



Maritime Safety Improvement Measures

International Environmental Forum

BALTIC SEA DAY

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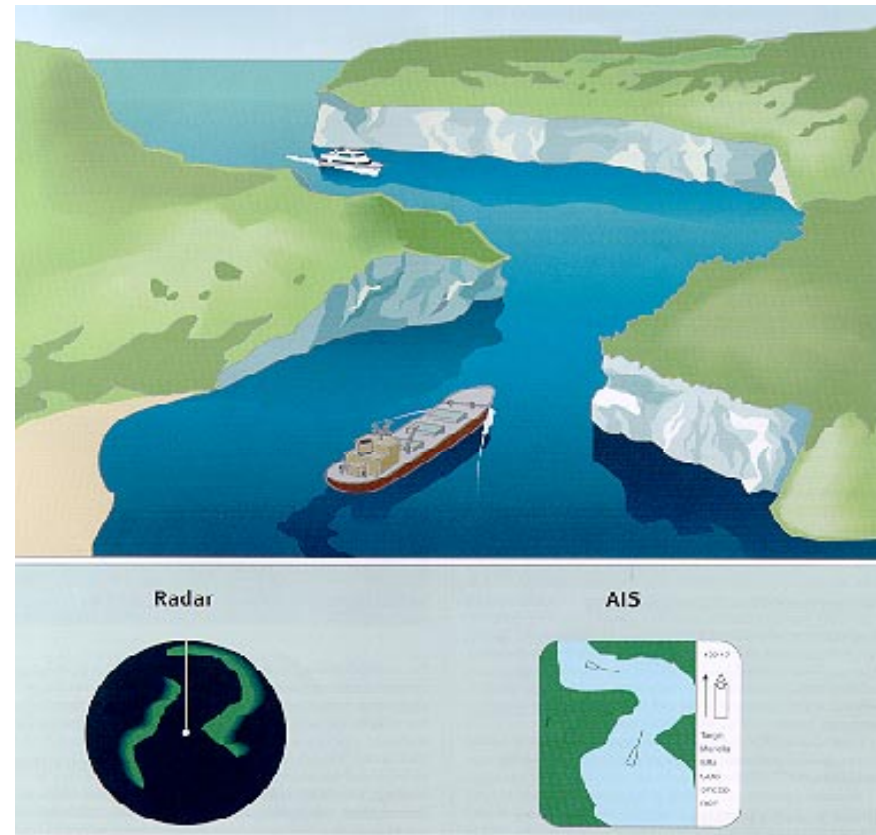


Contents

- Maritime Safety Concept
- General Safety Level ?
- Safety in the Baltic Sea Area ?
- Trends in the Maritime Traffic ?
- Risk Handling Options
- Cases
- Why Risk Based Approaches should be used ?

Maritime Safety

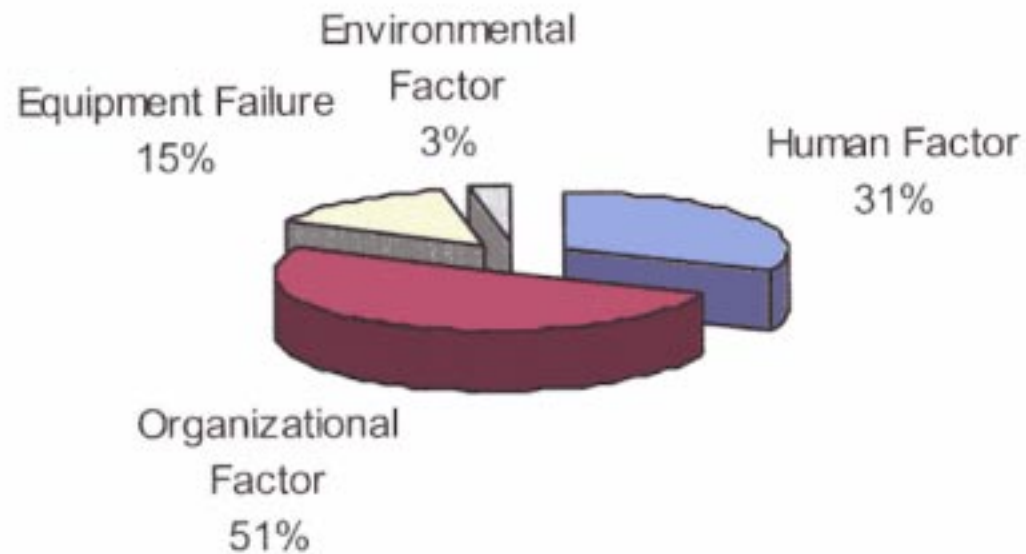
- External Safety (fairways, ships, ports)
- Internal Safety (strength, stability),
- Human Aspects,
- Environmental Impacts.



