

CLEAR ANCE

CircuLar Economy Approach to River
pollution by Agricultural Nutrients
with use of Carbon-storing Ecosystems



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Introduction













Question: how much does it cost
and are people willing to pay for it?








Catchment upscaling of WBZs (modeling-based)



Article

Catchment-Scale Analysis Reveals High Cost-Effectiveness of Wetland Buffer Zones as a Remedy to Non-Point Nutrient Pollution in North-Eastern Poland

Ewa Jabłońska ^{1,*}, Marta Wiśniewska ¹, Paweł Marcinkowski ², Mateusz Grygoruk ²,
Craig R. Walton ³, Dominik Zak ^{3,4}, Carl C. Hoffmann ⁴, Søren E. Larsen ⁴, Michael Trepel ⁵ and
Wiktor Kotowski ¹

Jabłońska et al., 2020, Water, IF=2.544

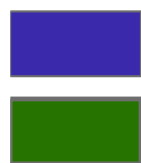
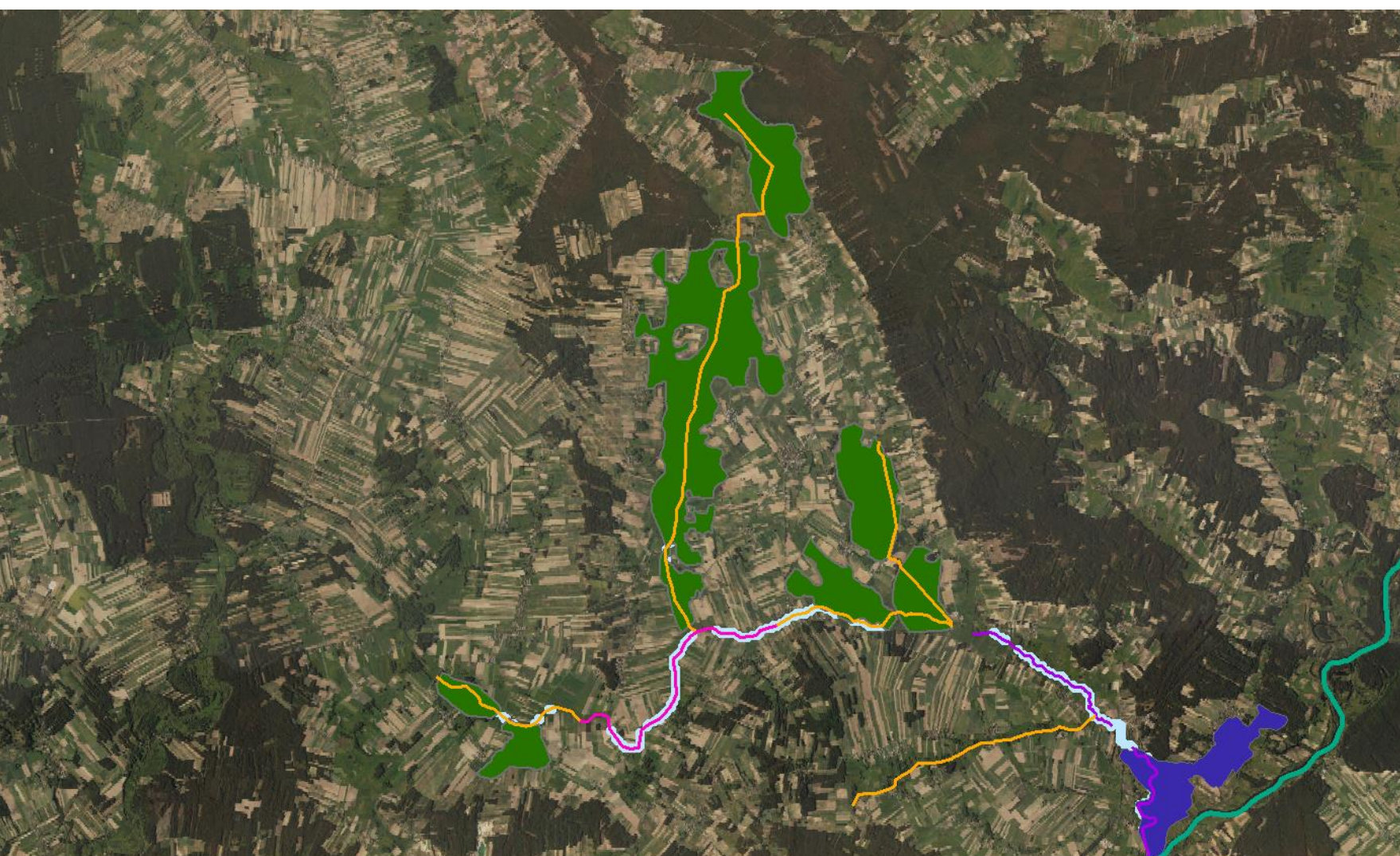


