



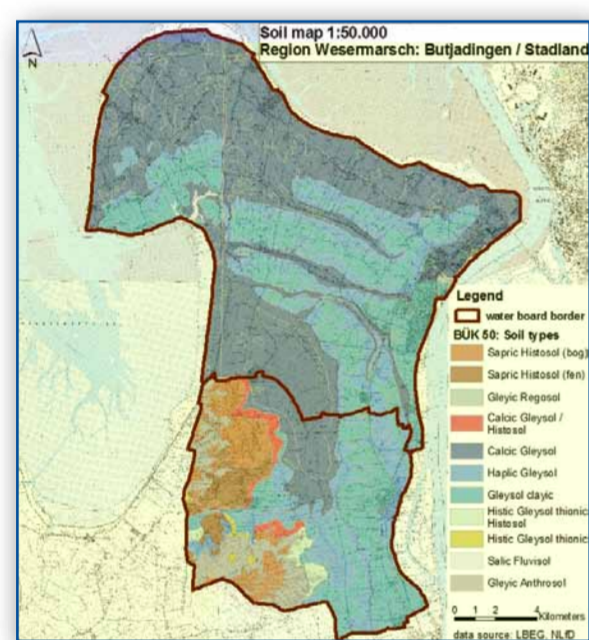
## ► Pilot Area: Wesermarsch – Rural

To solve challenges concerning possible flooding, salinisation of fresh water and drainage systems for the hinterland, a feasibility study will provide insight on these matters.

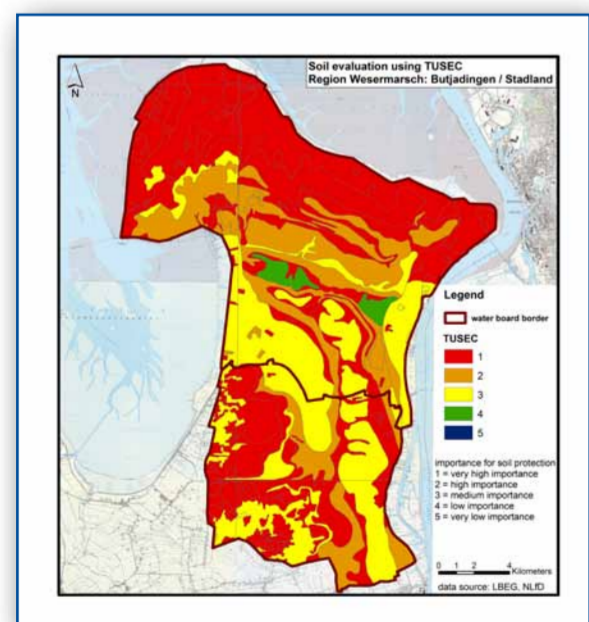
### Status Wesermarsch Rural

- Establish a Regional Forum "Climate Proof Areas" in the county of Wesermarsch, north-western Lower Saxony (cfr. Wesermarsch urban)
- 2 intensive meetings of the working group "Wesermarsch Rural"
- First approaches to a water management which is climate proof taking the different requirements of drainage of rural and urban areas into account (see pictures)
- Investigate the ability of the soil (see extra document)

### Investigation of the ability of the soil



The North (Butjadingen) is dominated by marsh soils (blue coloured), whereas large parts of the adjacent region of Stadland are dominated by peat soils (brown, red coloured).



#### Soil in Wesermarsch

The region of Wesermarsch is characterized by young marsh and peat soils, developed during the last 11,000 years with beginning of the Holocene. Marsh soils, widely spread in this area, developed from tidal sediments (Schlick, a dark blue soft mud). The development is dominated by transgression (flooding periods) and regression (periods of decreasing sea level) and human activities, like dike construction. Slower sea level rise led to increasing groundwater and surface water level (due to backwater), so peat growth was possible.

#### Effects of climate change on soil functions

Evaluating the soil functions in the regions Butjadingen and Stadland (Status quo and regarding the influences of climate change) is one part of the German CPA project. Soil functions are a) natural functions (being a basis for life, being a part of the natural balance (especially water and nutrient balance) and being a control medium to avoid contamination), b) archive functions for the natural and cultural history and c) production functions.

#### Status

Using TUSEC (Technique for Soil Evaluation and Categorization for Natural and Anthropogenic Soils) as one evaluation tool first results (Status Quo) have been obtained. The overall evaluation (including the evaluation of all soil functions) shows that main parts of the region Butjadingen / Stadland are very import regarding soil function protection (see fig. 2). Therefore, if planning e.g. a constructional measure, it is necessary to consider the results of the evaluation of the single soil functions.

#### Plan

Next step is to evaluate the soil functions with consideration of the impact of climate change.

### Plan

- Describe the current problems of water management, mainly focussed on watering of the low lying area in the north of the county
- Investigate and describe the regional effects induced by climate change for water management
- Discuss and generate long-term and sustainable solutions integrating different types of land use taking the current problems and the possible future changes into account
- Deliver a consensus based vision for the year 2050 of the county of Wesermarsch for water management

#### Wicken Fen National Nature Reserve

The Wicken Fen Vision is a 100 year plan to expand Wicken Fen National Nature Reserve in the Cambridgeshire Fens to 53 sq km, creating new habitats to provide sustainable ecosystems to protect over 8200 species recorded on the old reserve. The Vision should help climate proof the reserve as the creation of large scale habitats will enable species niches to develop and change in relation to external factors such as temperature or precipitation changes.

The Pilot Lead is Burwell Fen where over 100 hectares of wet grassland habitat buffering the old reserve is set to be created. The construction of a low level clay bund will help retain water, with the excavation of clay for the bund enabling new wildlife ponds to be created.

The new habitats created will be managed in a sustainable way by herds of free ranging herbivores.

