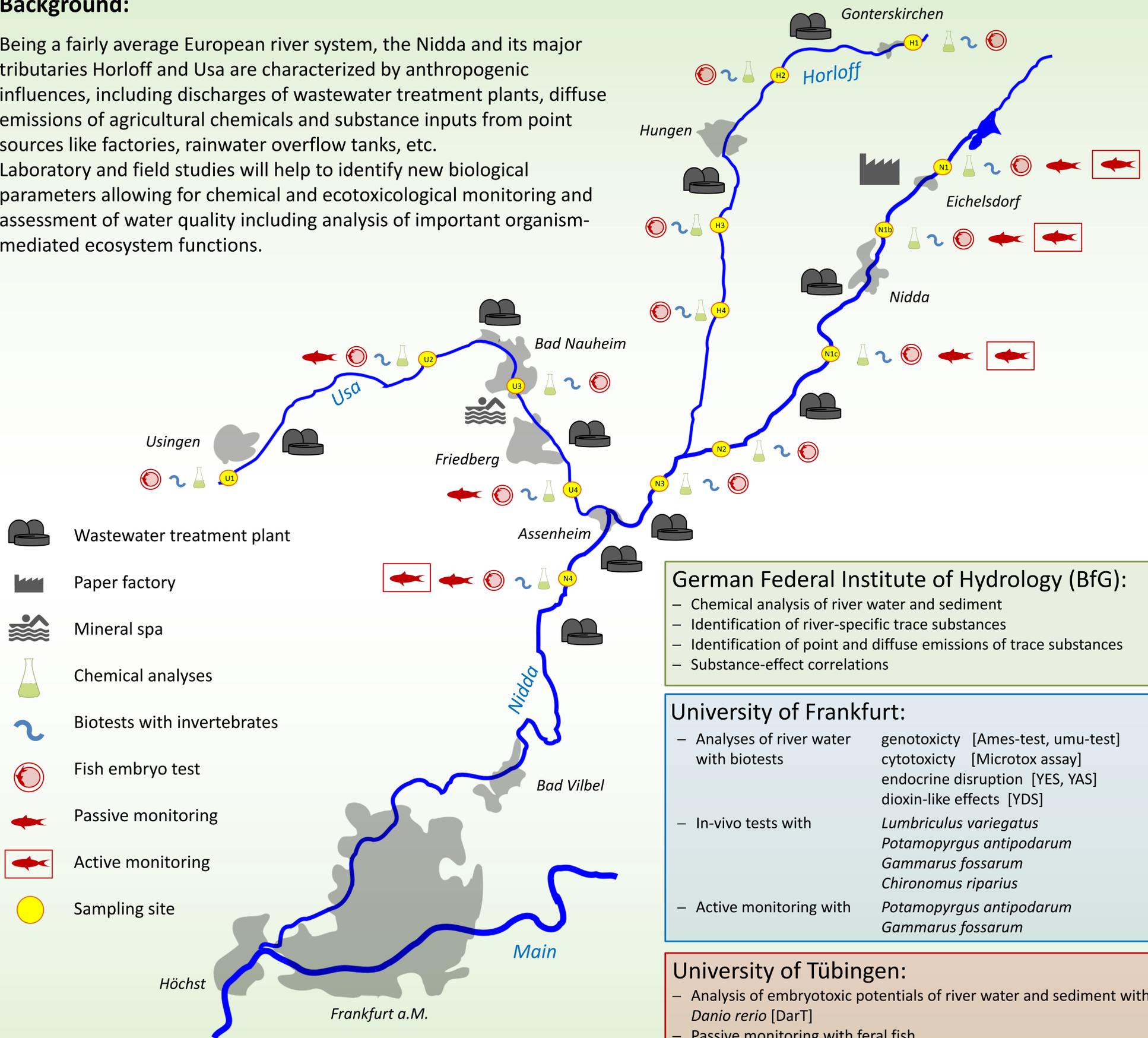


# Investigations on biodiversity and ecosystem health of the river Nidda within the framework of the project 'NiddaMan'

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## Background:

Being a fairly average European river system, the Nidda and its major tributaries Horloff and Usa are characterized by anthropogenic influences, including discharges of wastewater treatment plants, diffuse emissions of agricultural chemicals and substance inputs from point sources like factories, rainwater overflow tanks, etc. Laboratory and field studies will help to identify new biological parameters allowing for chemical and ecotoxicological monitoring and assessment of water quality including analysis of important organism-mediated ecosystem functions.



### German Federal Institute of Hydrology (BfG):

- Chemical analysis of river water and sediment
- Identification of river-specific trace substances
- Identification of point and diffuse emissions of trace substances
- Substance-effect correlations

### University of Frankfurt:

- Analyses of river water with biotests
  - genotoxicity [Ames-test, umu-test]
  - cytotoxicity [Microtox assay]
  - endocrine disruption [YES, YAS]
  - dioxin-like effects [YDS]
- In-vivo tests with
  - Lumbriculus variegatus*
  - Potamopyrgus antipodarum*
  - Gammarus fossarum*
  - Chironomus riparius*
- Active monitoring with
  - Potamopyrgus antipodarum*
  - Gammarus fossarum*

### University of Tübingen:

- Analysis of embryotoxic potentials of river water and sediment with *Danio rerio* [DarT]
- Passive monitoring with feral fish and active monitoring with *Salmo trutta* f. *fario* in cages
  - Histopathology of kidney, liver, gill and gonads
  - Analyses of genotoxicity [micronucleus test]
  - dioxin-like effects [EROD assay]
  - endocrine disruption [vitellogenin induction]

The overall goals of this project are the development of strategies to counteract water quality impairment induced by environmental stressors and to support river ecosystem recovery.

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