

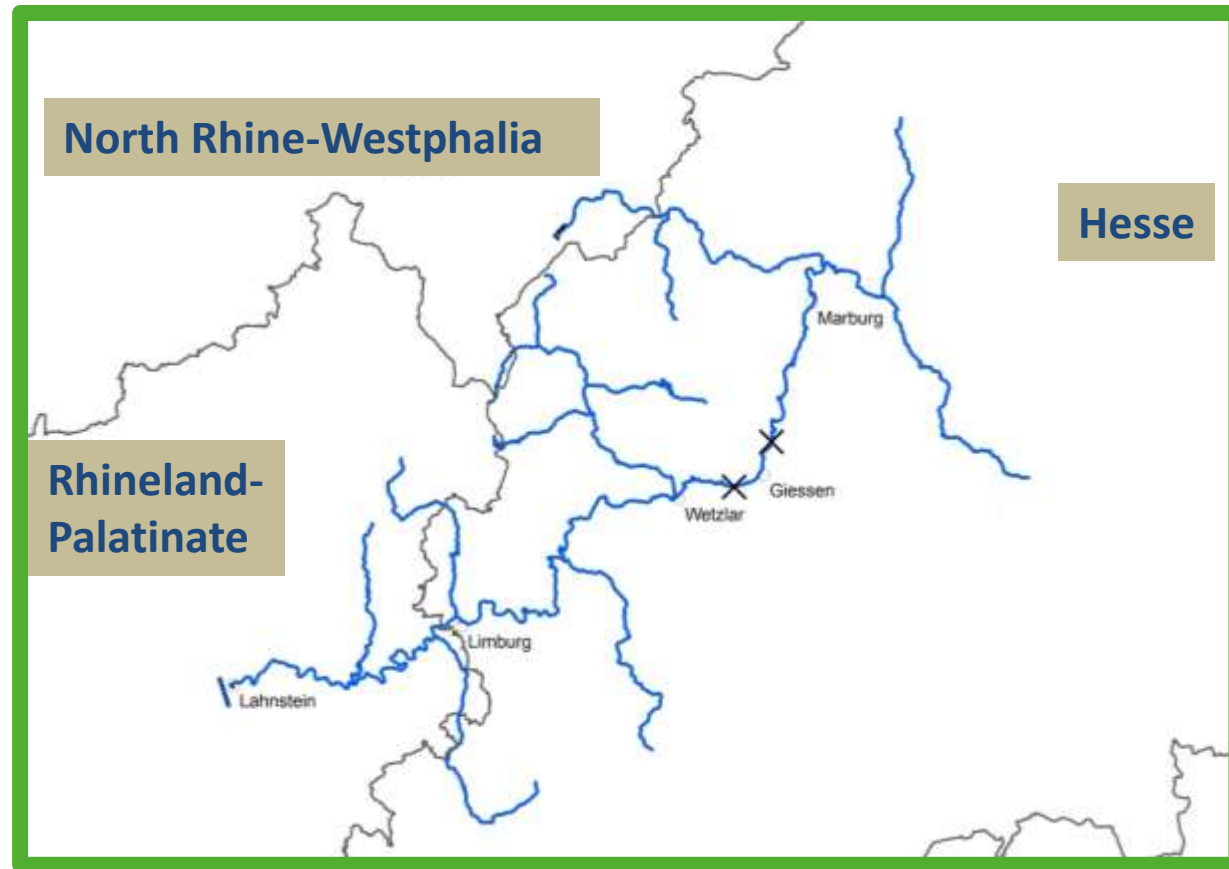


Sediment management for a living river - the Lahn River case

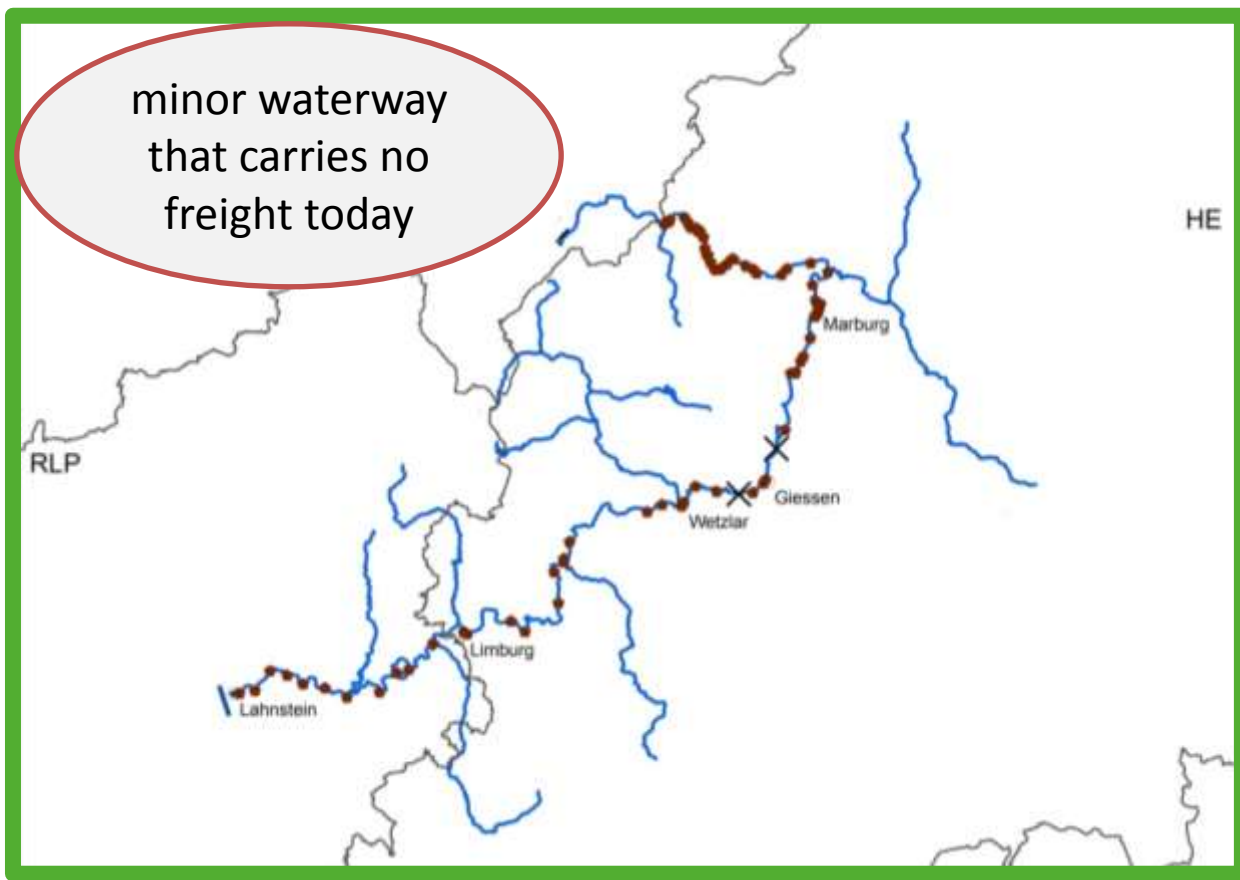
Alexandra Brinke, Denise Spira, Michael Schleuter,
Georg Reifferscheid, Peter Heininger & Ute Feiler

