



## GETTING TO THE BOTTOM

Design enhancement of low water levels of reservoirs

SOURCE: Based on Generaldirektion Wasserstraßen und Schifffahrt, 2017, Scannerdaten 2003 Talsperre Edersee, Hannover; Fachstelle Vermessungs- und Kartenwesen, Wasser- und Schifffahrtsamt Hann. Münden, 2017, DGN-Grundlage, Hann. Münden; Gewässerkunde, Wasser- und Schifffahrtsamt Hann. Münden, 2017, Pegelstände Edertalsperre, Hann. Münden; Gewässerkunde.

Country / City Germany/ Hanover  
University / School Leibniz Universität Hannover  
Academic year Winter semester 2017/2018  
Title of the project GETTING TO THE BOTTOM - Design enhancement of low water levels of reservoirs  
Authors Kerstin Wagener

TECHNICAL DOSSIER

Title of the project	GETTING TO THE BOTTOM - Design enhancement of low water levels of reservoirs
Authors	Kerstin Wagener
Title of the course	Master's thesis
Academic year	Winter semester 2017/2018
Teaching Staff	Prof. Dipl.-Ing. Katja Benfer & Prof. Dr.-Ing. Martin Prominski
Department/Section/Program of belonging	Institut für Landschaftsarchitektur & Institut für Freiraumentwicklung
University/School	Leibniz Universität Hannover



Written statement, short description of the project in English, no more than 250 words

Recently, the effects of climate change can be seen in the landscape. It can be noticed that reservoirs are effected as well by these developments. The master's thesis deals with low water levels at reservoirs and the interface between the hydraulic engineering structure of a dam, the related water movements and the quality of open spaces. The reasons for this examination are the low water levels caused by the water management and the climate-related water supply. This leads to an enormous conflict potential for the various stakeholders. At low tide, temporary areas become available which are of no use from a hydraulic engineering point of view. The tourism, especially the water-dependent tourism, is particularly affected. Nevertheless, low water levels and the water movements in general produce fascinating, diverse and unexpected landscapes. Starting from different design situations of the study area the thesis investigates whether a design can transform low water levels into attractive sceneries. The interventions of sensitive landscape architecture highlight the unique qualities and rearrange them. The reservoir and the bottom of the lake ressamble two worlds which were connected, by redirecting the use of former structures and adapt it for a new purpose. The designs, which are especially adapted to the needs of Lake Edersee, reveal similarities which can be formulated as transferable strategies. Conclusively, the series of strategies which cope with different characteristics of low water levels can be used as a study basis for changing water levels at dams and provides inspirations to increase their attractiveness.

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CLIMATE CHANGE AGAIN

11th International Biennial Landscape Barcelona

Barcelona September 2020  
SCHOOL PRIZE



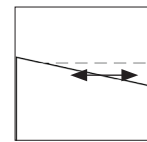


SOURCE: Based on OpenStreetMap, 2017, „Ederstausee“, Aufgerufen 15.10.2017, Google Earth, 2017, „Edersee“, Aufgerufen am 19.10.2017, Generaldirektion Wasserstraßen und Schifffahrt, 2017, Scannerdaten 2003 Talsperre Edersee, Hannover: Fachstelle Vermessungs- und Kartenwesen, Wasserstraßen- und Schifffahrt, 2017, DGN-Grundlage, Hann. Münden: Gewässerkunde, Wasser- und Schifffahrtsamt Hann. Münden, 2017, Pegelstände Ederstausee, Hann. Münden: Gewässerkunde.

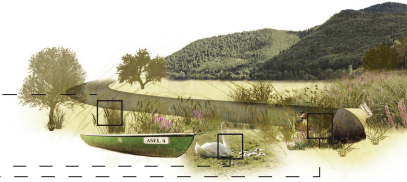
General plan Edersee, spatial expansion of the different Water levels | location of the areas of design, 1:15.000, scaled down

## TYPLOGIES OF BANKS

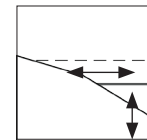
### SHALLOW BANKS



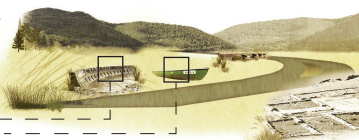
HORIZONTAL WATER MOVEMENT  
LONG PERIODS OF LOW WATER  
Development of vegetation  
Alternate habitat for aquatic birds  
Sea relics remember to functional purpose as a reservoir



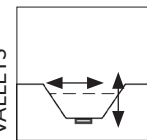
### MIXED BANKS



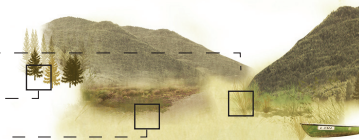
VERTICAL AND HORIZONTAL WATER MOVEMENTS FOLLOW EACH OTHER IN TIME  
Ruins and old village  
Structures turn up  
Boats refer to the use as a lake