Background of the Marine Accidents

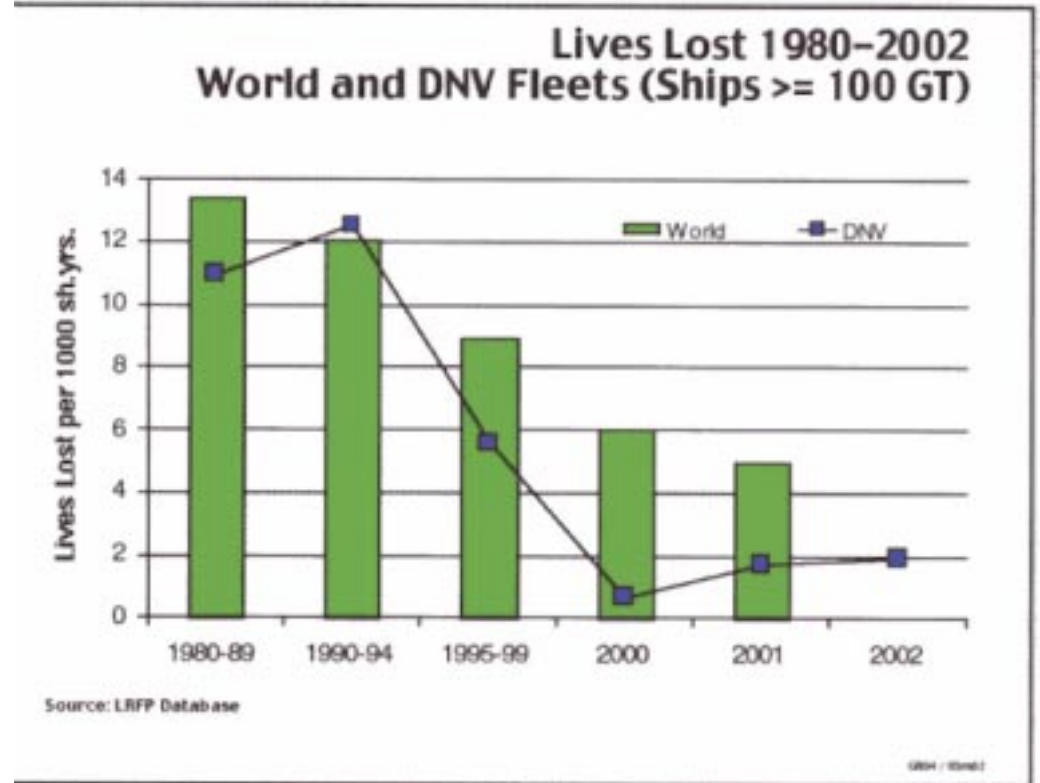
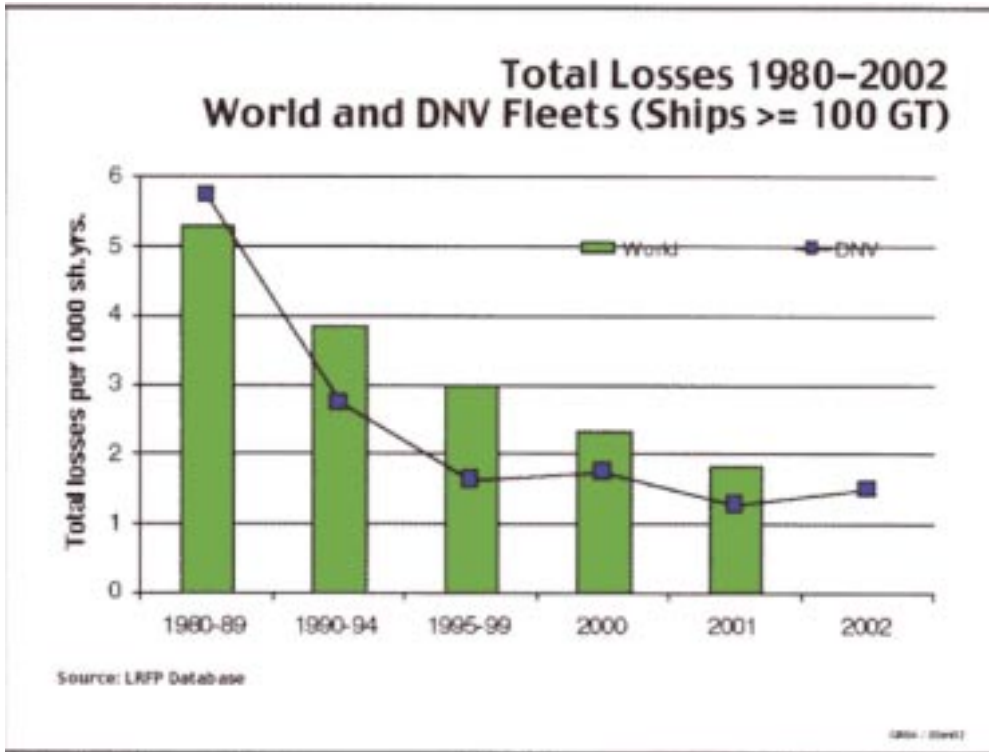
Source: www.ecy.wa.gov/programs/spills/