Federal Institute of Hydrology, Germany

Starting point for LiLa

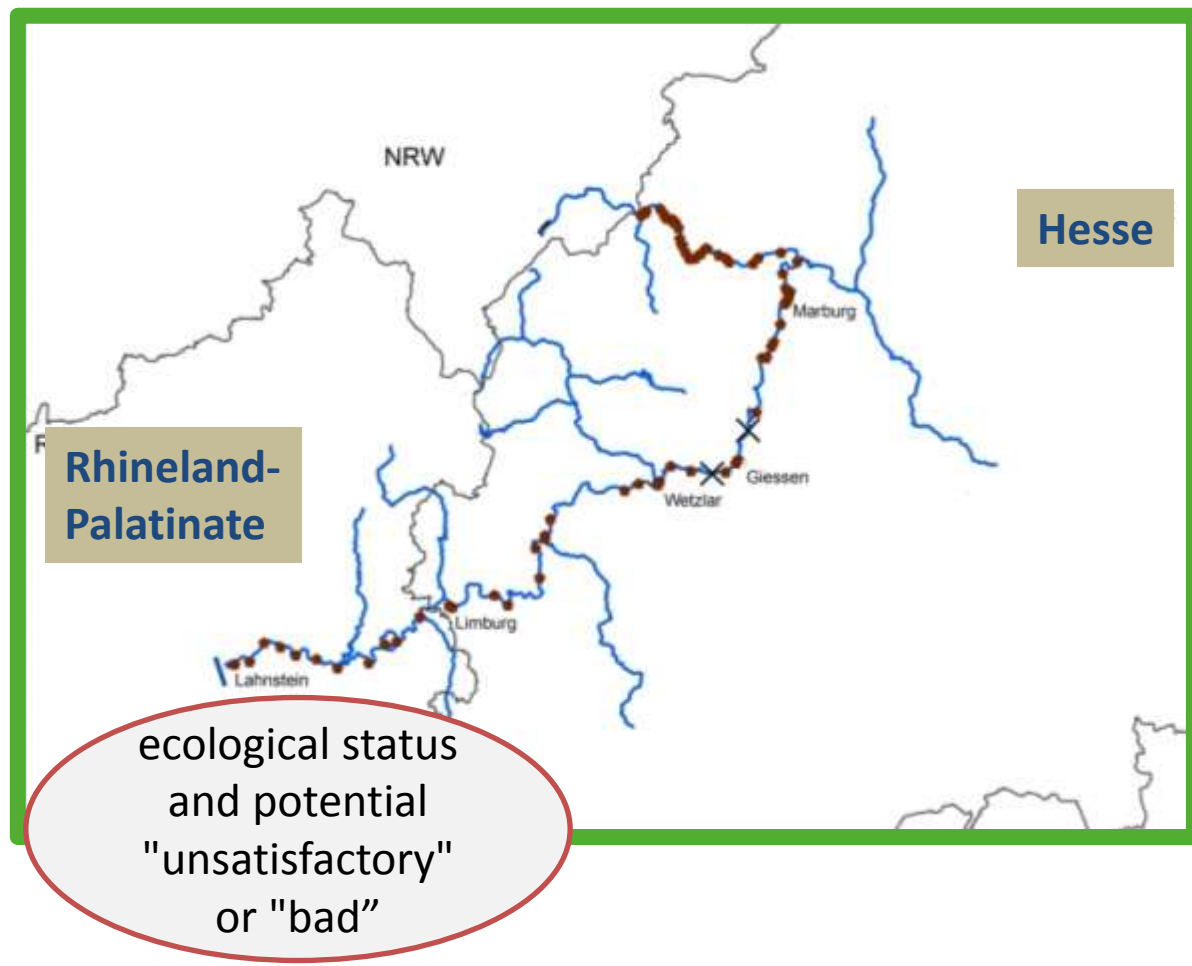
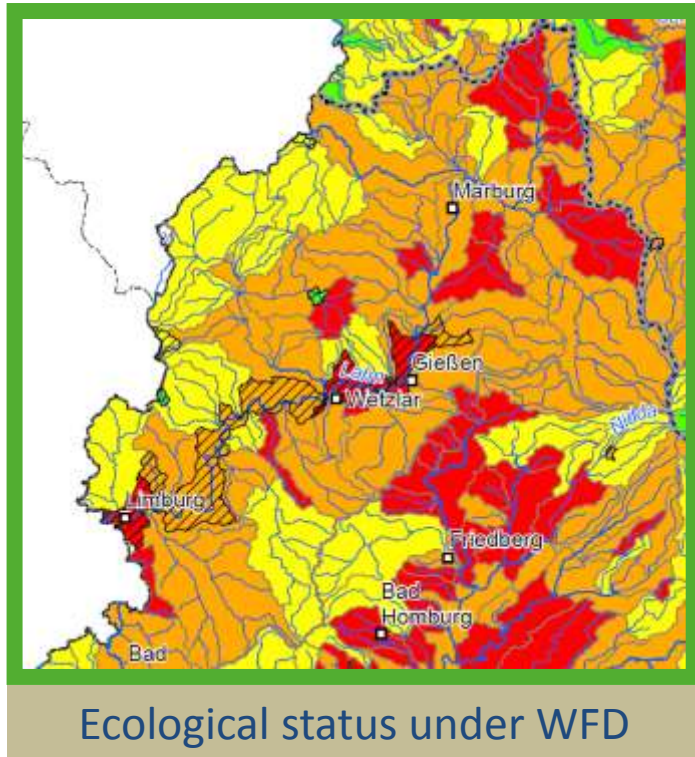


