



# Water bodies, floodplains and good ecological status -

Comments on the implementation of the Water Framework Directive from an NGO perspective

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# Structure



1. Introduction
2. Some questions concerning „water bodies“ and floodplains
3. Good examples for the integration of floodplains



# 1. Introduction

## Some key aspects of WFD implementation concerning floodplains



### Strong linkage with nature conservation

- Natura 2000
- Wetlands and floodplains (?)

### Weak linkages/main areas of conflict

- Flood risk management
- EU Agricultural Policy
- Navigation/waterways

> *Are WFD environmental objectives implemented strongly enough to have significant impacts here?*

## Relevance of floodplains for achieving WFD environmental objectives

1. **Good ecological status**
  - Nutrient retention
  - Habitat (e.g. fish species)
2. Environmental objectives in **Natura 2000-sites**
  - Art. 4 (1) c WFD
  - Conservation agencies have to come up with conservation objectives and management plans!
3. No deterioration and enhancement of terrestrial ecosystems and **wetlands** directly depending on the aquatic ecosystems (Art. 1 WFD)



## Some results of the risk analysis for German river basins



Main pressures causing „at risk“:

### 1. Nutrients

(mainly diffuse inputs from agriculture)

### 2. Hydromorphological changes

(mainly dams of all sizes)

3. Chemical substances (Annex VIII)

4. Priority substances (Annex IX and X)

Limitations of the „at risk“ classification

- Assessment only on the basis of existing data (e.g. fish fauna generally not regarded)
- Hydromorphology – only a „supporting“ component

Abb. 2: Ergebnisse der Bestandsaufnahme für Oberflächengewässer und Grundwasser



Abb. 5: Ergebnisse der Bestandsaufnahme für den guten Zustand der größten Oberflächengewässer in Deutschland



Table and map:  
IPB, 2005



1. Introduction
2. **Some questions concerning „water bodies“  
and floodplains**

# Do floodplains belong to the „water body“?



## 1. Water bodies of rivers do not have precise boundaries

- Definition water body (CIS-Guidance water bodies)

*(...) a river water body comprises:*

- (a) the hydromorphological quality elements, which include the water flow, the bed of the channel, that part of the land adjacent to the channel that's structure and condition is directly relevant to the achievement of the values for the biological quality elements (i.e. the **riparian zone**), and*
- (b) the relevant biological elements.*

## 2. WFD reference conditions explicitly include "undisturbed conditions" in the riparian zone

## 3. The riparian zone is more than just the immediate shore

- Definition riparian zone (CIS-Guidance Wetlands):

*Land immediately adjacent to a river, the structure and condition of which significantly influences the river's other hydro-morphological quality elements, biological quality elements and physico-chemical quality elements, and which may in turn be influenced by the river. The zone **will include relevant parts of islands and floodplains.***

- Definition floodplain (Bavarian floodplain program):

*"areas of water courses that are formed by water dynamics (flooding and groundwater),,*



Where are...

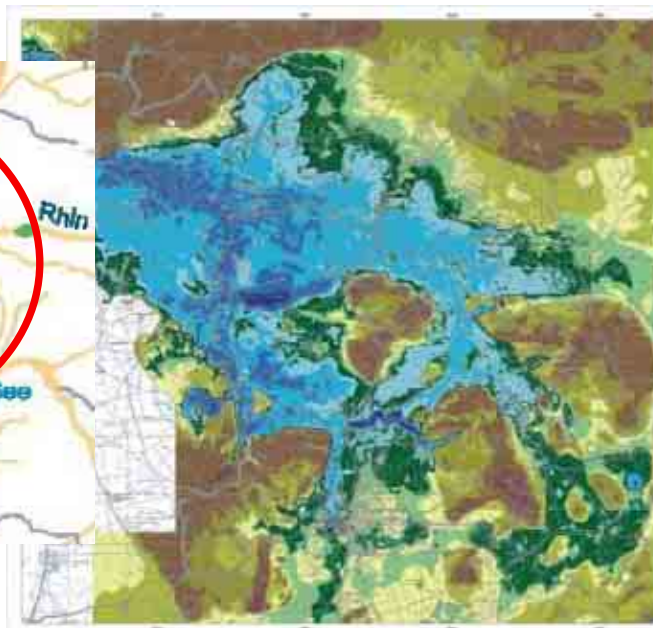
Where are the boundaries of the water body in the reference condition?