Principal Cause of Investigated Incidents

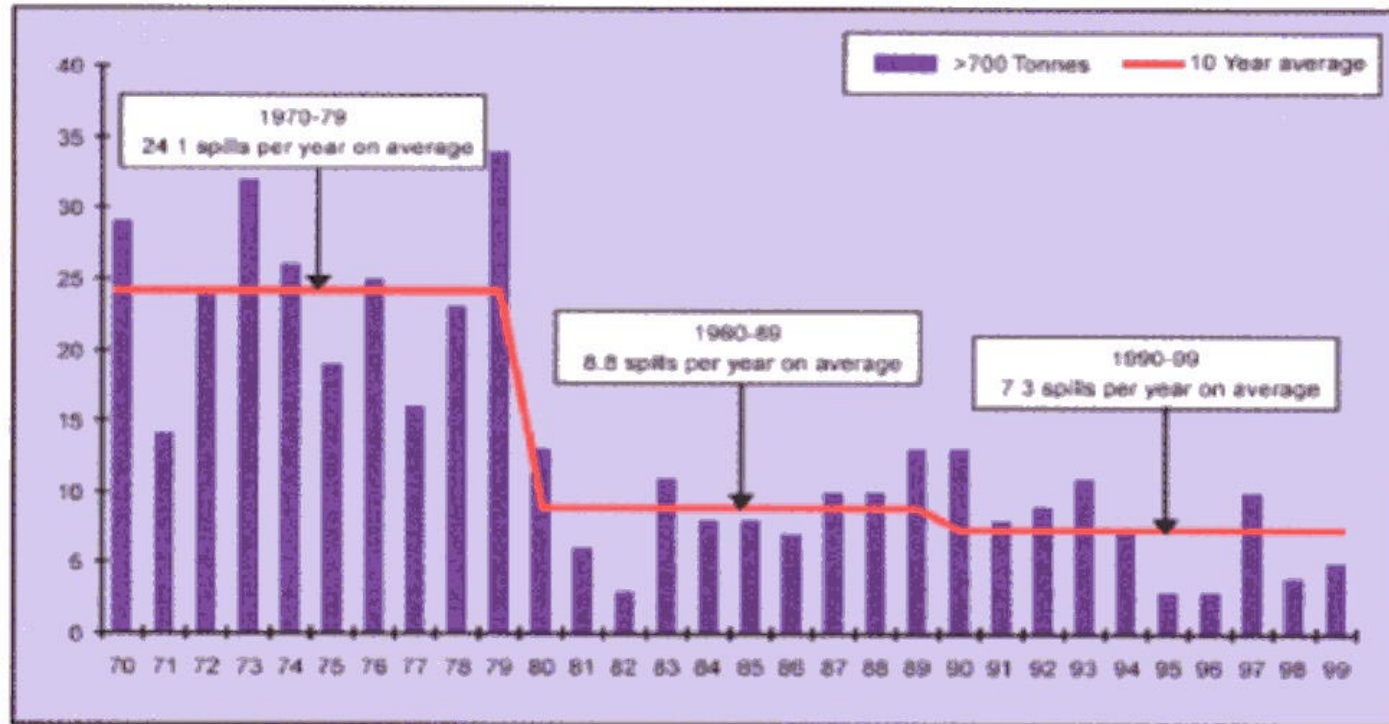


Improved Safety ?

(Source: LRFP data Base)



Oilspills caused by Maritime Accidents



99.9997 % of all oil arrives safely -
3 tablespoons per ton oil is lost

10-4-1

1.0000000000000000



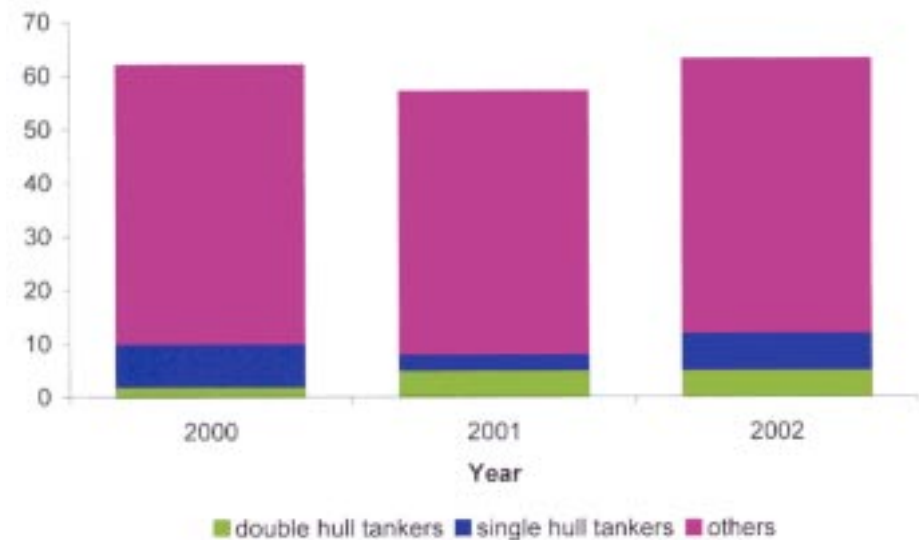
Baltic Sea Situation ???

