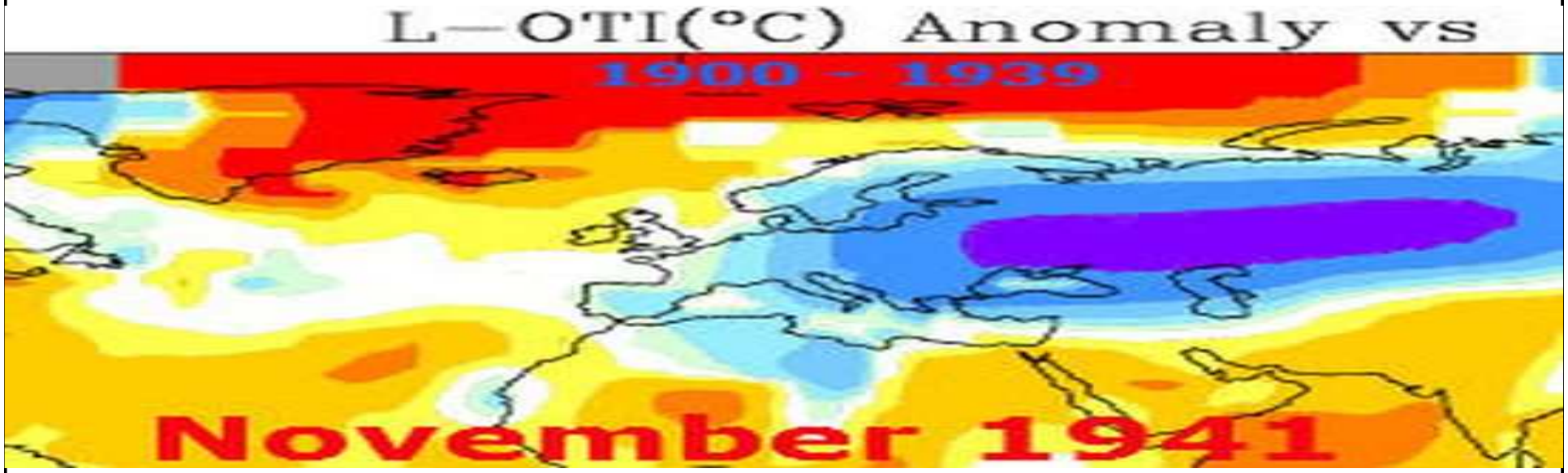
_from mid Oct. : for one month extremely wet;

_Nov.: partly extreme cold.









Ice, cold and snow stopped further advance in early Dec.41

The New York Times brought the news on the

front page of the December 9th 1941 issue:

"Nazis give up idea of Moscow in 1941. Winter forces abandoning big drives in the north until spring, Berlin says"

(NYT, Dec. 09, 1941).

Unusually low temperatures in November and December rendered plans and expectations as mission impossible.

The Moscow region, which usually expected mean temperatures of +1° to –3°C (November) or –3° to –7°C (December), was now faced with conditions far below –20°C. For example, Field Marshal von Bock, commander of Army Group Center, recorded in his war diary, on November 5, 1941, that the mercury dipped to -29°C (-20°F) while it had been reported that it was a steady -30°C (-22°F).

Was this disaster forseeable?

YES!

Forecasters failed to undertake a thorough analysis of cause and source of the previous two extreme winters 1939/40 & 1940/41, and which role naval warfare played in this game!

German weather experts excluded a strong winter, because statistically three consecutive cold winters had never been observed.

Facts which link naval warfare in the Baltic to early and extreme winter in Europe 1941/42

Strength of the opposing forces on the Soviet Western border.

Status: 22 June 1941	Germany and allies	Soviet Union	Ratio
Divisions	166	190	1 : 1.1
Personnel	4,306,800	3,289,851	1.3 : 1
Guns and mortars	42,601	59,787	1 : 1.4
Tanks (incl assault guns)	4,171	15,687	1 : 3.8
Aircraft	4,389	11, 537	1 : 2.6

Source: Mikhail Meltyukhov "Stalin's Missed Chance" table 47, reference at http://en.wikipedia.org/wiki/Operation_Barbarossa Footnote 72 //download: March 25, 2011

Table by: http://en.wikipedia.org/wiki/Operation_Barbarossa // Creative Commons Attribution-ShareAlike License

Operation Barbarossa (code name for Germany's invasion of the Soviet Union) began on 22 June 1941.

22. June

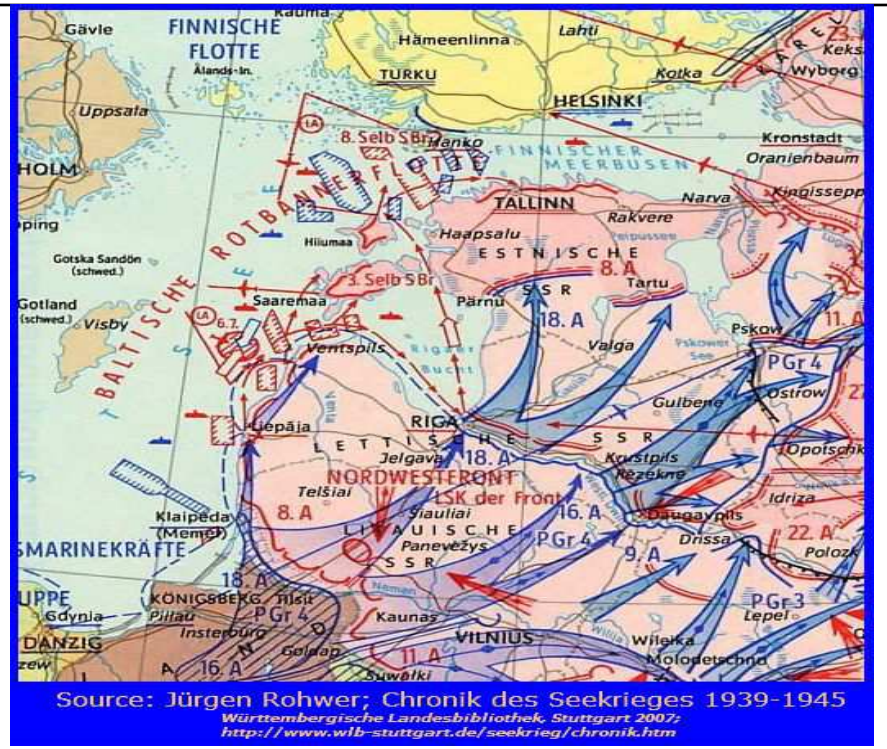
to

25. Aug.

1941

An unprecedented attack rolls eastward.

Baltic naval war activities since June 1941 are poorly documented and investigated.



Strenght of fleets on 22nd June 1941

German Kriegsmarine

~ 100 naval ships,

_10 large mine layers,

_28 torpedo boats, and

_2-3 dozen mine sweeper.