Starting point for LiLa



New National Navigation Concept

Starting point for LiLa



Starting point for LiLa

LiLa-Living Lahn
"One river, many interests"



Starting point for LiLa



Federal Authorities



Rhineland-Palatinate



Integrated EU-LIFE-Project
„LiLa-Living Lahn River“

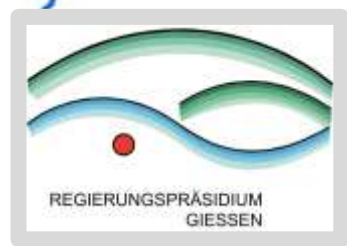
Duration:
10 years (2015 bis 2025)

Budget:
15.7 Mio. Euro
(EU-Contribution 8.5 Mio. Euro)



Hesse

HE



„LiLa - Living Lahn“
SedNet 2017
Genua, .15 JUNE 2017

Main topics in LiLa...

**Ecological upgrading/
Renaturalization measures**
(WFD and Natura 2000)

**Development concept for
the Lahn river**

**Cross-administrative
collaboration in regional
projects**

Main topics in LiLa...

Ecological upgrading/ Renaturalization measures (WFD and Natura 2000)

Ecological upgrading/Renaturalization measures in the context of WFD and Natura 2000...

- Prevention and control of invasive plant species
- a turbine management at hydroelectric power plants to protect migrating blank eels
- supporting measures for endangered fish species (grayling and gib head)
- improvement of flooding situation by creation of new retention areas
- Structural improvement measures on the Lahn and its floodplains
- PCB and dioxin pollution in the tributary Gelbach river
- **Sediment management concept and monitoring**

Sediment cadastre

Aims:

- Determination of **status quo of sediment-quality** to
 - give an overview on remediation needs and possibilities
 - pinpoint “pollution hot-spots”,
 - build-up a database
- **Serves as basis for**
 - the development of the sediment management concept
- precondition of the sediment monitoring

Method:

- physicochemical, chemical und ecotoxicological **characterization of sediments**
- Sampling campaign over 3 years

Measures of the BfG in LiLa

Aims:

- Offer solutions to handle (contaminated) sediments
- basis and decision guidance regarding the implementation of measures

Method:

- Established sediment management concepts serve to **provide useful guidance**
 - Identification of qualitative indicators (e.g. relevant pollutants)
 - Proper sediment classification

Sediment-management-concept

Measures of the BfG in LiLa

Sediment cadastre

Sediment monitoring

Aim:

Success control sediment-management concept

Method:

Analysis of sediment quality before, during and after a measure provides information on a possible improvement of the chemical status of the waters

Measures of the BfG in LiLa

project start: 2015

Sediment cadastre

Sediment monitoring

Sediment management concept

project end: 2025

Sediment-cadaster

Sediment cadastre



Identification of potential reference monitoring sites



Informations by regional authorities on existence of discharges (e.g.wastewater treatment plants)