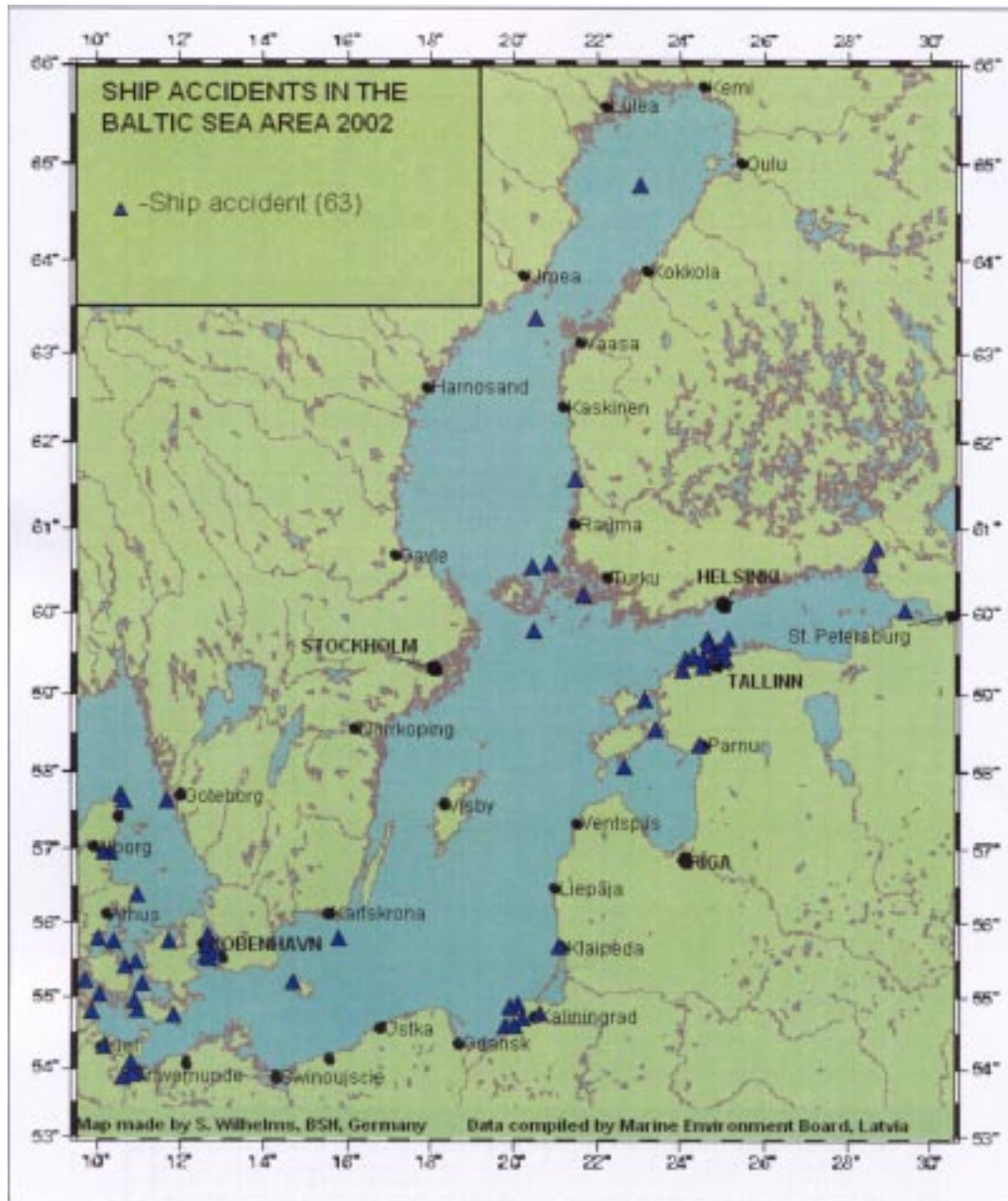
(source: HELCOM RESPONSE, St. Petersburg, Dec. 2003)



MT Alambra in the Port of Muuga

Ship Accidents and Types of Ships Involved in the Accidents from 2000 to 2002





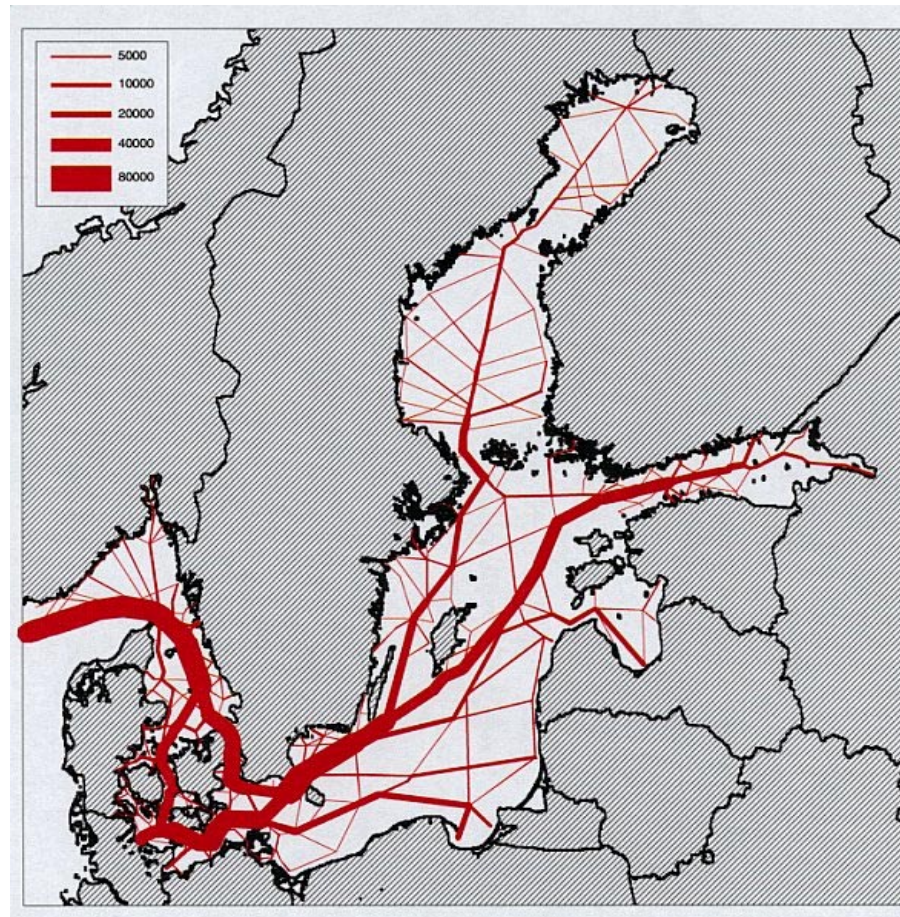
Source: HELCOM
RESPONSE,
St. Petersburg, Dec.
2003



