

30 years Sediment Management in the Port of Hamburg



7th International SedNet Conference | Venezia | 6 – 9 April 2011

North Sea

Wadden Sea

Hamburg

100 km



Need for Water Depth Maintenance



Sedimentation rate 3 m per year, some places even more.

Dredged Material Disposal in the 1960's



METHA – Treatment Plant

Throughput 1.000.000 m³ per year

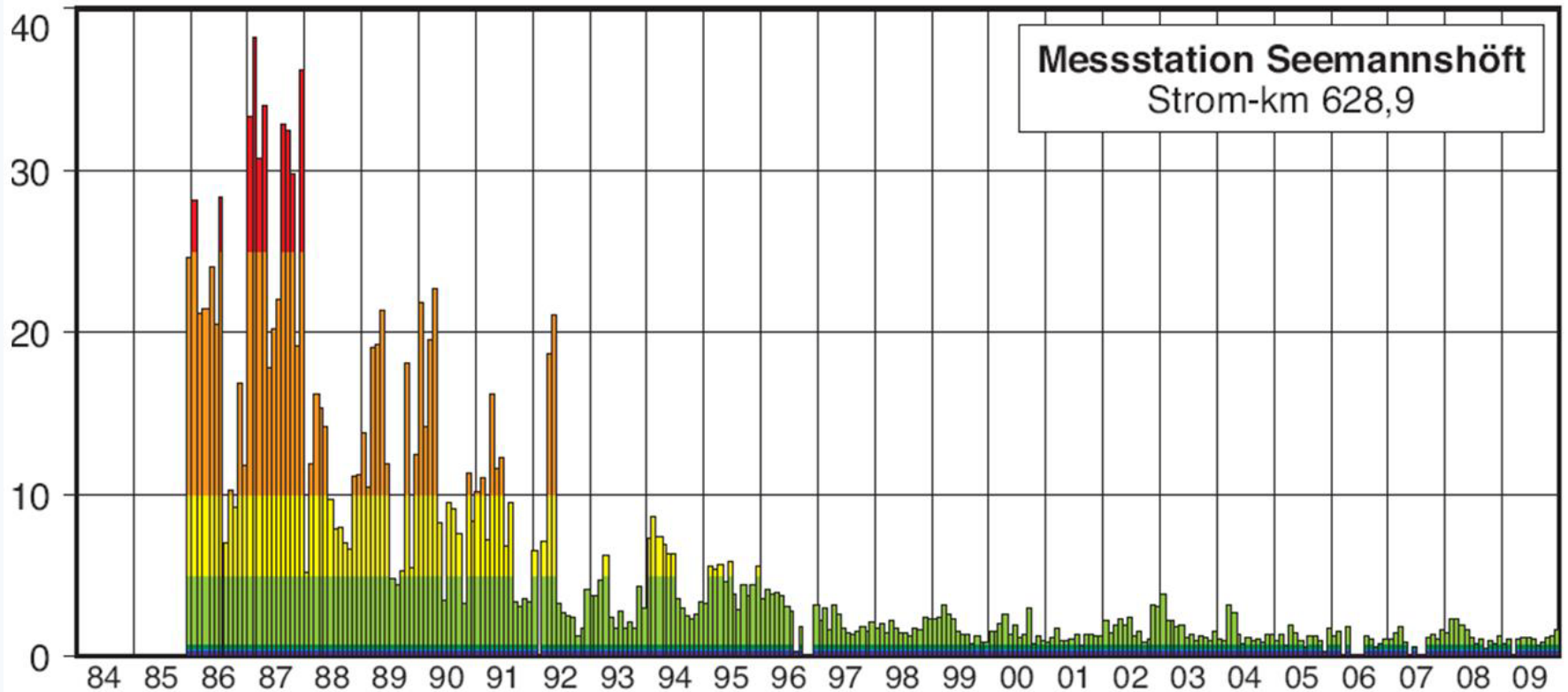


1993 into operation | Investment 70 Mio. Euro | Annually 15 Mio. Euro

Dredged Material Land Disposal Today



Mercury in fresh Sediments (mg/kg TS)



