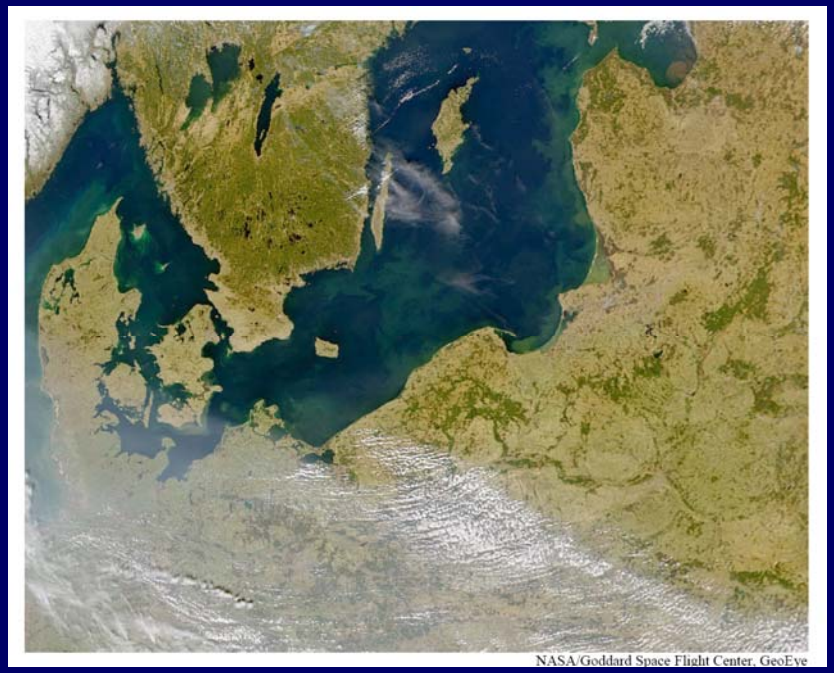
International Conference on

Climate Change

The environmental and socio-econmic response

in the southern Baltic region



University of Szczecin, Poland

25 – 28 May 2009

J. Harff[1], A. Witkowski[1], M. Reckermann[2], H.-J.Isemer[2]

[1]University of Szczecin, Poland, [2]GKSS Research Centre Geesthacht, Germany

Baltic Sea Experiment

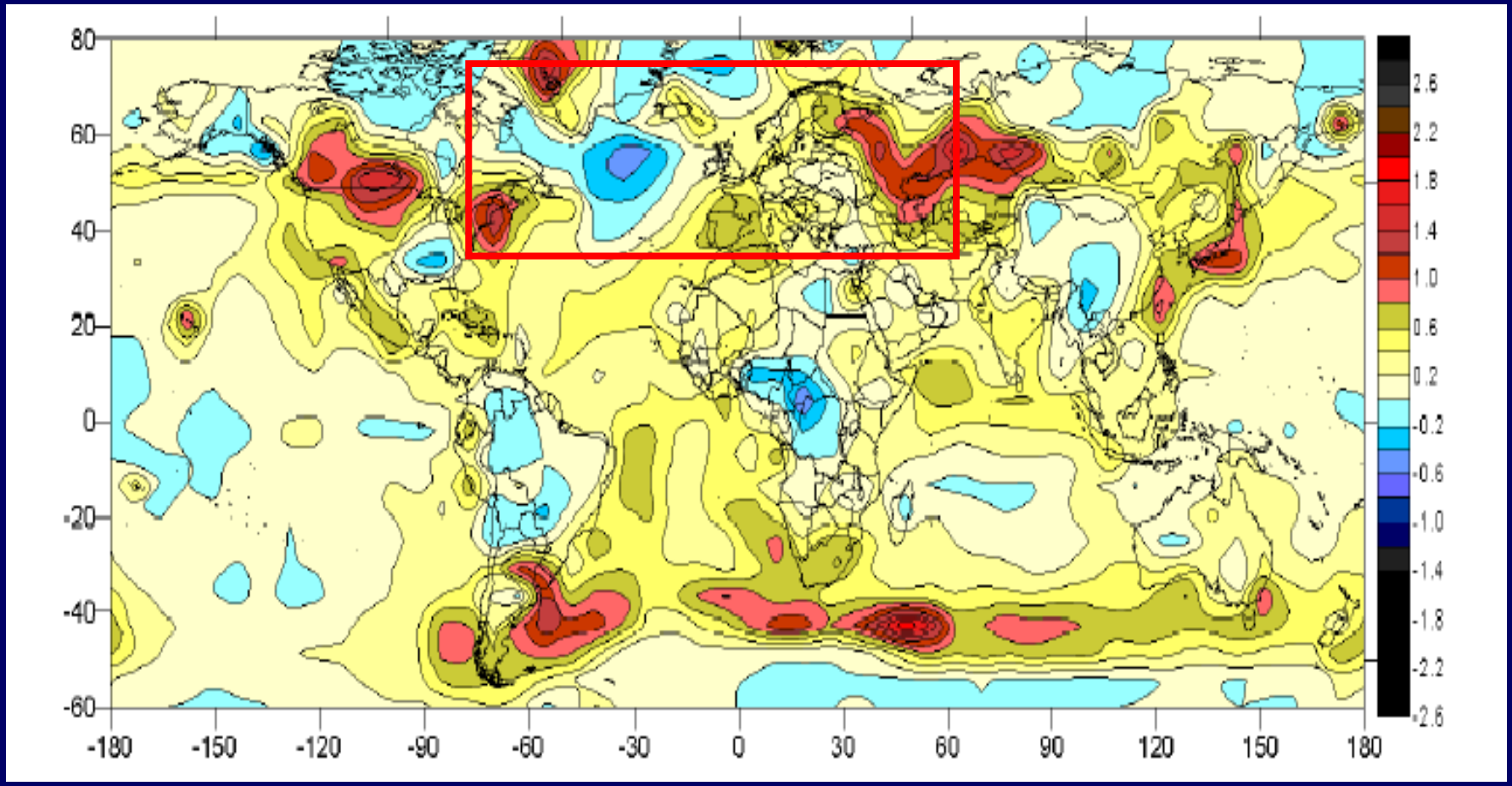
BALTEX

GEWEX

A GEWEX / WCRP Project

UNIWERSYTET SZCZECIŃSKI

Observed Trends in (near surface) Air Temperature 1891-1990 (annual averages)



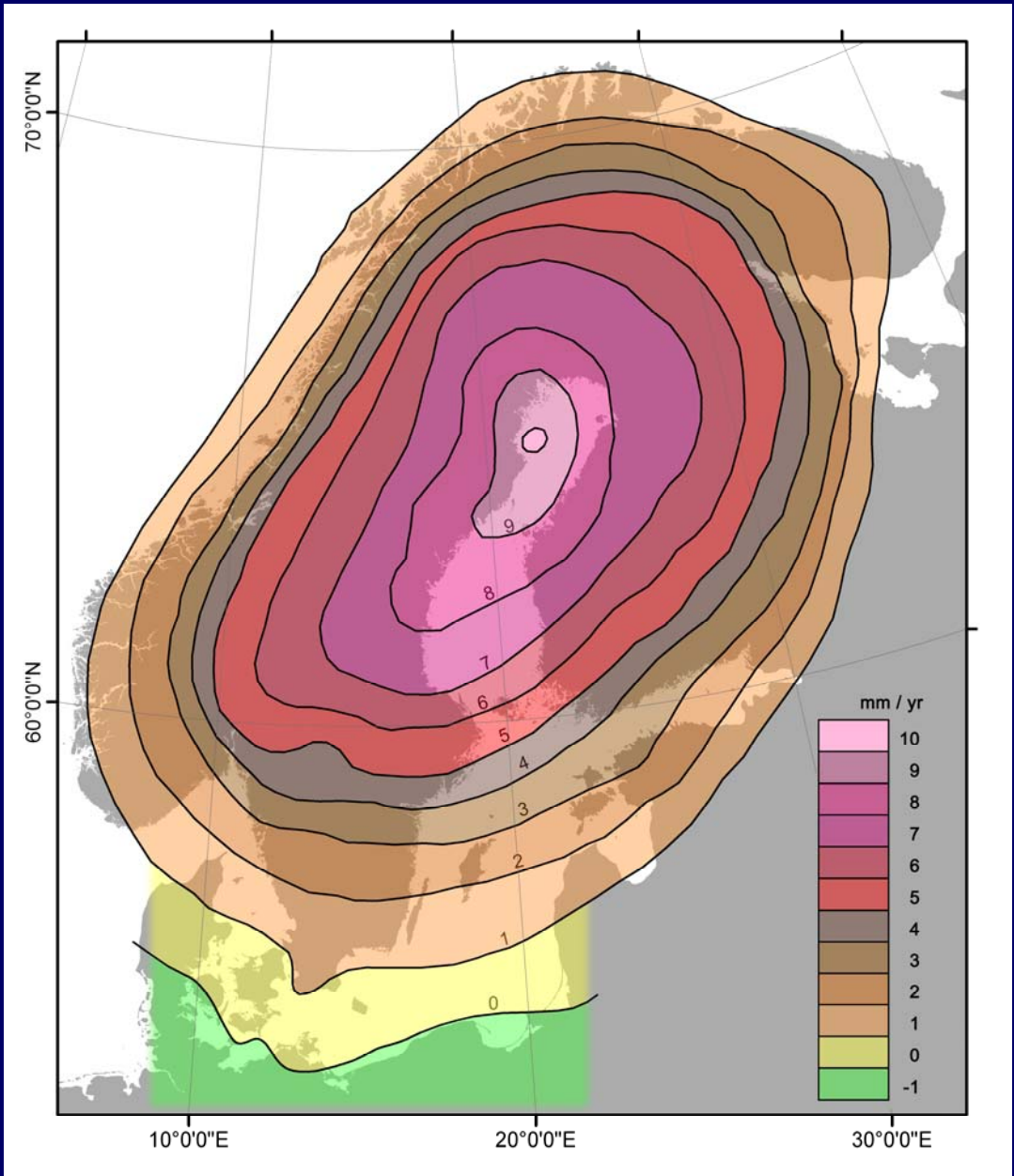
Schönwiese (2002)