Air support should provide the Luftwaffe

Soviet Baltic Fleet

~ 180 naval ships

__6 capital ships

_20 destroyers; _65 submarines;

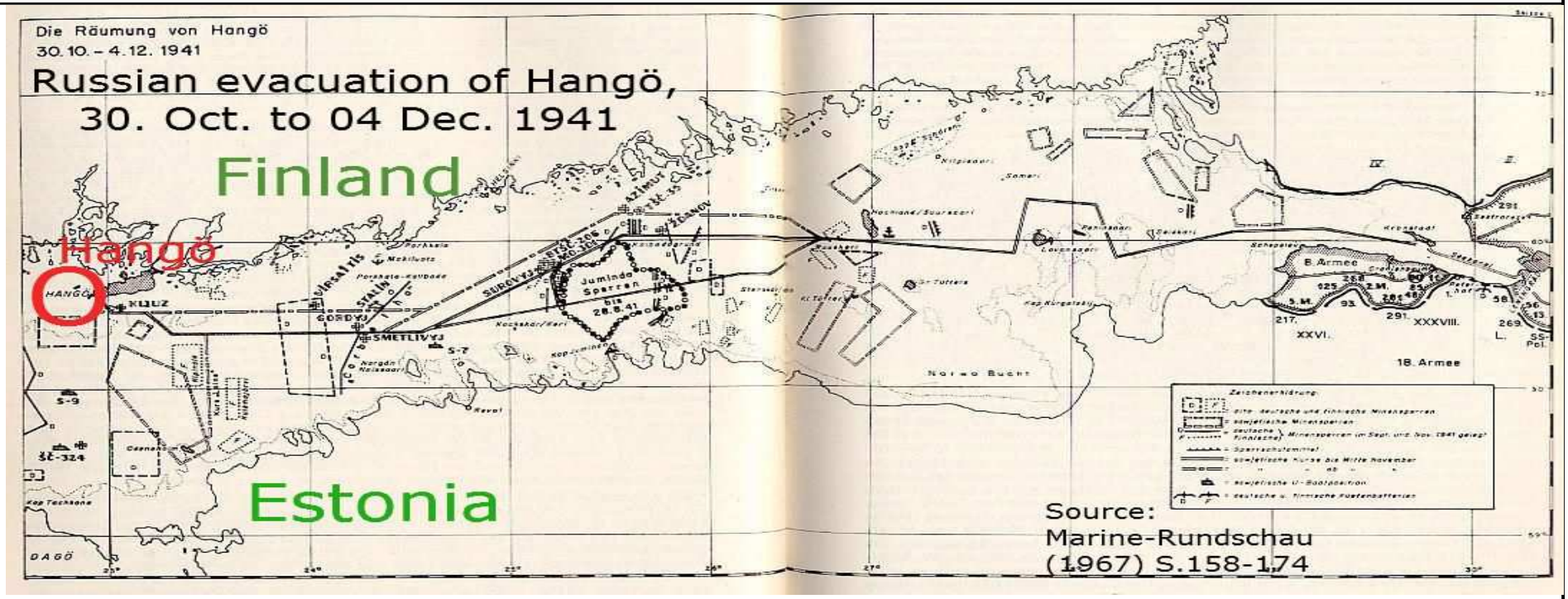
_80 mine & torpedo boats , and about 700 bomber/fighter planes.

All military figures are dificult to varify, for example:

__The number of sea mines can be several 10‘000, but also 100T-plus. Many dozen mine sweepers operated permanetly. Many mines exploded by way of contact, shelling or bombing.

__Threat and impact was immence. For example: Germany lost 28 minesweepers on its own mines between July and December 1941.

__Even today it is assumed that about 80‘000 sea mines from the two World Wars still present a threat.

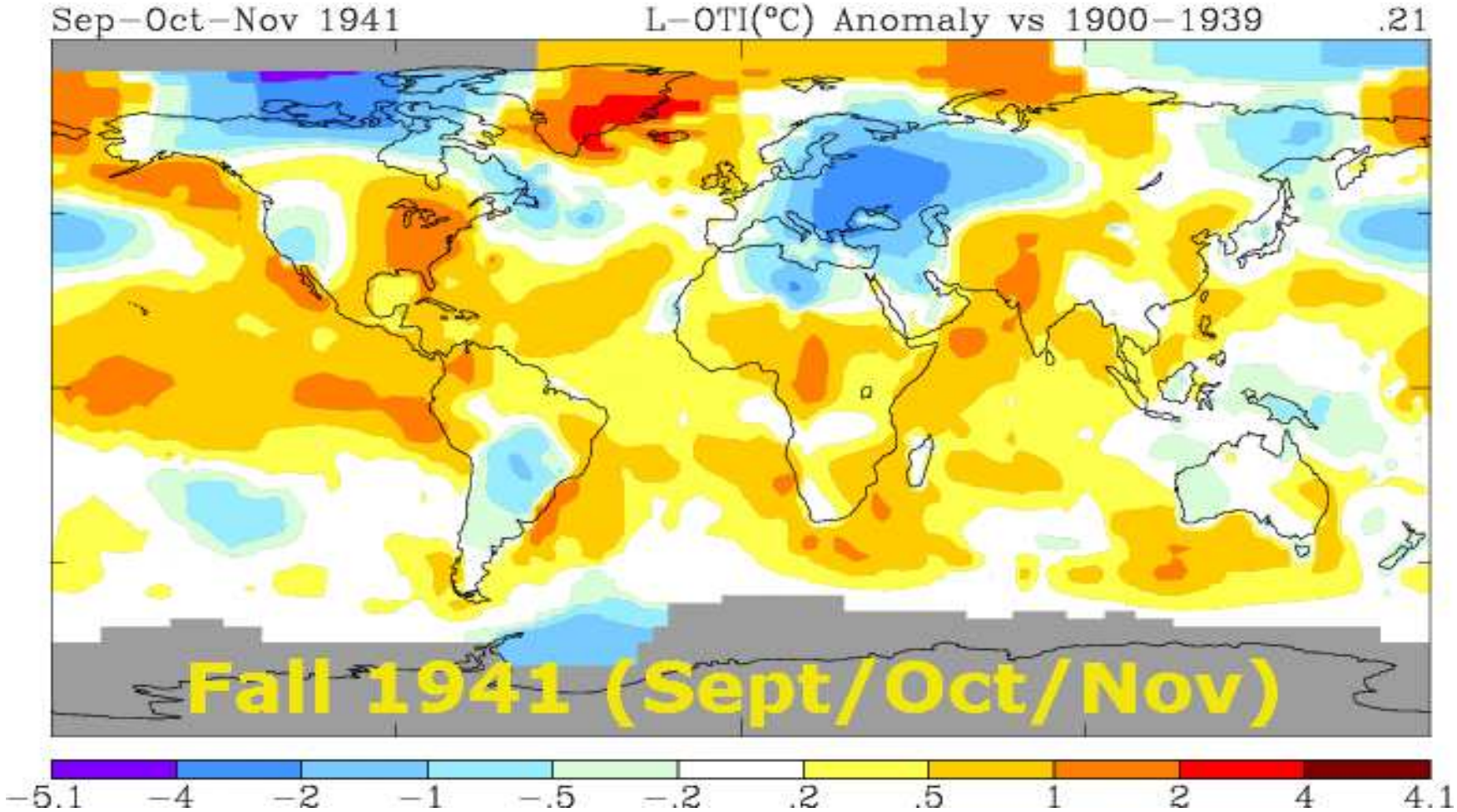


Map: The Gulf of Finland was paved with sea mines.