... the same area in the art. 5 report



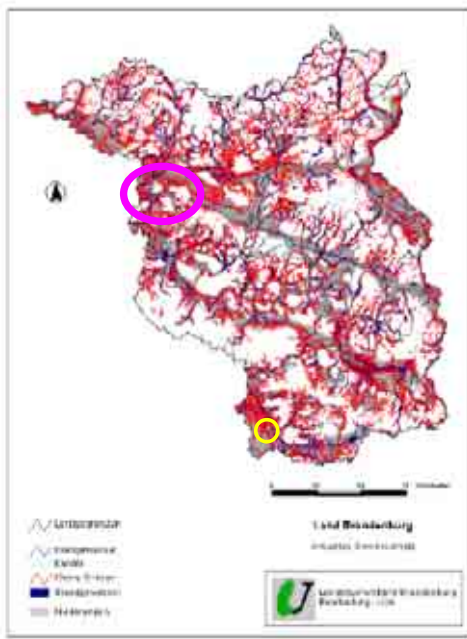
## Where are the boundaries of the water body? (2)



# Are floodplains classified as wetlands?



Obersicht über das aktuelle Gewässernetz in Brandenburg



Umsetzung der Wasserrahmenrichtlinie im Land Brandenburg

Karte der grundwasserabhängigen Ländkoösysteme



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## Will the assessment of the fish fauna integrate floodplains?



### WFD requirement for good status (fish fauna):

„slight changes in species composition and abundance“

### Problem 1: Assessment method for fish integrates floodplains only partially (Germany)

- Composition of species
  - reference conditions **refer to the main river channel** only!
  - reference conditions for floodplain waters were not definable
- Abundance
  - only assessed in water bodies with <9 species
  - not measurable in large rivers
  - examples illustrating the scale of change:
    - Lower Odra valley: estimated increase of fish recruitment by a factor 10-12 (for species dependent on floodplains) in case of natural flooding regime in the polders (Bischoff 2002)*
    - Lower Havel: Along an 80 km stretch of the river, 1.100 Fishermen went bankrupt after river regulation in 1911-1913 (Kotzde 1914)*

## Will the assessment of the fish fauna integrate floodplains? (2)

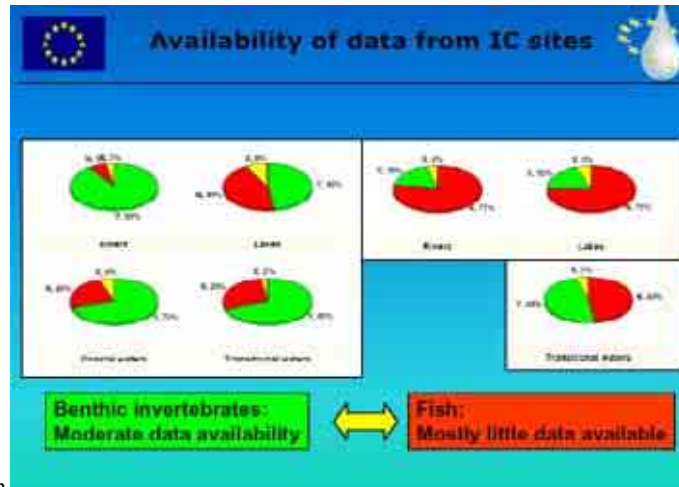


- **Expert recommendation:**  
(Leibniz-Institute of Freshwater Ecology and Inland Fisheries, Berlin)
  - „Monitoring site“ has to consist of main river channel, side channels, and floodplain water bodies if present
  - occurrence of floodplain dependent species should than exceed 5%
- **Pragmatic approach in Bavaria:**
  - Use hydromorphological classification to assess fish fauna (tests show high correspondance)

## Will the assessment of the fish fauna integrate floodplains? (3)



- Problem 2:  
Intercalibration process for ecological status classification does not integrate fish fauna sufficiently



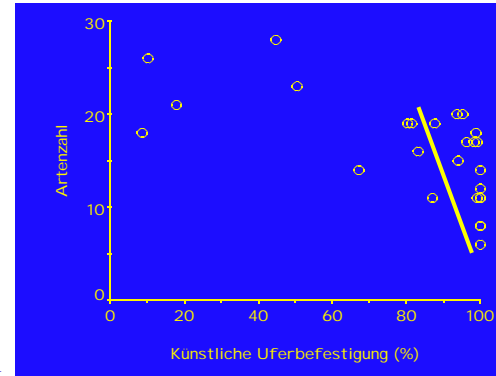
## How much floodplain does the "good ecological status" require?



