Policy Barriers and Solutions for Restoring Row Crops to Floodplains

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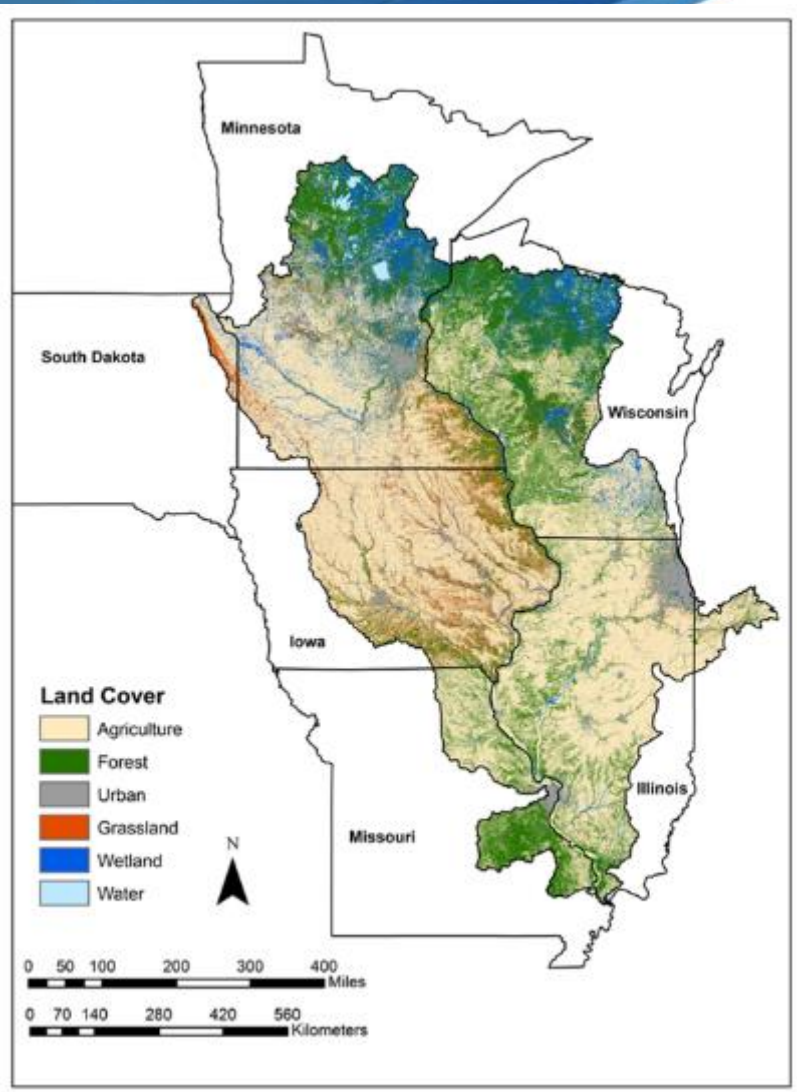
- Founded in 1973, American Rivers protects wild rivers, restores damaged rivers, and conserves clean water for people and nature.

- Headquartered in DC, American Rivers has offices across the country and more than 200,000 supporters, members, and volunteers nationwide