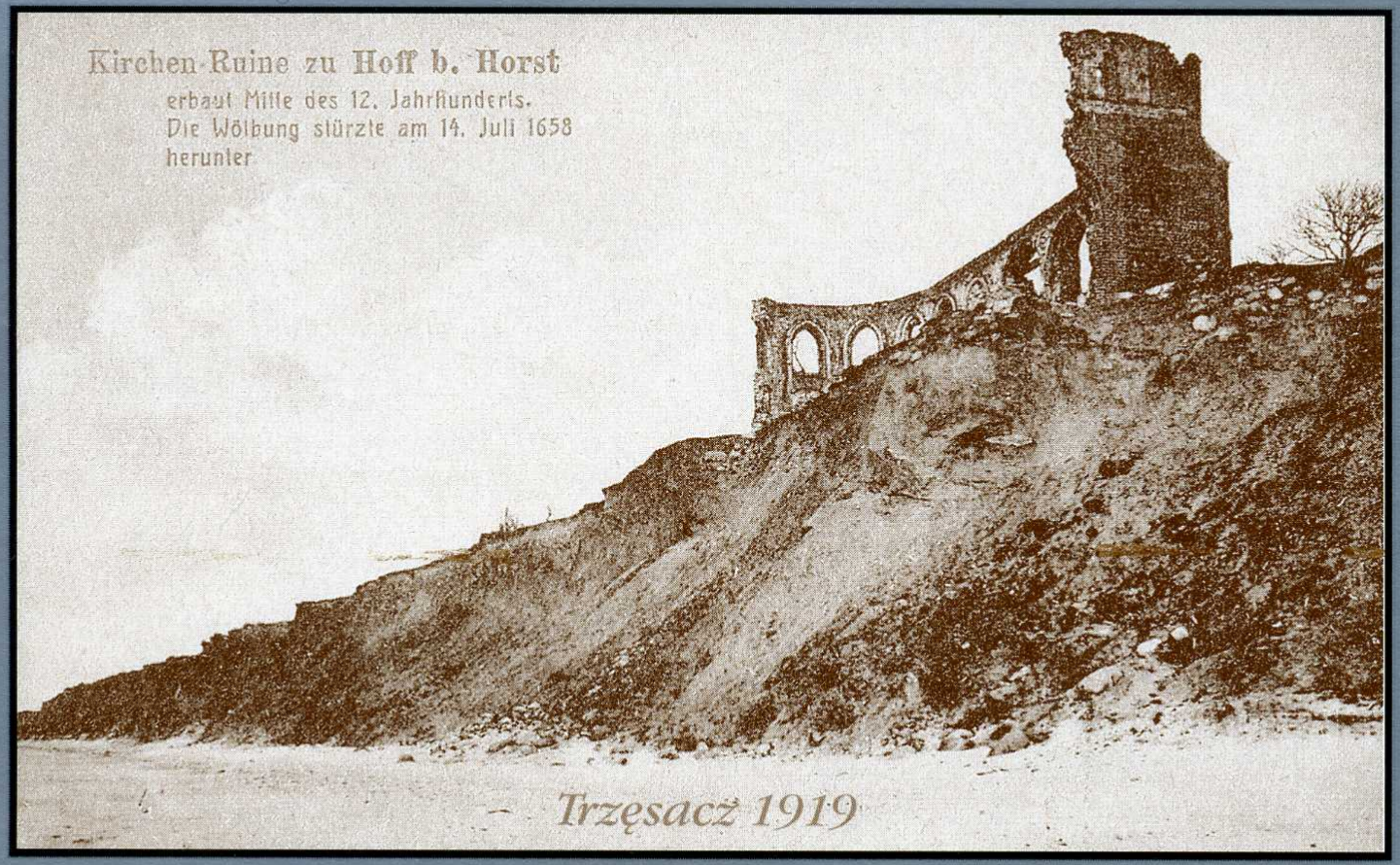
Lake Hancza

Younger Dryas/Holocene transition (palynological definition)

Core correlation in the field lab

Vertical crustal movement (mm/y)




Kirchen-Ruine zu Hoff b. Horst
erbaut Mitte des 12. Jahrhunderts.
Die Wölbung stürzte am 14. Juli 1658
herunter
Trzęsacz 1919

Coast at Wysowa, Poland, 20-22 June, 2004

Scuba diver investigating an achraeological site at an ancient coast line north of Poel Island

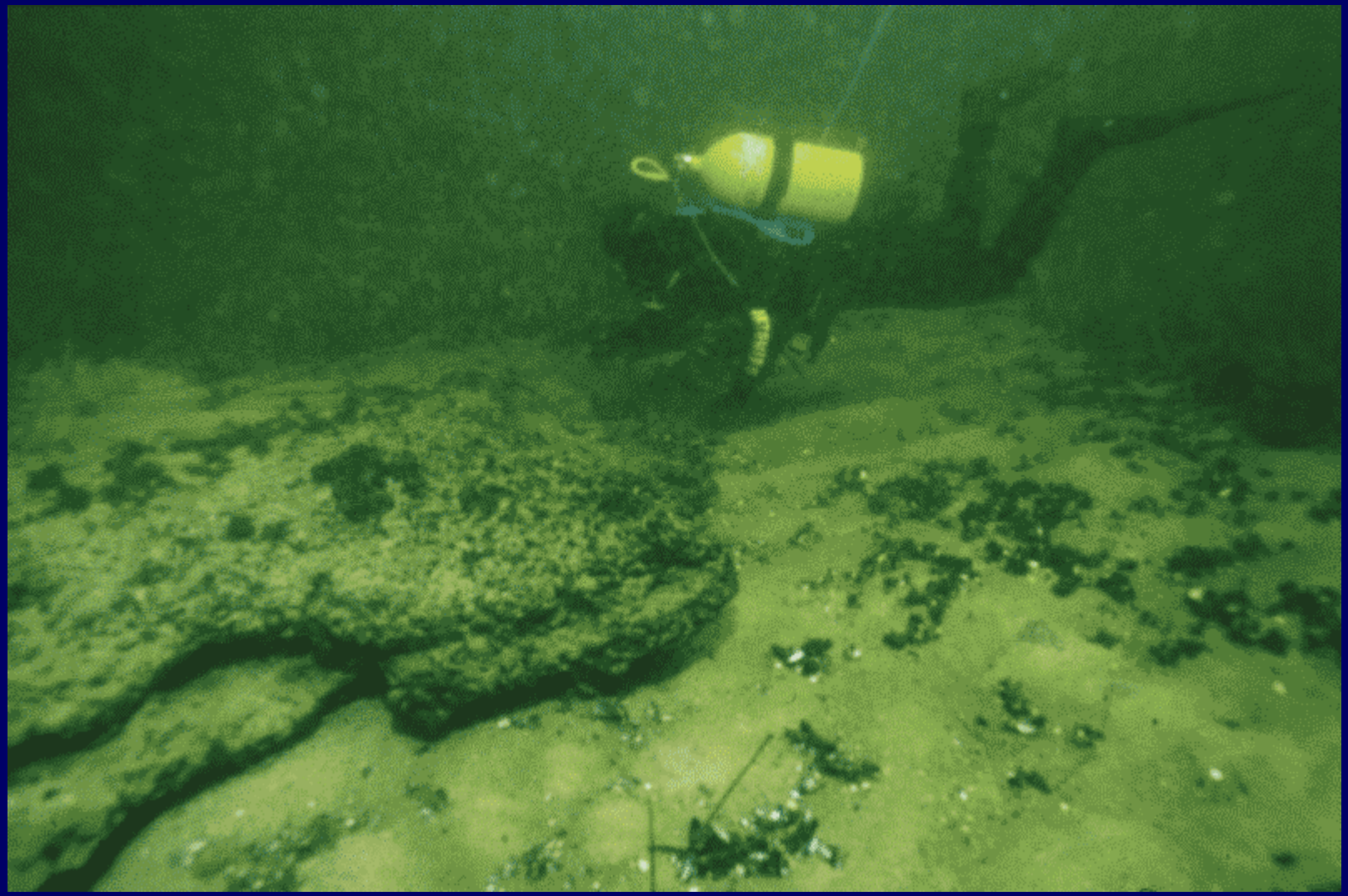


Photo: Harald Lübke

Hot Spots in the Baltic drainage basin


Assessment
of past and expected future
regional climate change in the
Baltic Sea Region
Finland
Sweden
Norway
Denmark
Belarus
Germany
Poland
Ukraine
Czech R.
GKSS
Speaker:
Hans von Storch
Sczcecin, 25. May 2009
GKSS Research Centre, Germany

