



Cultural Heritage Agency of The Netherlands
Ministry of Education, Culture and
Science

The Cultural Sea

Integrating remote-sensing
with historical data in
changing environments

Menne Kosian
Researcher spatial analysis
Landscape department





The Cultural Sea

De polder van de Waddenzee, met de Germaansche veldt, Eijderstaet, Dithmarische, cum parte aliqua adriensis Leuconis, nec non fluuium Vrijburgis Albus, Eijderis, Fluuii, aboronia, ostiorum, chasium, & madorum, littoribus maris Germanici aduentionem. Lucas loci Aurgaria Inuentor.

- Wadden Sea landscape
- Modern surveying techniques
- Historic surveys and maps
- Modelling historic data
- Towards a new indicative map of threats and possibilities



Wadden Sea landscape



Landscapes of Northwestern Europe



Wadden Sea landscape



Landscapes of Northwestern Europe



Wadden Sea landscape





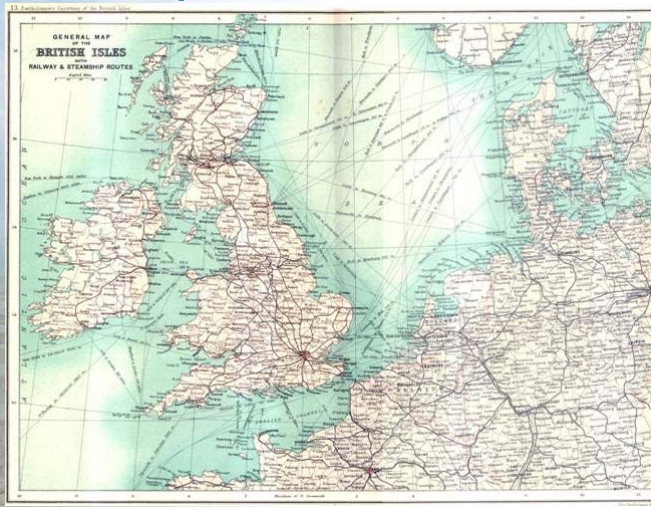
Wadden Sea landscape



1584 Lucas Jansz. Waghenaer

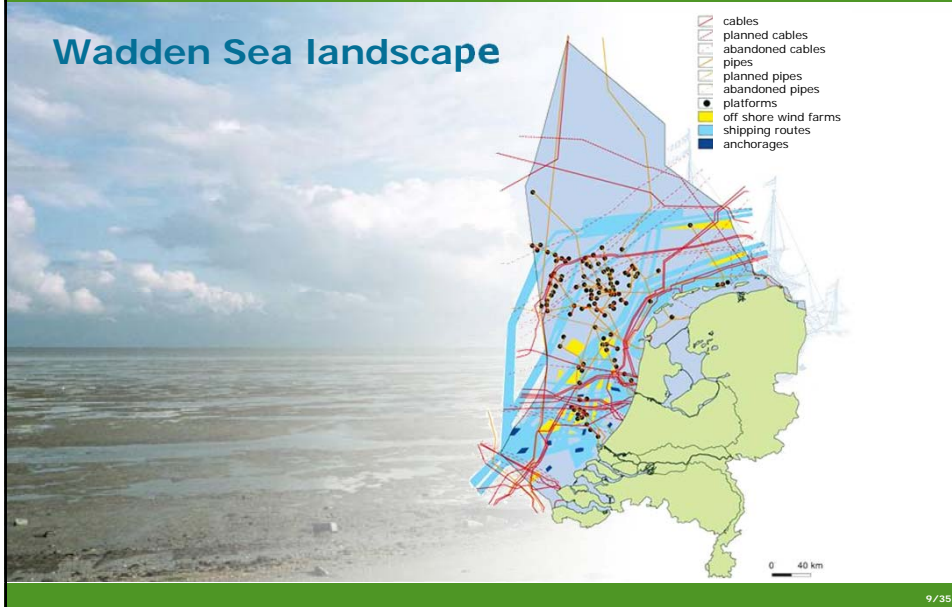


Wadden Sea landscape

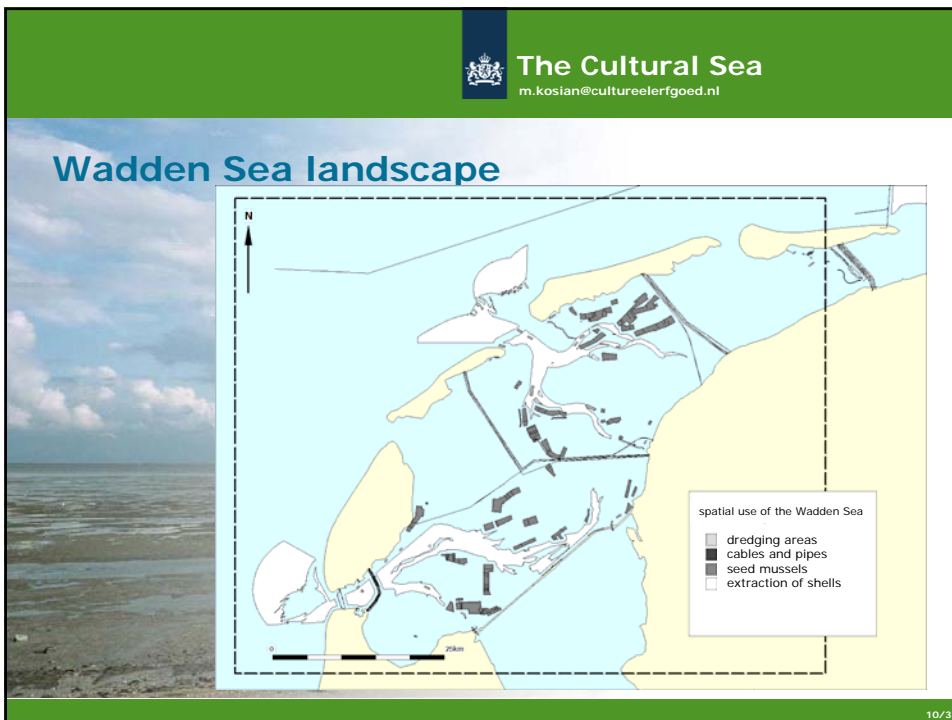




Wadden Sea landscape



Wadden Sea landscape





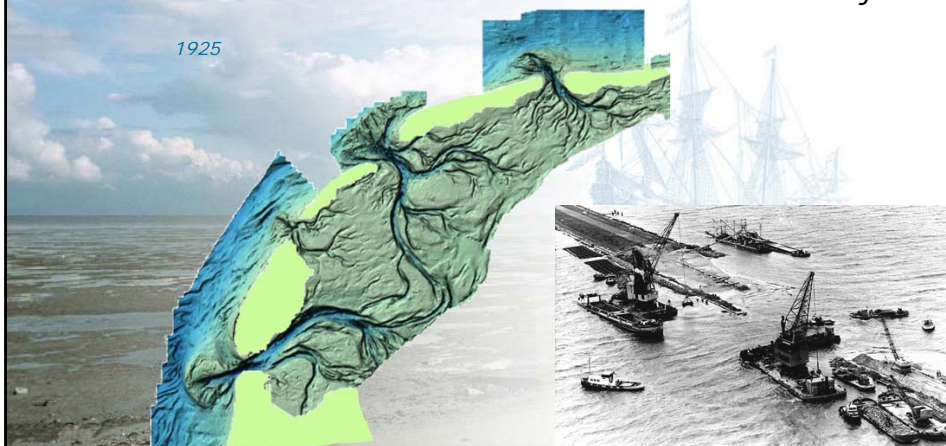