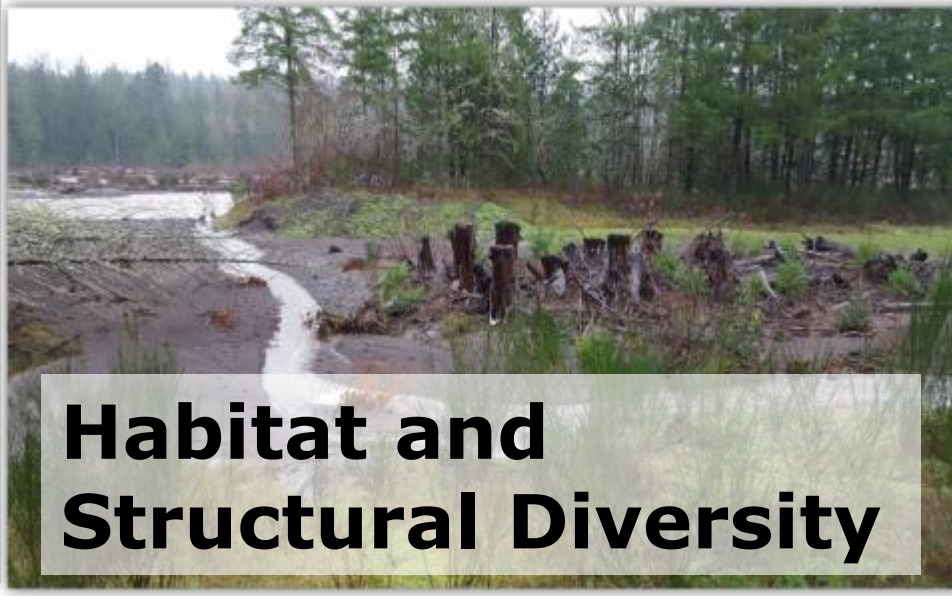
Upper Mississippi River Basin Floodplain Restoration

Presentation Overview:

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



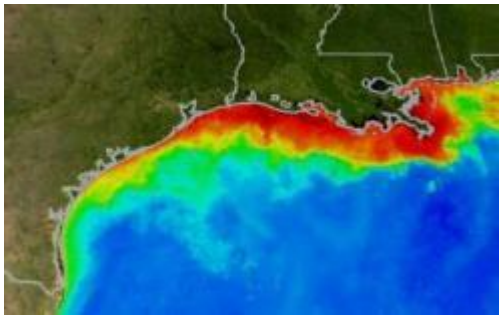
Restoring Functional Floodplains



Restoring the Multiple Benefits of Floodplains

Water storage and groundwater recharge during floods

Research Project #1
Nutrient Removal

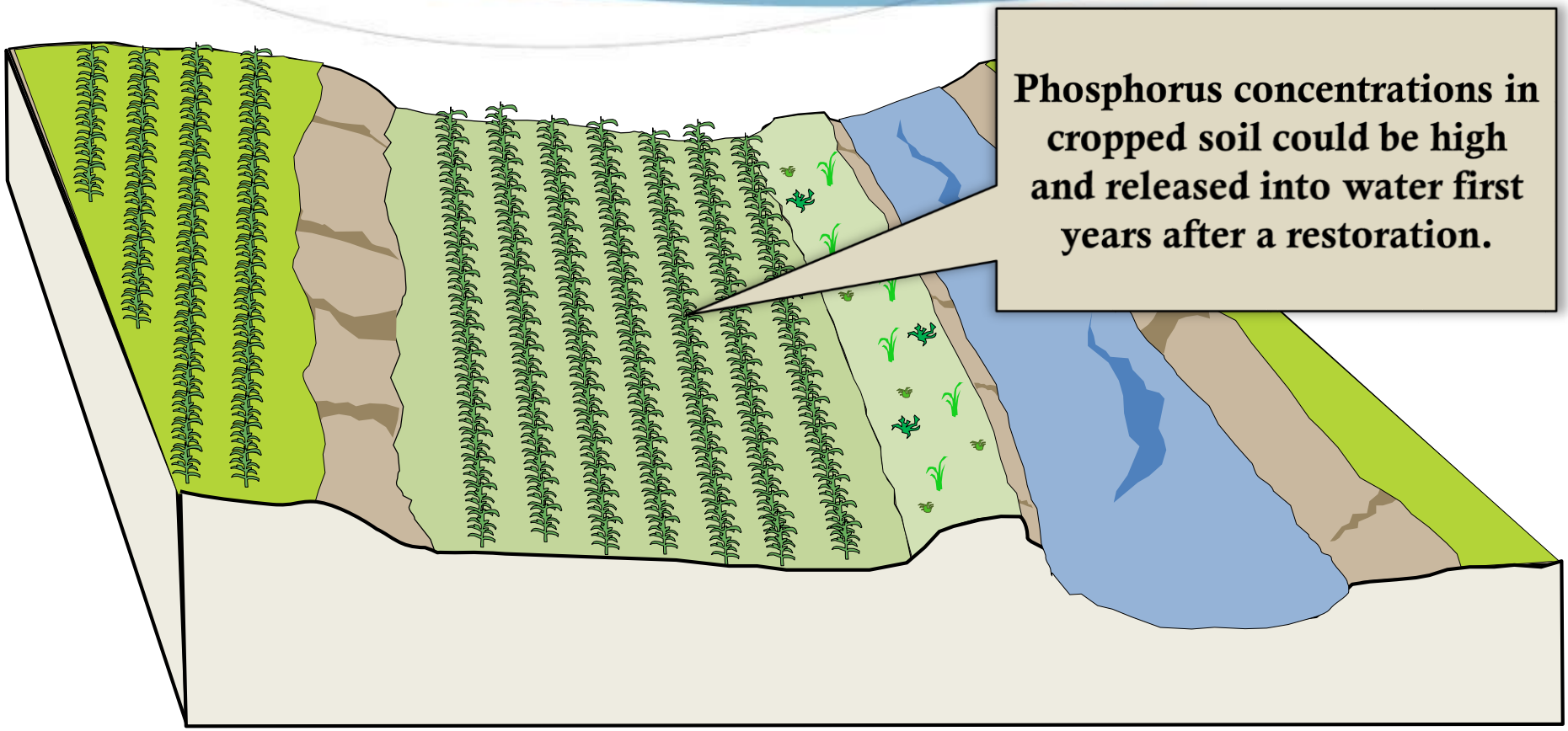