Conference topics

Session A:
Marine and terrestrial proxies for reconstructions of paleo-climate

Session B:
Modeling of past climate change and future projections

Session C:
Climate and anthroposphere interactions

Session D:
Prehistoric communities and climate change

Session E:
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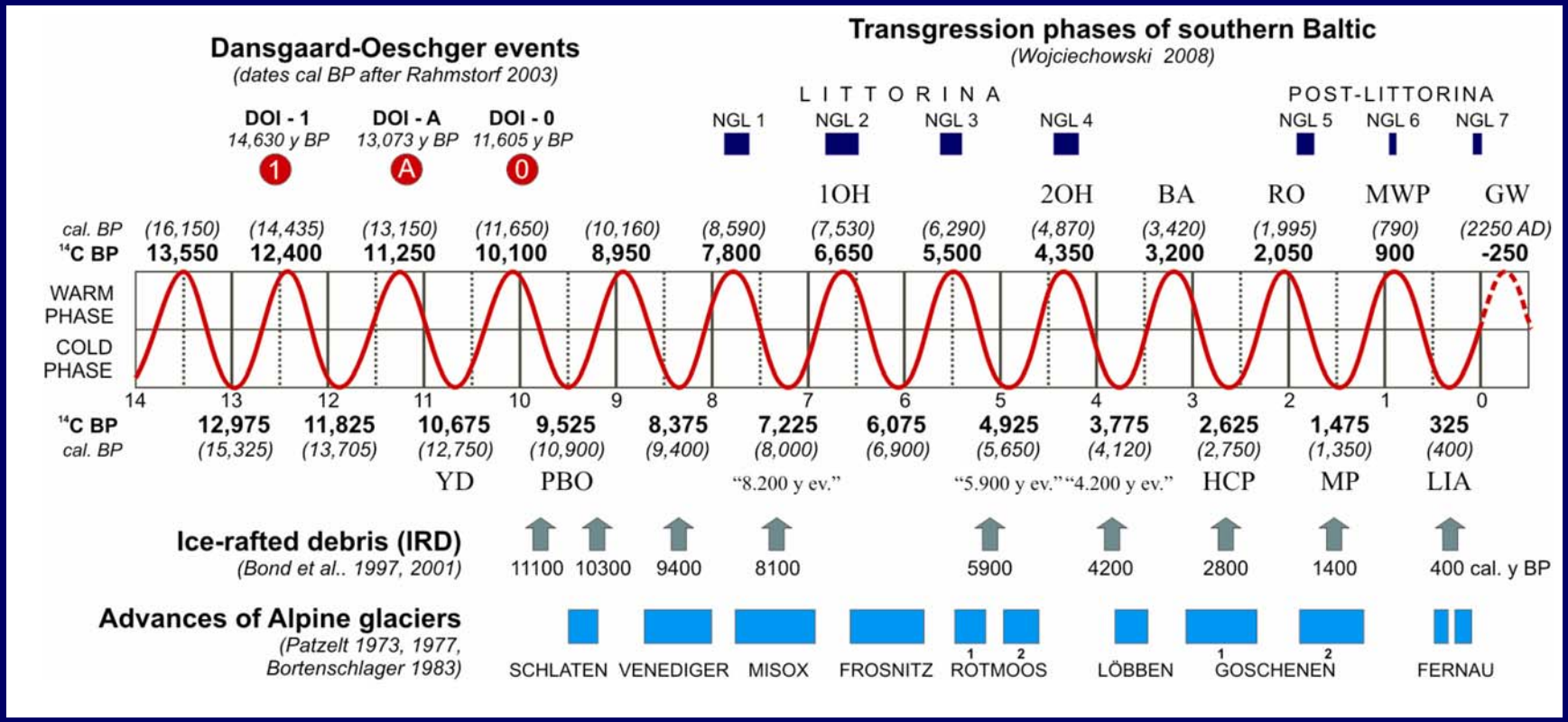
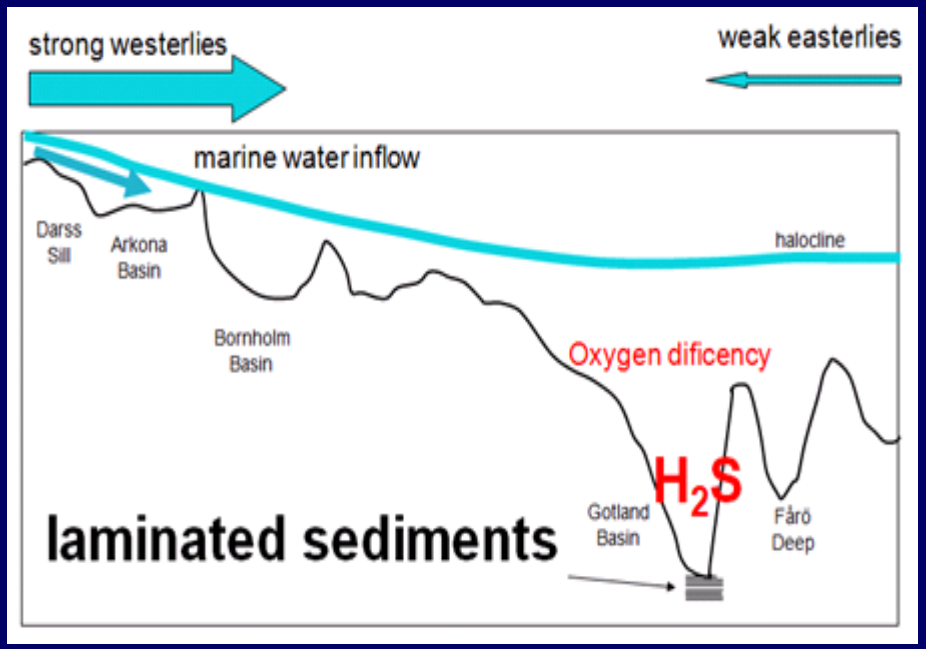
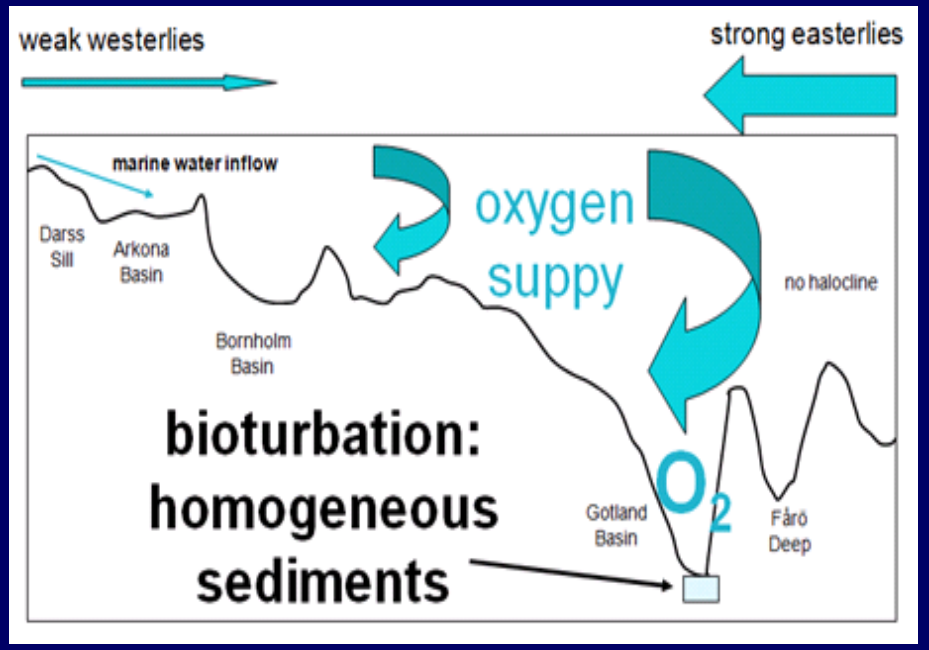
The Late-Glacial and Holocene course of the 1150 y climatic cycle after lake sediments in central Poland



Wojciechowski (2009)

Dominant wind directions and effects to the depostional environment of Baltic Sea basins





Tomczak et al. (2009)

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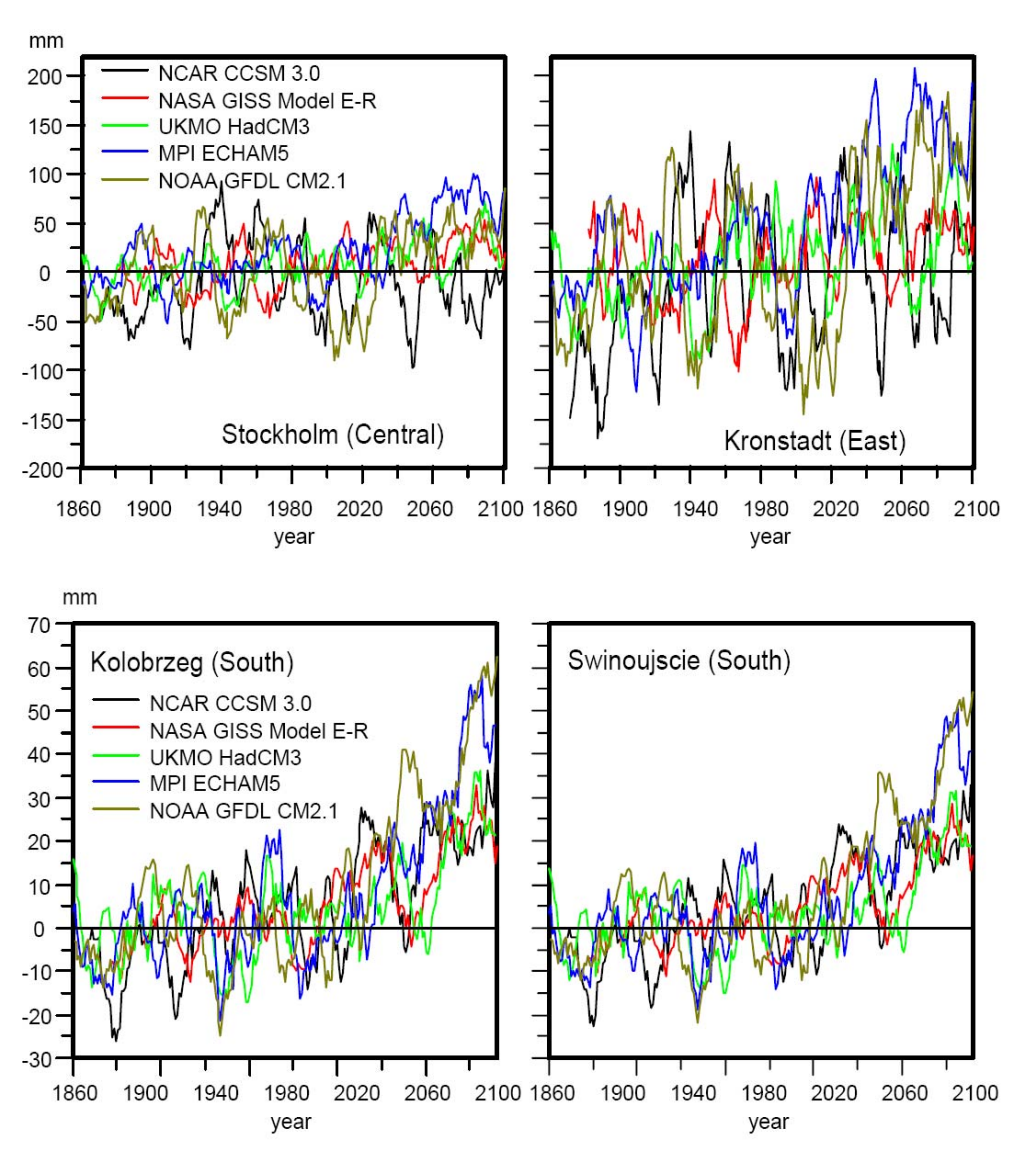
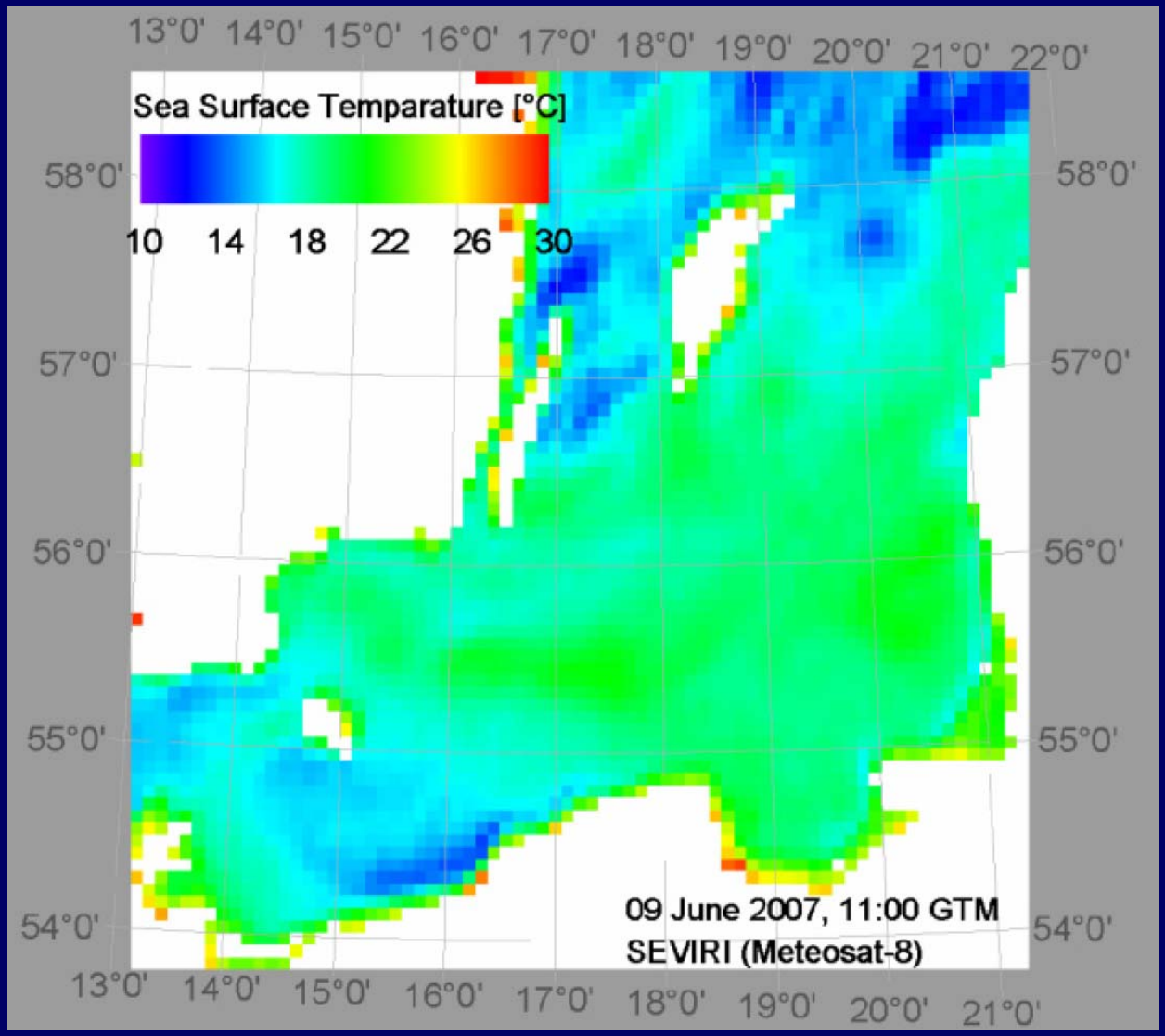
Estimations of the contribution of changes in atmospheric forcing to future winter sea-level change in the Baltic Sea