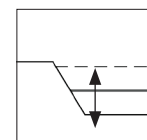
### SECONDARY VALLEYS



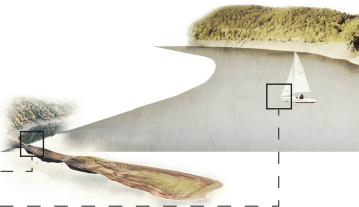
VERTICAL AND HORIZONTAL WATER MOVEMENTS EXPIRE AT THE SAME TIME  
Reservoir surface becomes a small trickle  
Development of vegetation  
Trees survive high water periods  
Trails guide in the direction of the main storage space of the reservoir



### STEEP BANKS



VERTICAL WATER MOVEMENTS  
Islands turn into headlands  
Lake area is still usable for water tourism



## STRATEGIES



WALKING ALONG



CONNECT AND ISOLATE



WALKING TOWARDS



MODIFY



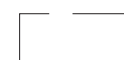
SHAPING THE WATERBODY



CONDUCT SUCCESSION



PROTRUDE



RETRACE



BEGINNING OF BACKWATER AT HERZHAUSEN



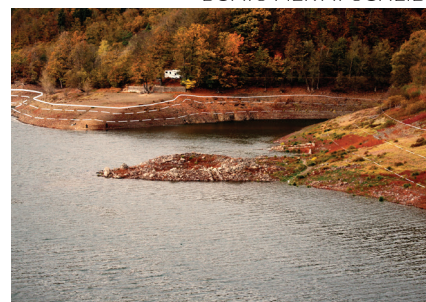
SECONDARY VALLEY ASEL



BOATS PIER AT SCHEID



STEEP BANK REHBACH



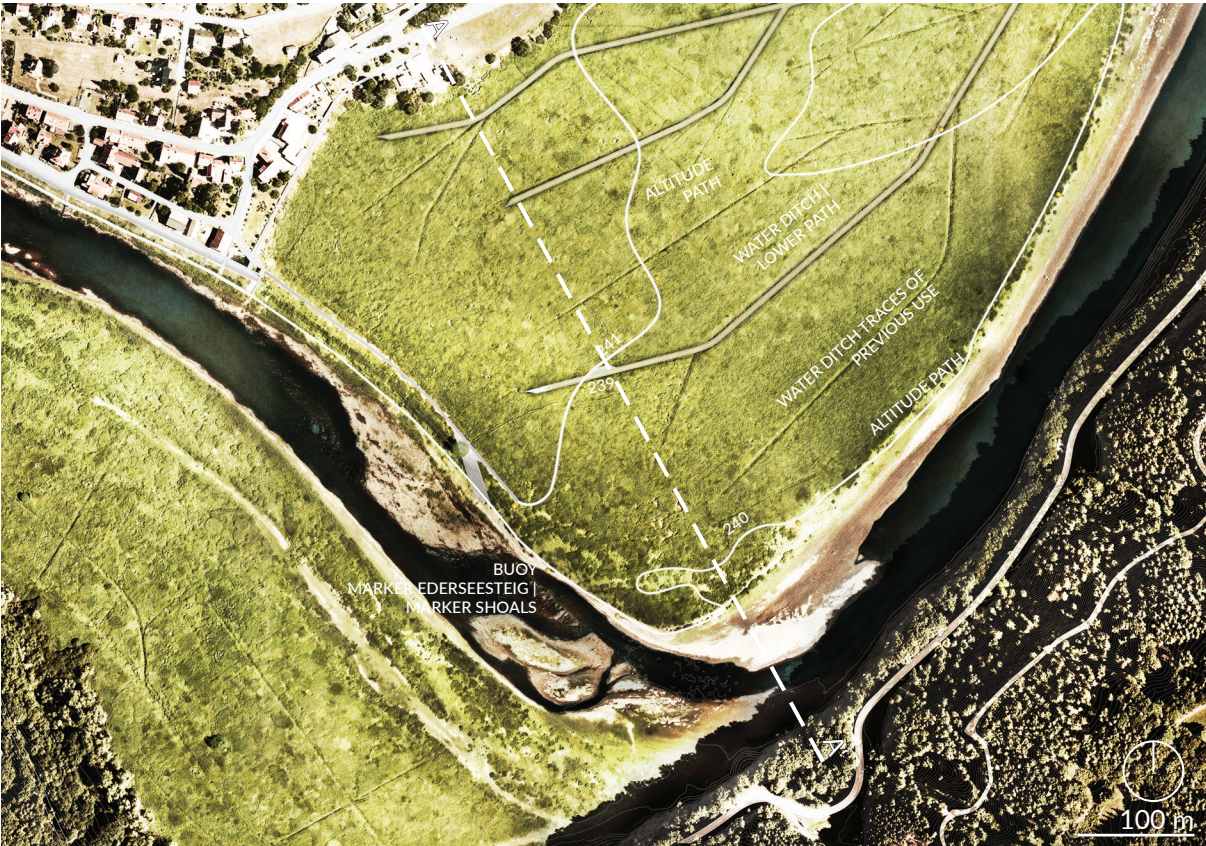
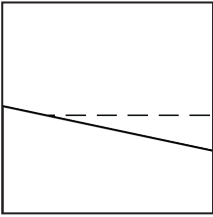
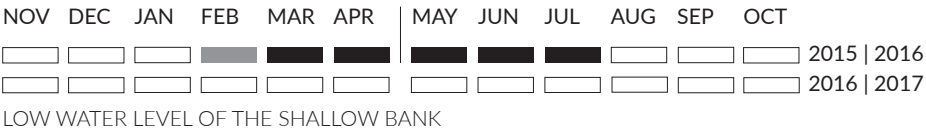
FORMER LOCATION OF ALT-BERIC