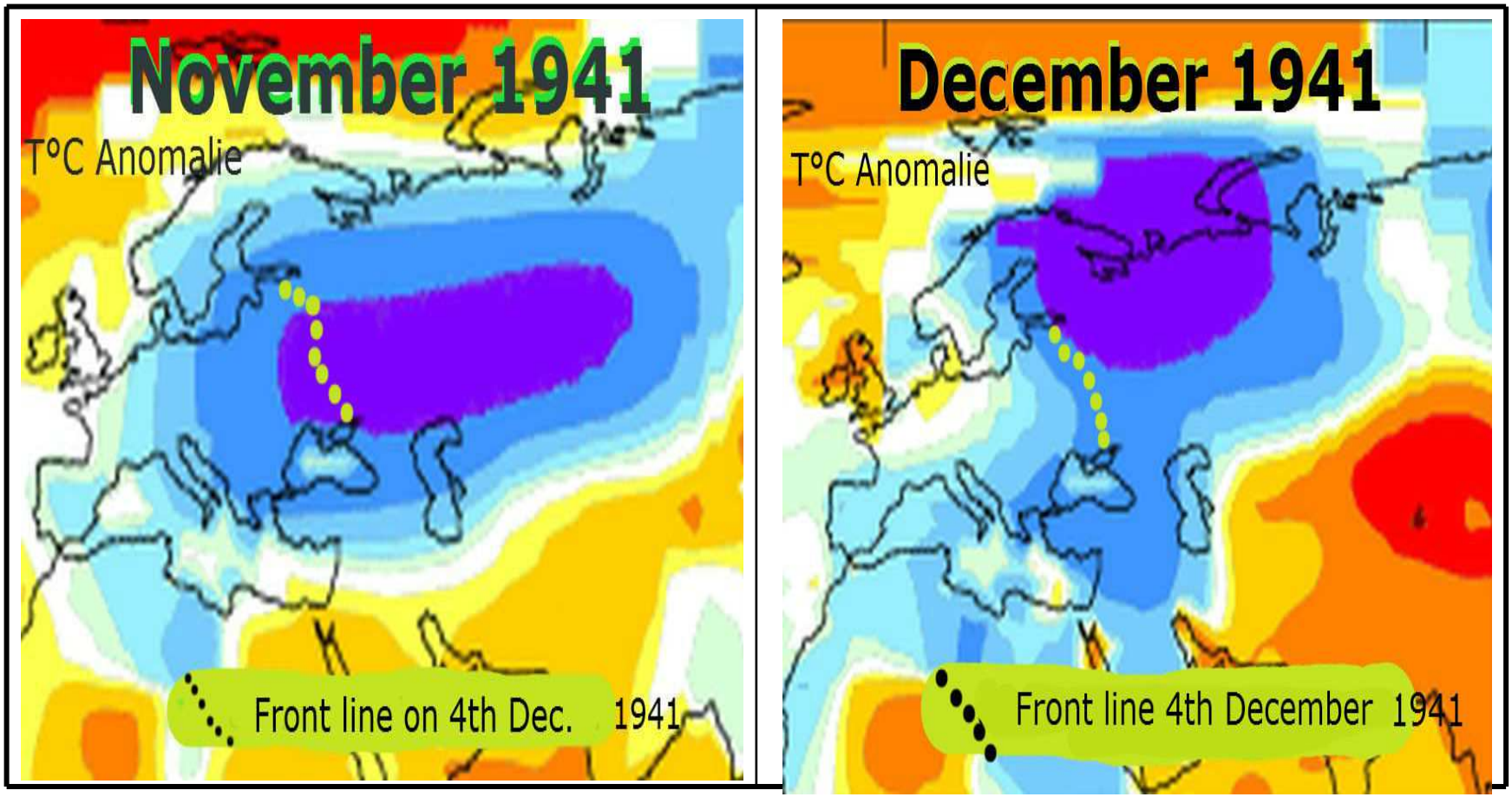
_The advance was rapid until the 4th of December.

_Fall 1941 show below average temperature (map).

_Naval war in all sea areas from Murmansk to Trioplis.



The cold centre in November and December 1941 is immediately „behind“ - in the East of - naval battle fields, owing to „west-wind-drift“.



Presumably all sea areas along Europe‘s coast contribute to low air temperature, whereby physical mechanisms may be different from location to location.

On the following slides only the situation in the Baltic can be discussed:

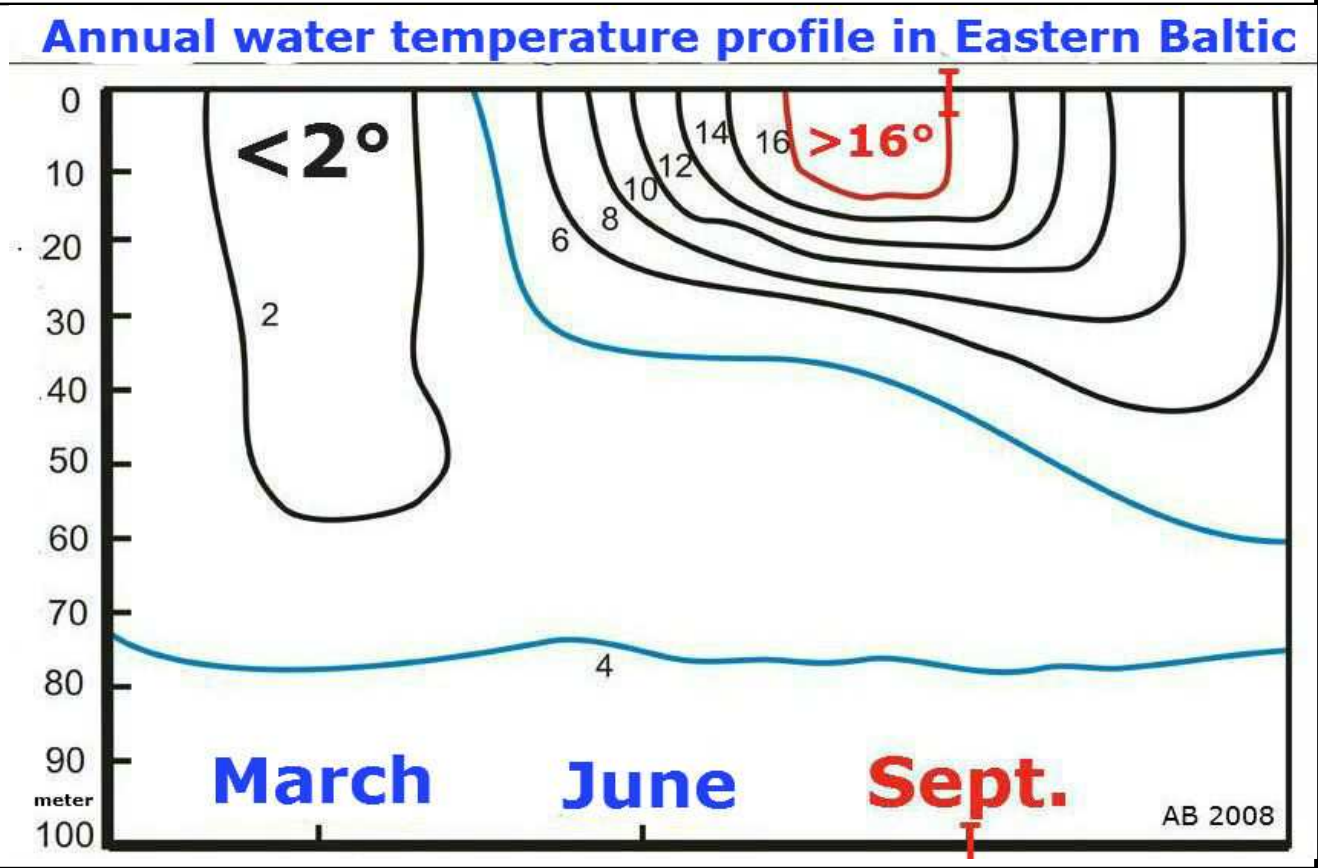
Over a year and four seasons the water temperature vary at the