Completed a literature review on nutrient removal in floodplains

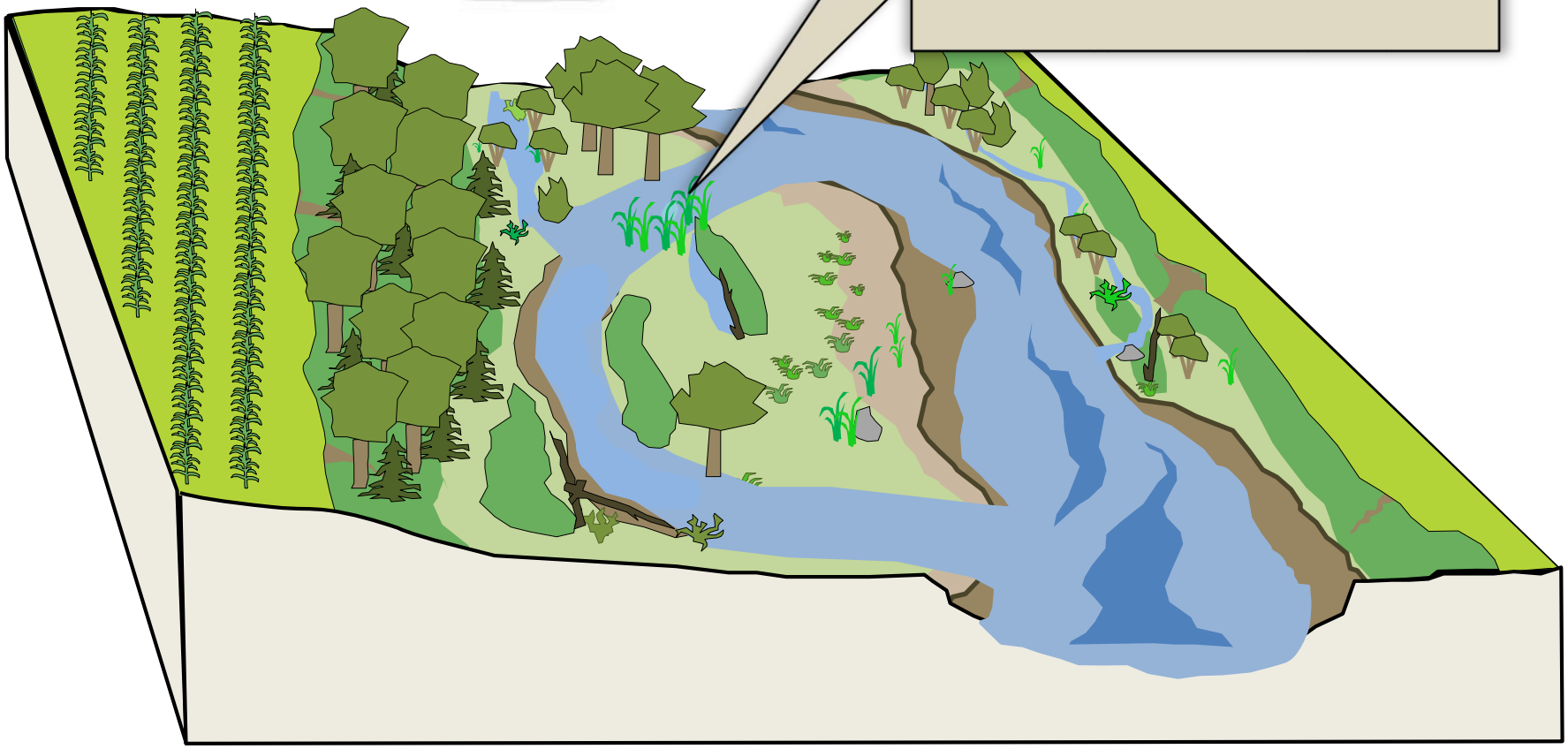
- Goal: direct nutrient removal funds toward floodplain restorations
- Barrier: uncertainty in how much nitrogen and phosphorus floodplains can remove
- Driver: states are trying to spend money on the best practices while updating their strategies

Restore diversity!