Wadden Sea landscape



Wadden Sea landscape

Before closure of the *Afsluitdijk*

1925

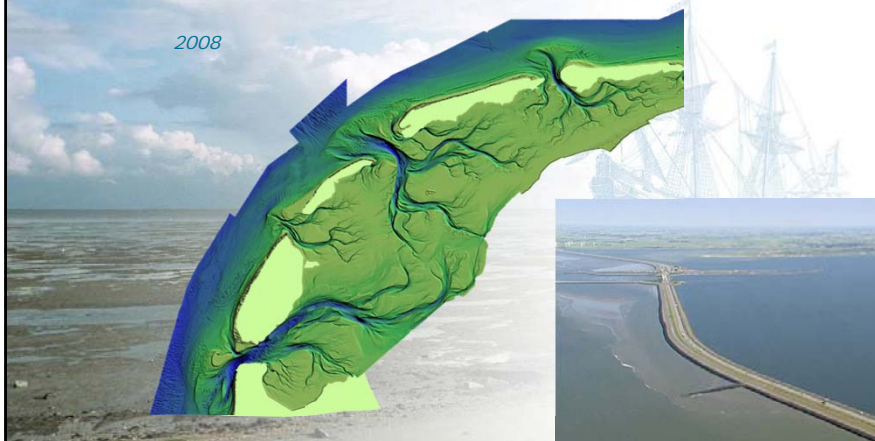




Wadden Sea landscape

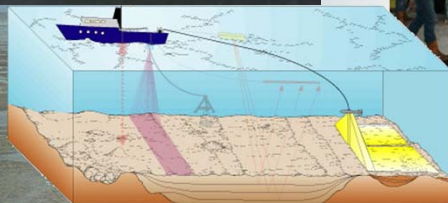
Current situation

2008



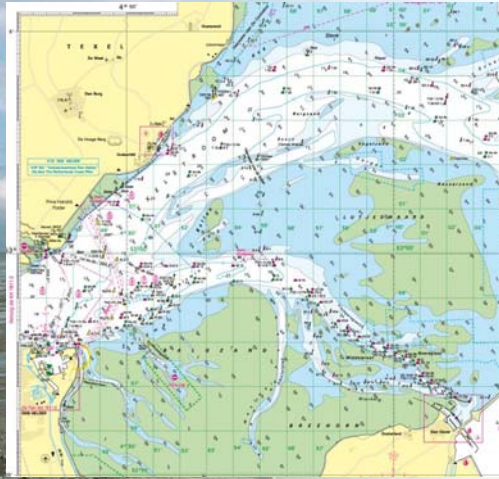
Modern surveying techniques

Sidescan sonar





Modern surveying techniques



Monitoring change...



WADDENZEE

Den Helder tot Kornwerderzand

1 : 75 000 (54°N)

Mercator projectie (WGS 84)

DIPTEN IN METERS SOUNDINGS IN METRES
Hoogten in Meters Heights in METRES
L.o.w. gem. Hoogwaterstand above mean highwaterstage

