

New shallow water area in Hamburg in the frame of the Tidal Elbe Concept

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Introduction:

Based on the Tidal Elbe Concept, a long term strategy developed by the Hamburg Port Authority (HPA) and the Federal Waterways Administration (WSV), 30 hectares of new shallow waters connected to the tides are presently being developed in Hamburg. The primary objective of the project “Spadenlander Busch/Kreetsand“ is to cope with changing hydrodynamics in the Elbe estuary using a “working with nature“-approach. For this purpose about 2 mill. m³ of soil will be excavated and the area will be newly designed by transforming a former flushing field area at a mean surface level of 5.50 m above MSL into a shallow water area.

Objectives

The overall objective of the creation of new tidal shallow water areas is to dissipate the tidal energy within the Elbe estuary in order to weaken the effect of ‘tidal pumping’. This effect is held responsible for the continuing increase of the sediment inventory in the upper parts of the Elbe estuary, which is unfavourable for biodiversity and handicaps maintenance dredging significantly.

The “Spadenlander Busch/Kreetsand“ measure is carried out as a pilot project for this concept which – besides the beneficial effects for navigation – also serves nature conservation goals. Therefore, it was decided in 2010 that the measure should also contribute to securing the coherence of the Natura 2000 network within the frame of the planned adaption of the Elbe fairway.

Marsh habitats, shallow water areas, mudflats and other ecologically valuable areas will be developed in the area “Spadenlander Busch/Kreetsand“. Furthermore, habitats for the endemic ‘Elbe Water Dropwort’ (*Oenanthe coniooides*), which is protected by EU legislation, will be developed in order to secure the coherence of the Natura 2000 network.

Background and site conditions

The project area is located on a dyke foreland created on top of a former flushing field. The project is designed so that shallow water areas as well as marsh habitats and other valuable habitats such as alluvial forest and reeds can develop. Thus, synergies on the one hand between the interests and targets of shipping and ports and on the other of nature conservation are expected. Therefore economic and

ecological groups both are interested in the success of the measure.

Description of Measure

At the site “Spadenlander Busch/Kreetsand“ 47 ha of a former flushing field are being transformed into a new Elbe anabranch in order to create new tidal volume and a valuable natural area. Of this total area 30 ha will be transformed into a shallow waters area subject to tidal influence. The measure will be realized by the removal of high-lying soils covering a foreland developed by former dyke realignment. Expected benefits of the measure are the generation of appr. 1 mill. m³ of additional tidal volume and the establishment of adjacent habitats like mudflats, reed and alluvial forests.

The area has already been added to the Natura 2000 area ‘Hamburger Unterelbe’ and is designated as part of the nature protection area “Auenlandschaft Norderelbe“. Costs for the measure are estimated at > 60 mill. € resulting from the huge amount of heavily contaminated soil that has to be removed and treated in a special way. Construction is expected to last three years.

In order to present the tidally influenced landscape to a wide-ranging public, appropriate communication measures are planned which aim to introduce basic tidal specific phenomena to the public. The complexity of the tidal dynamics and estuarine functioning will be demonstrated on site. An innovative information pavilion has been constructed displaying the different aspects of tidal action and flood protection.

Prospect

The measure is a prototype of river engineering measures serving several purposes. Valuable habitats will be created and new tidal volume will compensate the ‘tidal pumping’ effect. At the same time, identification and communication of the benefits for quite different concerns aim at achieving broad public acceptance. The measure will be completed by the end of 2015.

More information can be found online:

www.hamburg-port-authority.de

www.tide-toolbox.eu