Small scale measures under the 'Waters neighborhood Days' in Hamburg, Germany

Year of issue

2023

Summary

The measures implemented at two river within the city of Hamburg (Germany) included the restoration of rivers and ponds (N1), the revitalization of flowing waters (N5), natural bank stabilization (N10), and channels and rills (U5). They targeted the National Biodiversity Strategy of Germany as well as the achievement of a good ecological status as defined by the WFD. For the identification of locations for possible measures the general public was involved using online forms. The implementation was then carried out by a local chapter of the German nature conservation NGO NABU. This measure proves to be highly effective while easy and cheap to implement, it is therefore considered a success.

Since 2006, the “Waters Neighborhood Days” evolved into regular Bach-Aktionstage, engaging citizens and school groups in restoring small urban streams in Hamburg. Led by NABU and supported by SDW and local authorities, actions include placing deadwood, adding gravel, and removing concrete structures to improve stream morphology and biodiversity. Over 40 events have taken place across multiple streams, with long-term educational and ecological goals.

Photo Gallery





Location

53.600178, 10.094004

Project

NWRM

National ID

Germany-02

Sector

Hydromorphology

Installation Date

2006-02

Implementation status

Ongoing

Contact

Tamer Fawzy / BEF DE

Overview

Location of the project

The Osterbek river is an inflow of the river Alster in Hamburg. The studied river section is approximately 220 m long and located in a green corridor between allotments, roads and subway tunnels. The left side adjacent park area is a regularly mowed lawn, which also serves as an emergency overflow for a culvert of the Osterbek river. The Copse is light on both sides of the river. The middle Bille is part of the water system Bille, which flows into the Elbe river. The considered 150 m long section is located in a green belt. Left-sided runs a water-bound walk, on the right side residential blocks and a park are located at different distances.

Country

Germany

NUTS2 Code

Hamburg

Sponge measures implemented in the case study

Natural bank stabilisation

Stream bed re-naturalisation

Coarse woody debris

Involved partners

Authority type	Authority name	Authority role
NGO	Tobias Ernst	Implementation

Documents

cs-de_02-hamburg_final_version.pdf (855.11 Ko)

Site Information

Climate Zone

Cool temperate moist

Temperature (°C)

9.00 °C

Slope range

moderately steep (15-30%)

Vegetation class

Riparian & aquatic vegetation

Design and Implementation

Project scale

Micro

Project scale specifications

Small river sections of about 200m. At least 8 streams affected: Kampbille, Schleemer Bach, Osterbek, Seebek, Rahlau, Saselbek, Furtbek, Kollau ; over 40 events.

Size

370.00

Size unit

m

Principles

Low costs, functionality, adaptability

Constraints

The waters neighborhood days were initiated in 2005 by the Project Manager group for water protection at NABU Hamburg. Guided by their own vision to actively improve the water body structure of streams in Hamburg, also in times of scarce public resources, this particular collaboration was launched. It consisted of the project managers, NABU Hamburg, volunteers, Rückenwind e.V. and the competent district office (civil division).

Financing

Total cost

1270.00 €

Costs investment

1270.00 €

Costs investment information

Through the volunteer work of the project as well as the numerous helpers on the one hand and the charitable work of young people on the other hand no additional costs incurred.
This cost only covers the first 2 restored sections of rivers. It has increased since the number of events grew.

Financing authorities

Authority name	Type of funding	Comments	Financing share
District authority	Local funds	€ 1270 for the first 2 sections which is very low-cost.	100 %

Policy and Governance

Policy description

The basin of the Osterbek river was expanded very widely over the past decades and thereby lost its natural structure. The increased runoff after rain and corresponding management led to a domination of sand in the river bed. Gravel, stones and dead wood are largely absent, so suitable conditions for animal and plant communities are absent.
Due to anthropogenic interventions in the 19th Century the middle Bille was cut off from their natural course. Since then, it is supplied by the Kamp-Bille. In addition rain water flows into it from an outlet from a heavy frequented street.
Due to the highly variable runoff and the narrow, deeply incised river bed with a partially still existing bank stabilization with Bongossi timber, it is a poorly structured river bed that offers no suitable conditions for most animal and plant communities.
The proportion of sand is very high, stones and dead wood only occur sporadically.

Land ownership

Most streams involved (e.g. Schleemer Bach, Seebek, Osterbek, Saselbek) run through public land, including parks, green corridors, and road margins managed by Hamburg’s Bezirksämter (district offices).

Policy targets

Erosion Control

Improved Biodiversity

Runoff control

Target remarks

Biodiversity and gene-pool conservation in riparian areas

Soil formation and maintenance

Mass stabilisation and control of erosion rates

Policy pressure

Directive	Relevant pressure
WFD identified pressure	2.1 Diffuse - Urban run off

Policy impact

Directive	Relevant impact
WFD identified pressure	Nutrient Pollution
Floods Directive identified pressure	Community

Policy challenges requirements

National Biodiversity Strategy

Part of a wider plan

Oui

Wider plan

Wider plan type	Wider plan focus	Name
National	Environment & Biodiversity	National Biodiversity Strategy

Public consultation

Non

Consultation activities

Activity stage	Activity type

Other	Via a Form, which is available for download under www.NABU-Hamburg.de/wasser, the interested public can contribute their own proposals for local measures. The proposed measures for the two river sections were developed with the technical assistance of the NABU experts for water protection.

Has contractual arrangements

Non

Impacts and Monitoring

Monitoring System

Monitoring requirements

A professionally sound monitoring by the NABU is not possible with these small projects.

Maintenance

Maintenance requirements

The application has to be regularly monitored and maintained due to the use of only natural materials.

Impact Assessment Methodology

Performance impact assessment method

Catchment outlet

Performance impact estimation information

Monitoring

Biophysical impacts: Hydrology

Hydrological effects

A variability of flow velocities in low and medium water levels was achieved. It led to both depressions and aggradations in the river bed as well as a sorting of different sediment fractions.

Information on retained water

N.A.

Ecosystem water supply

0

Biophysical impacts: Biodiversity

Improved biodiversity

Oui

Information on improved biodiversity

River bed serves numerous aquatic organisms as a resting place or shelter during flood events. In them a layer of organic materials is accumulated which serves as a food source.

Biophysical impacts: Water & Soil Quality

Soil quality overall improvements

N/A info

Information on soil quality overall improvements

N.A.

Biophysical impacts: Others

Ecosystem impact climate regulation

No specific impact

Lessons Learned

Key lessons

After the first flood events it is visible, that the water body structure at the Middle Bille has been significantly improved. Due to different flow speeds and variability of the basin structure a positive short to medium term impact on biodiversity can be assumed.

Barriers

Barrier type	Comments
Other	There were no implementation barriers, because of the small scale of the measure.

Drivers

Driver type	Driver role	Comments
Organisation committed to it	Main driver	Biodiversity and gene-pool conservation in riparian areas

Success factors

Success factor type	Success factor role	Comments
Attitude of the public	Main factor	voluntary work

Cost effectiveness

They are assumed to be highly cost-effective, although no quantitative assessment was carried out for this application.

Sources

Sources

Small scale measures under the "Waters neighborhood Days" in Hamburg - Factsheet

Kleinteilige Maßnahmen im Rahmen der „Gewässernachbarschaftstage“ in Hamburg Urbane Gewässer, Sohlstruktur, Kooperation

Bach-Aktionstage – Gewässerschutz zum Mitmachen

Bach-Aktionstage: Wo wir aktiv sind

Bachrenaturierungen – Kleine Bäche, große Wirkung