


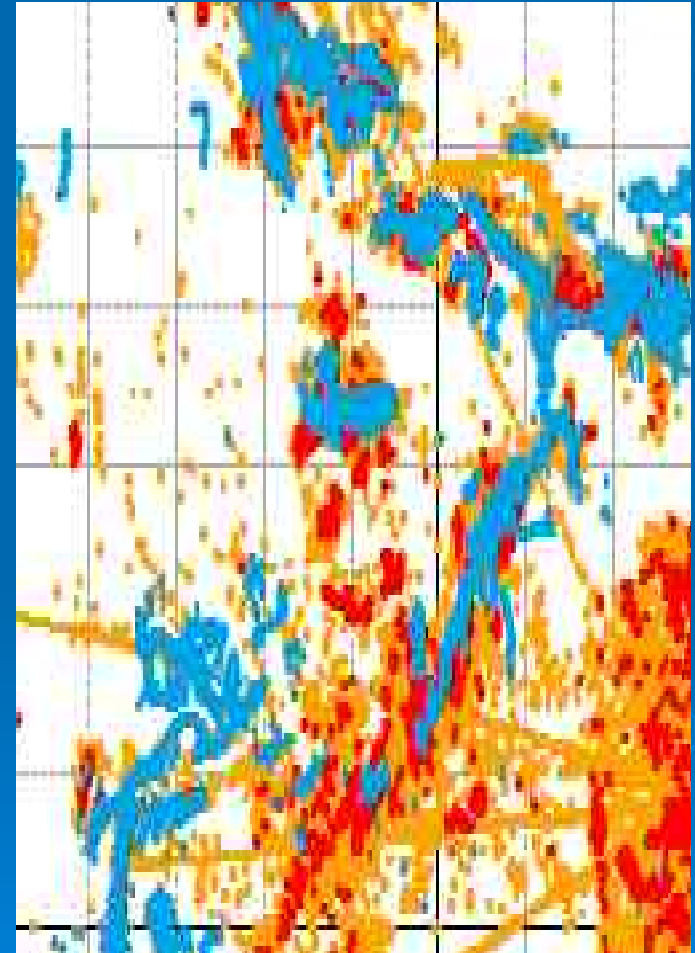
GIS in DIFRES

GIS is a main support item in
fisheries research and
consultancy



Sand eel

- The sand eel is living in a sediment bottom more than half of its life.
- Difres are mapping sand eel fishing grounds based on:
 - Geological data
 - VMS data from fishing vessels combined with interviews with fishermen
 - Research vessel based activities

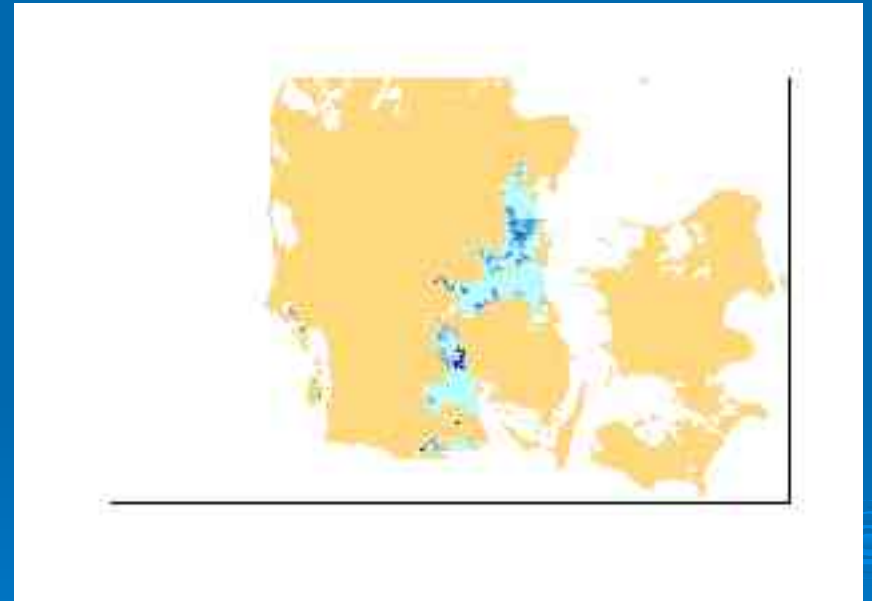


Juveniles

- Prepare maps of juvenile fish for important species.
- These activities are based on (research) projects:
 - Herring. Juvenile Herring sampling under the ICES activities.
 - Sand ell. The PLACES and LIFECO projects.
 - Cod and other gadoid fish. Egg-sampling from PLACES, LIFECO and other cruises i the Nordsea, Skagerrak and Kattegat.
 - Plaice, egg data from PLACES
 - Ising, håising, egg data from PLACES