based on regression between observed sea-level as predictand and SLP (upper panels) and area-averaged precipitation (lower panels) as predictor.



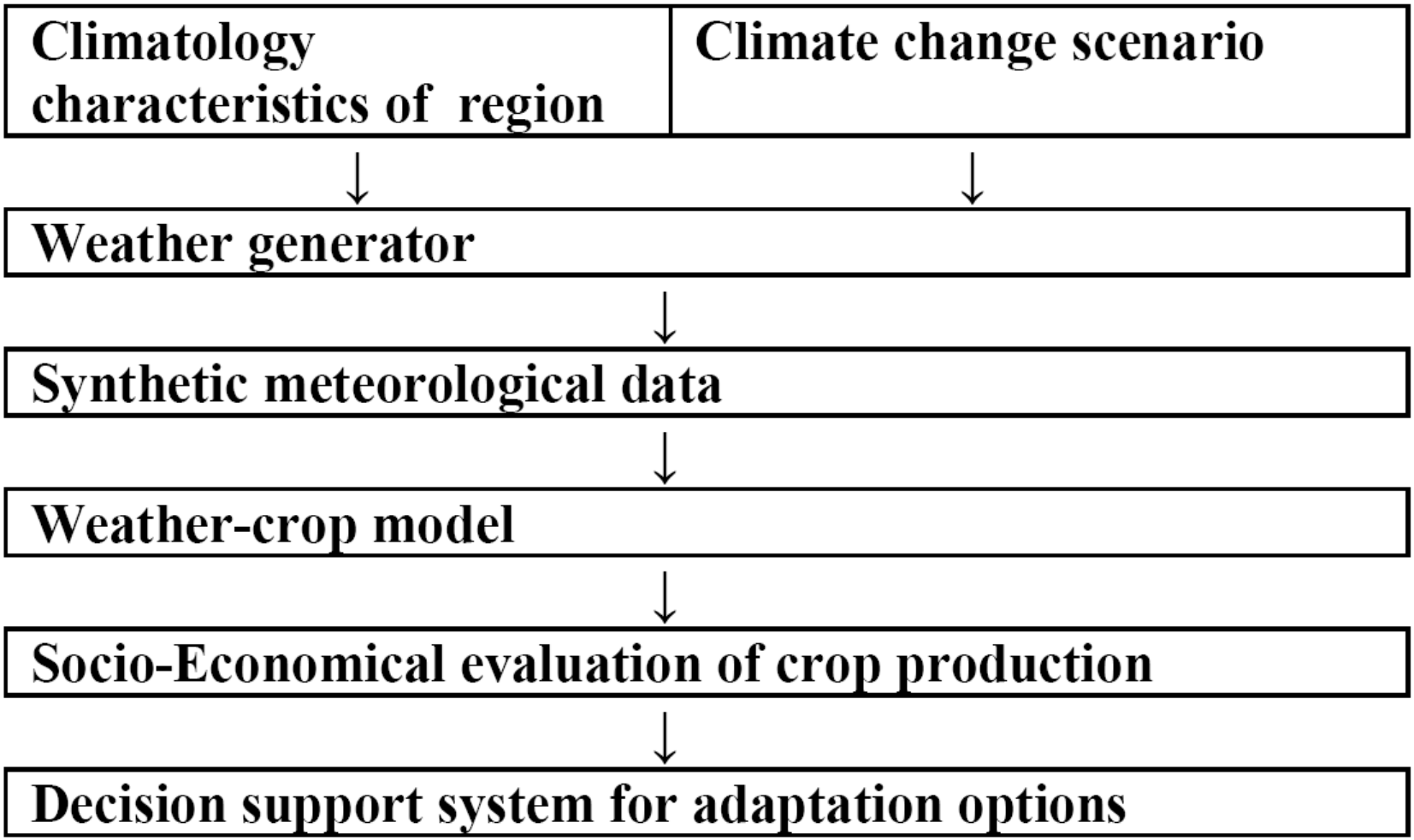
Hünicke (2009)

Sea surface temperature [°C] of the southern Baltic Sea, June, 9th, 2007, 11:00 GMT calculated on the basis of SEVIRI data



Wozniak (2009)

A tool for modelling agricultural and socio-economic response to future climate



Kuchar (2009)

