

EROSION PROBLEMS

Global and Local Perspectives













HISTORICAL EVENTS

- **1820 – Erosion occurred near Ystad**
- **1950 – Erosion is regarded as a problem**
- **1960 – Big erosion damages; protection with stones**
- **1986 – The first erosion conference in Sweden**
- **1989 – The first climate conference in Sweden**
- **1990 – Big erosion damages; two houses fell into the sea**
- **1993 – The first Swedish court verdict regarding groins**
- **1994 – Erosionsskadecentrum is established**
- **1995 – Federal money for a full-scale coastal protection experiment in Ystad**
- **2001 – The first Swedish court verdict regarding beach nourishment**
- **2003 – SGI is appointed as coordinating authority for erosion-related issues**
- **2004 – EU project EUROSION**
- **2005 – EU project MESSINA**

Attempts to Engage the Federal Authorities

“Grey zone”

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Several occurrences around 1990

- Dramatic incidents
- Houses were swallowed by the sea
- The shoreline was eroded 300 meters
- Problems with housing insurances

Interest from key persons

- Leaders of political parties
- Ministers
- The Prime Minister
- Directors-general
- The King and the Queen
- Public media
- Several municipalities in the south of Sweden
- SBUF
- NUTEK
- LTH; Gunnar Lindh, Hans Hanson
- KTH; Klas Cederwall
- Owners of houses and land



The King and Queen of Sweden



The King of Sweden and the Governor of Scania

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Erosionsskadecentrum, EC

- Founded 1994
- Founded while we waited for engagement from Federal Authorities
- In the beginning seven municipalities
- Now twenty municipalities
- The Engineering Science Council

Financing

- Decision from the government about seven million Swedish crowns for a full-scale experiment
- One million Swedish crowns from the property owners in Löderups Strandbad
- Several million Swedish crowns from the municipality of Ystad

Different techniques

- Groins / Swimming piers
- Breakwaters
- Beach nourishment
- Build-up and reinforcement of dunes
- Planting of vegetation
- Mats
- Protection of cliff slopes: Reverse filters, gabions, concrete mattresses, concrete slabs
- Experiments: Pump project UDC, Vertical drain pipes, Fins

Groins / Swimming piers



Breakwaters



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Beach nourishment



Build and reinforce dunes



Planting of vegetation



Mats

- Textile mats
- Textile mats prepared with seeds
- Biological textile weave prepared with seed and fertilizer (Greentex)

Slope protection

- Reverse filters (protection of cliff slopes by stones)
- Gabions (net baskets filled with stones)
- Concrete mattresses (Foreshore Protection)
- Concrete slabs (Flexplates)

Experiments

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Decision about moving sand

- The Environmental Court, 31 August, 2001
- Unique verdict
- The decision goes in the same direction as in the model countries

Decision about coordination

- Swedish Geotechnical Institute, SGI, became authority for coordination of federal responsibility for erosion issues
- An important milestone for the federal engagement in erosion issues

Decisions according to the Law of the Continental Shelf

- Application to SGU – forwarded to Government
- Rejection by the Government
- A new application
- A new rejection by the Government
- A new consultation has been initiated
- A new application ?
- ?

International examples

- Denmark
- Poland
- The Netherlands
- Great Britain
- France
- Spain
- Italy
- Other countries around the Mediterranean
- North Africa
- Australia
- Thailand
- Dubai
- USA / Florida
- Brazil

Engagement in different projects

- Beach nourishment
- Laser bathymetry (LIDAR)
- National climate and vulnerability inquiry
- Commission for sustainable development
- Sustainable development of coastal areas

Actual local projects

- Erosion exhibition
- New coastal policy
- Coastal action plan
- New web site for Erosionsskadecentrum
- Measurements along the coast
- Messina manuals
- Breakwaters
- Beach nourishment
- Repairing swimming piers
- Repairing groins and dune/cliff protection after the winter storms

Great engagement

- Local citizens
- Organizations
- Politicians
- Newspapers and broadcasting media
- Without Ystad, Sweden had not been on the international map.....

FUTURE

Local measures

- New policy for administration, management and protection of the coastal zone
- Action plan for administration, management and protection of the coastal zone
- Finish on-going projects
- Reconditioning of old groins (swimming piers)
- Maintianing existing structures
- Prepare for beach nourishment
- Some experiments
- Local measures regarding climate issues - planning

FUTURE

Desires towards regional and federal
authorities / EU

Central measures

- More research and development
- Coordination and follow-up, for example methods for monitoring
- Get beach nourishment accepted in Sweden
- Rules ought to be changed at e.g. National Board of Housing, Building and Planning
- Work with erosion issues within the climate work
- International collaboration
- Necessary resources
- The involvement of the County Government

Information material

- State-of-the-art report
- The erosion protection project of Environmental Protection Agency
- Building beach protection
- Films - VHS and DVD
- Information from Erosionsskadecentrum
- News and information from Messina
- Valuation of the coastal areas

Internet web sites with erosion information

- www.ystad.se
- www.swedgeo.se
- www.erosionsskadecentrum.se

END

QUESTIONS ?