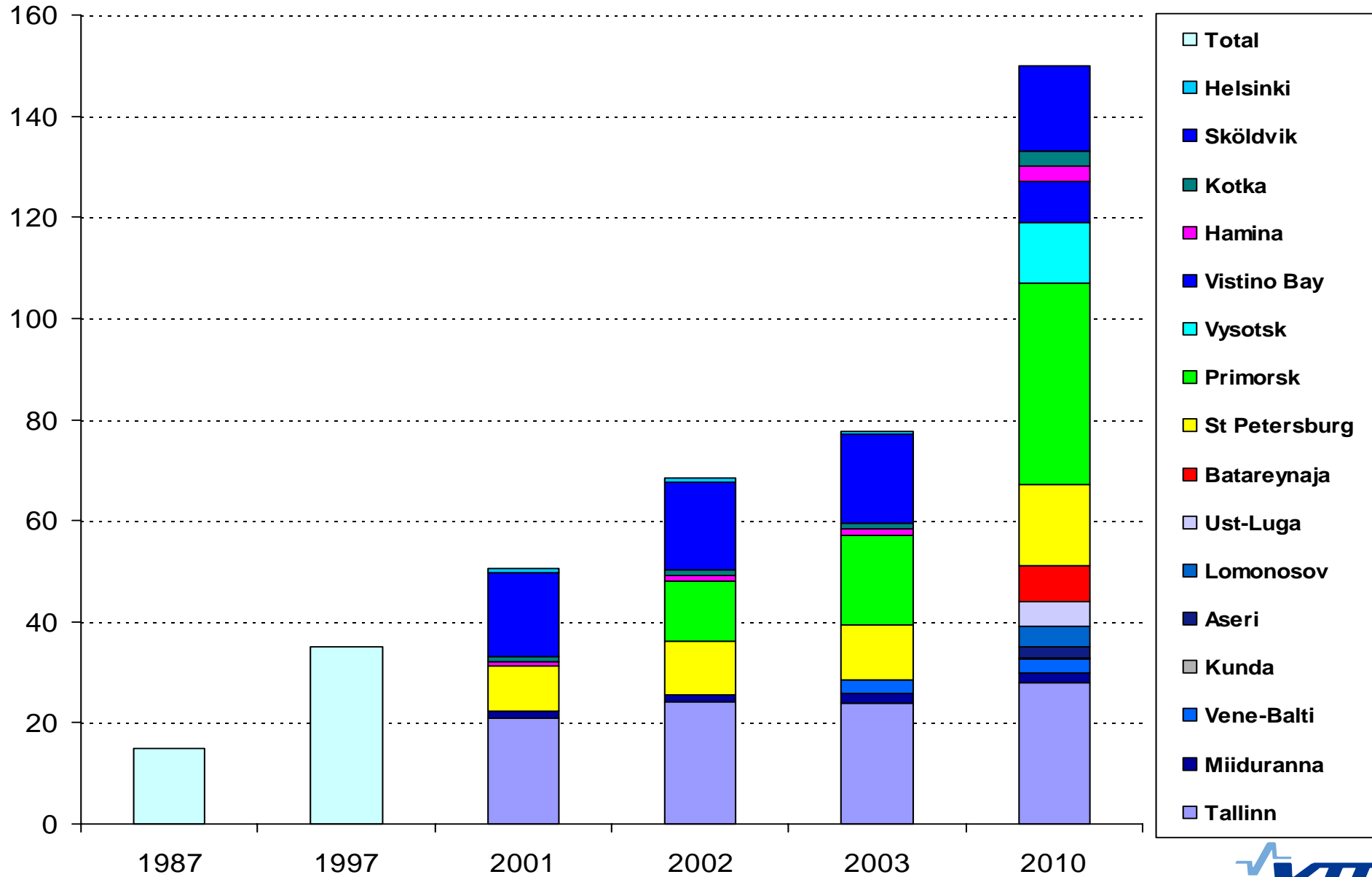
Source: HELCOM
RESPONSE,
St. Petersburg, 2003

Annual Ship Traffic (No. of movements) projected to year 2017, all ship categories

Source: Tacis, 1998: Existing and Future Shipping through the Baltic Sea.



Oil transportation in the Gulf of Finland in 1987-2003 and estimated development by 2010



Human Impact on Risks

- out-flagging:
 - poor local knowledge,
 - differences on the professional level ,
 - differences on the education,
 - language
 - COLREG-rules - misunderstandings:
 - traffic separations, routeing - wrong behaviours observed,
 - unknown rules for passing by,
- long shifts,
- problem ships - obey no rules.

External Risks

- Increased Maritime Activity
 - fast routes: Helsinki - Tallinn
 - oil - and chemical transportation,
 - passenger traffic, new lines,
 - small crafts,
- difficult weather and ice conditions,
- problems with cargo, losses of deck cargo (timber, saw-timber)

Technical Risks

- increased oil transportation - old and poor ships,
- single-hull tankers,
- ship-owners with one ships,
- danger of explosion or fire,
- electronic failures,
- dangerous & hazardous goods,
- spills due to technical failures
- damages, structural damages .

Tools for Risk Handling

- Examples such as,
- traffic control,
- pilotage,
- escort towing,
- ice breaking assistance,
- speed limits,
- traffic control,
- ship registers, PortNet, IbNet, IbPlot,
- AIS, Helcom AIS
- VTS & VTMIS,
- routeing
- weather limits
- wind limits,
- etc.....