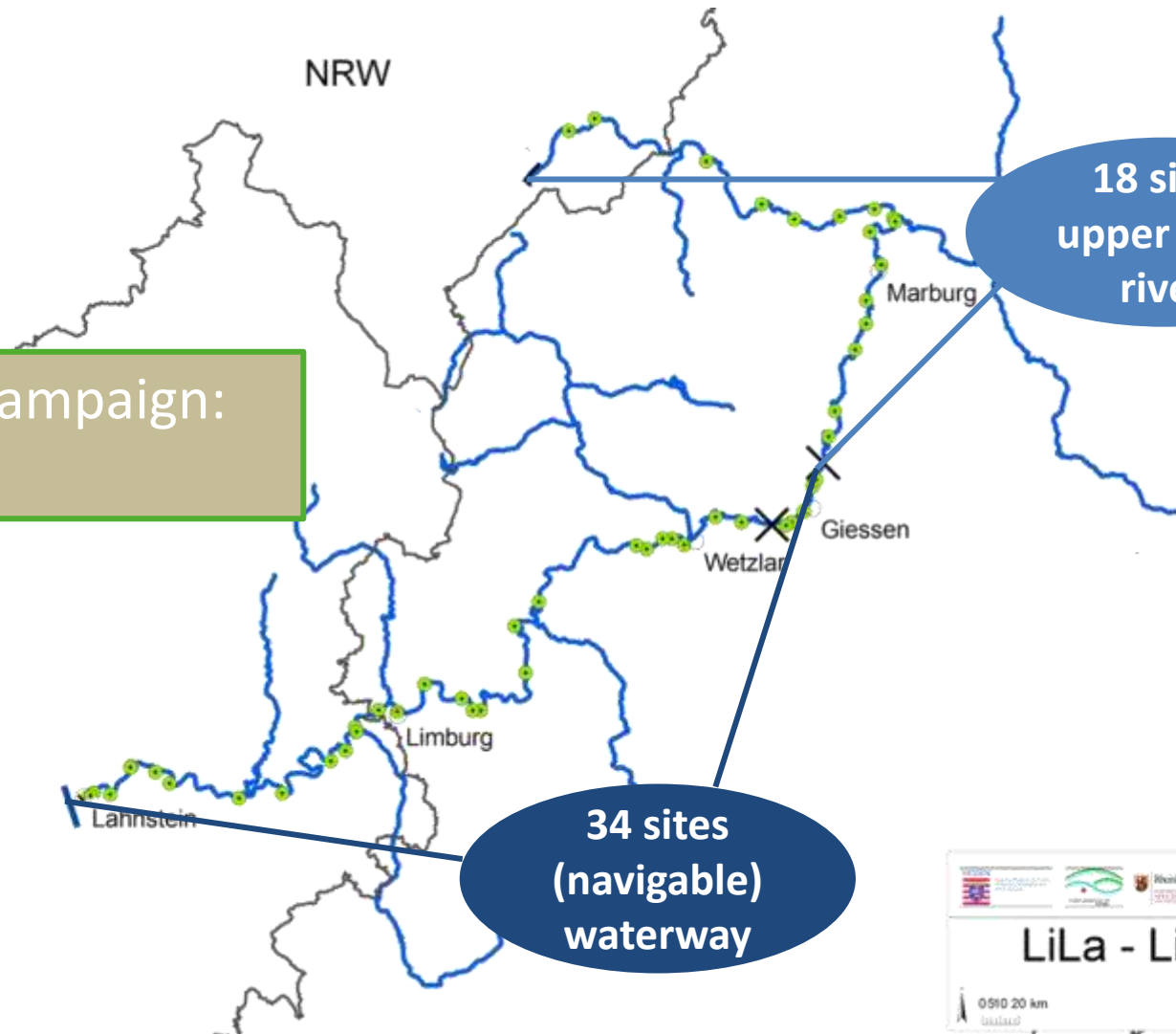


Literatur research on known „pollution hotspots“



Analyses of aerial images: locks, mouth of tributaries , ports/marinas,backwaters, population density and agriculture

