

Water · Peatland restoration

Stadtwerke Karlsruhe

Securing drinking water supply with peatland restoration

Municipal water and energy utility · Pfälzerwald biosphere reserve, Germany · 2024–2025

Goal

Restore water retention and biodiversity on 7 ha of drained forested peatland

Customer Industry

Municipal water and energy utility

Impact

Groundwater measurably higher and stable; 37 breeding bird species in year one

Customer Region

Rhineland-Palatinate and Baden-Württemberg, Germany

About the project

As drinking water supplier for the region the Stadtwerke Karlsruhe rely on local ecosystems to hold, filter and infiltrate water. RESPOND identified, developed and managed an exclusive 7 hectares peatland restoration project in the wider watershed of the client, going from first analyses to execution and monitoring. The site is secured over the long term and for public benefit through municipal protection.



“As a water and energy provider, we depend directly on healthy ecosystems in the surrounding area. The business case is clear to us.”

Michael Homann, CEO, Stadtwerke Karlsruhe



Learn more!

About RESPOND

RESPOND is the smart solution to Germany's water crisis. The startup works with companies, local partners, and the scientific community to implement restoration projects for a water-resilient Europe.

Context

Spruce monocultures & drainage ditches but potential for water and peat

RESPOND coordinated three authorities and two specialist firms before the first measure was implemented.

The water baseline in the region

Seibertsbachtal, Dahner Felsenland, Pfälzerwald

The catchment lies inside the UNESCO Biosphere Reserve Pfälzerwald-Nordvogesen (FFH / Natura 2000). Records show rising summer drought stress. The peatland was drained by ditches and carried around 90 % spruce, which removed its retention function. Soil surveys confirmed remaining peat.

Sources: ProLimno, Natur Südwest, Soilution (2024)

Three key challenges

- **Changing rain patterns**
Lead to decreasing groundwater levels and stress
- **Long term site availability**
Is one of the main challenges in nature restoration in Europe
- **A record dry spring**
Spring 2025 was exceptionally dry, so impact had to be proven against a dry baseline.

How RESPOND helped

- 01 We map the catchment water balance and survey the site.
- 02 We coordinate with landowners and authorities and secure approvals first.
- 03 We restore hydrology: spruce out, ditches closed, native species planted.
- 04 We verify with IoT sensors, satellite data and independent review.

7 ha

Wetland restored

37

Bird species, year one

< 12 mo

To first measurable gain

Steps and timeline

M0 · Feb 2024

Water balance and species survey

M6 · Summer 2024

Spruce and ditch removal, planting

M12 · Winter 24/25

Cartography, 30-year protection

M16 · June 2025

IoT sensors live, interim report

Summary

Measurable gains in water retention and biodiversity within 18 months of first investment, verified by satellite data and independent on site monitoring.

Tell us about your challenges

Start your project