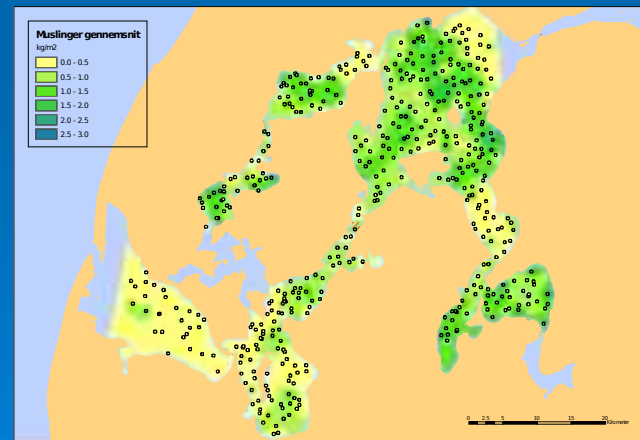
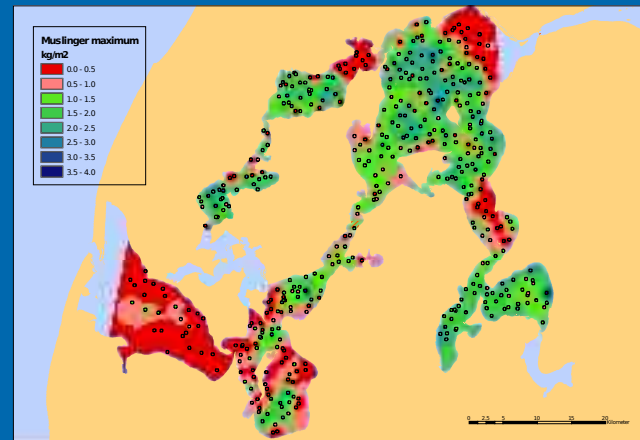
Blue Mussels

- Difres have monitored and mapped the blue mussels and seaweed in Lillebælt and Kattegat in the years 1994 and 2004.
- Difres have in 20 years mapped the stock of blue mussels and other mussels in the Waddensea.



Mussel data in Limfjorden

- Data consist of 451 positions where there have been fishing blue mussel in Limfjorden from 1993 to 2003.



Mapping material from DIFRES

- Fish & Shell animals
 - Juvenile areas
 - Area for shell animals
 - Mari-culture areas
 - Fishing grounds
 - Monitoring cruises
- The basis for fish
 - Plankton recordings
 - Hydrographic recordings

The GIS laboratory in DIFRES

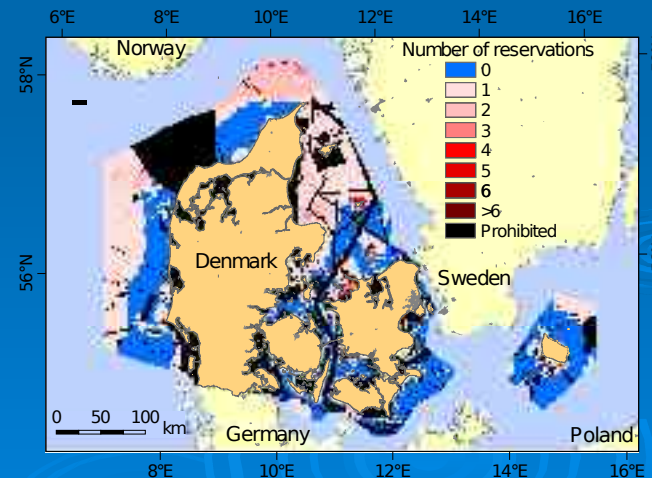
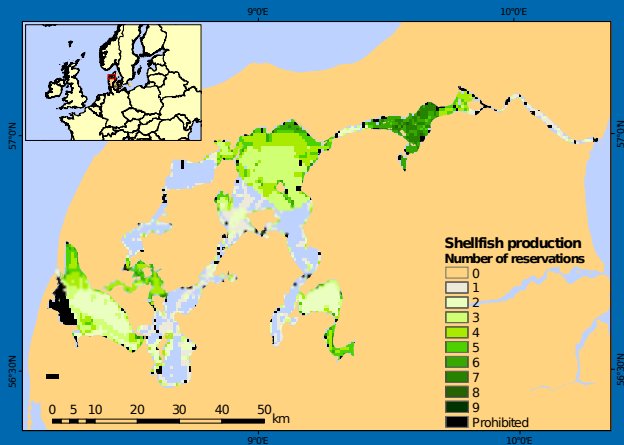
- GIS project support
- Participation in research and consultancy projects
- Increase the knowledge about GIS by provide state-of-art knowledge to projects
- Arrange courses and workshops for GIS users
- Users support with respect to GIS tools
- Data storage and common maps
- Quality insurance of maps and data material
- Acquisition of hardware and software related to GIS