END OF THE BACKWATER, DAM



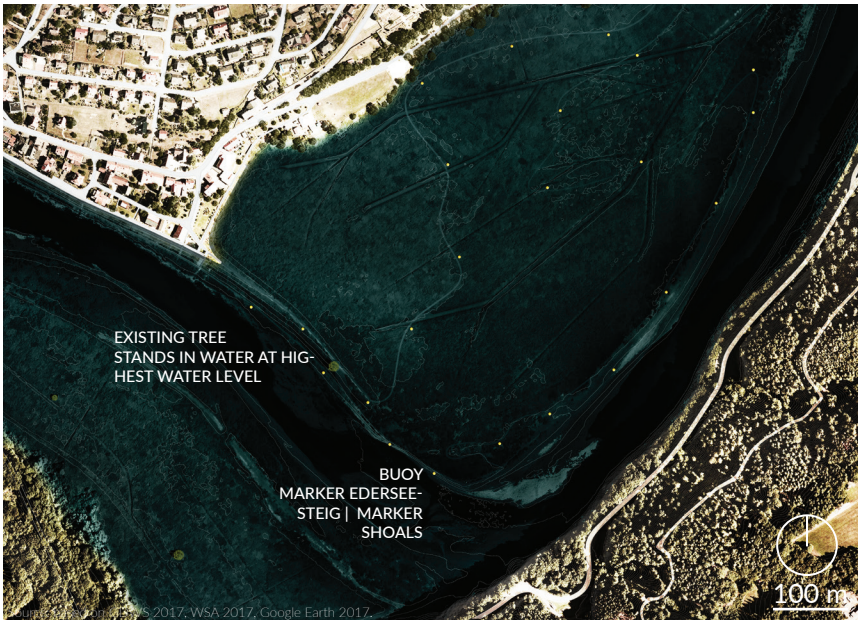
# SHALLOW BANK AT HERZHAUSEN



Design Herzhausen, low water Level, M 1:1.000 scaled down



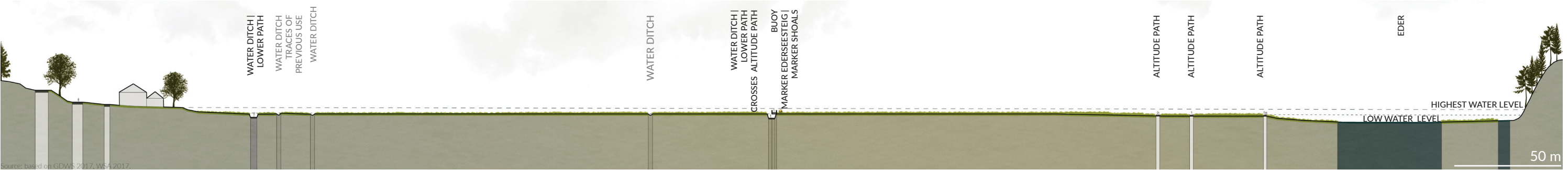
Design Herzhausen, medium water level, M 1:1.000 scaled down



Design Herzhausen, high water level, M 1:1.000 scaled down



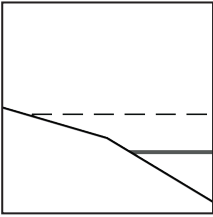
Altitude path at the shallow bank with view of the willow which stands in the water when the dam has his highest water level



SECTION AA' | M 1:500 | scaled down



# Former location of the village Alt-Berich



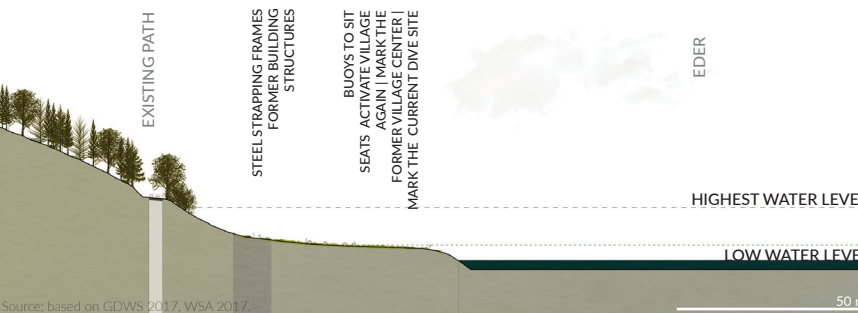
Design Berich, low water Level, M 1:1.000 scaled down



Design Berich, medium water level, M 1:1.000 scaled down



Design Berich, high water level, M 1:1.000 scaled down



SECTION EE' | 1:500 | scaled down



The new buoys to sit get the public life back into the former village center of Berich