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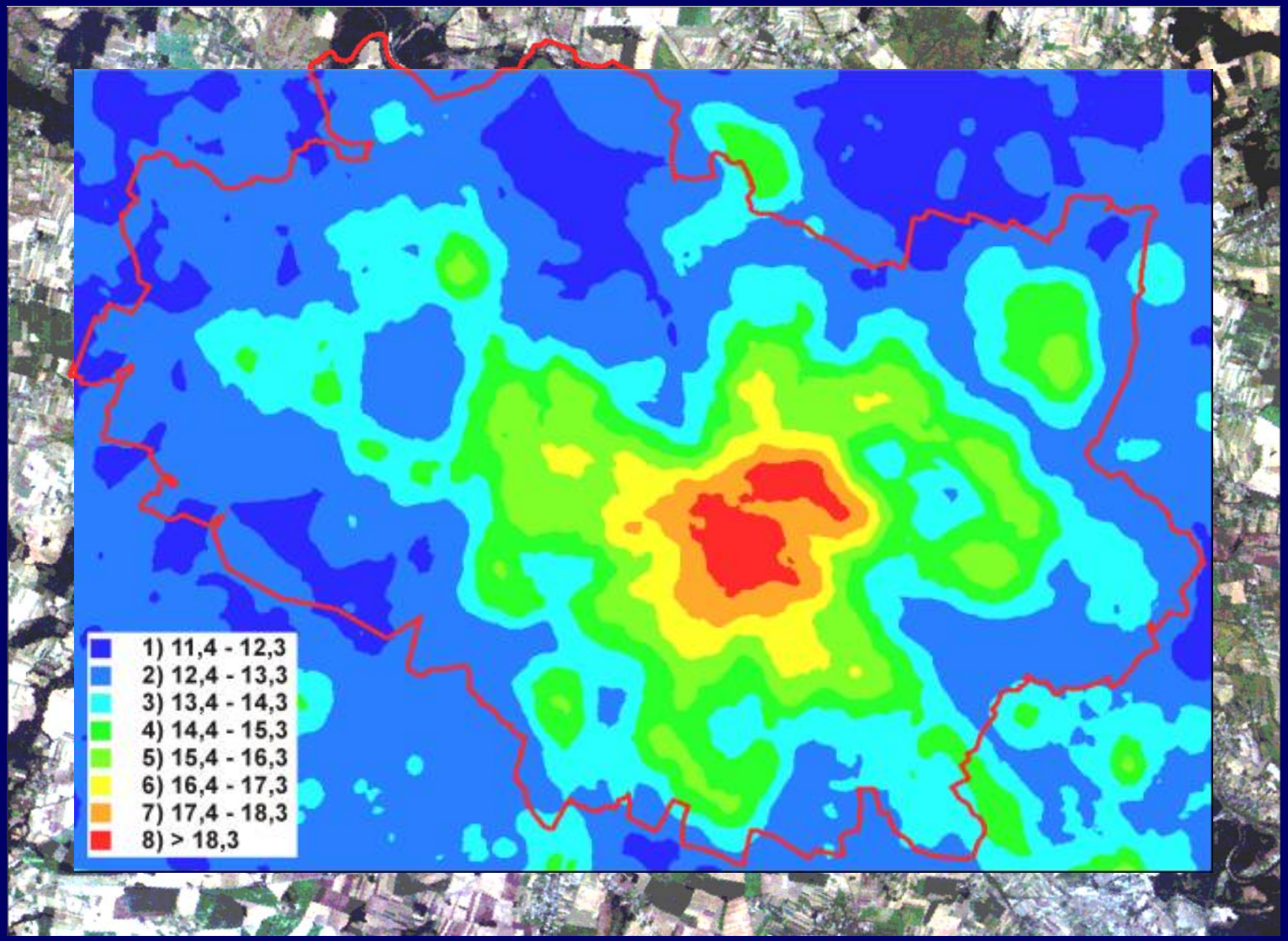
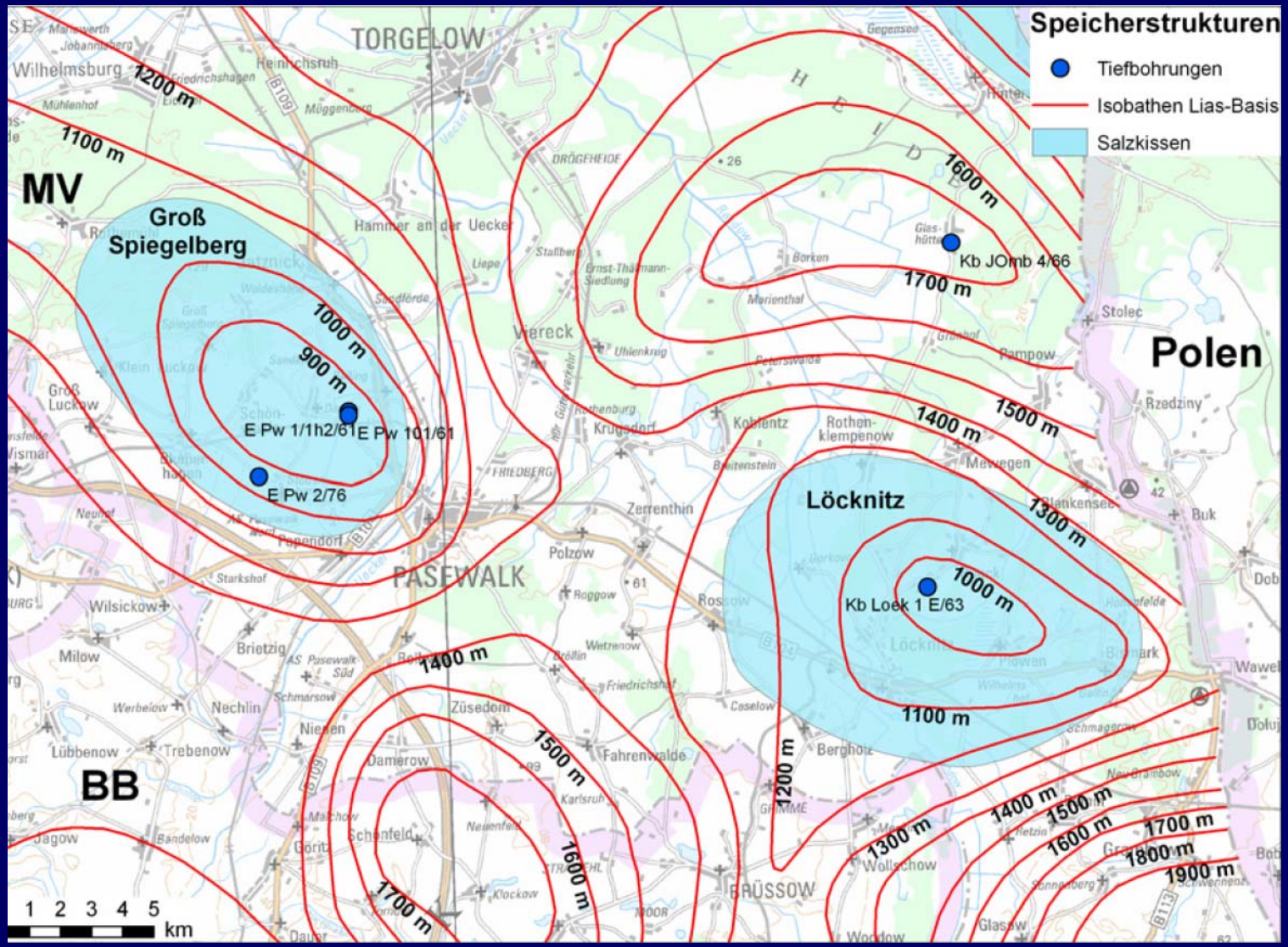
Urban heat island in Wrocław, 22/23 May 2001



Fortuniak (2009)

Two possible storage structures for carbondioxide in the Southeast of Mecklenburg-Vorpommern close to the Polish border



Niedermeyer (2009)

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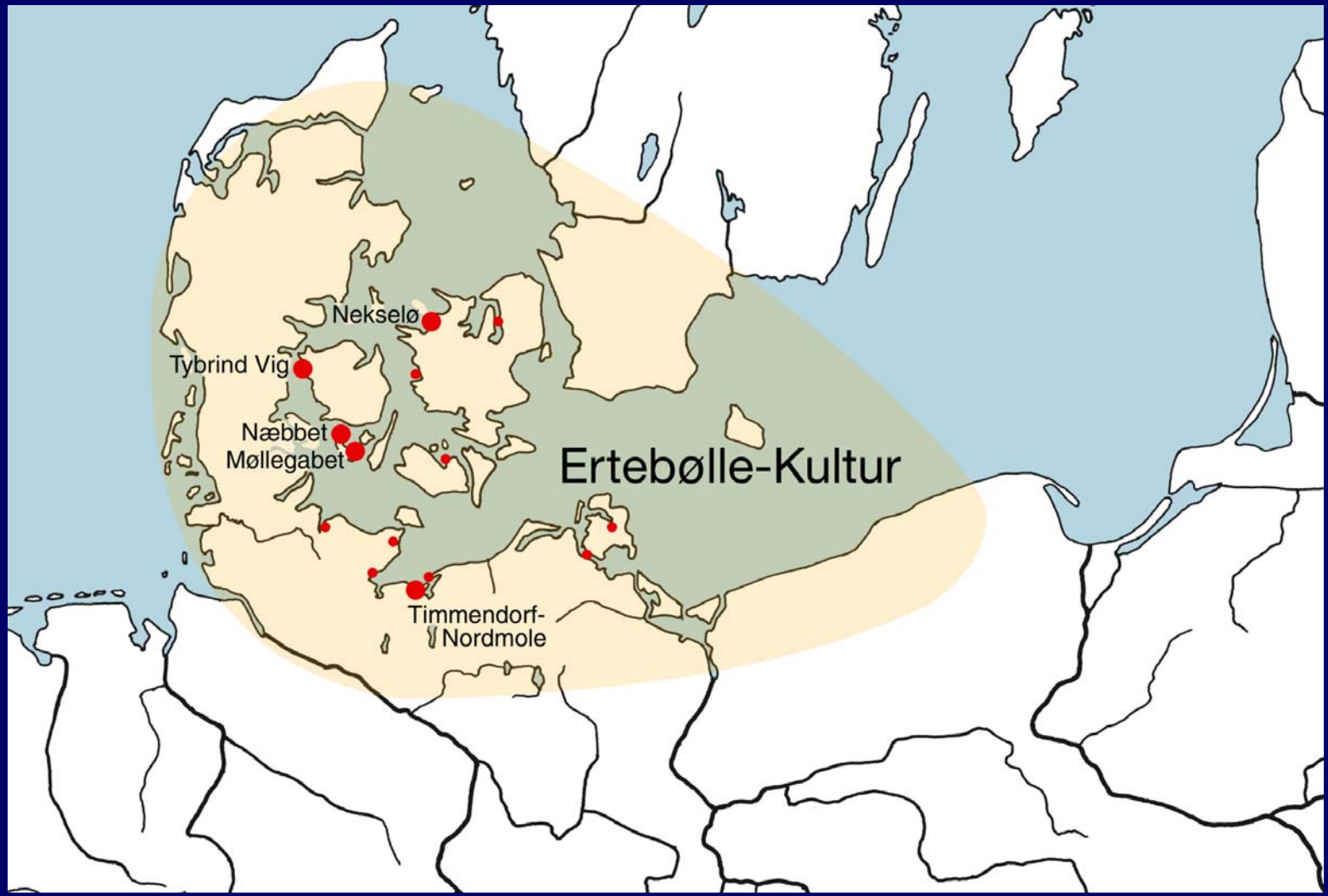
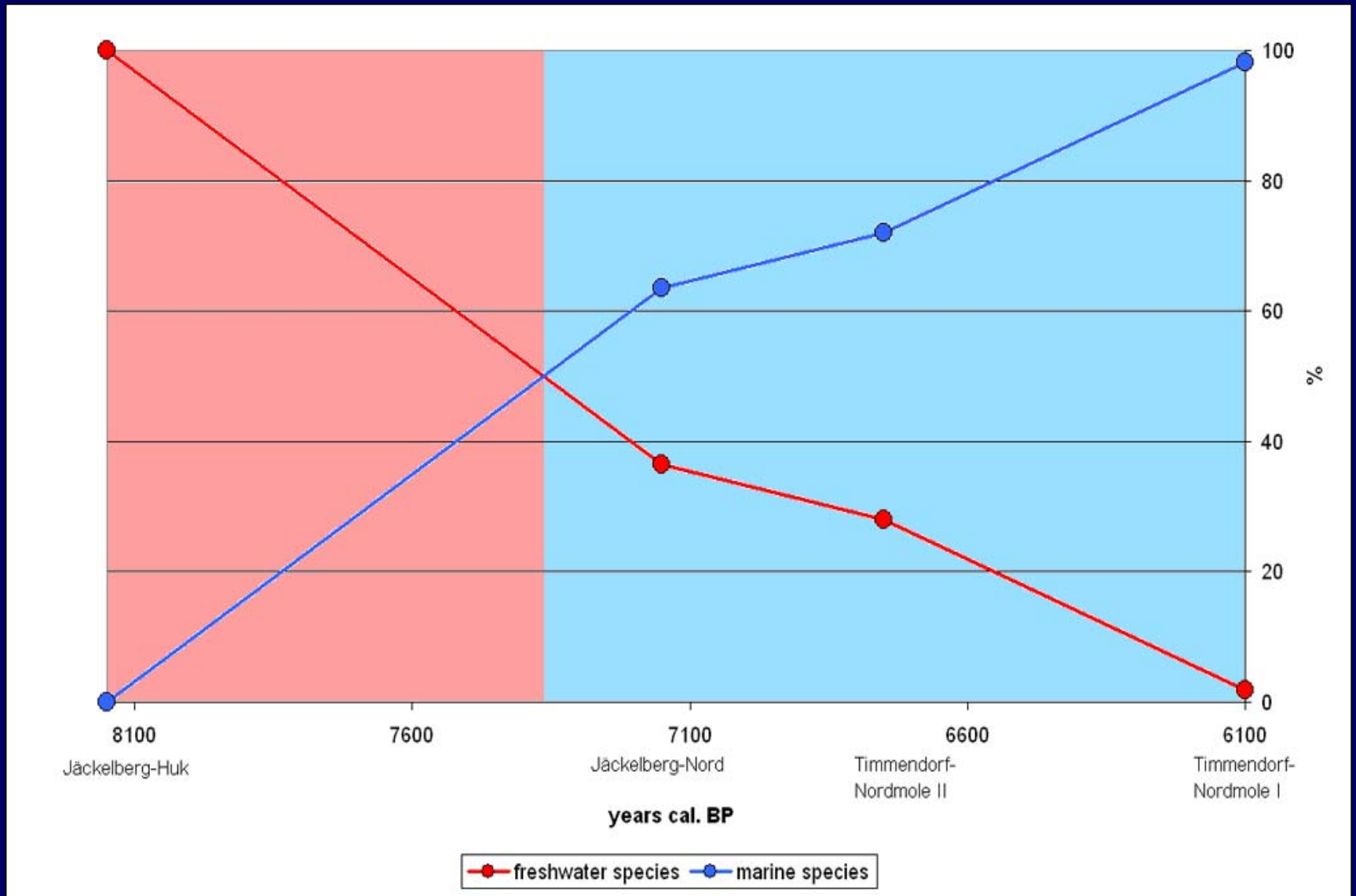
Locations of Ertebølle Culture (7.400 – 6.100 y BP)
Western Baltic Sea Region