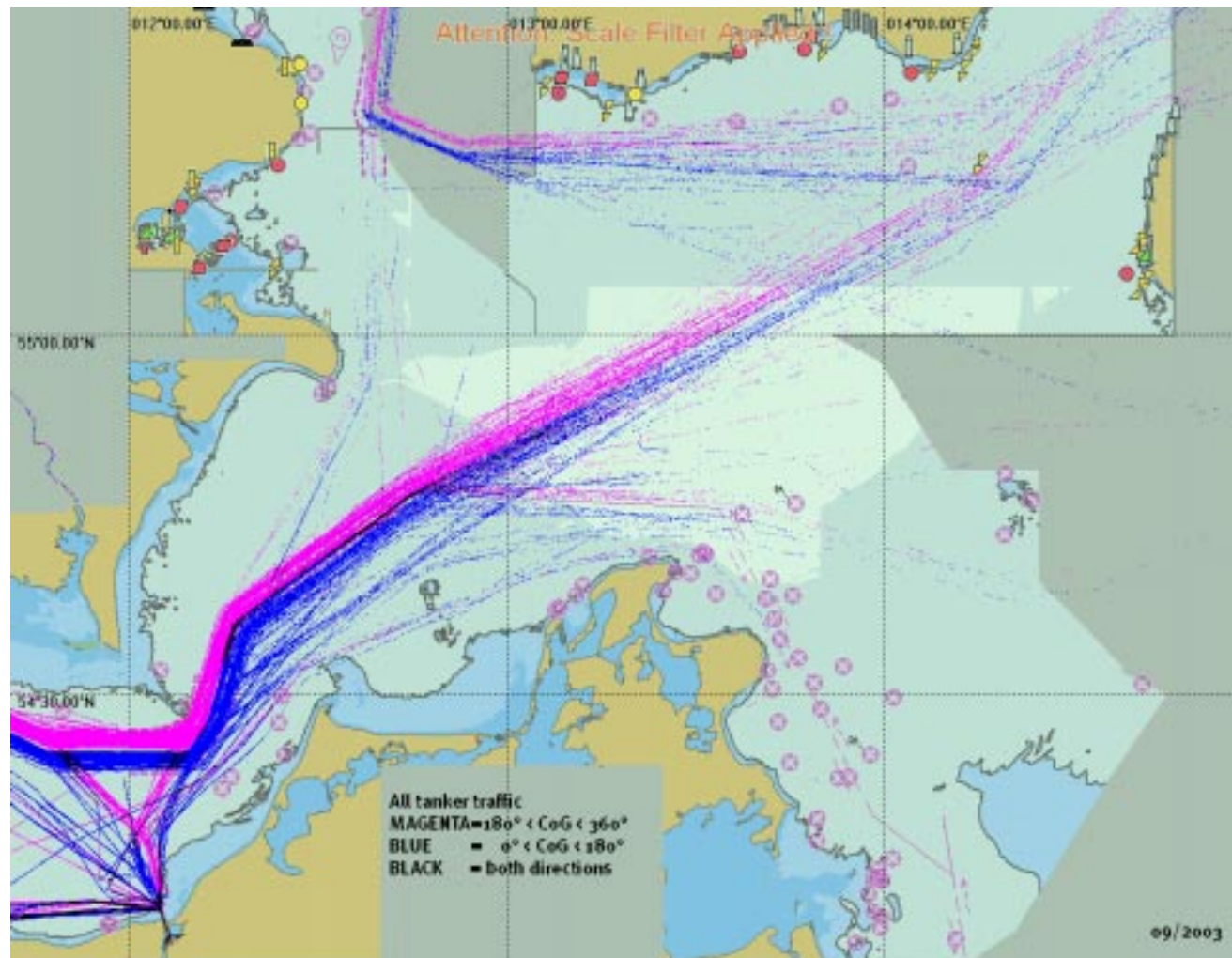


Lack of Escort Towing



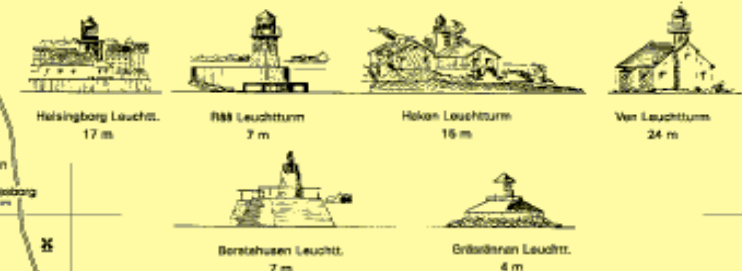
Bornholm / AIS DATA September 2003

source: prof. Reinhard Mueller, **SCHIFFAHRTSINSTITUT
WARNEMÜNDE e.V.**



S26

Sportschiffahrtskarten SUND NORD



M 1 : 80.000
Alle Tiefenangaben in Metern
Betonnungssystem A - Positionen WGS 84
© 1986 NAUTISCHE VERÖFFENTLICHUNG Verlagsgesellschaft mbH - Amis