- surface between 0° and 20°C (SST), and
- between 20°C and 4° C from top to bottom,

with an average depth of about 53 meters, and at some locations with more than 150 meter depth.

The basic rule is simple:

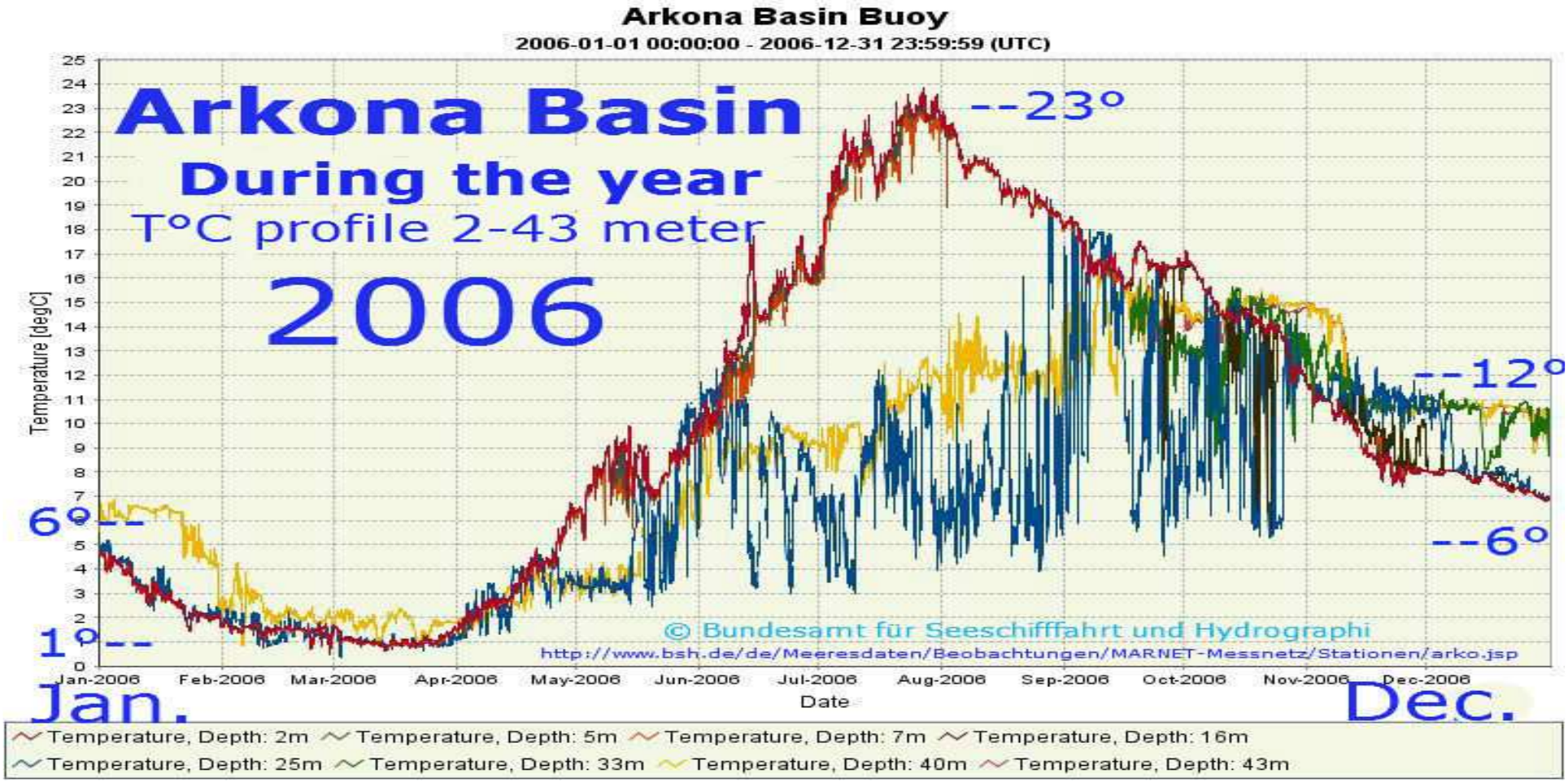
In late August the Baltic reaches it‘s highest heat capacity, and reacts to high activities in the marine environment like a baby-bath tube, a hot coffee pot or soup:



The more it is stirred,

the faster it cools off.