Sediment-cadaster

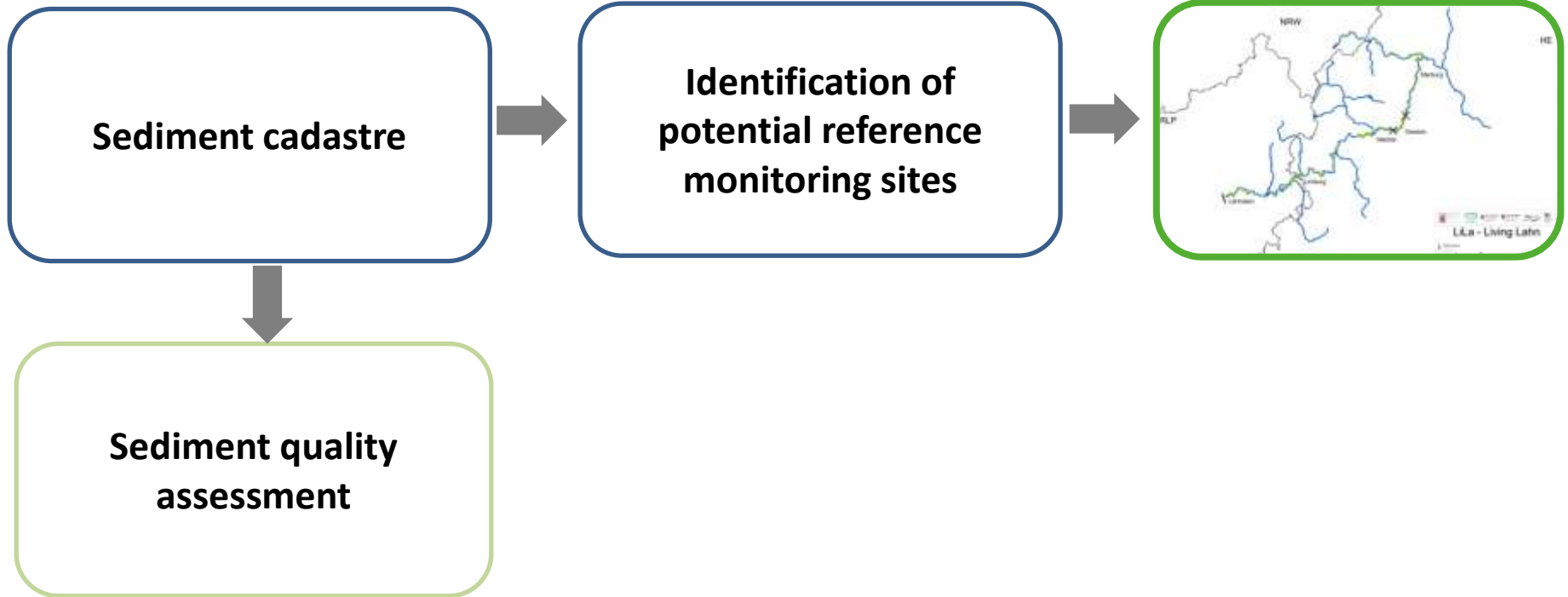


18 sites
upper Lahn
river

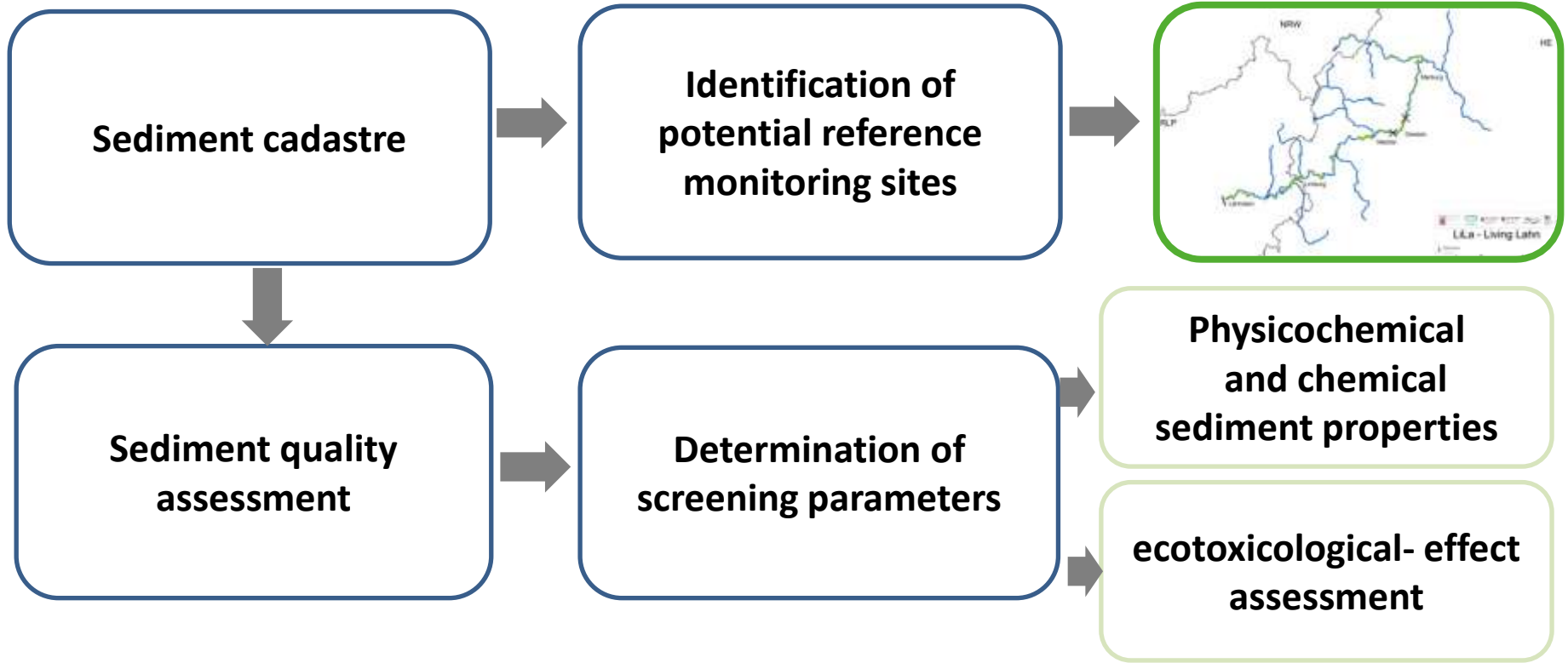
34 sites
(navigable)
waterway

First sampling campaign:
2016/07-09