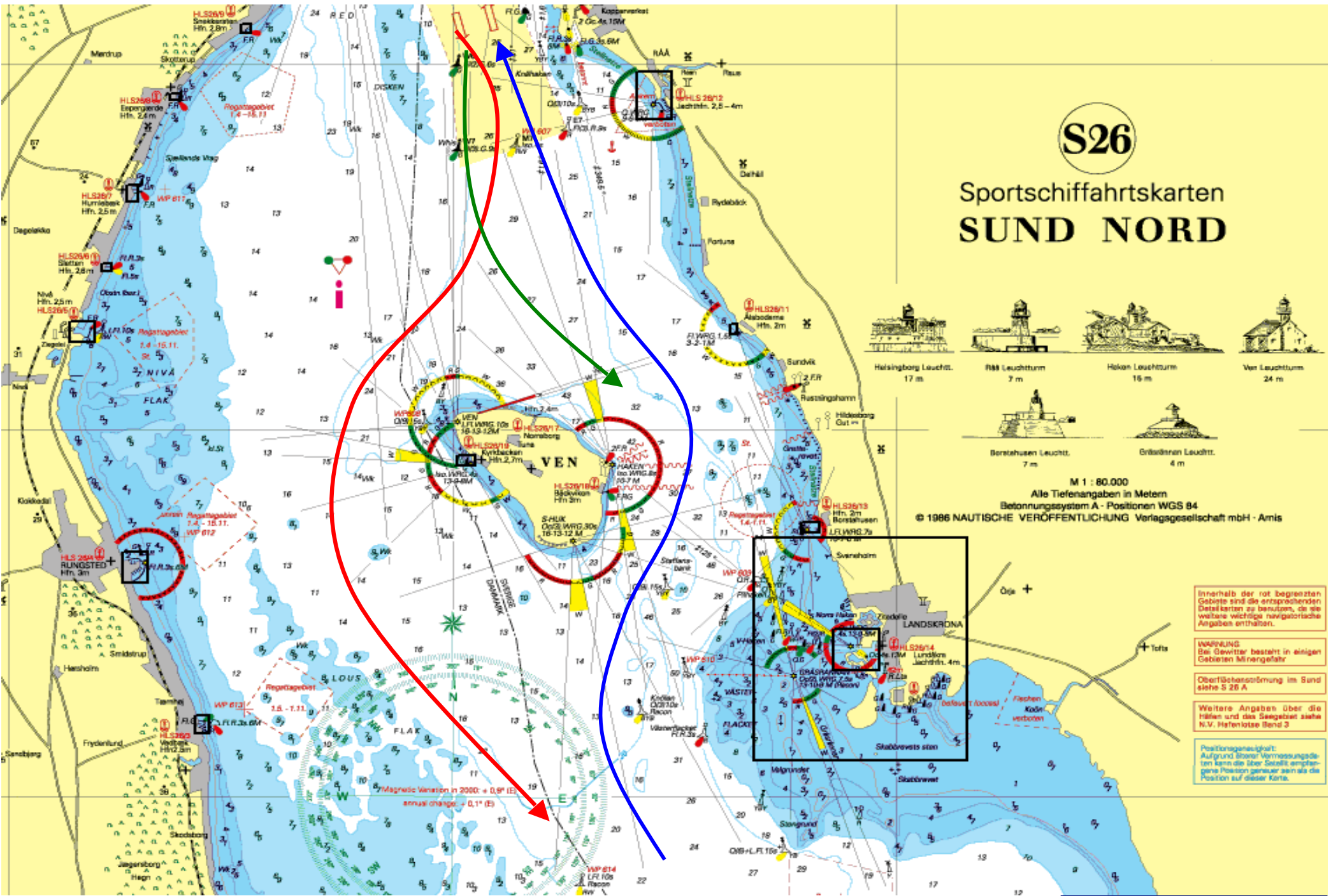
Innenhalb der rot begrenzten Gebiete sind die entsprechenden Detailkarten zu benutzen, die die weitere wichtige navigationsische Angaben enthalten.

WARNUNG:
Bei Gewitter besteht in einigen Gebieten Minregengefahr

Oberflächenschrägung im Sund siehe S 26 A

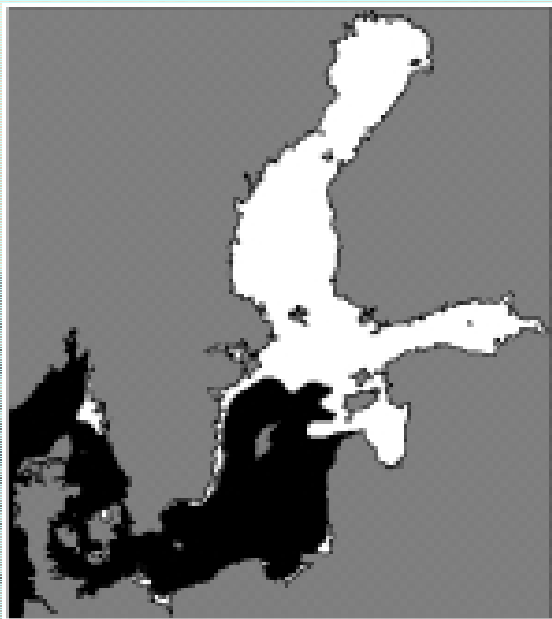
Weitere Angaben über die Höhen und das Seesgebiet siehe N.V. Hafenlotse Band 3

Positionsgenauigkeit:
Aufgrund starker Vermessungsdaten kann die über Satellit empfangene Position genauer sein als die Position auf dieser Karte.

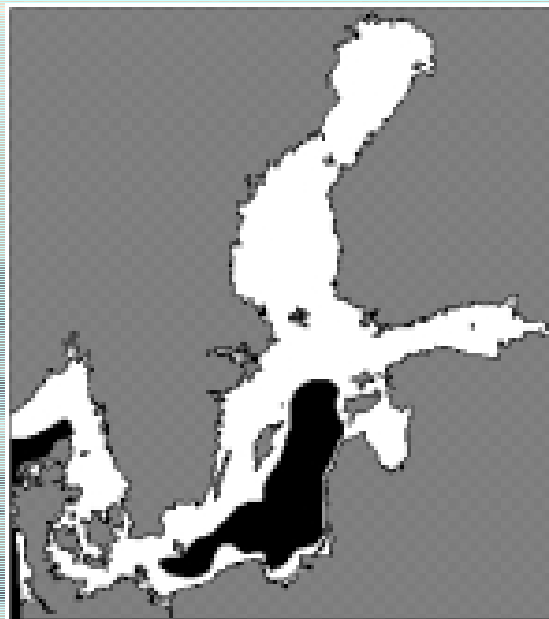


Magnetic Variation in 2000: + 0,6° (E)
annual change: + 0,1° (E)