WGS 84

RAADPLEEG WAARSCHUWINGEN OP ALGEMEEN INFORMATIEBLAD
PLEASE ATTENTION TO CAUTIONS ON GENERAL INFORMATION SHEET

1811.3



Modern surveying techniques

...for safety

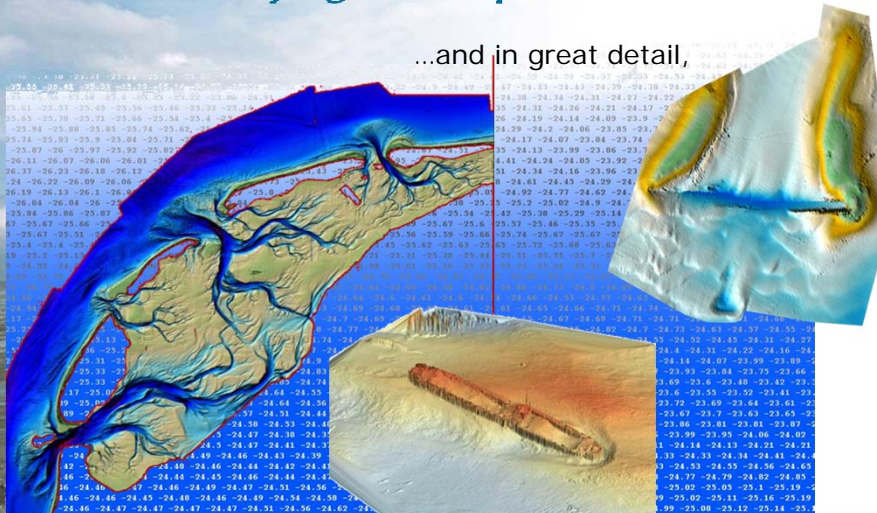


© 2014
MarineTraffic.com



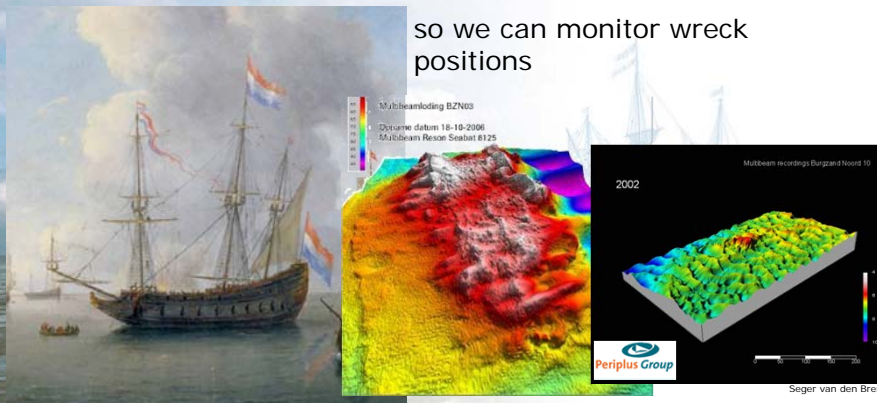
Modern surveying techniques

...and in great detail,



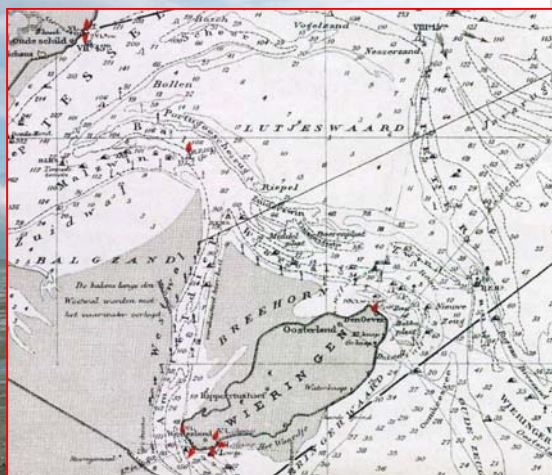
Modern surveying techniques

so we can monitor wreck positions





Historic surveys and maps



1905