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— Narew

— rivers in subcatchments





floodplain mineral

rewetted fen



wetland bank

two stage ditch

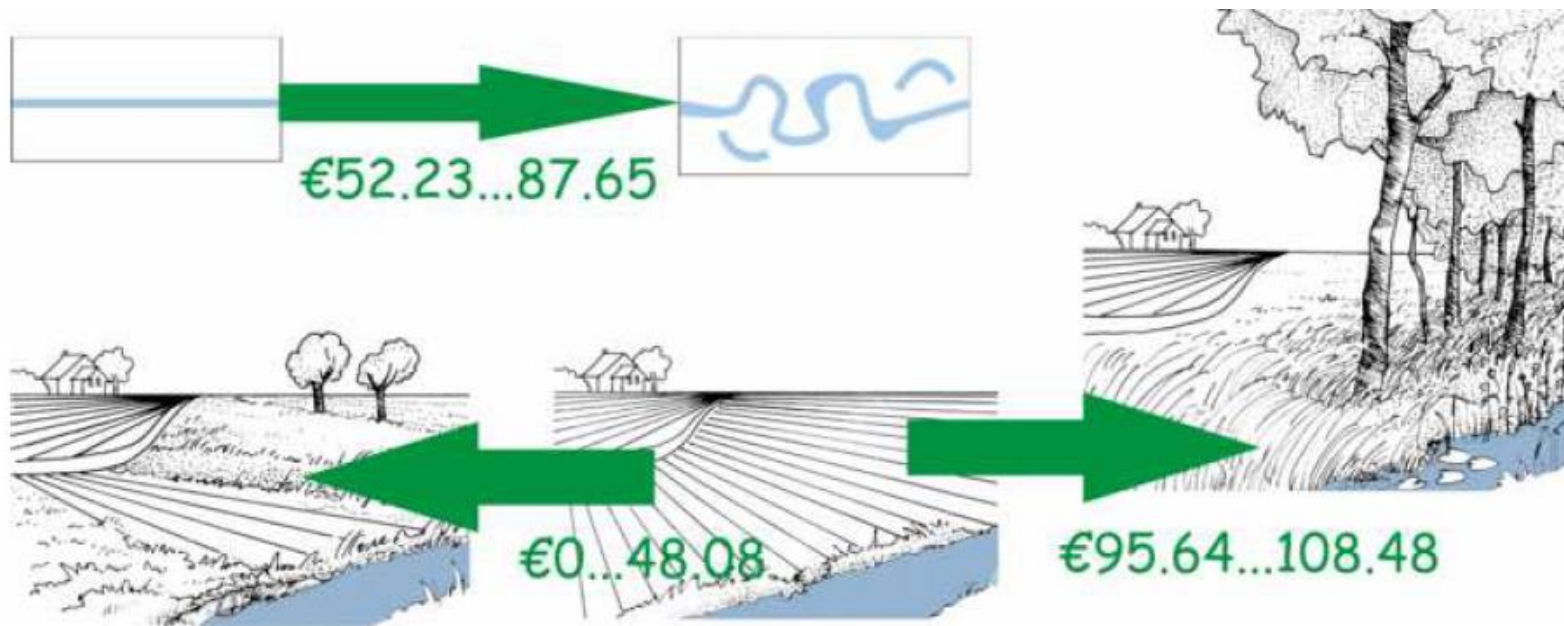
meandering

- ▶ Restoring WBZ along all river courses in upper Narew catchment (5% of PL) would reduce 33%–82% of N and 41%–87% of P at costs of about 171 million EUR.
- ▶ Restoring polygonal WBZs alone (88.500 ha peatlands and 2.400 ha floodplains) would reduce 11%–30% of N and 14%–42% of P load at cost of 8.9 million EUR

**Jabłońska et al., 2020,
Water, IF=2.544**



WTP Choice experiment: People in Poland, Germany and Denmark support river and WBZ restoration



Giergiczny et al., submitted to **AMBIO**

Summary

- ▶ WBZs are ecologically and economically effective
- ▶ WBZs are wanted
- ▶ Knowledge base exists
- ▶ Acceptance as mainstream societal innovation needed