Seasonal water profile: Southern Baltic (NNE of the island Fehmarn)

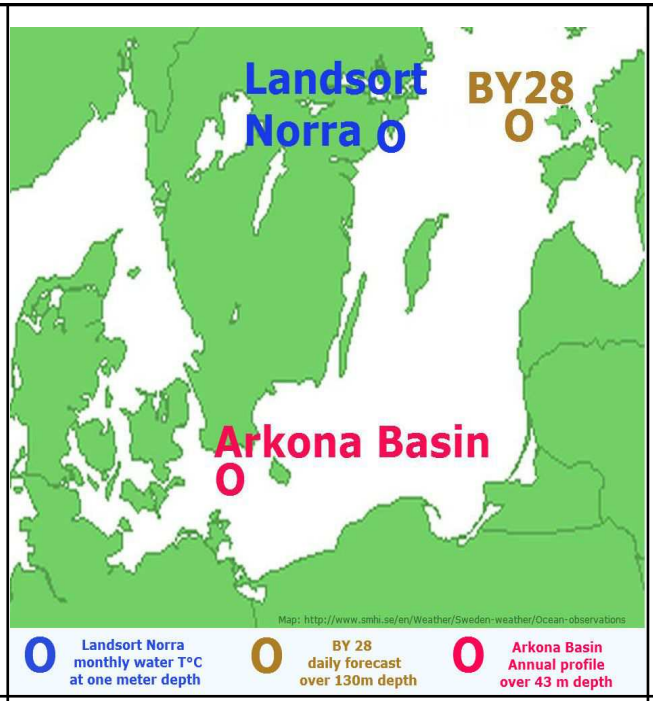


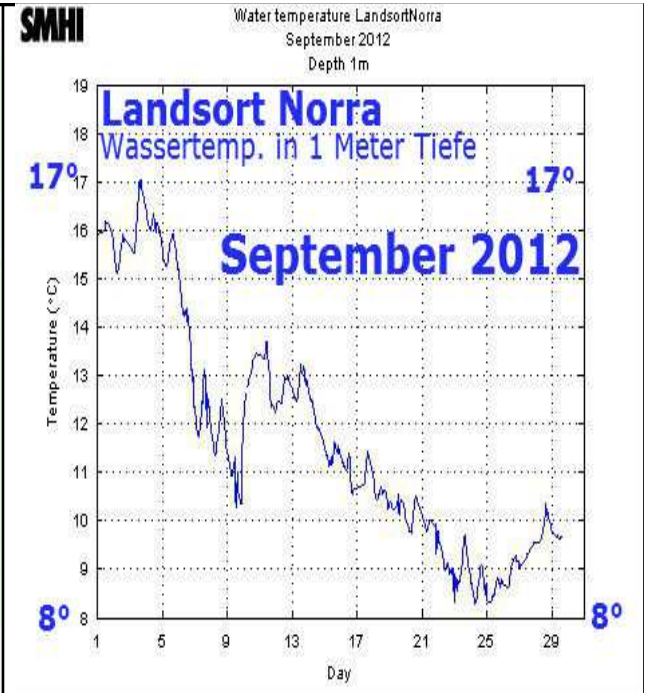
EXAMPLE:

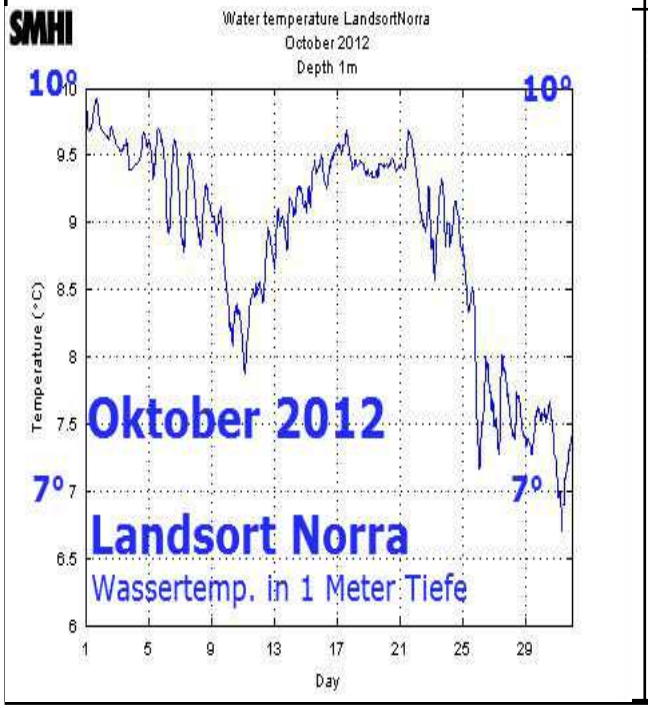
Landsort/Sweden

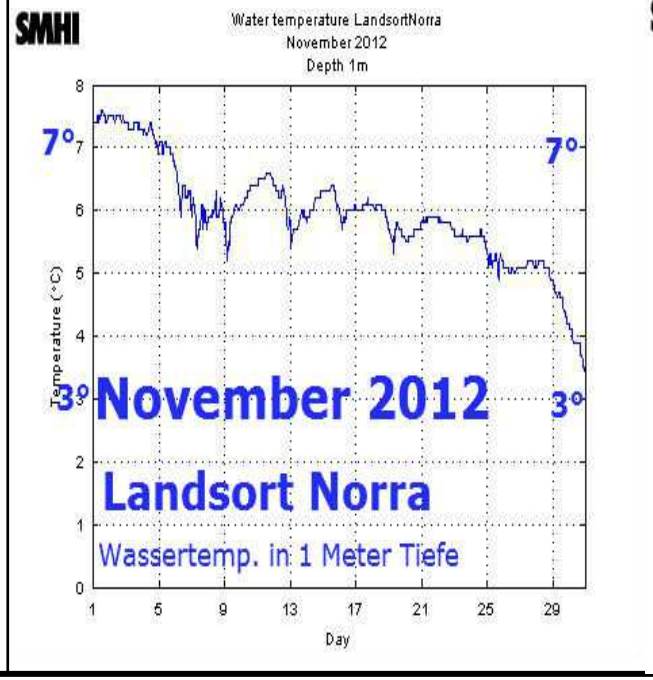
-SW of Stockholm –

Water temperature at one meter depth from September to December 2012

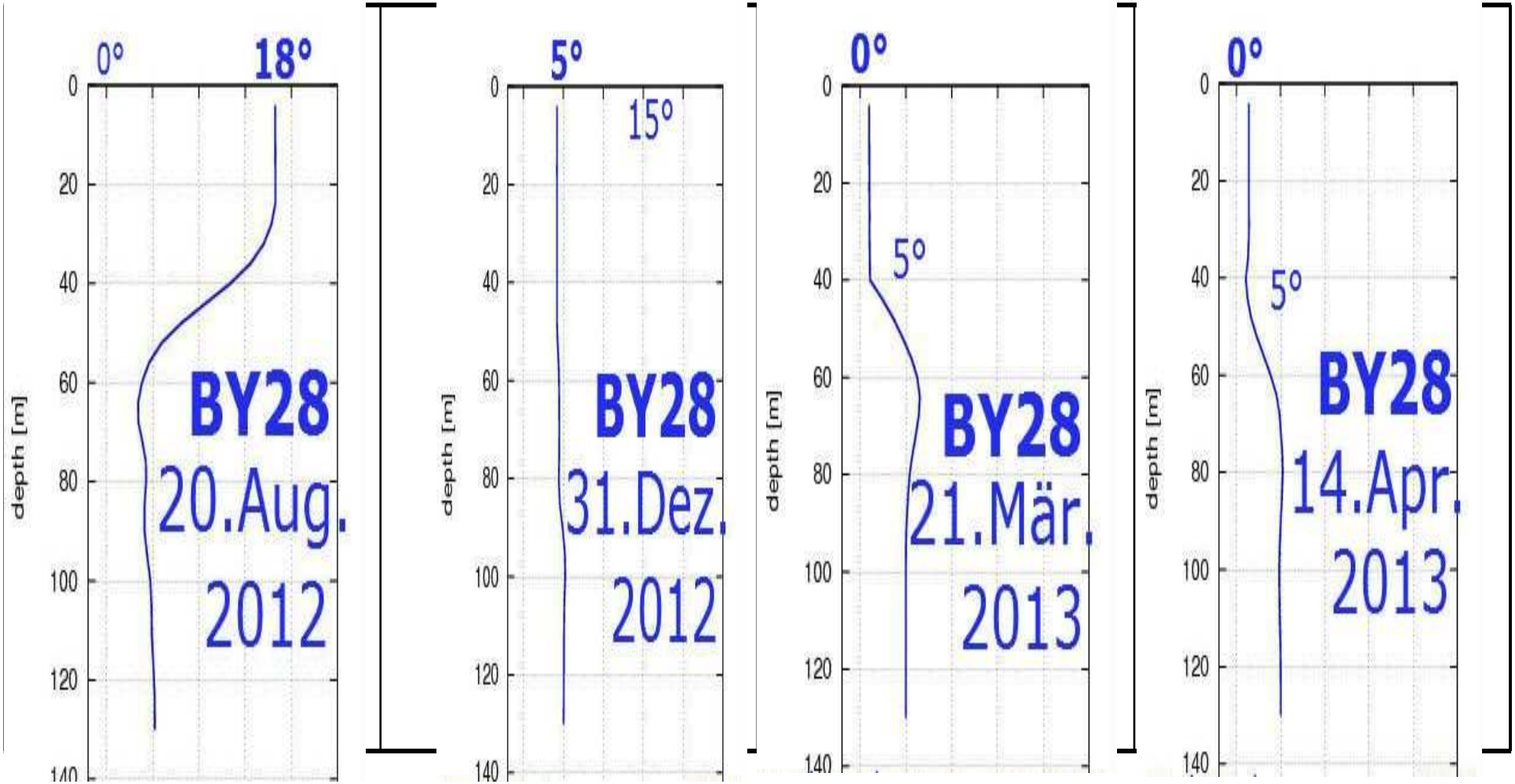




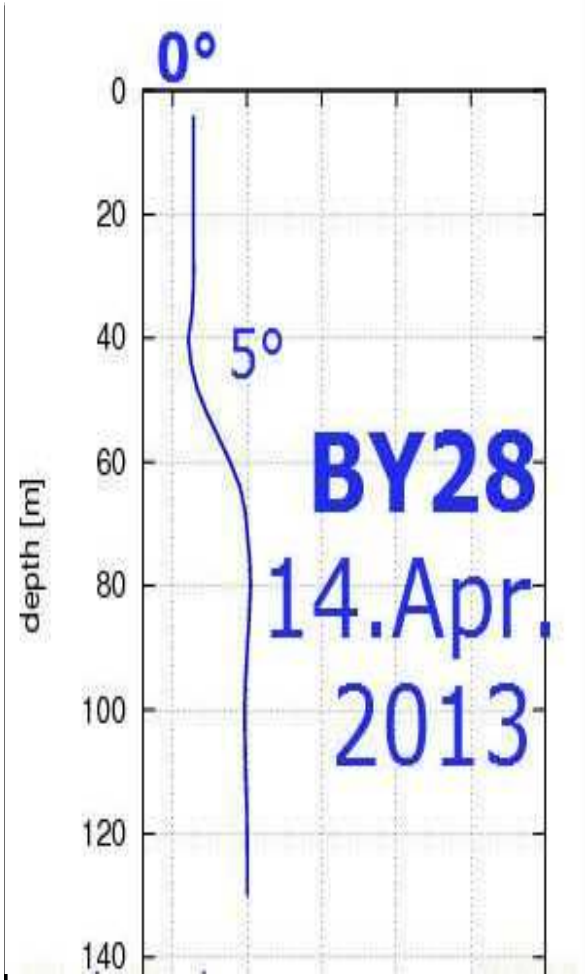




Profile over 130 m at Gulf of Finland entrance during winter season.



Let‘s once again take a look at the remaining heat capacity of BY 28 in mid April:



__from surface to 40m it is still +2°C;

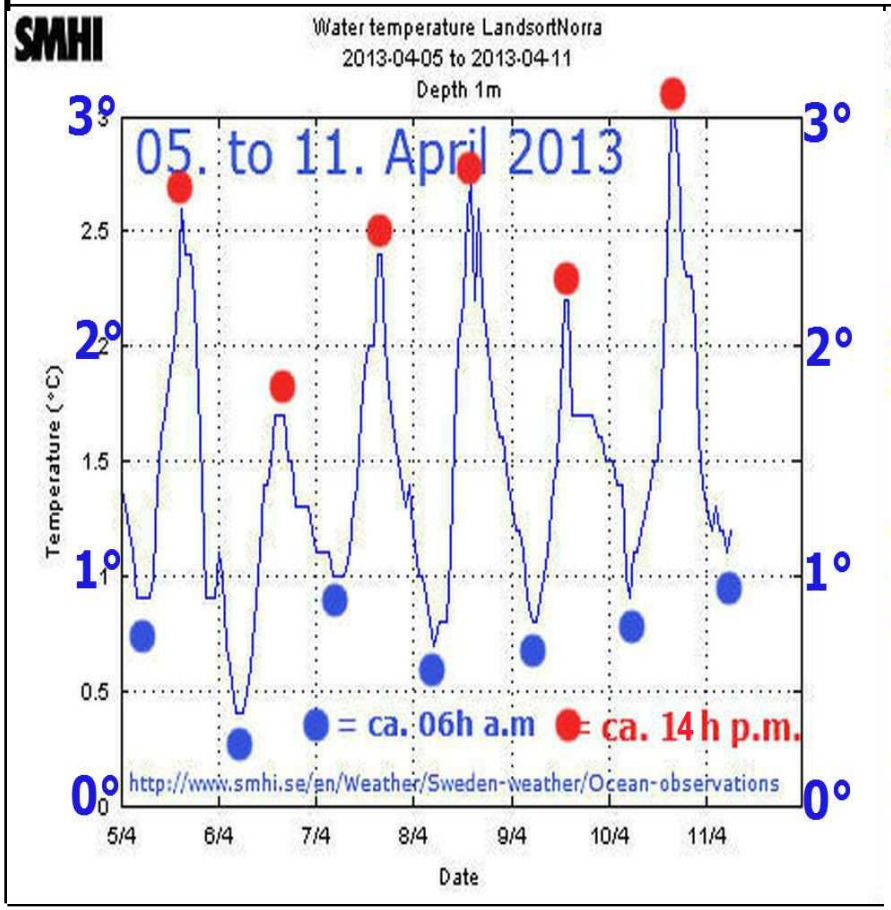
__from 40-60m about +3,5°C; and

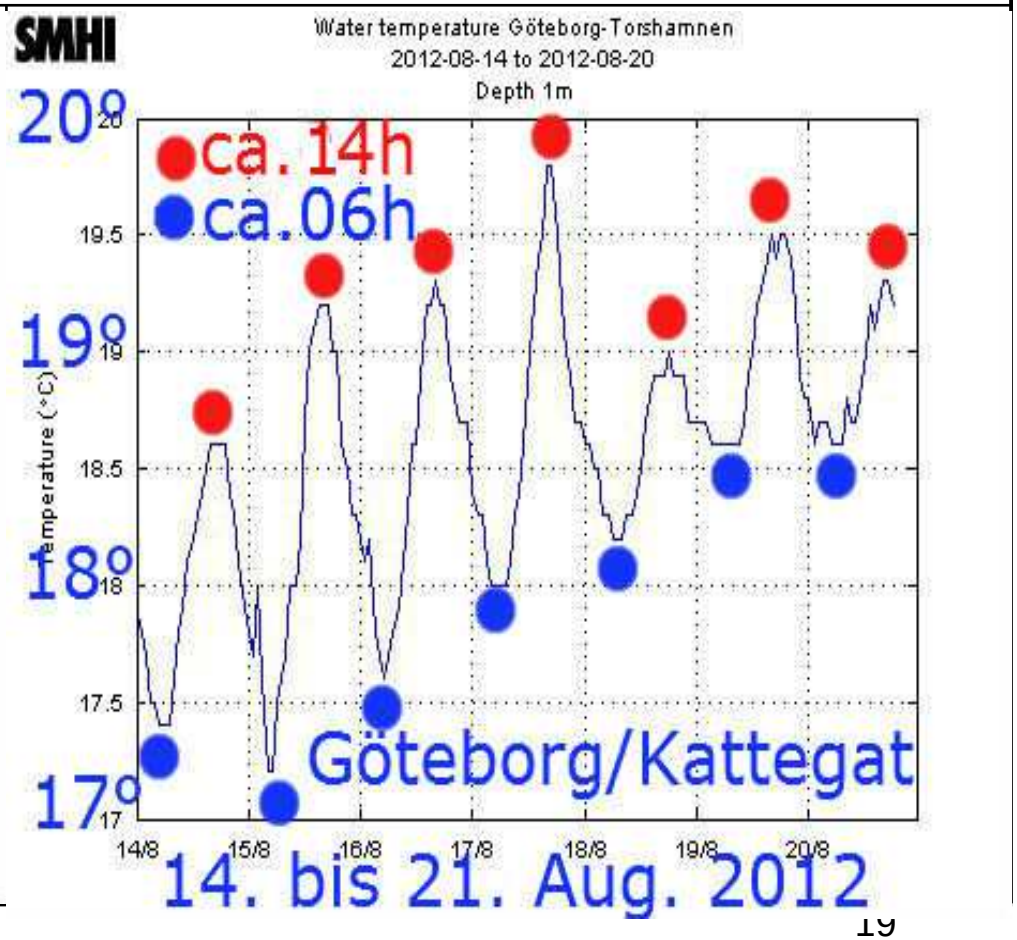
__from 60-130m +5°C.

FACT is that:

One degree heat from a three meter thick water layer is sufficient to increase the air temperature of a 10‘000 meter air column above by one degree!

How influencal the Baltic is on regional daily weather and temperatures shall be demonstrated with one week observation at two stations, showing the temperature change between day and night (taken at 1m depth).





Swedish navy protect merchant ships in the Baltic Sea.
Source: Marcusroos (wikimedia commons)

Not paying attention to massive naval activities in the Baltic and other sea areas, concerning the impact on weather and climate, is irresponsible!,

Commencement of winter 1941/42 already in November did not come out of the blue. It was man made!

Gösta Liljequist **wrote the official Swedish sea ice report for winter 1941/42 (*Liljequist*, 1942). He expressed his amazement about the winter 1941/42 as follows:**

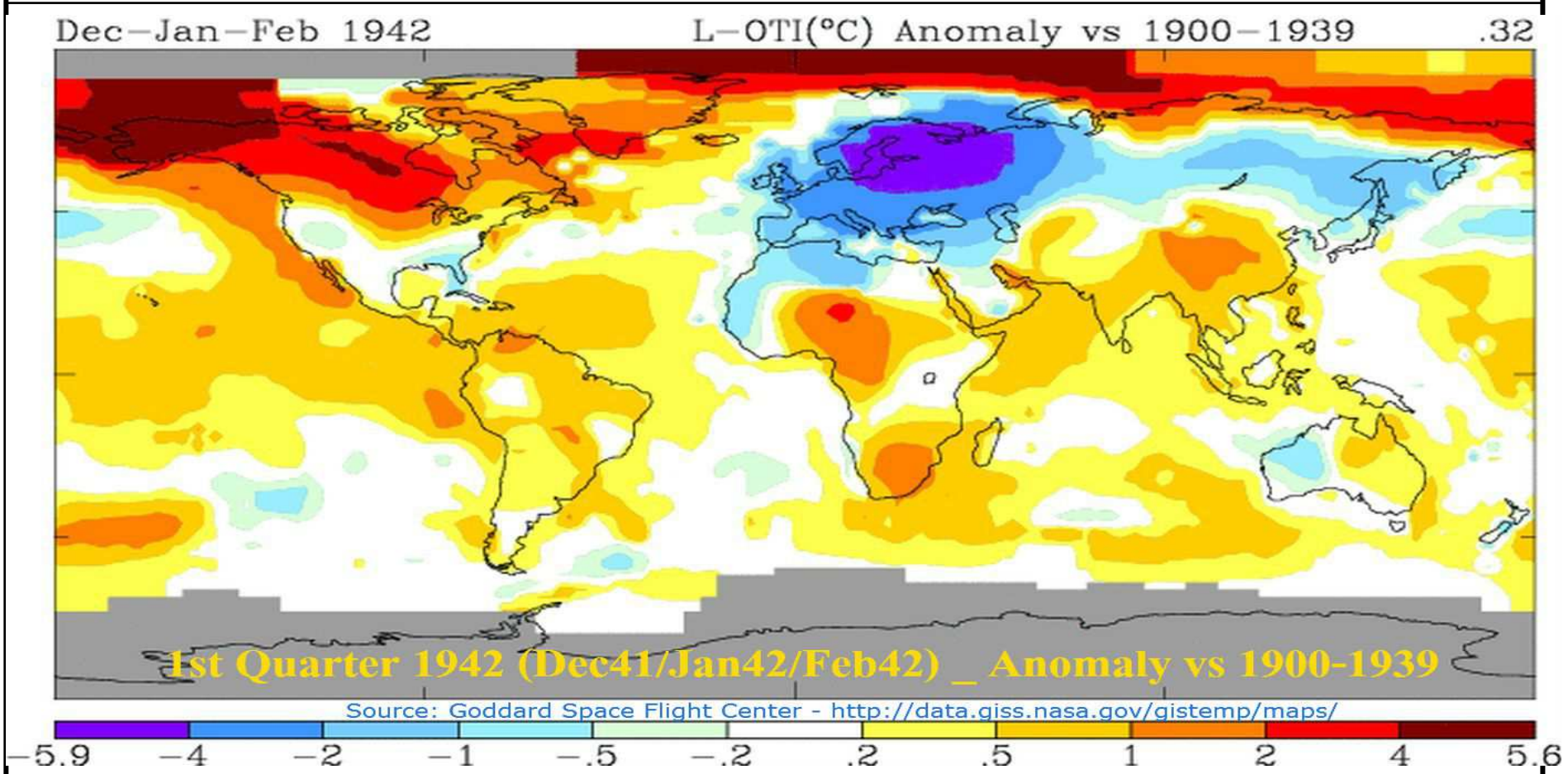
After the two hard winters of 1939/40 and 1940/41 and the difficulties they generated for shipping and the fuel supply for the country, it was awaited and expected that the winter of 1941/42 would bring the return of mild winters, which had recently predominated. Instead this winter became one of the toughest, if not the severest of all winters during the last 200 years.