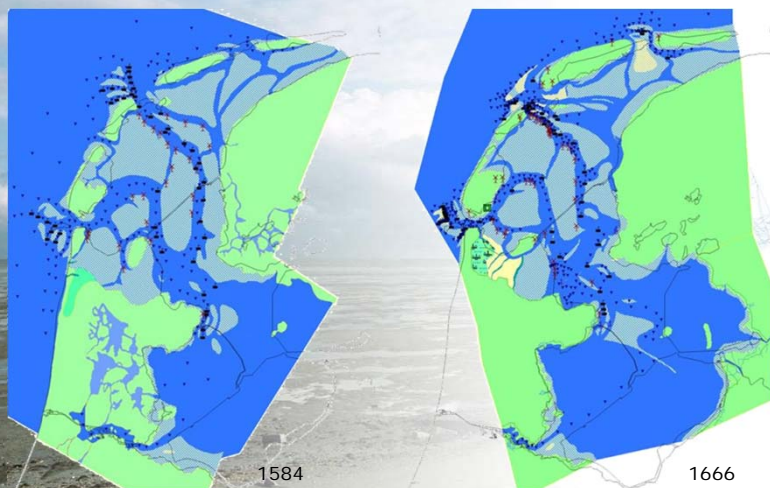
Historic surveys and maps



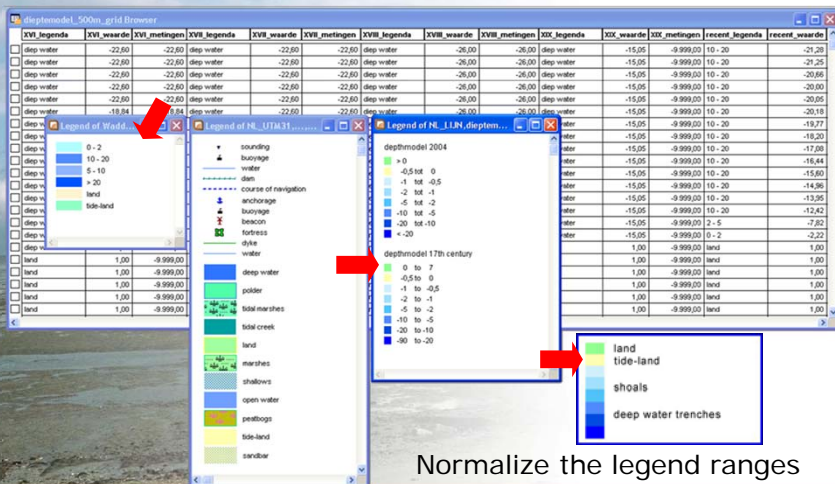
1584



Historic surveys and maps

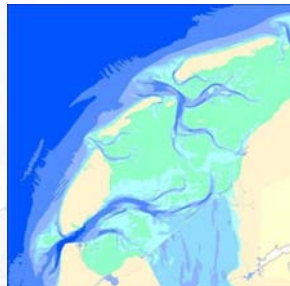
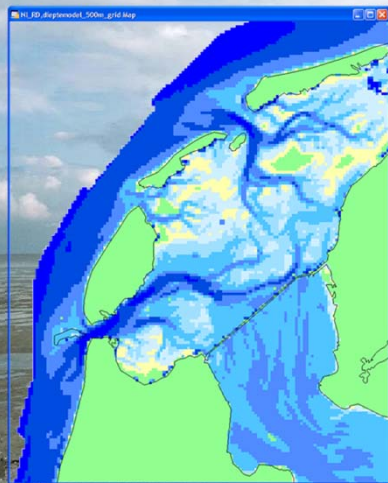


Modelling historic data





Modelling historic data

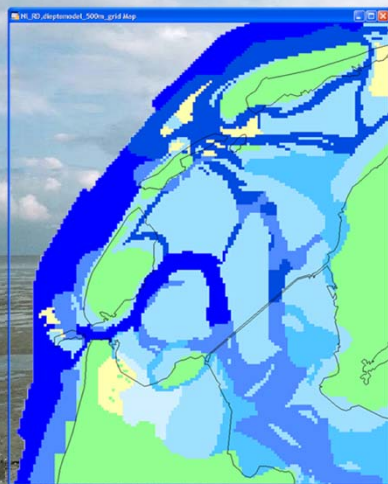


land
tide-land
shoals
deep water trenches

model of the
modern
bathymetry



Modelling historic data



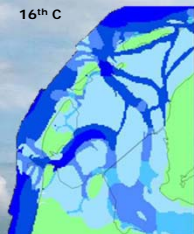
land
tide-land
shoals
deep water trenches