- Basis: In heavily degraded waterways and canals, the last 20% of lost natural shore result in largest loss of species

To be discussed:

- Can we define a pragmatic approach to define a necessary minimum for floodplain integration?
- Criterion: Percentage of the morphological floodplain that is still regularly inundated
  - **Can we come up with (type-specific) minimum percentages for rivers?**
  - **For example: No „good status“ below 20% active floodplain?**



Slide: Christian Wolter, IG

## Summary: A Floodplains-Questionnaire



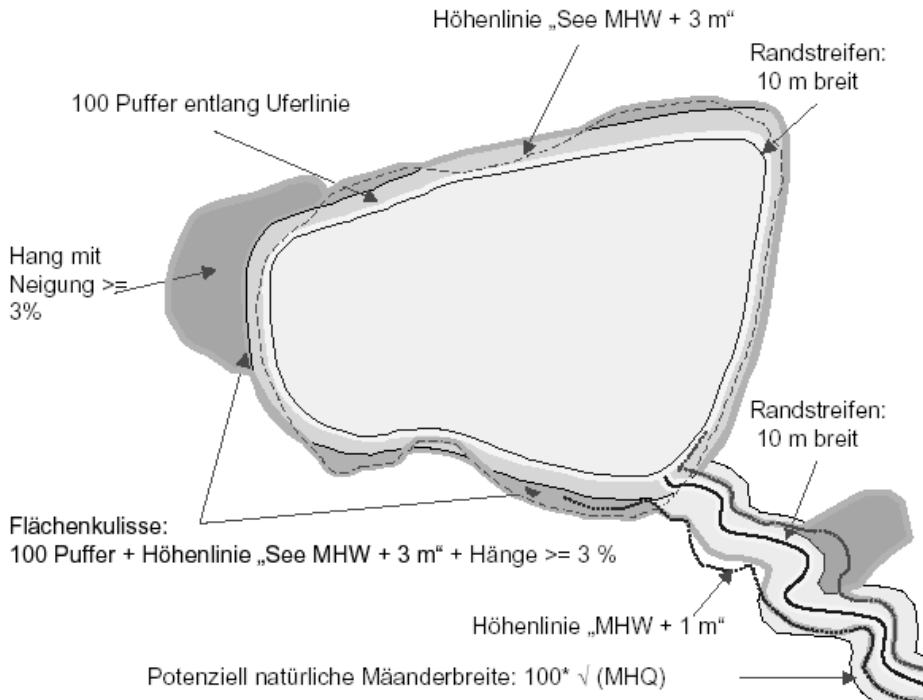
- Do floodplains belong to the water body?  
*Yes, in theory (at least partially)*
- Where are the boundaries of the water body?  
*Not yet on the map*
- Are floodplains classified as wetlands?  
*Sometimes*
- Will the assessment of the fish fauna integrate floodplains?  
*Probably not sufficiently*
- How much floodplain does the "good ecological status" require?  
*I'd really like to know!*





1. Introduction
2. Some questions concerning „water bodies“ and floodplains
3. **Good examples for the integration of floodplains**

# Buffer zone register (Schleswig-Holstein)



## Activities in Northrhine-Westphalia



- Working group on floodplains and WFD
  - Working hypothesis:  
„Good status“ will in many cases not be achieved without integration of floodplains
- Floodplain program (long term)

## The Austrian „Floodplain-Index“



- A tool to assess the ecological status of lowland river floodplains
- Chovanec et al. (2005)
- Indicators:
  - Dragonflies
  - Caddisflies
  - Amphibians
  - Molluscs
  - Fishes

## Reference conditions for floodplains (BfN project)



### Ergebnisse zum Stand der Flussauentypisierung • Visualisierung des Leitbildes



Sandige, sehr gefällige  
Flüsse des Flach-  
hügellandes mit  
Winterhochwassern



Planungsbüro  
Koenzen,  
Hilden



Thank you  
for your attention!

