

# **An Assessment of Some Environmental Effects of Flood Protection Schemes on Rivers: a Case Study of River Ems, UK**

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**Key words:** Photogrammetry; Risk management; Spatial planning

## **SUMMARY**

This paper assesses some of the environmental effects of Flood protection schemes (FPS) on river ecology in the face of climate change. The methodology includes a case study, Geographic Information System and field survey. The results show that FPS have a significant environmental effect on river systems and their ecology. Though it facilitates the reduction of flood risk, there are various negative effects, which are less recognised including, changes to the physical shape of the river, damage to the natural environment and the river ecology. The paper highlights the need to reduce the negative effects of FPS, which is currently uncertain, due to the recurrence of flooding events globally due to climate change. It is clear, therefore, a balance needs to be met between, flood protection and safeguarding the natural environment of rivers. The paper identifies ‘given water space’, catchment-wide flood risk management and softer engineering approach as sustainable FPS strategies worth pursuing because they have limited effects on the environment and they tend to offer holistic flood protection without severely compromising the river ecology.

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