model of the
17th century
bathymetry

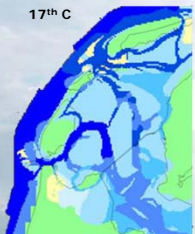


Modelling historic data

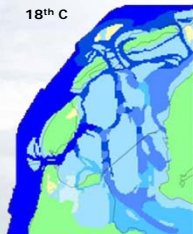
16th C



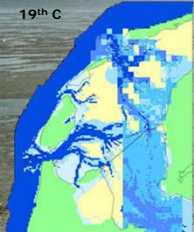
17th C



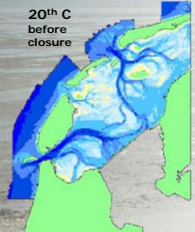
18th C



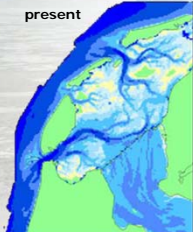
19th C



20th C
before
closure



present

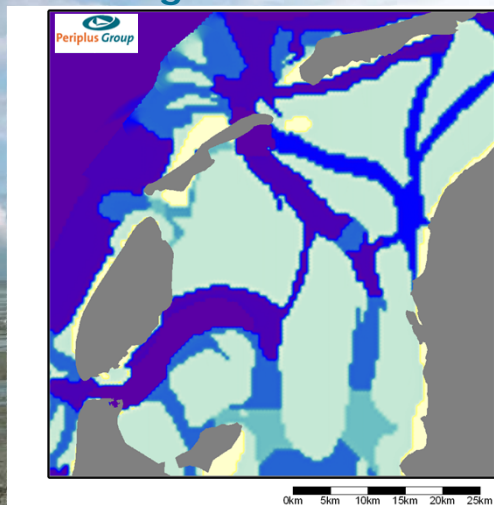


land
tide-land
shoals
deep water trenches

27/35



Modelling historic data

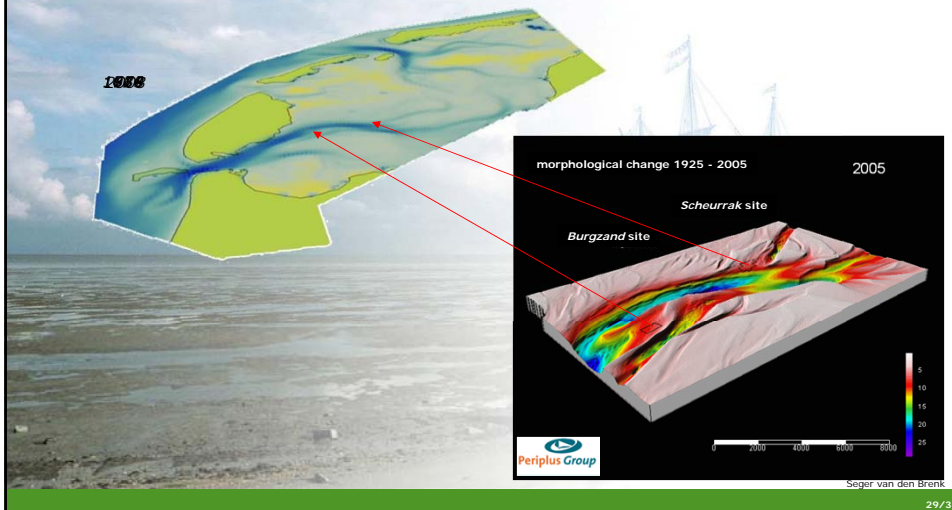


the integrated model
for the period 1575 - 2000

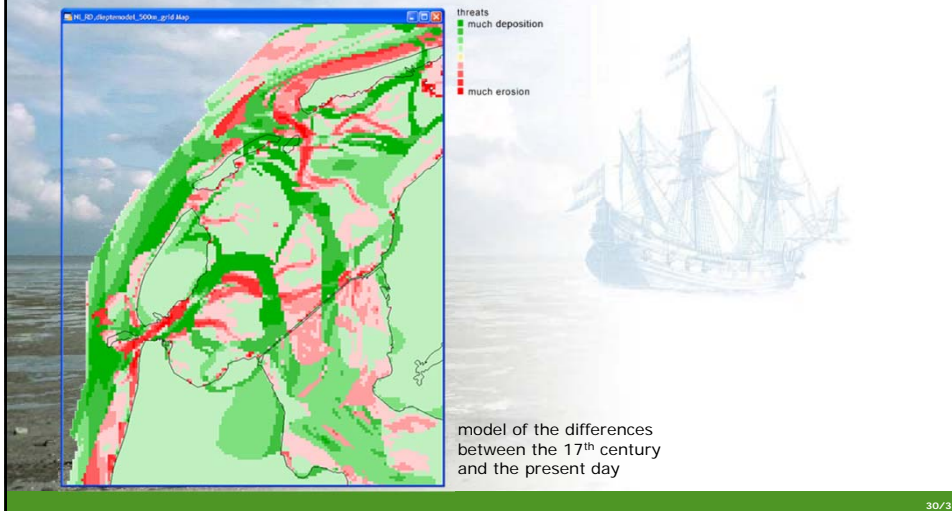
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Towards a new indicative map



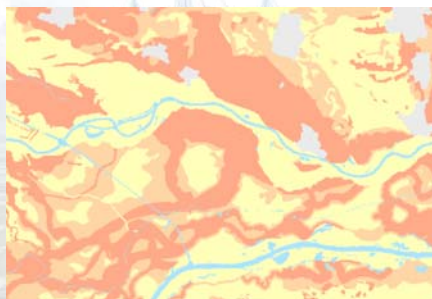
Towards a new indicative map





Towards a new indicative map

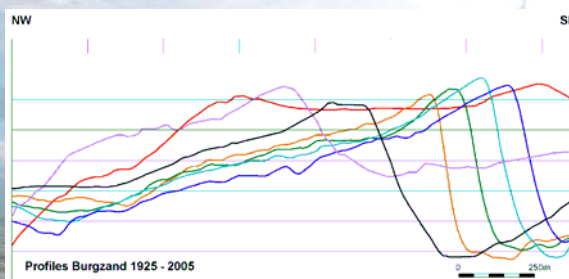
Indicative Map of Archaeological Values (IKAW)