Stockholm's coldest winters since 1757

Rank No	Mean temp. of Dec. – March	Mean temp. of the three coldest months	Sum of negative monthly means temp.
1	1788/89, -8.0°	**1941/42, -9.2°**	1788/89, -31.9°
2	1808/09, -7.6°	1788/89, -9.1°	1808/09, -30.5°
3	1941/42, -7.5°	1808/09, -8.7°	1941/42, -30.5°

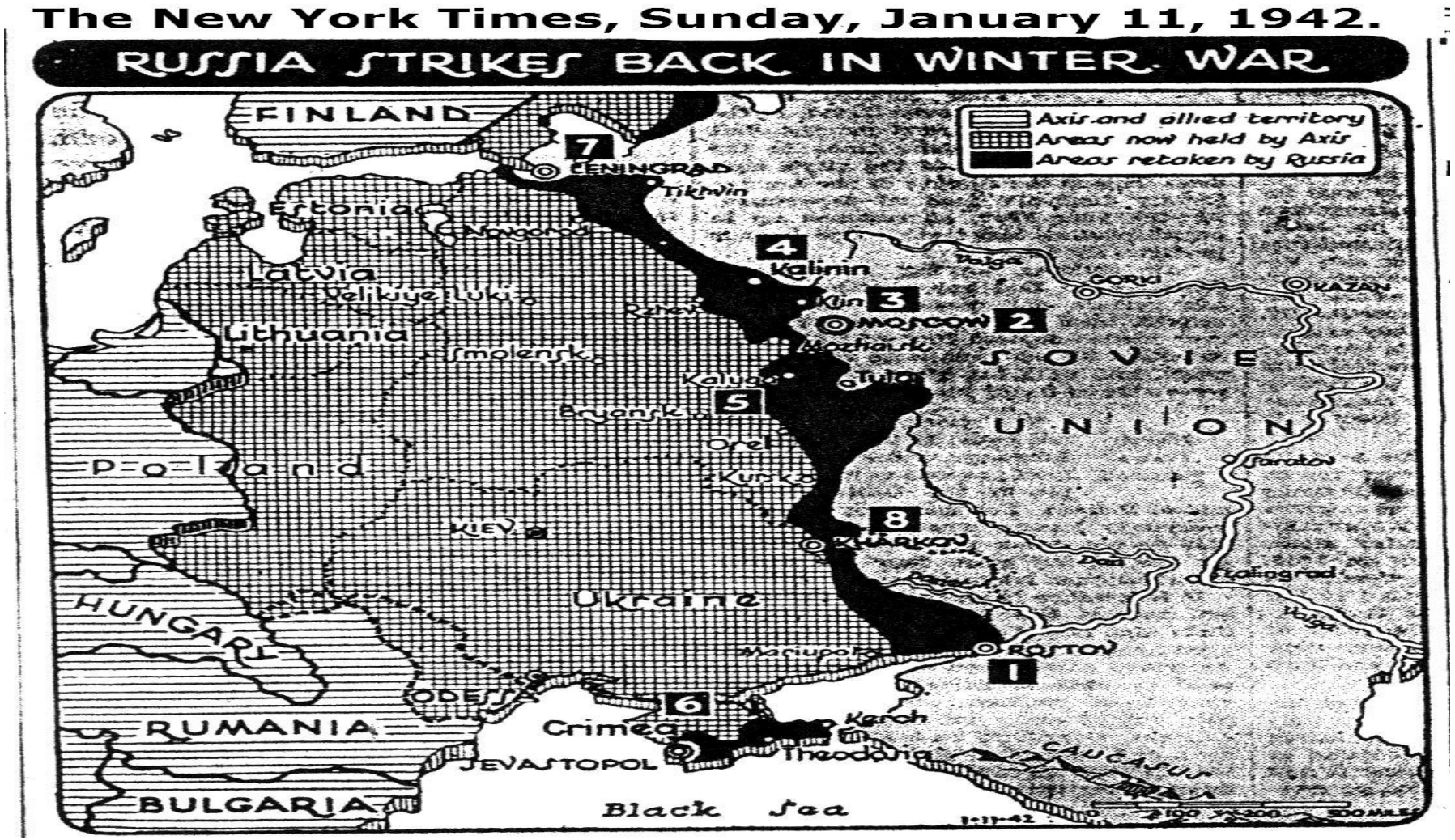
Data source: G. Liljequist, Stockholm Winters (1942) Arranged by: www.seaclimate.com/2005

The worst was still to come, and showed a cold center over the Baltic, while the world is warm!



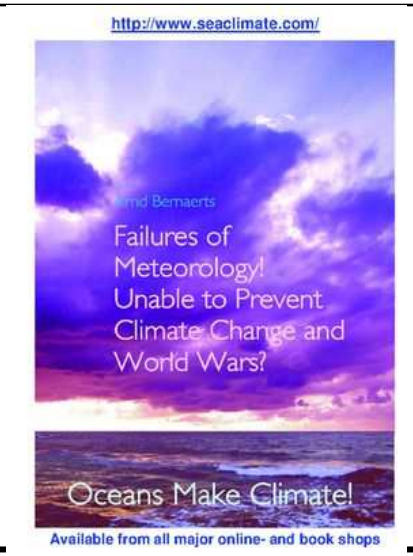
For the entire story of extreme winter 1941/42 see a further PPT-presentation, at: www.climate-ocean.com!

For the Geman Army the harsh, and early start of winter was the beginning of the end. The Soviet Union was enabled to fight back!



Many thanks for

your kind interest!



The lecture is based on the book:

Failures of Meteorology! Unable to Prevent Climate Change and World Wars?
Oceans Make Climate!

Pages: 232, about 200 figures and images, 14 color pages.Book on Demand/BoD; ISBN 978-3-8448-1284-8
online available at: http://www.seaclimate.com/

And in online-book shops, e.g. **http://www.amazon.co.uk**

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