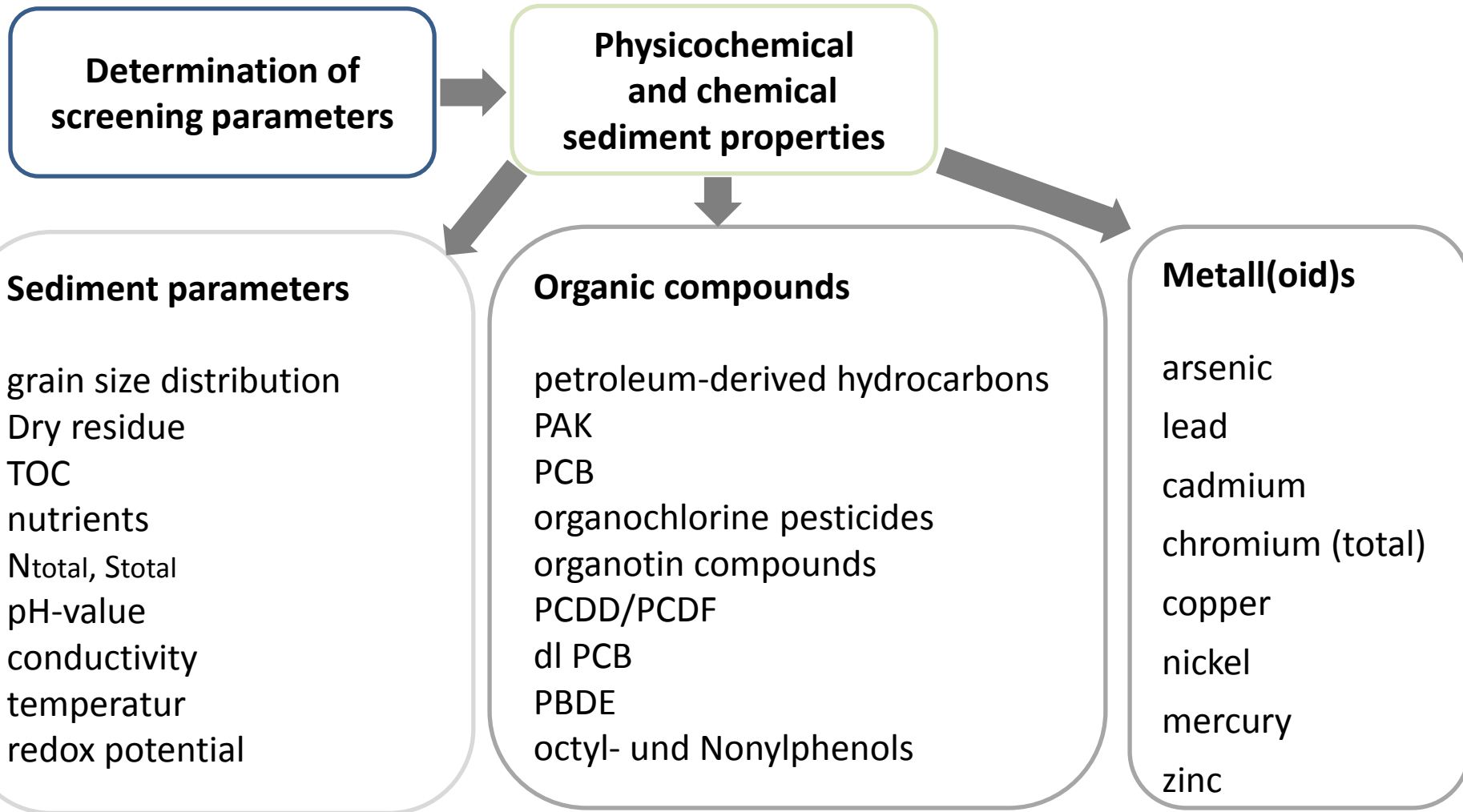
Sediment-cadaster



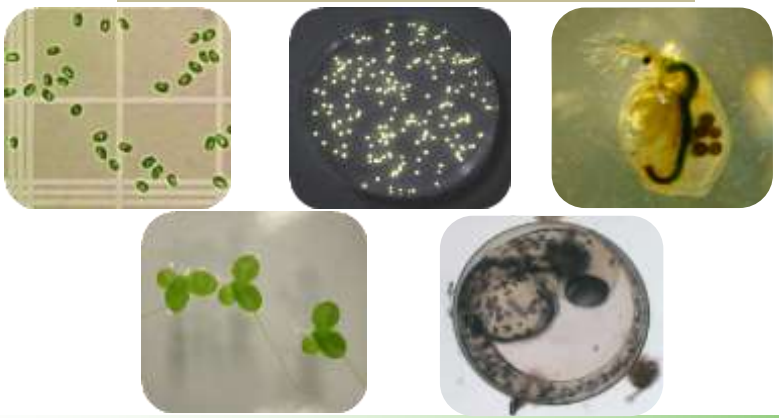
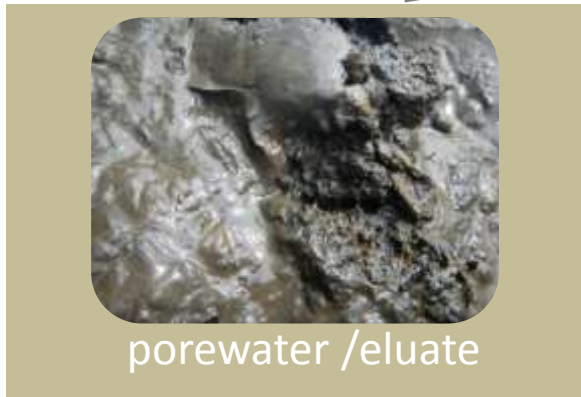
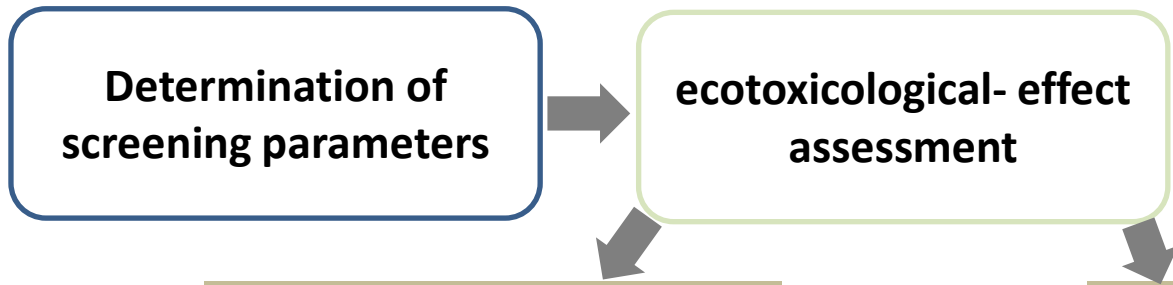
Sediment-cadaster