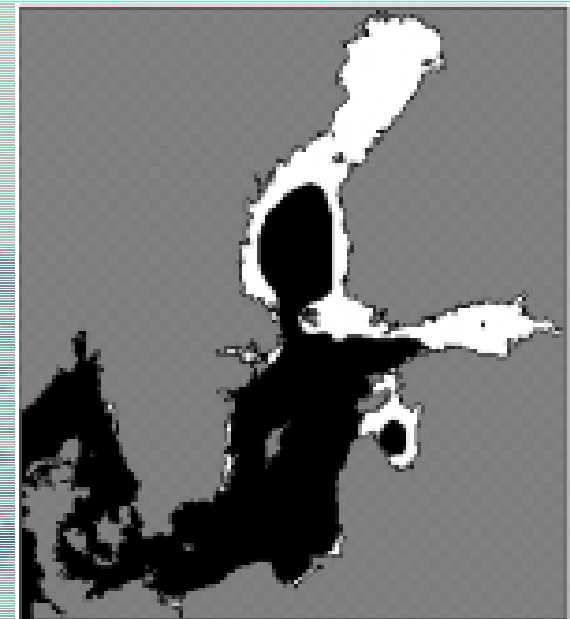
Extent of the Ice Cover in the Baltic Sea



Average winter (1994)
206 000 km²

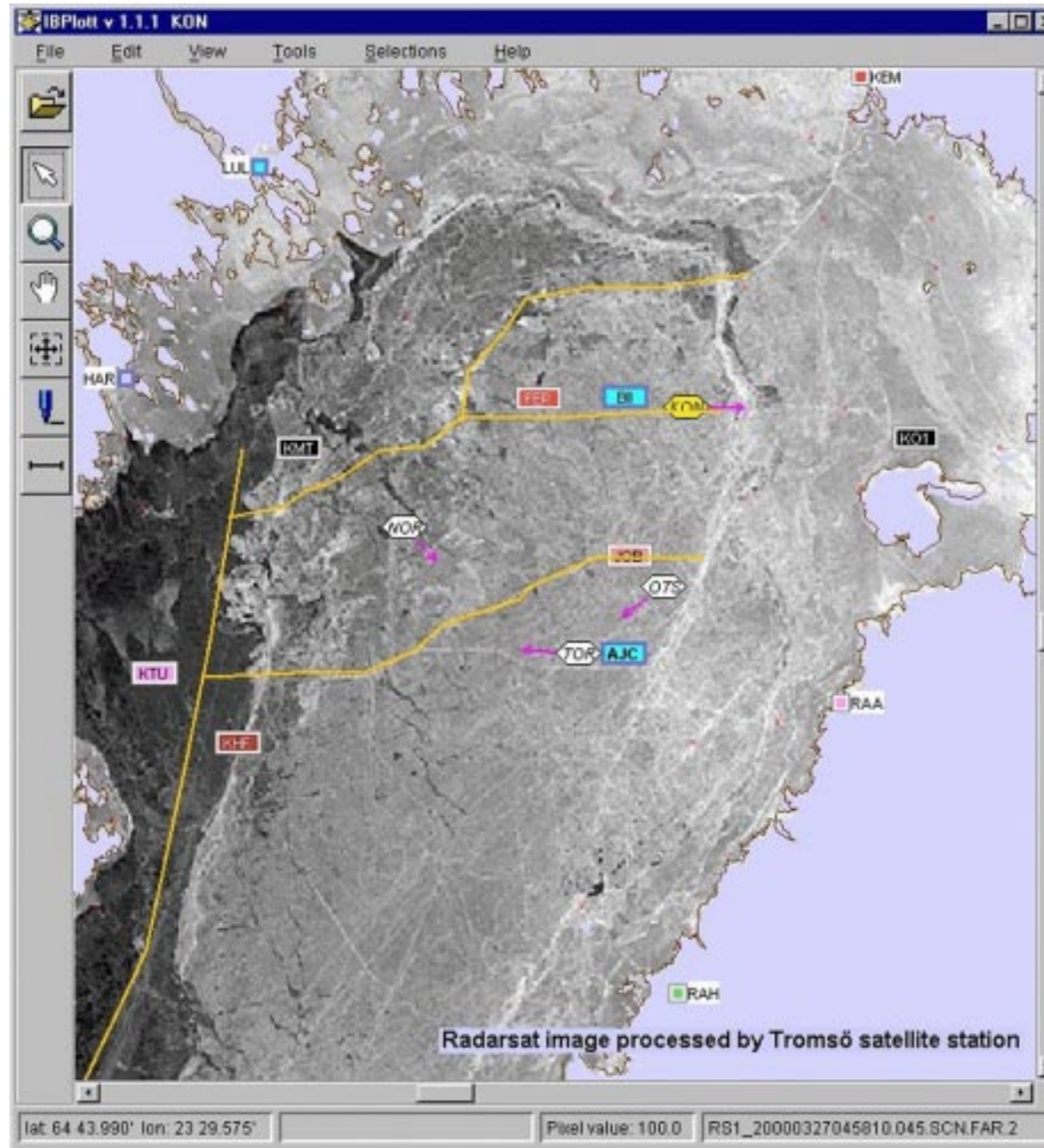


Severe winter (1986)
337 000 km²



Mild winter (1991)
122 000 km²

IBPlott



Why to use FSA ?????

FSA Main Steps

1 Defining risks

2 Risk evaluation

Probability and consequences ?

3 Risk handling options

What can be done to avoid the unwanted event ?

4 Cost - Benefit Analyses

Costs of the risk handling procedures?

5 Recommendations

Legislative actions?

CASE: The Benefits of GOFREP

- improved view over the traffic,
- reduced risk of collision
- identification,
- winter traffic, optimization of the ice breakers, co-operation,
- cargo etc data (PORT@NET),
- pilotage, accurate schedules,
- rescue- & salvage operations,
- oil spill counter measures,

CASE: The Benefits of GOFREP

- reduced risk of grounding,
- improvement of maritime safety,
- improvement of environmental protection.

Thank You

