

# CASE Study – Germany

## Altenau River

# REMOVE THE DAMS FREE OUR RIVERS

### Restoration of the Altenau River

The Altenau River restoration project is a striking and educational example of several small dam removals and dam conversions implemented in the frame of a river restoration project.

The Altenau is a 28 kilometre long creek in the department Paderborn in Nord Rhine Westfalen Germany. During a flood catastrophe in 1965 seven people died and a damage of several Million German Marks occurred. As a consequence it was decided to regulate the creek and to construct several flood retention basins. In 1985 the Altenau was dammed and a large retention basin was created upstream the village Husen.

The intention of this 3ha large artificial lake was to promote regional tourism. Upstream this retention basin another artificial lake was created for sediment disposal.

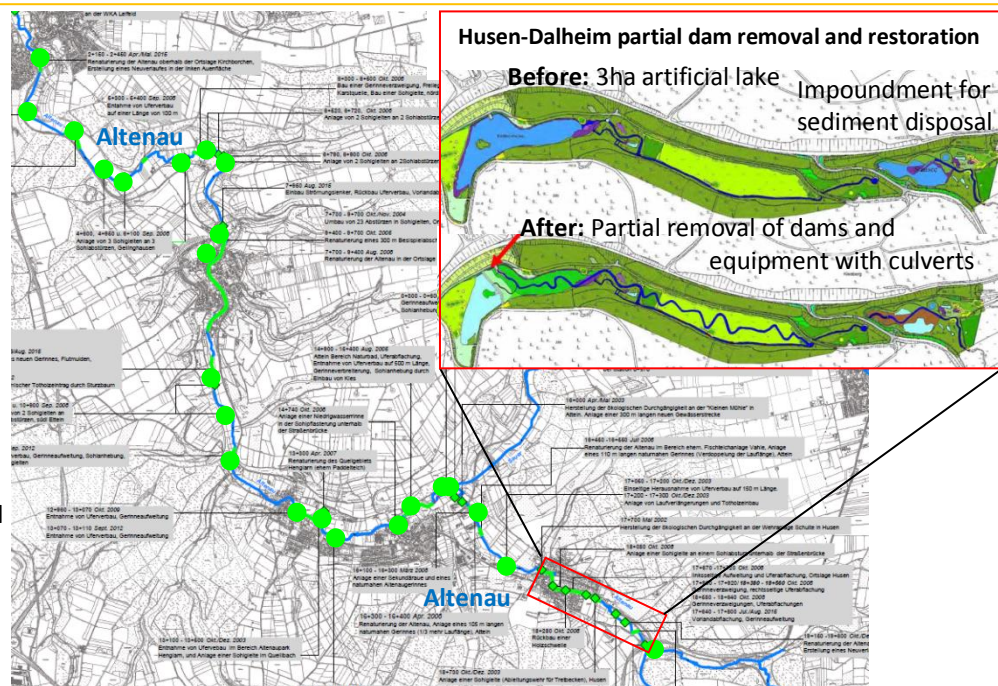
The environmental impacts of these artificial lakes were disastrous: In 1990 it was the first time as anyone can remember that the Altenau fell dry. It turned out, that about 80% of the impounded Altenau River was drained into the underground beneath the artificial retention basins, as these were situated above a karstic soil.

Technical	Data (Source:WOL)
Country	Germany
Name of River	Altenau / tributary of Alme and Rhine
Name of Dam:	Husen-Dalheim dam and 51 weirs and ground sills
Year of construction	1985: Husen-Dalheim dams 1965 -1985: weirs
Year of removal	2002-2009: weirs and sills 2014-2017: partial dam removal of Husen-Dalheim dams
Cost of removal:	1,7 Mio. € for Husen-Dalheim partial dam removal and restoration
Type of dam	Flood protection
Capacity	-
Height / Length	4-5m Husen-Dalheim dams 0,5 -1,5m weirs and sills
Volume	-
Freed river km	45,8km (Altenau and tributaries)
Dam owner:	Wasserverband Obere Lippe (WOL)



- Location of project
- Removal of 51 weirs and sills

□ Husen-Dalheim dams: partial removals and restoration at Altenau River



Source: Water Authority Obere Lippe - Wasserverband Obere Lippe - WOL

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Since that time every year the same misery was recurring: In summer the Altenau River was falling dry. Besides the reduced quantity of water also the water quality was impaired. In summer the water discharge was so reduced downstream the dams leading to a 6 degree higher water temperature which was much too warm for trout and Co. The higher water temperature resulted in lower oxygen rates and less capacity for self-purification and a worse water quality in general.