Research started



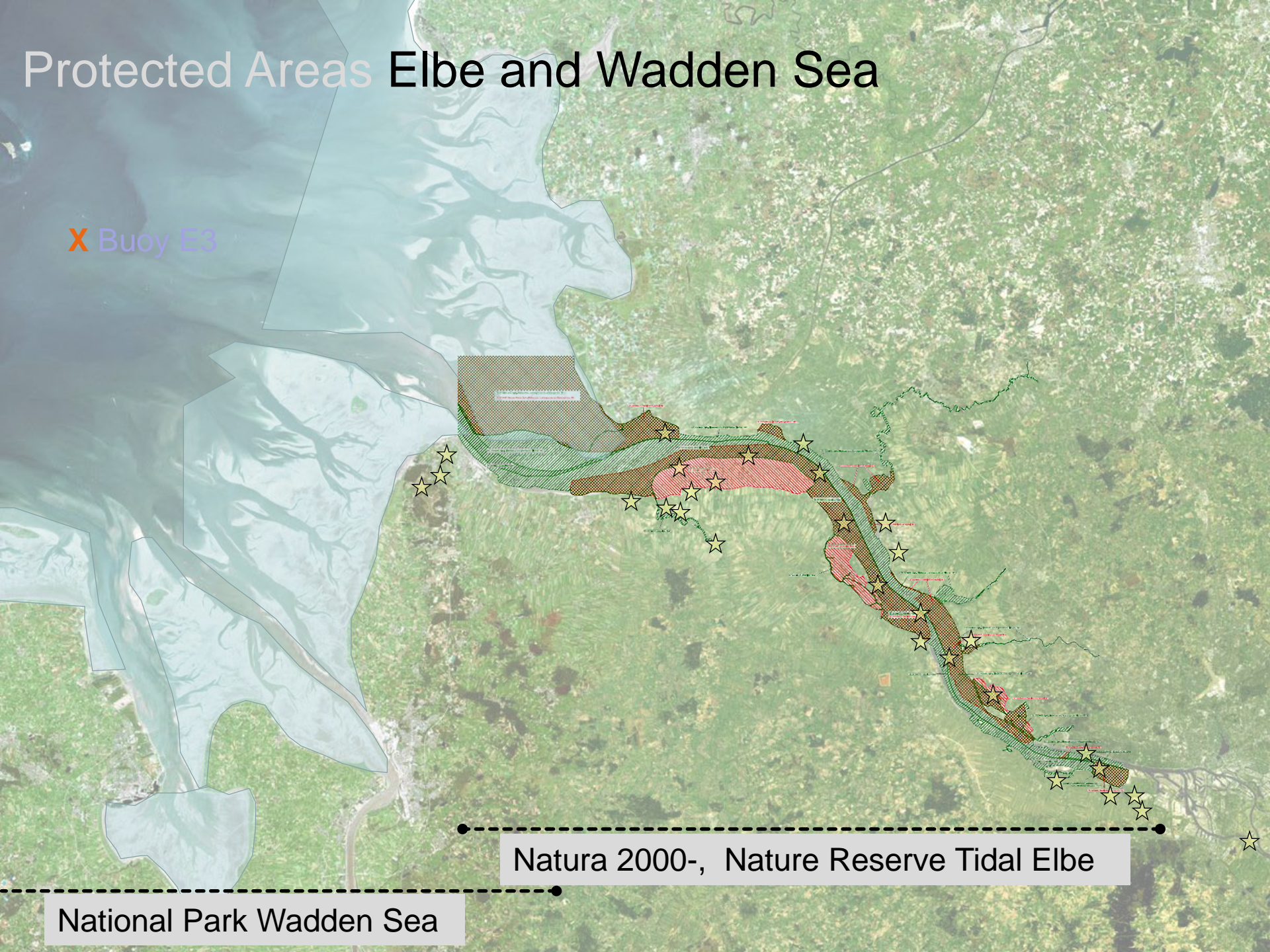
METHA into operation

Open Water Disposal



Protected Areas Elbe and Wadden Sea

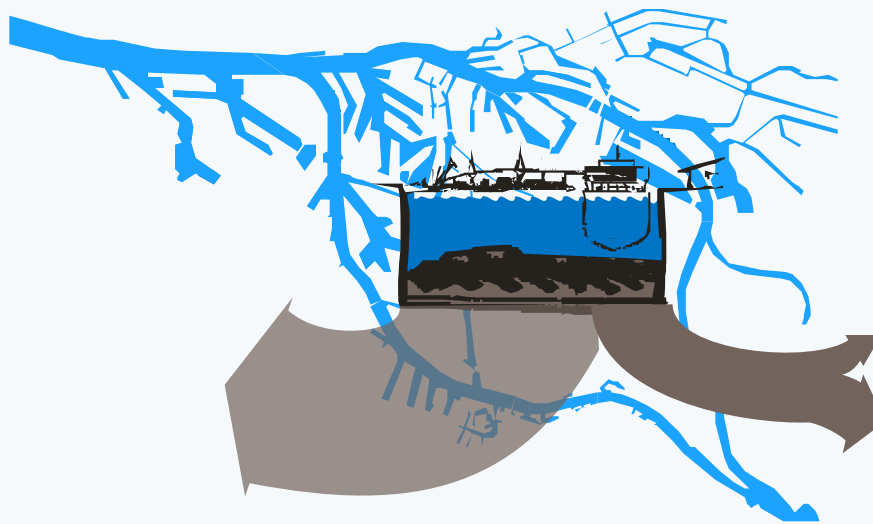
X Buoy E3



Natura 2000-, Nature Reserve Tidal Elbe

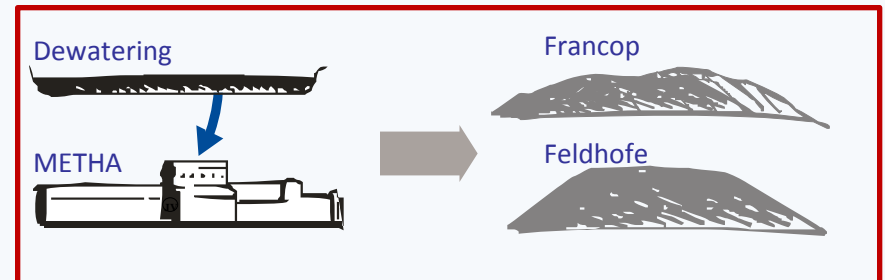
National Park Wadden Sea

Today's Sediment Concept



