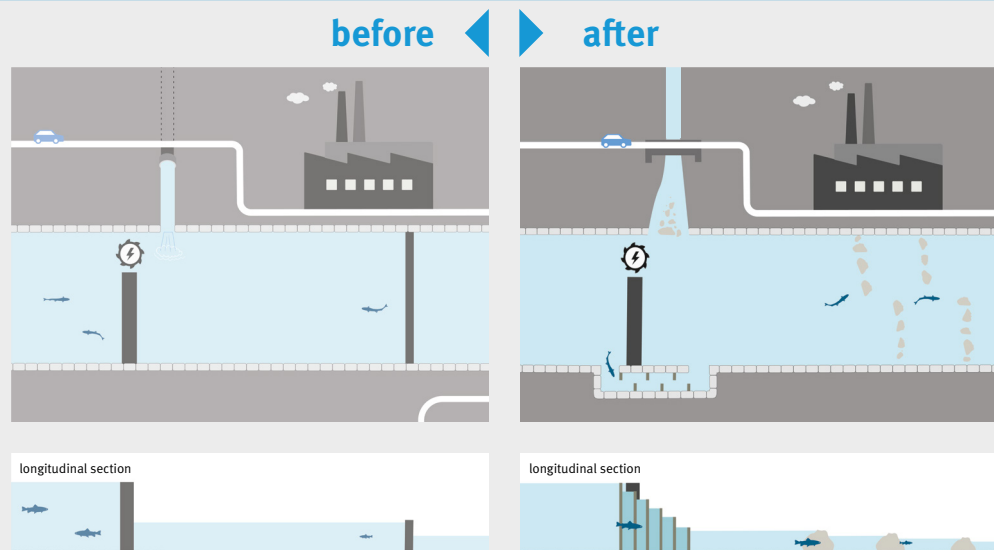


Measures for river restoration

Bulldozers are not always needed to restore a river. Lively waters manage their restoration themselves when space for development is provided and initiating measures trigger the dynamics of a river. If the watercourse cannot be changed, small measures can still considerably improve the structure of

a river. Over 90% of German rivers and streams are straightened, constricted, piped or interrupted by structures such as weirs or barrages. Restoration can improve the ecological status and attractiveness of water bodies.

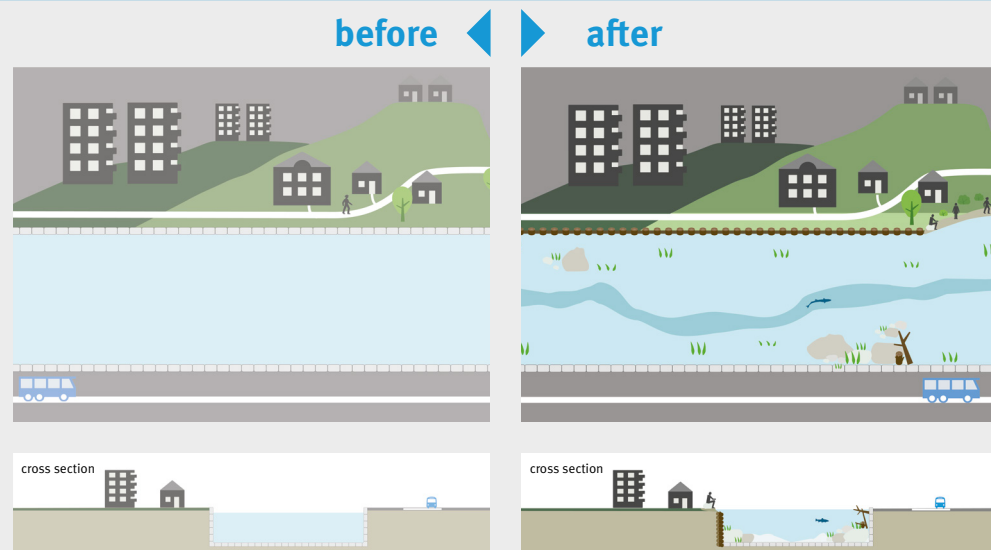
If obstacles interrupt the river's continuity:



- remove obstacles
- convert obstacles to small cascades
- establish fish protection or migration system
- redesign culverts and pipe systems
- reconnect tributaries
- near-natural river maintenance

For more information about measures to achieve watercourse continuity:
uba.de/massrenat-hinderniss