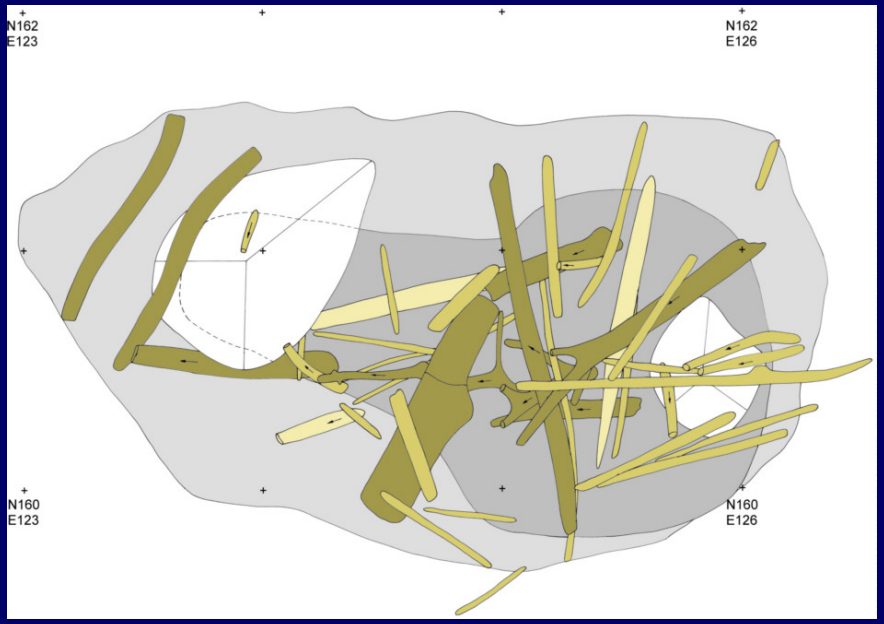
M. Wagner

Proportions of Freshwater and Marine Fish Species on Archaeological Sites, Wismar Bight, Baltic Sea



Remnants of a wooden building and reconstruction, Ertebølle Culture,

Timmendorf N-Pier, Wismar Bight



Lübke and Lüth (2009)

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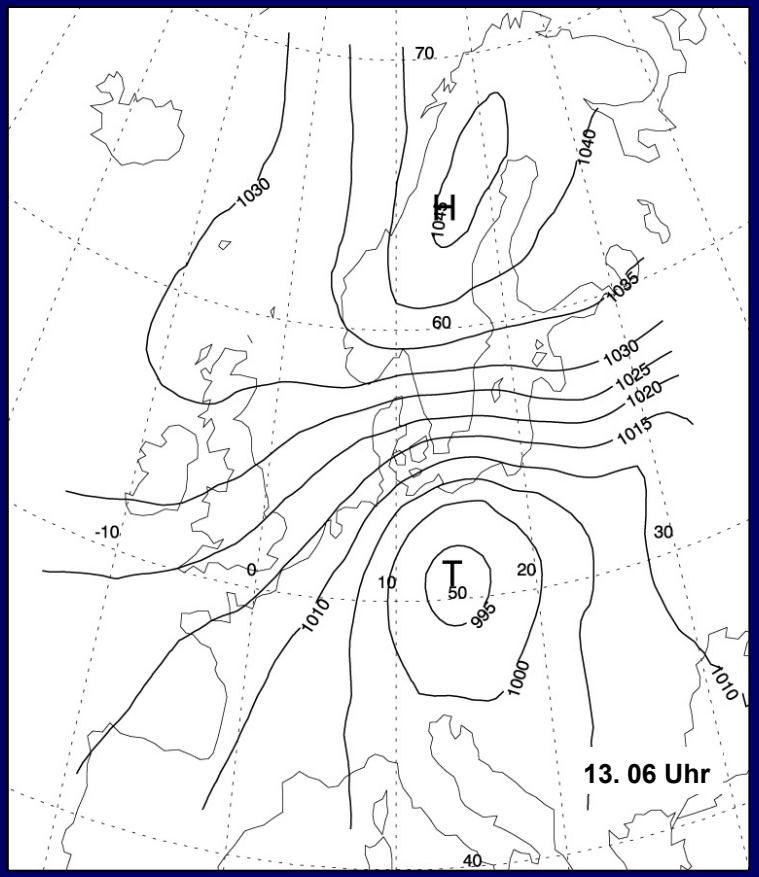
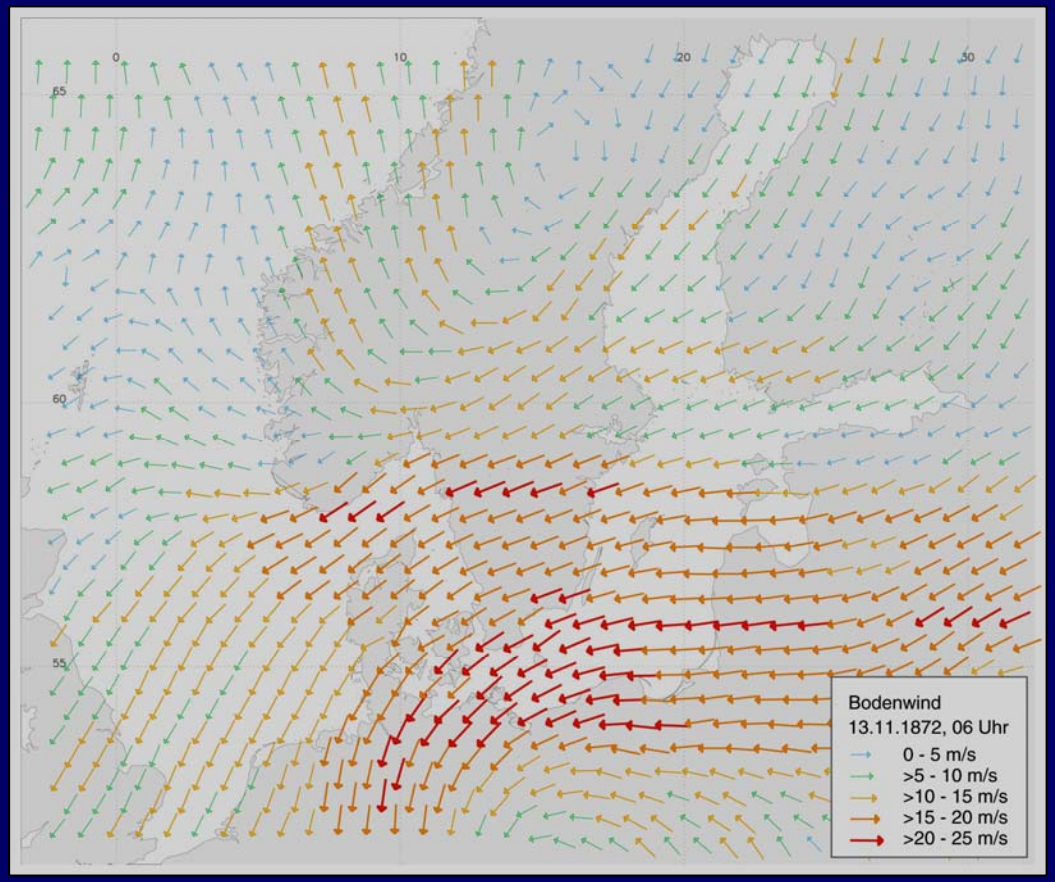
Køge Bugt 13.11.1872

(Det Kongelige Bibliotek)