Relocation

> 3 Million m³



Land Treatment

1 Million m³

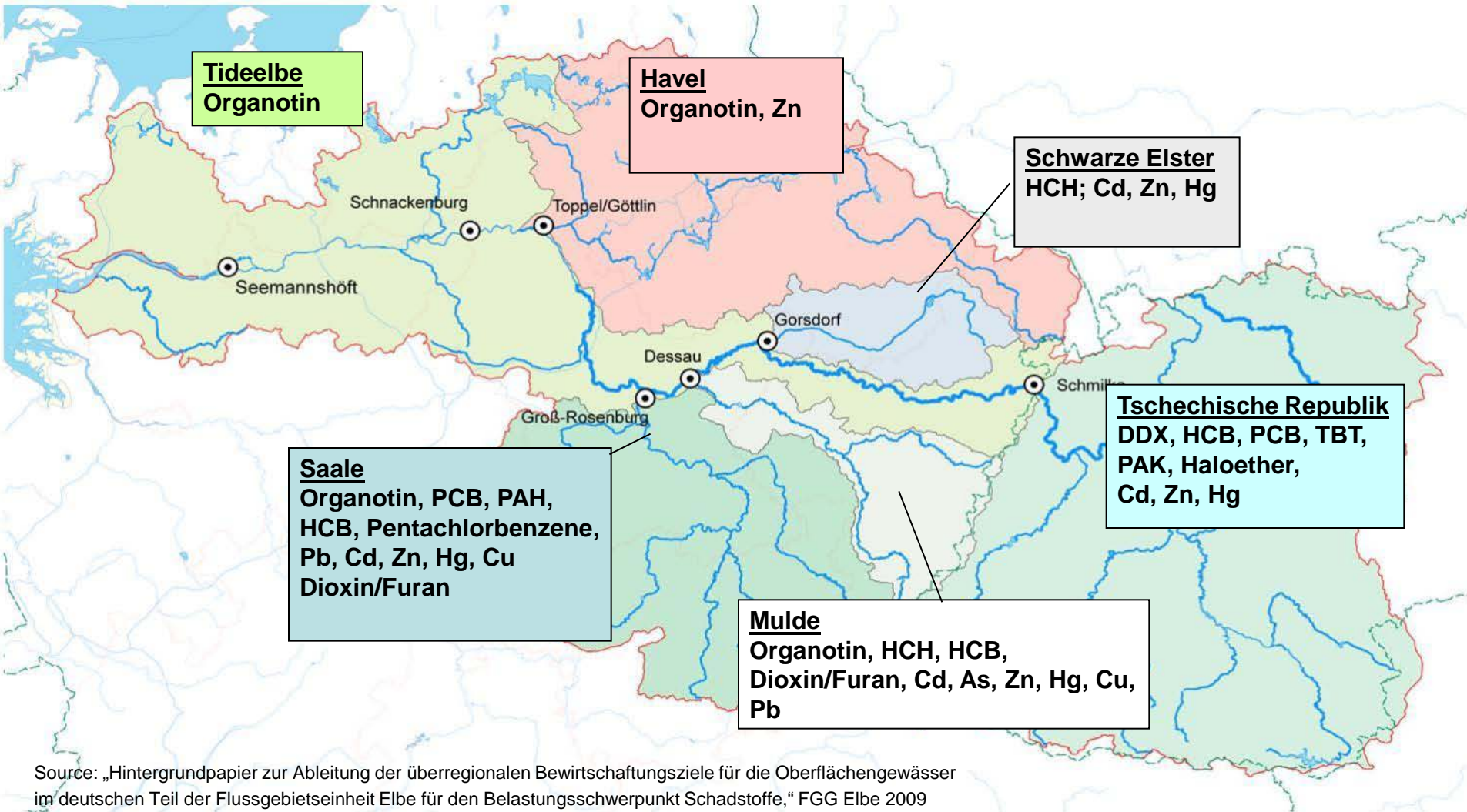
River Basin Sediment Management



The Elbe:

Length 1100 km

Population 25 Million

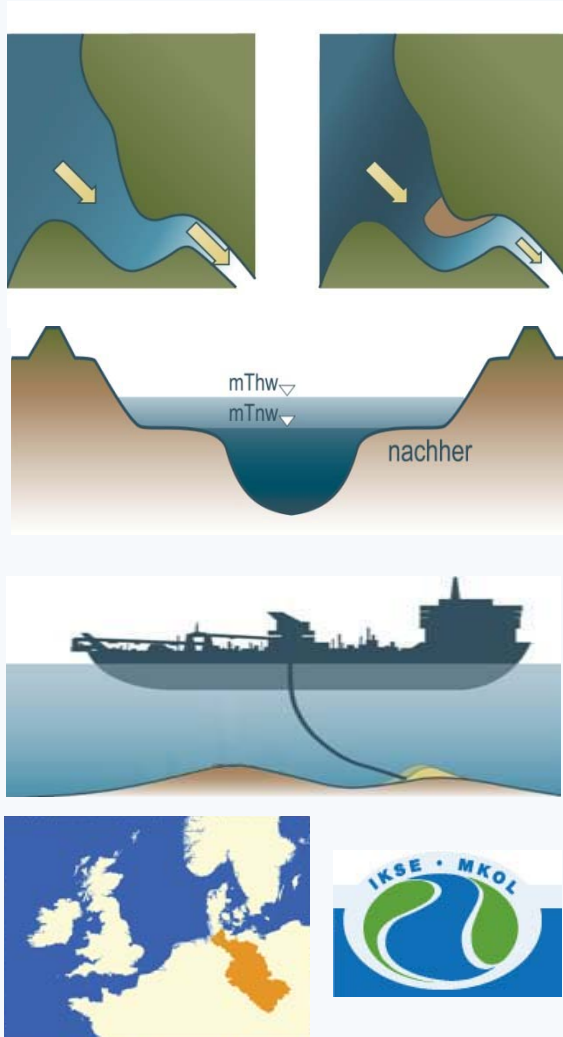


Source: „Hintergrundpapier zur Ableitung der überregionalen Bewirtschaftungsziele für die Oberflächengewässer im deutschen Teil der Flussgebietseinheit Elbe für den Belastungsschwerpunkt Schadstoffe,“ FGG Elbe 2009

Abandoned Sites



Bild 5: Durchfluss der Freiburger Mulde am Altlasten-Standort Freiberg-Muldenhütten; rechts Halden der ehemaligen Arsenhütte mit Hochwasserlinie (Foto Rank 07.09.2002)



