Policy Barriers and Solutions for Restoring Row Crops to Floodplains

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Natural Floodplains Functions Alliance
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Founded in 1973, American Rivers protects wild rivers, restores damaged rivers, and conserves clean water for people and nature.

Headquartered in DC, American Rivers has offices across the country and more than 200,000 supporters, members, and volunteers nationwide.
Upper Mississippi River Basin
Floodplain Restoration

Presentation Overview:

- Summarize current projects in the basin
  - Nutrient Removal
  - Floodplain Easements
  - Croplands in Floodplains
- Describe drivers and barriers
Restoring Functional Floodplains

Connectivity

Variable Flow

Spatial Scale

Habitat and Structural Diversity
Restoring the Multiple Benefits of Floodplains

Water storage and groundwater recharge during floods

Photo by Chris Young
Completed a literature review on nutrient removal in floodplains

- Goal: direct nutrient removal funds toward floodplain restorations
- Barrier: uncertainty in how much nitrogen and phosphorus floodplains can remove
- Driver: states are trying to spend money on the best practices while updating their strategies
Restore diversity!
Legacy Phosphorus

Phosphorus concentrations in cropped soil could be high and released into water first years after a restoration.
Having vegetation and topography that improve sedimentation and accretion could be best for both nutrients’ particle-bound forms.
Restoration Project

- **Goal:** restore thousands of flood-prone acres to natural floodplain
- **Barrier:** funding is difficult to access for easements or land purchases
- **Driver:** farmers are tired of the repetitive flooding and are open to restoration
Restoration Project

- Best easement funds for this project
  - ACEP- Wetland Reserve Easements
  - CREP Wetlands
  - FEMA disaster mitigation
  - EWP Floodplain Easements
Research Project # 2
Farming in Floodplains

- Goal: help landowners dealing with flooding and reconnect isolated floodplain easements
- Barriers: it’s difficult deciding whether to restore floodplains and find the right program
- Driver: farmers are tired of the flooding
Preliminary Results:

- In 2018, 50% of corn and 16% of soybeans grown in floodplains lost the farmer money – assuming farmer ownership.

- ~99% of rented floodplain cropland lost the farmer money.
1999-2008: 4 floods; 3 of 10 years had flooding of those, 3 were minor or greater; 1 was moderate or greater; 0 were major

2009-2018: 20 floods; 9 of 10 years had flooding of those, 16 were minor or greater; 11 were moderate or greater; 3 were major

Major Flood stage: 32'
Moderate Flood stage: 27'
Minor Flood stage: 22'
Action stage: 19'
Conclusions

- **Solutions for overcoming these barriers**
  - More demonstration projects for nutrient removal
  - More emphasis and involvement in EWP Floodplain Easements
  - More options and ideas for farmers
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Floodplain Disconnection

~8,000 miles of levees in the Upper Mississippi River Basin (Galloway Report, 1995)
Rivers Flood

Floods drive natural processes and ecosystem functions that sustain rivers and create floodplains.

Floodplains support natural functions.
What should we restore for better nutrient removal?
What should we restore for better nutrient removal?