Sediment-cadaster



Sediment-cadaster



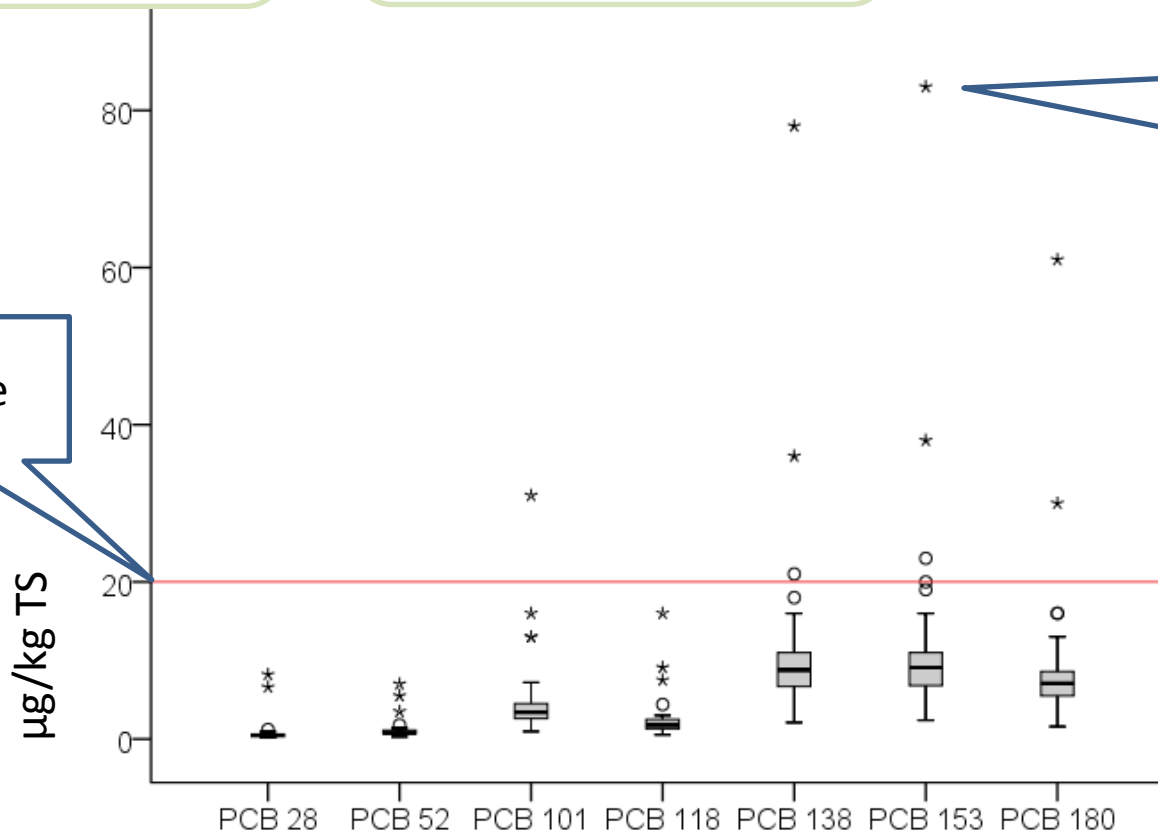
Sediment-cadaster

Physicochemical
and chemical
sediment properties

preliminary results

Are outlier
potential
„pollution
hot-spots“?