Legacy Phosphorus

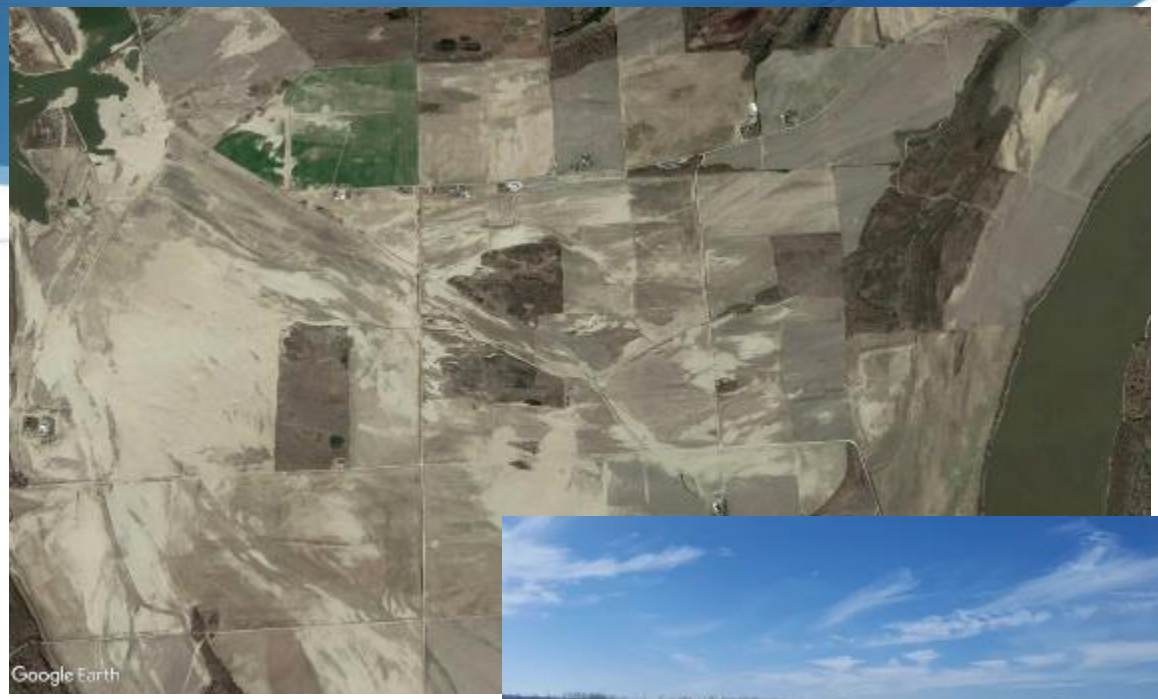


Having vegetation and topography that improve sedimentation and accretion could be best for both nutrients' particle-bound forms.



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

USDA NRCS

United States Department of Agriculture
Natural Resources Conservation Service

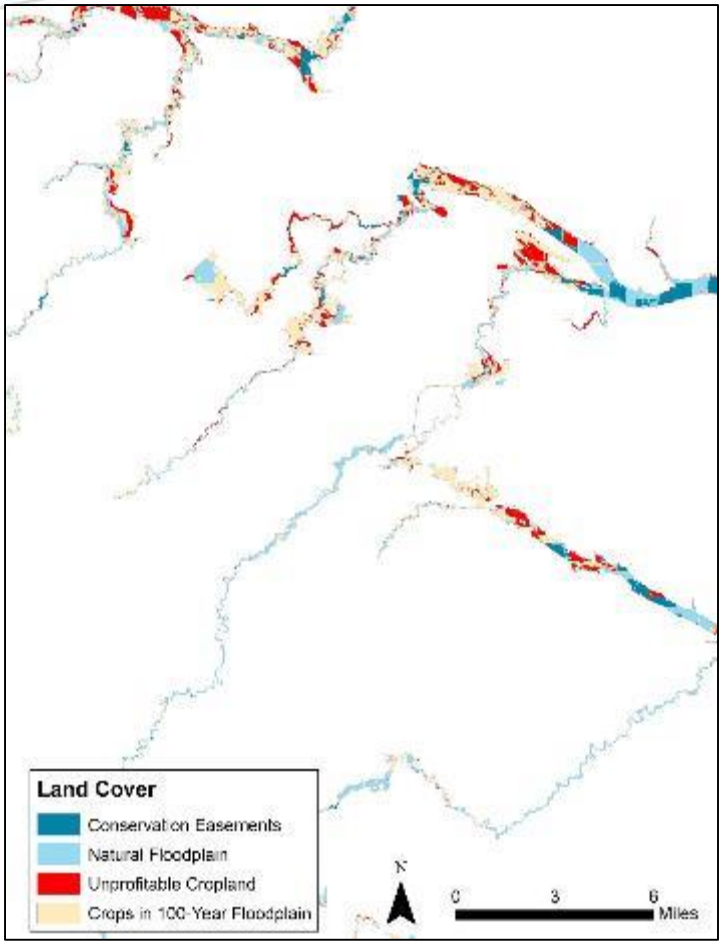
Research Project # 2
Farming in Floodplains