Rivers and river areas not rated, coastal waters only rudimentary

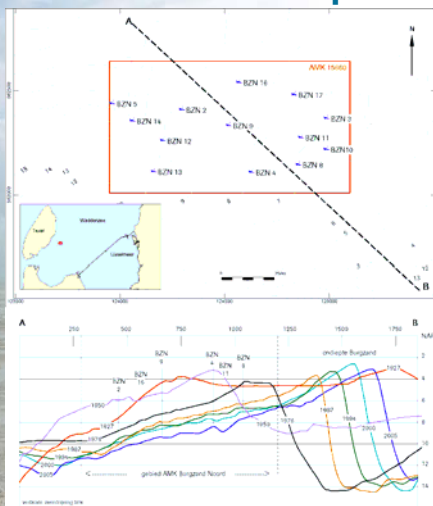


Towards a new indicative map

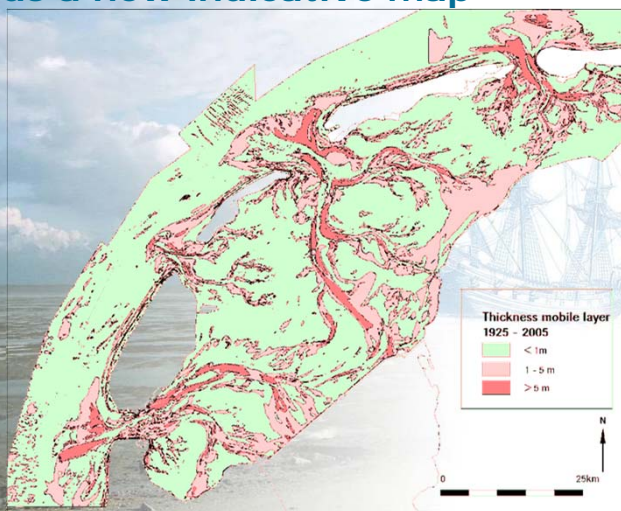




Towards a new indicative map

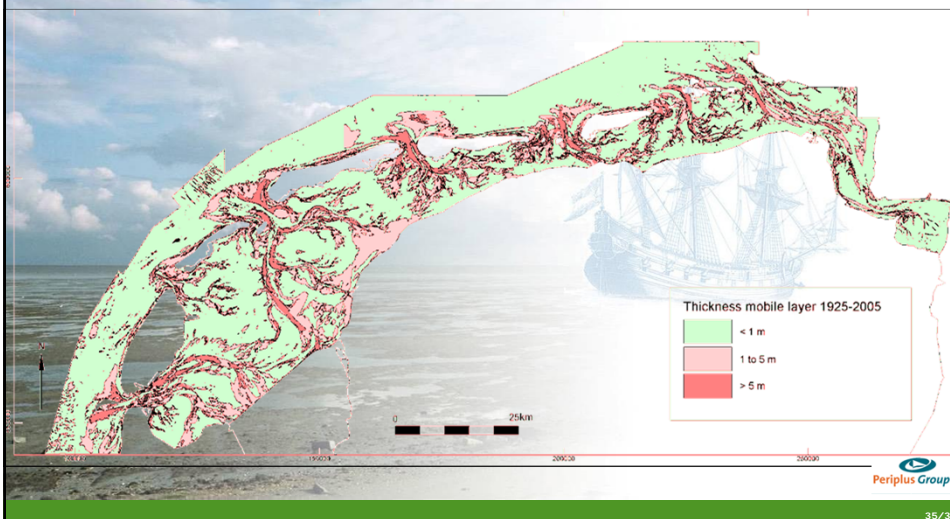


Towards a new indicative map





Towards a new indicative map



The Cultural Sea

Thank you for your attention