Despite this environmental disaster in 1990, this dry fall of the river was also a salutary shock. People from the Altenau valley, foremost the local heritage association (Heimatverein) started the initiative „Die Altenau soll leben!“ (The Altenau should live!) with the objective to release the impounded Altenau.

In the next ten years demonstrations, TV broadcast in the German television, postcard campaigns, music events („Rock-Wadi- Nights“) and other actions for raising awareness followed. But, these artificial lakes had also supporters, notably the anglers, who had got used to catch carp and perch, or the local residents who enjoyed walking next to the artificial lakes. These groups were against the emptying of the artificial lakes resulting in delays and throwbacks for the river restoration initiative.

After all people understood the benefits of dam removal and dam conversion and in 2001 nearly every mayor, angling and local heritage association of the Altenau valley undersigned the Altenau Memorandum, called „Ein Tal will seinen Fluss zurück“ (A valley wants its river back!). Therein the supporters of the memorandum requested the government and water authorities for the upper Lippe Riverbasin to restore the Altenau River and to empty the artificial lakes. Finally this request was allowed and the river has been progressively restored in a 9,5km stretch.

By 2009, 51 barriers mostly ground sills and old wind mill weirs had been removed. From autumn 2014 to June 2017 the dam conversion works of the artificial lakes were carried out. The artificial reservoirs were emptied and the large dams of the reservoirs were partly removed or equipped with culverts, which is nothing else than a hole in the dam, enabling the Altenau river to flow through freely. The works were undertaken under the

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Former artificial lake of Altenau © Michael Weber



Photo taken during emptying of artificial lake 2014-2015  
© NZO



Restored river stretch between the two artificial lakes  
one year after emptying of the lakes © NZO

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leadership of the Water Board for the Upper Lippe area (Wasserverband für das Obere Lippegebiet).

The flood protection function is not affected by the conversion of the dam. In case of heavy rains the amount of water that is not running through the culvert can be retained behind the dam and inundate the former artificial reservoir. The rest of the year the river is flowing free without a barrier blocking the flow.

Since June 2017 fish like grayling can migrate again from the confluence of Altenau with the Alme until the upper reaches of the Aletnau. This is the first time since the middle age!

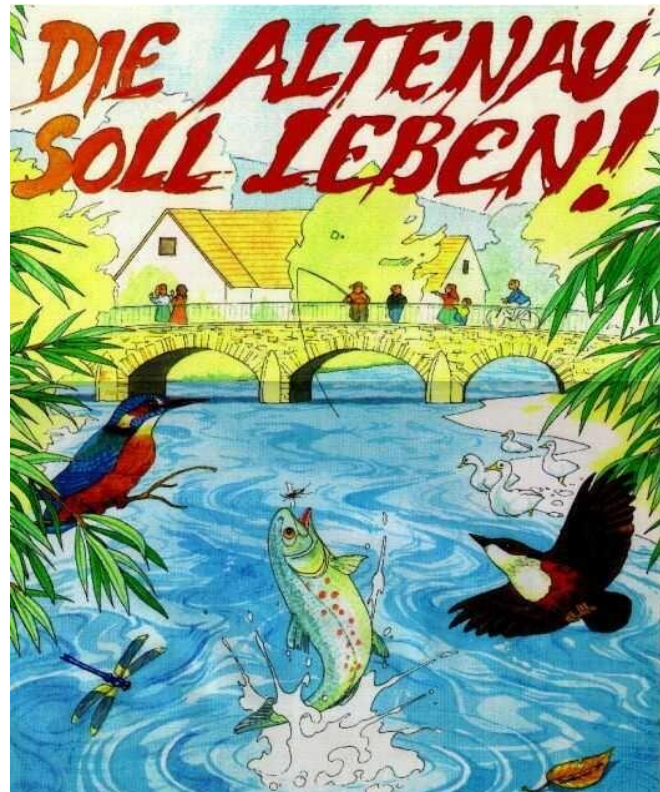
The story of the Altenau restoration shows that dam removal is possible and that a long breath is needed to persevere the long negotiations.

**More information about the Altenau river restoration story can be found here:**

<http://www.altenau-nrw.de>

<http://www.atteln-online.de/altenau.htm>

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Postcard for the river restoration campaign  
© painted by Dominique Gröbner



Section of the Altenau before and after restoration and removal of ground sills © WOL

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