GIS competence in DIFRES

- 3 GIS specialists with state-of-art competence
- 4 technical supporters with GIS knowledge
- A number of researchers and consultancy workers that are experience ArcGIS users.

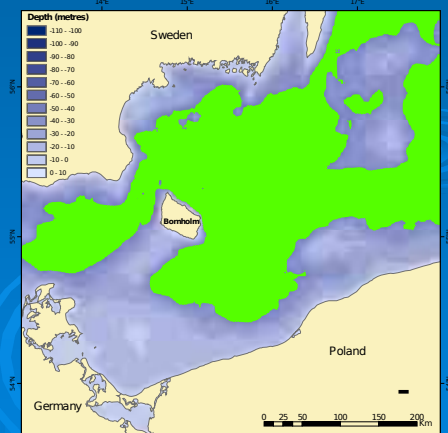
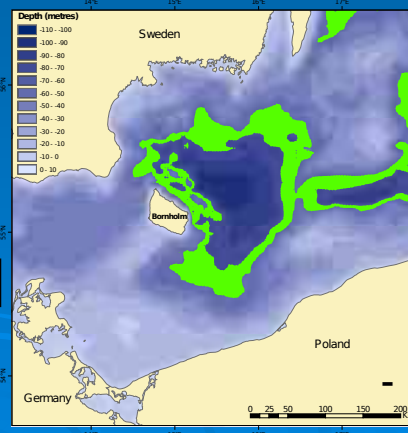
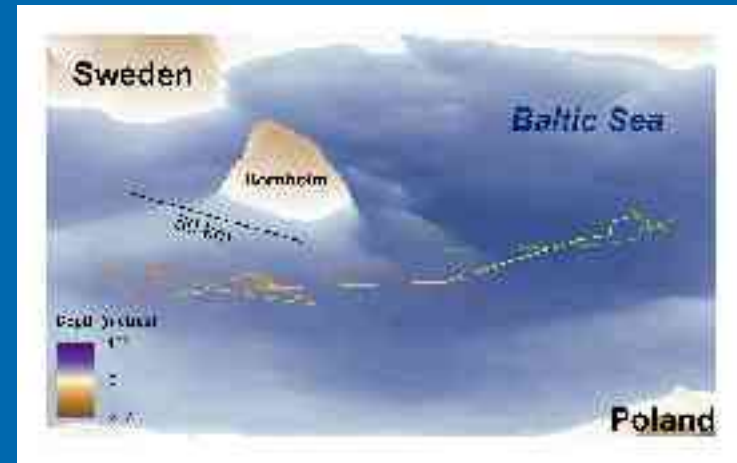
Some GIS strategy in DIFRES

- One external ArcIMS application every quarter.
- The plan:
 - Q1 2004 – Mussels in Limfjorden
 - Q2 2004 – Mari culture
 - Q3 2004 – Fish in lakes and streams
 - Q4 2004 – Mussels in vadehavet and fjords
 - Q1 2005 – Stock maps
 - Q2 2005 – Sand ell fishing grounds
 - Q3 2005 – Juvenile areas
 - Q4 2005 – Fishing limitations areas
 - Q1 2006 – Sensible fish habitats
 - Q2 2006 – Dan cruises



More GIS strategi

- One major ArcIMS application every year
- The plan:
 - 2005 - GIS for international consultancy
 - 2006 - GIS for sampling
 - 2007 - GIS for fishery in space and time



Tak for opmærksomheden