EQS value



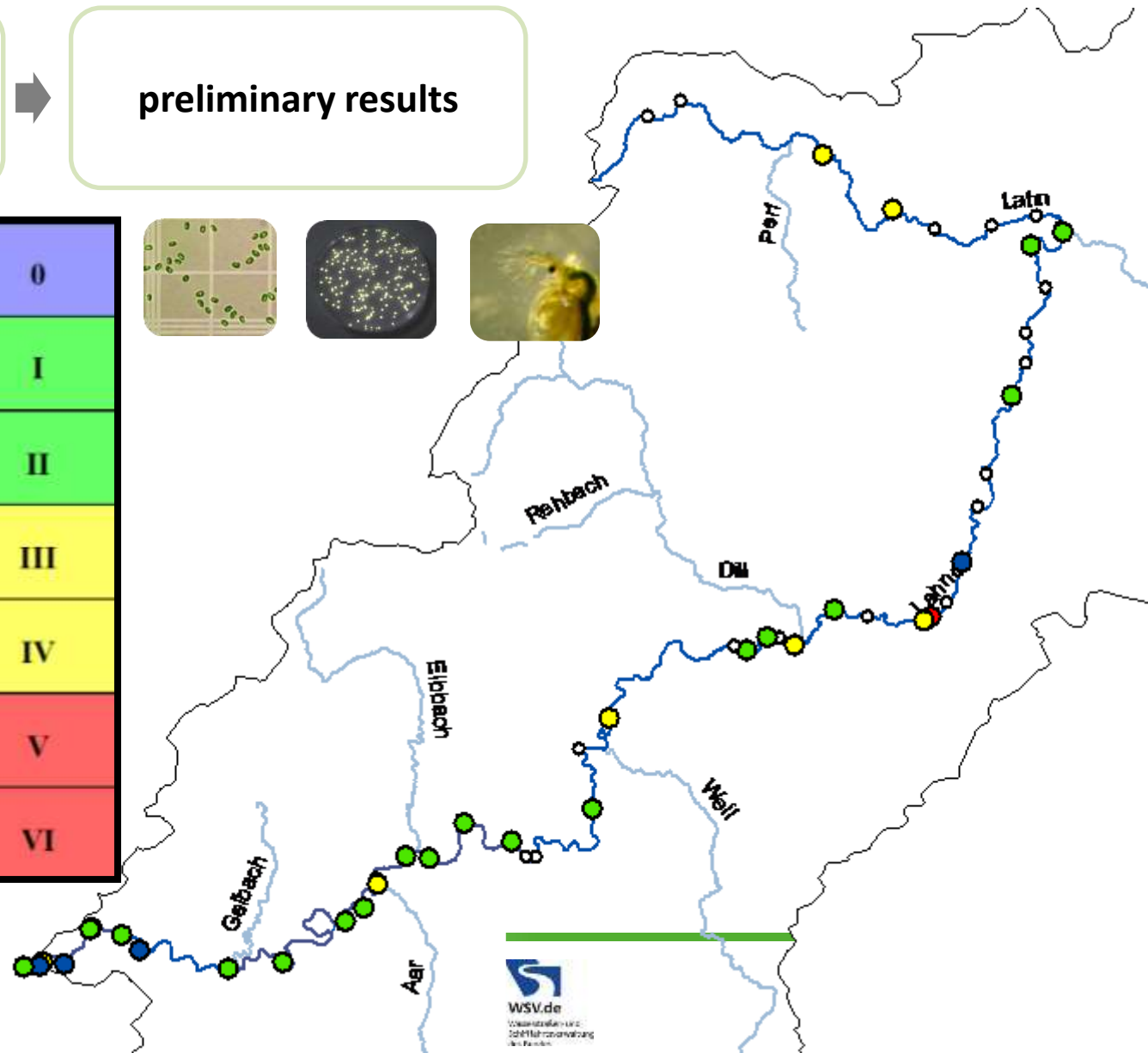
Sediment-cadaster

ecotoxicological- effect assessment



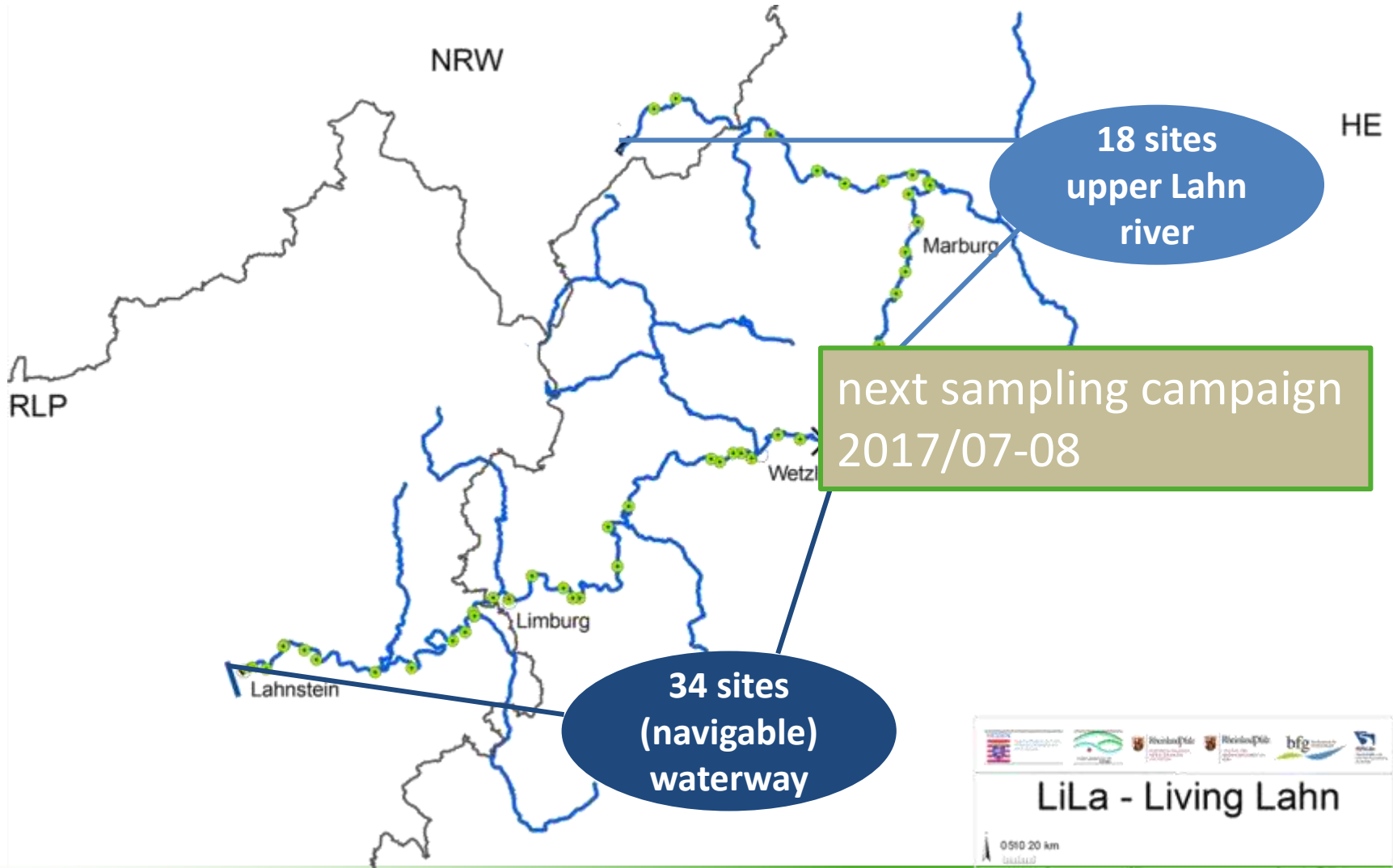
preliminary results

toxicity not detected	unpolluted	0
very slightly toxic	unproblematic	I
slightly toxic		II
moderately toxic	problematic	III
distinctly toxic		IV
highly toxic	hazardous	V
extremely toxic		VI



pT value

Outlook



LiLa - Living Lahn

0 50 20 km

The banner includes logos for the Hessian state government, the German Federal Government (BfG), and the Rhineland-Palatinate state government.

Many thanks for your attention...



<http://www.lila-livinglahn.de>