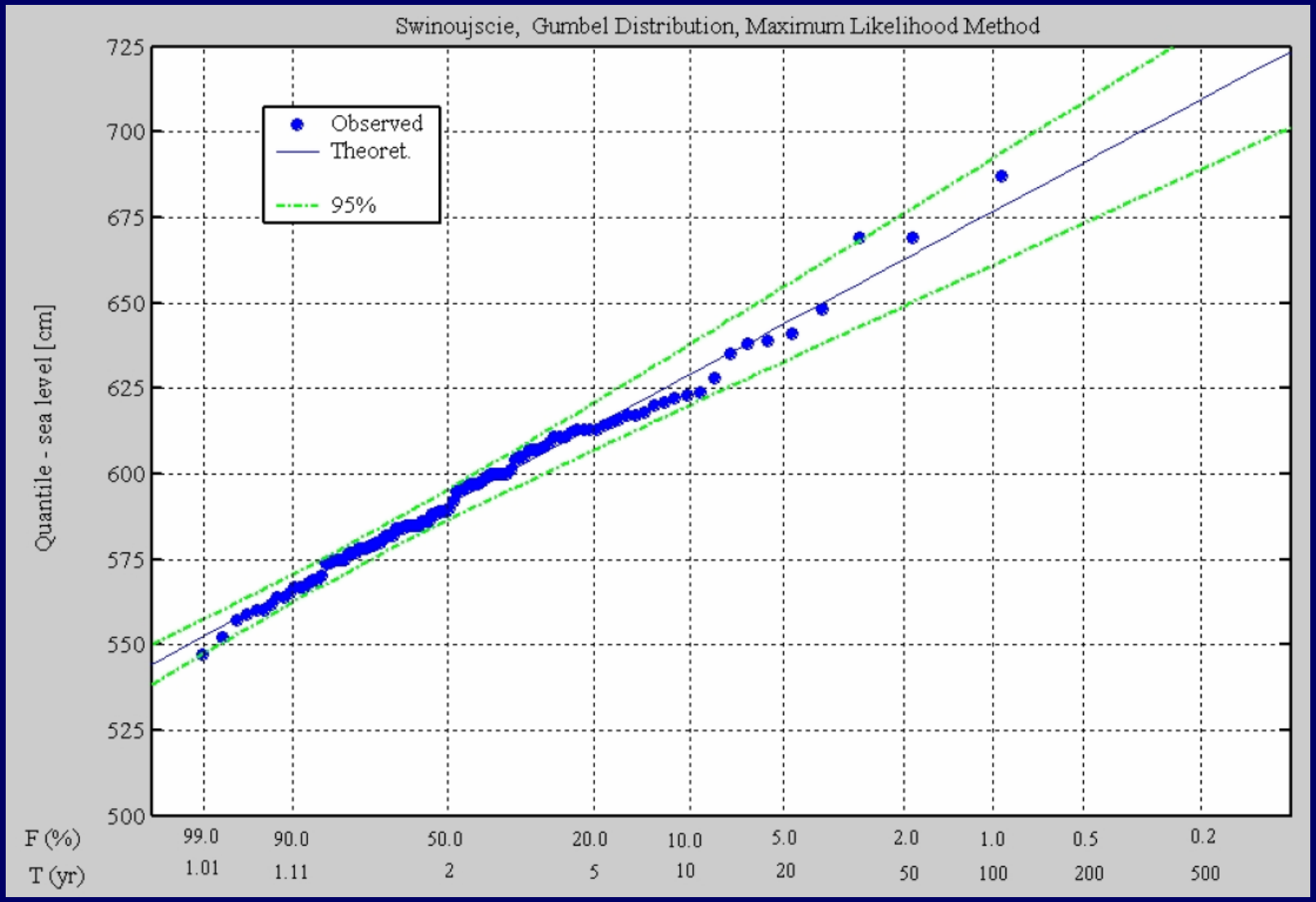
Reconstruction of atmospheric conditions on November 13,1872, by numerical modeling (air pressure: 1:06 pm (left), near bottom wind field 6:00 (right)





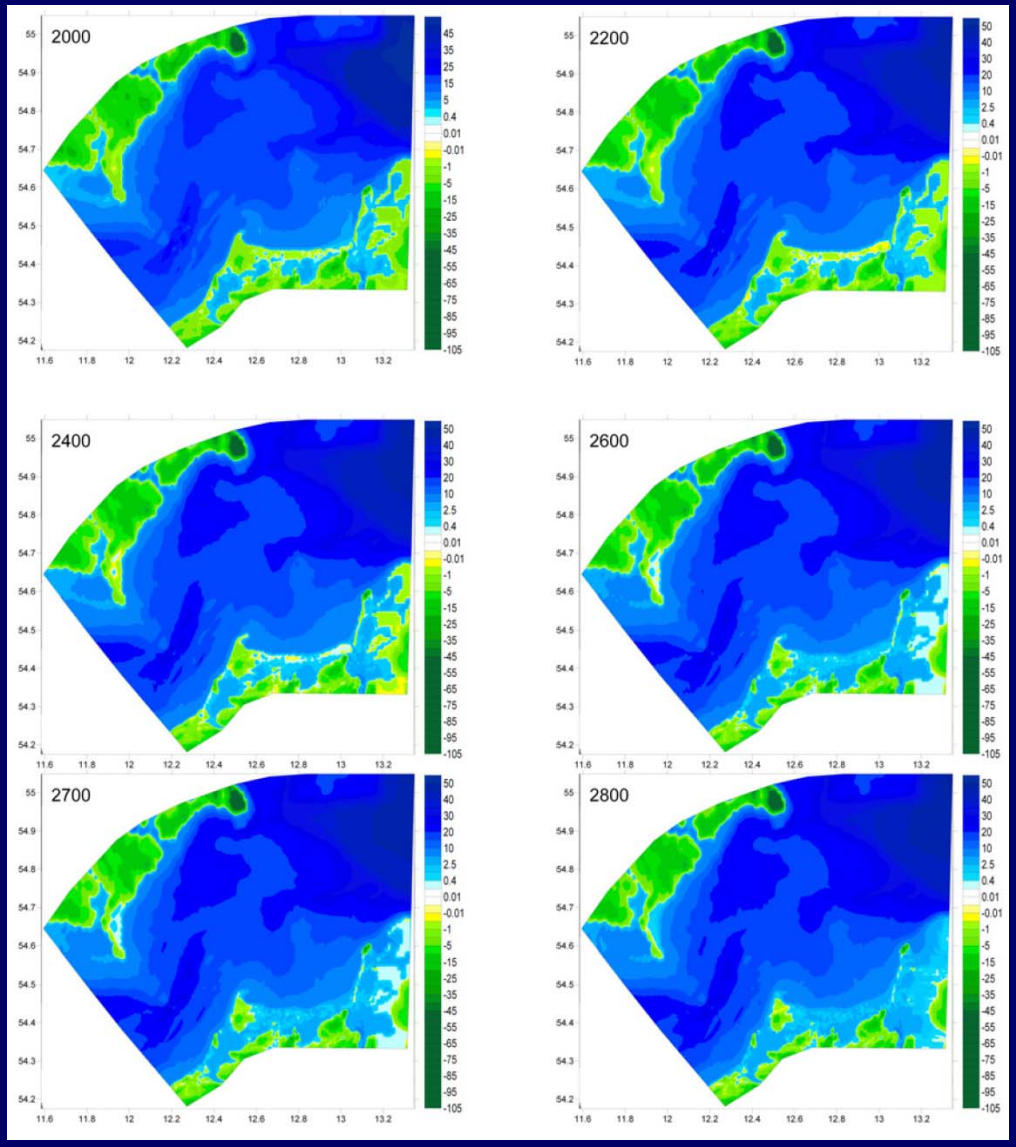
Rosenhagen and Bork (2009)

Probability of annual maximum sea levels in Świnoujście in 1901-2006 (Gumbel distribution, maximum likelihood method)



Wisniewski and Wolski (2009)

800 years predicted evolution of the Darss-Zingst peninsula



Zhang et al. (2009)

Outcomes

- Correlation between changing climate and the natural and socioeconomic systems under investigation is obvious. In order to explain statistical correlation by cause-effect relations a more intensive interdisciplinary cooperation between marine scientist, geologist, archaeologist, historians, socio-economists and climate researchers is needed.

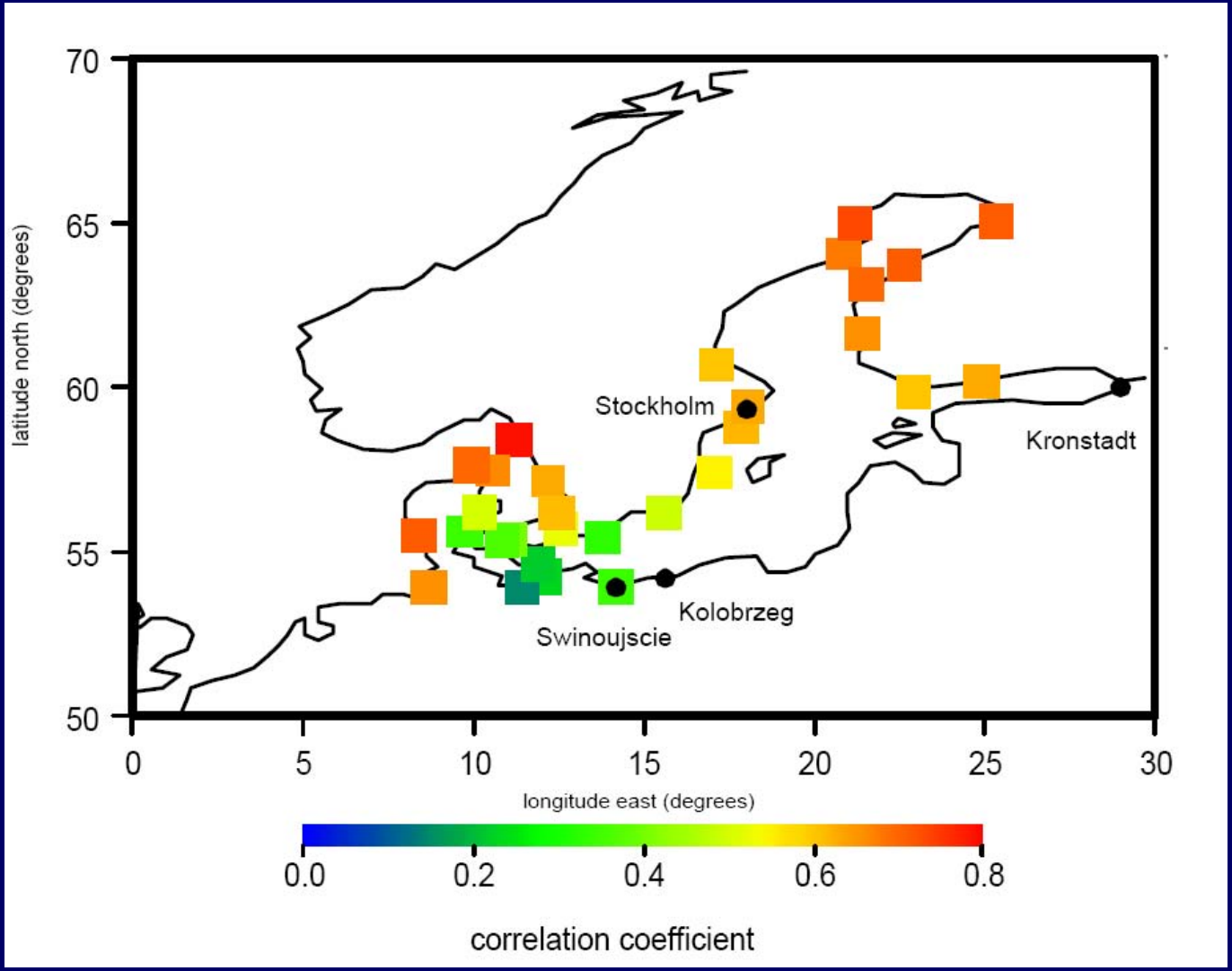
-The BACC report provides an appropriate data base for interdisciplinary studies of regionalized climate change effects. However, data in higher spatial resolution (for instance sea level change) are needed for coastal system studies and investigation of climate in cities.
Therefore, a BACC-II report is needed to an earliest date.

