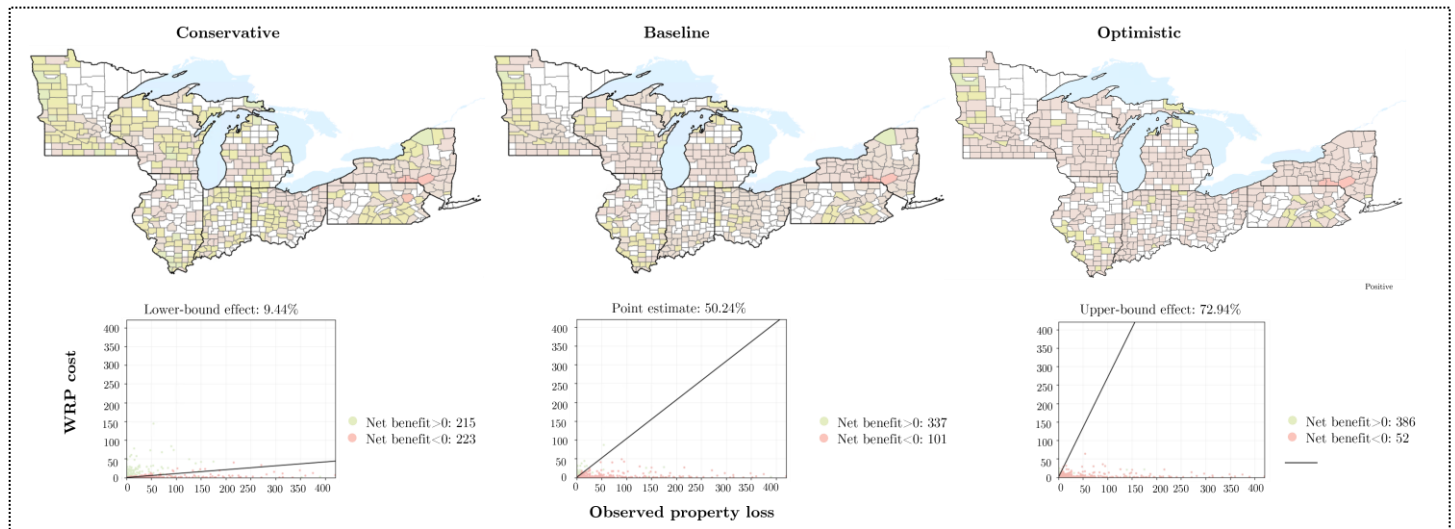


The Wetland Reserve Program generates asymmetric land-conversion dividends through flood loss mitigation

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Research background:

Flooding is the most destructive severe weather-related event in the US, with losses totaling more than \$5 billion annually. Flood risk is predicted to grow by 26.4% in the US by 2050. Given this, the Wetland Reserve Program (WRP) was established in the 1990 Farm Bill and had a goal to restore 395,000 ha to wetlands by 2002. It is an opportunity for landowners to receive financial incentives to restore wetlands that have been converted to agricultural production or have been altered by multiple flood events. However, despite this, the ambitious conservative policy has been implemented for more than two decades, and floods still cause large property and crop losses. The environmental economic value of WRP, especially reducing loss caused by the flood, is still unknown. To address these gaps, the proposed research will enhance our understanding of the effectiveness of the WRP to mitigate flooding in the US Great Lakes Region

Research objectives:

- (1) We employ a staggered DID model to estimate the causal effects of WRP on total flood losses and distinguish between property and crop losses.
- (2) We examine how WRP effectiveness varies with hydrological position and ecological endowments
- (3) We then use baseline model estimates in a benefit-cost analysis to assess whether the resulting flood-mitigation benefits justify the costs of WRP

Findings:

WRP primarily protects built assets rather than agricultural production: total flood losses decline by approximately 50.24%, driven primarily by a 50.76% reduction in property losses.

Ecologically endowed and hydrologically connected counties are the primary beneficiaries: high wetland share or cropland share, low developed share, and mainstream river crossing counties experience stronger reductions in property losses, with estimated avoided losses ranging from US\$2.27 million to US\$8.76 million.

WRP Effectiveness unable to guarantee cost recovery: Of the 444 WRP-enrolled counties, 215 (49%) generate positive net benefits under the conservative scenario, compared with 337 (77%) under the baseline scenario and 386 (88%) under the optimistic scenario.

Citation:

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- (3). Aronoff, Daniel, and Will Rafey. 2026. "Conservation Priorities and Environmental Offsets: Markets for Florida Wetlands." *American Economic Review* 116 (5): 1723–64.