1: Tidal Energy Damping River Mouth

2: Creation of Tidal Volume

3: Optimised Sediment Management

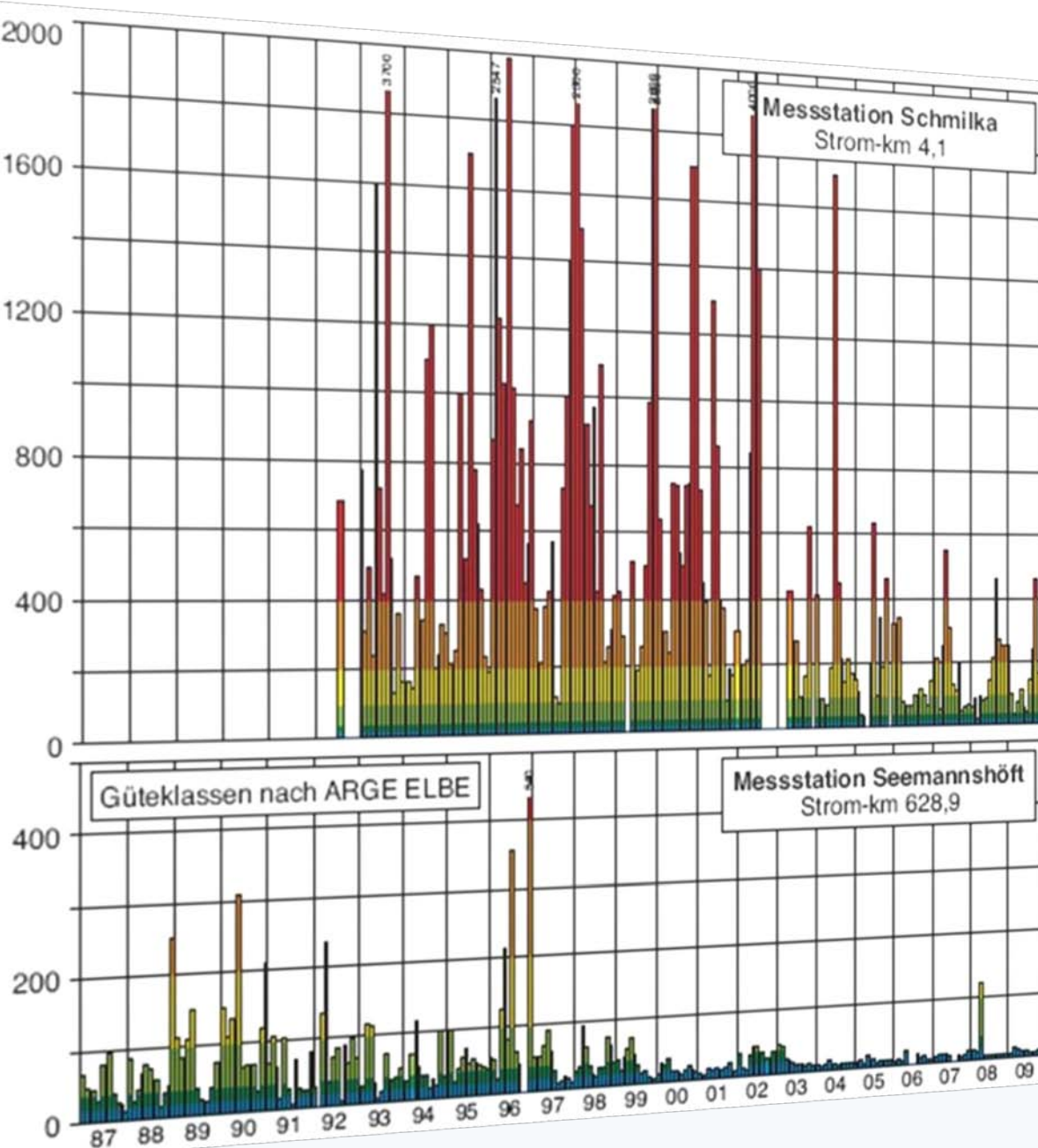
4: River Basin Sediment Management

Thank you for your attention!



Hexachlorobenzene

in fresh Sediments
($\mu\text{g}/\text{kg}$ TS)



Dredged Material Mean

(20 μm)

9 - 32

Dredged Material Guidance

Value R1 / R2 (20 μm) 2 / 6

Supraregional Reduction to
reach all Environmental
Objectives

Schmilka / Schnackenburg 98 %



Pagensand /