- In the southern and south-eastern Baltic the southern and south-eastern Baltic countries numerous national climate-change projects are set up. These groups should be networked and their work plans should be harmonized.

- To disseminate newest scientific results and skills summer schools for the academic youth should be organized regularily.

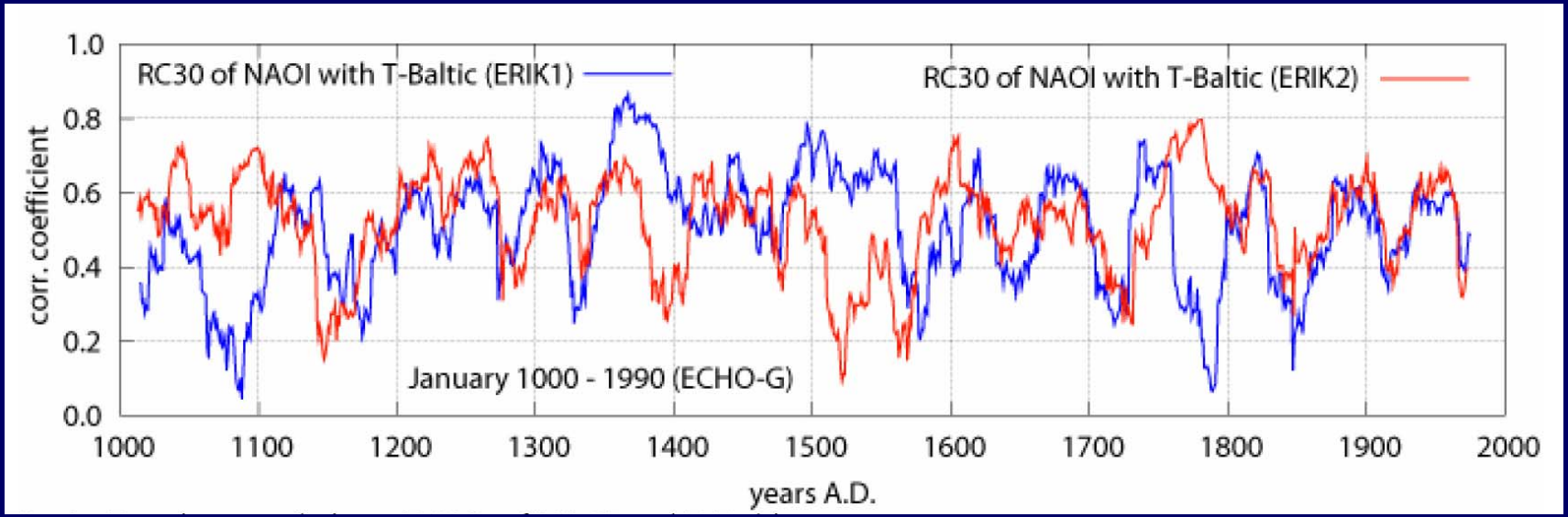
-In the near future, increasing research activities are expected regarding the cause-effect relation between green house gas emission, climate and environmental system reactions for the Baltic Sea basin. Results will be reflected by a second conference dealing with the climate change effects for the Southern Baltic region to be held at Szczecin in 2012.

Correlation between winter mean (DJF) of NAO index and winter mean (linearly detrended) Baltic Sea level (obtained from PSMSL), 1900 to 1998



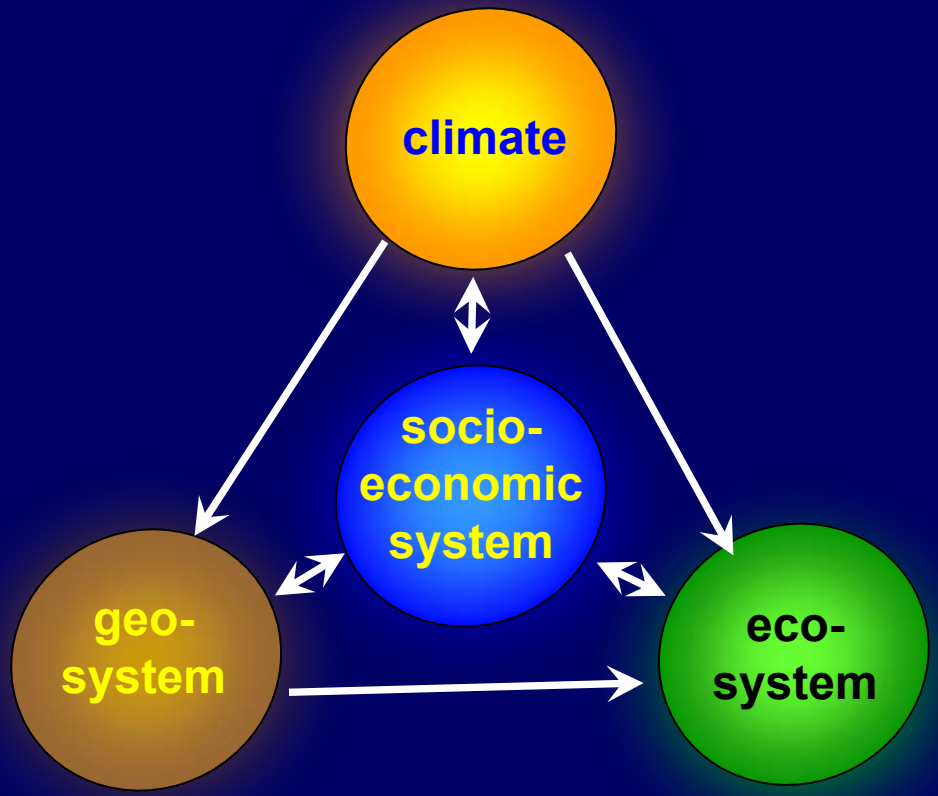
Hünicke (2009)

Running correlations (RC30) of NAOI and T-Baltic calculated from two external forced simulations of the coupled GCM ECHO-G for January 1000-1990A.D.



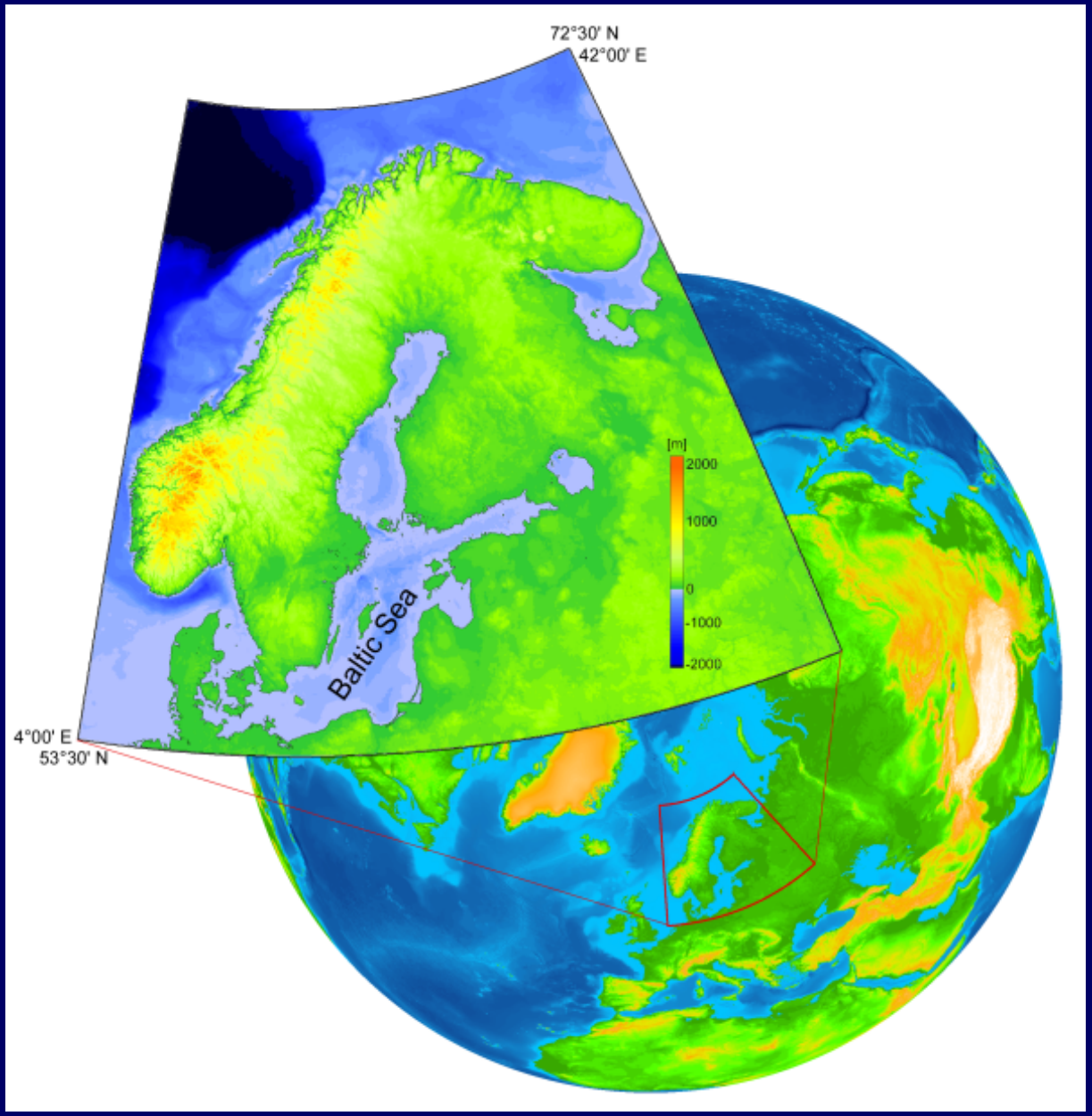
Schenk et al. (2009)

Cause-effect relation of factors influencing coastal developments



Harff et al. (2009)

The Baltic Area



Our over-arching hypothesis is that the BSB sediments can contribute significantly to a deeper understanding of the environmental history of the last glacial cycle in NW Europe and the Northern Hemisphere.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