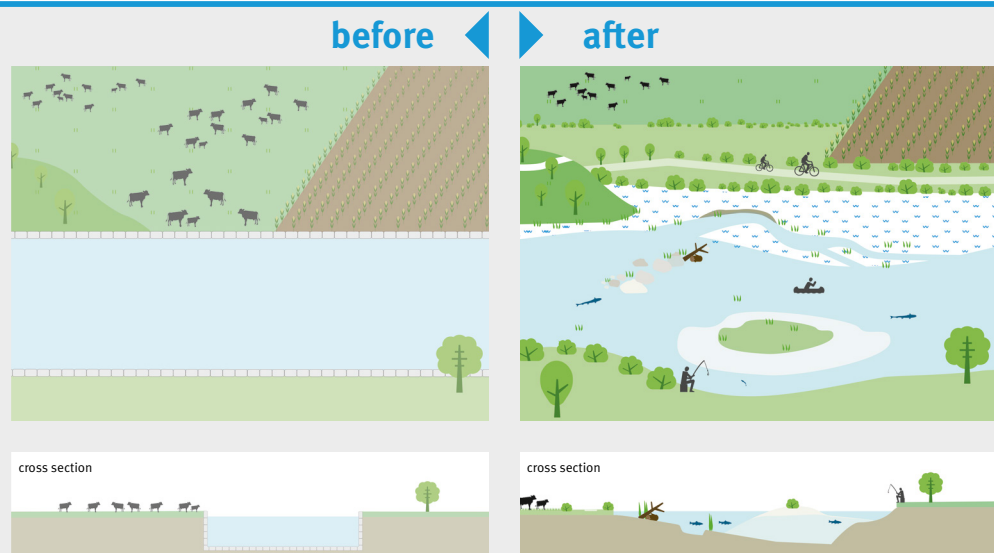
If the watercourse cannot be changed:



- allow accumulation of sediments and growth of aquatic plants
- install natural elements (such as dead wood)
- lift the river bed
- adapt channel to periods of low flow
- create natural river bed
- replace technical river bank protection
- flatten river banks
- near-natural river maintenance

For more information about measures using the existing river profile:
uba.de/massrenat-laufbleibt

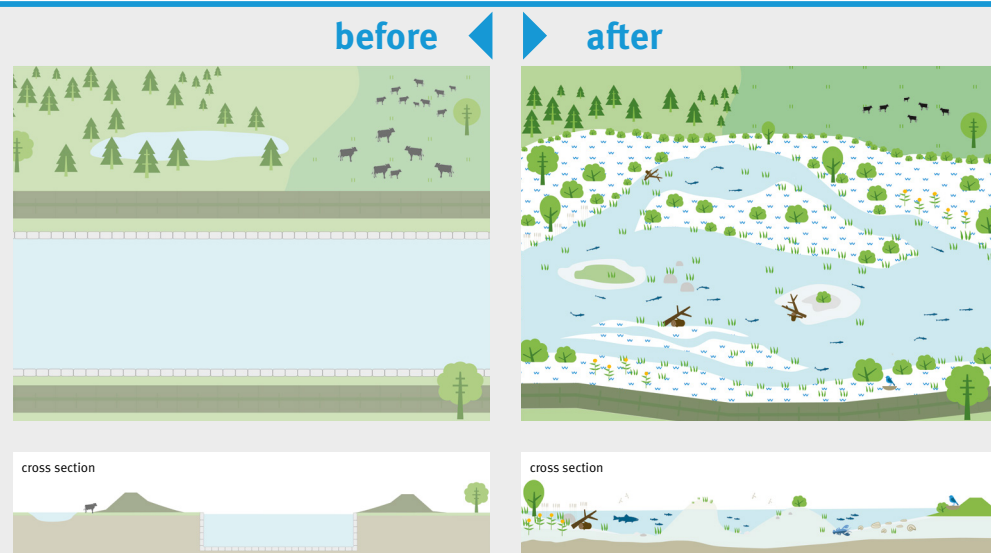
If river profile and banks can be changed:



- re-route the straightened watercourse
- remove river bank protection
- incorporate structures for diverting flow
- flatten river banks and surrounding area
- design diverse river banks
- create riparian buffer strips
- allow the river to develop naturally in some areas
- near-natural river maintenance

For more information about measures in the river and the surrounding areas:
uba.de/massrenat-uferprofil

If large-scale development is possible:



- Relocate dykes further away from river
- Reduce land use intensity in surrounding area
- create wide river development corridor
- secure and extend flood areas
- re-establish oxbow lakes or create branches
- trigger dynamics of river through initiating measures
- near-natural river maintenance

For more information about measures extending into the floodplain:
uba.de/massrenat-weitraum