

Summary

Ideas for free rivers: Tool for rivers, free from pollution: online biomonitoring of polluters

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European rivers face some major problems, such as dams, lack of space and pollution.

There are about 100.000 chemicals which end up in our rivers, groundwater and drinking water, especially if we take our drinking water from surface water such as lakes artificial and impounding reservoirs. The above mentioned pressures on our rivers may also interact, such as dams may cause accumulation of sediments and sediment-bound toxicants, or the rest-water flow below a dam might be too little to take up the effluent from a wastewater treatment plant, resulting in high concentrations of toxins.

European legislation enforces the polluters pay principle, but often we do not catch the pollution producers. The real-time permanent online biomonitoring tool combined with an automatically triggered water sampling can help to track polluters. Sensitive bioindicator species from the river or reservoir/lake serve as “taster” of the water quality day and night continuously. In case a toxic wave is passing by, e.g. Friday night, the animals react and give alarm. The alarm triggers the water sampling and informs water authorities and or nature conservationists.

The LimCo biomonitor system (so-called Multispecies Freshwater Biomonitor, MFB) has successfully been used as “environmental police officer” in the river Rhine, in wastewater treatment plant effluent monitoring and in waterworks with raw water from Lake Constance (where the Rhine flows through and makes 2/3 of the water body): We detected and prosecuted industrial pollution as basis for judicial cases and encouraged remedial measures.