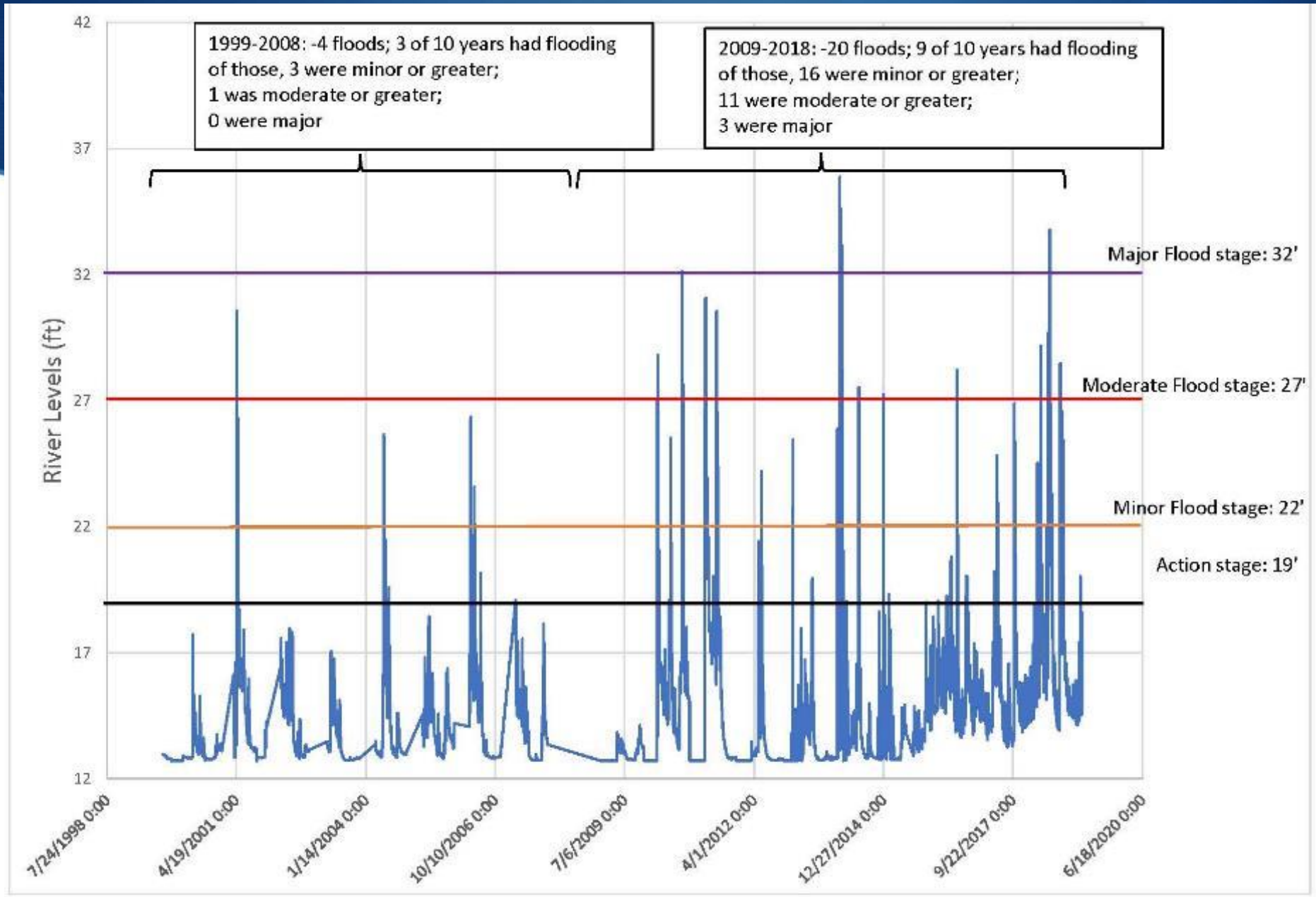
- Goal: help landowners dealing with flooding and reconnect isolated floodplain easements
- Barriers: it's difficult deciding whether to restore floodplains and find the right program
- Driver: farmers are tired of the flooding

Research Project # 2
Farming in Floodplains

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'
River Levels (ft)
42
37
32
27
22
17
12
7/24/1998 0:00
4/19/2001 0:00
1/14/2004 0:00
10/10/2006 0:00
7/6/2009 0:00
4/1/2012 0:00
12/27/2014 0:00
9/22/2017 0:00
6/18/2020 0:00

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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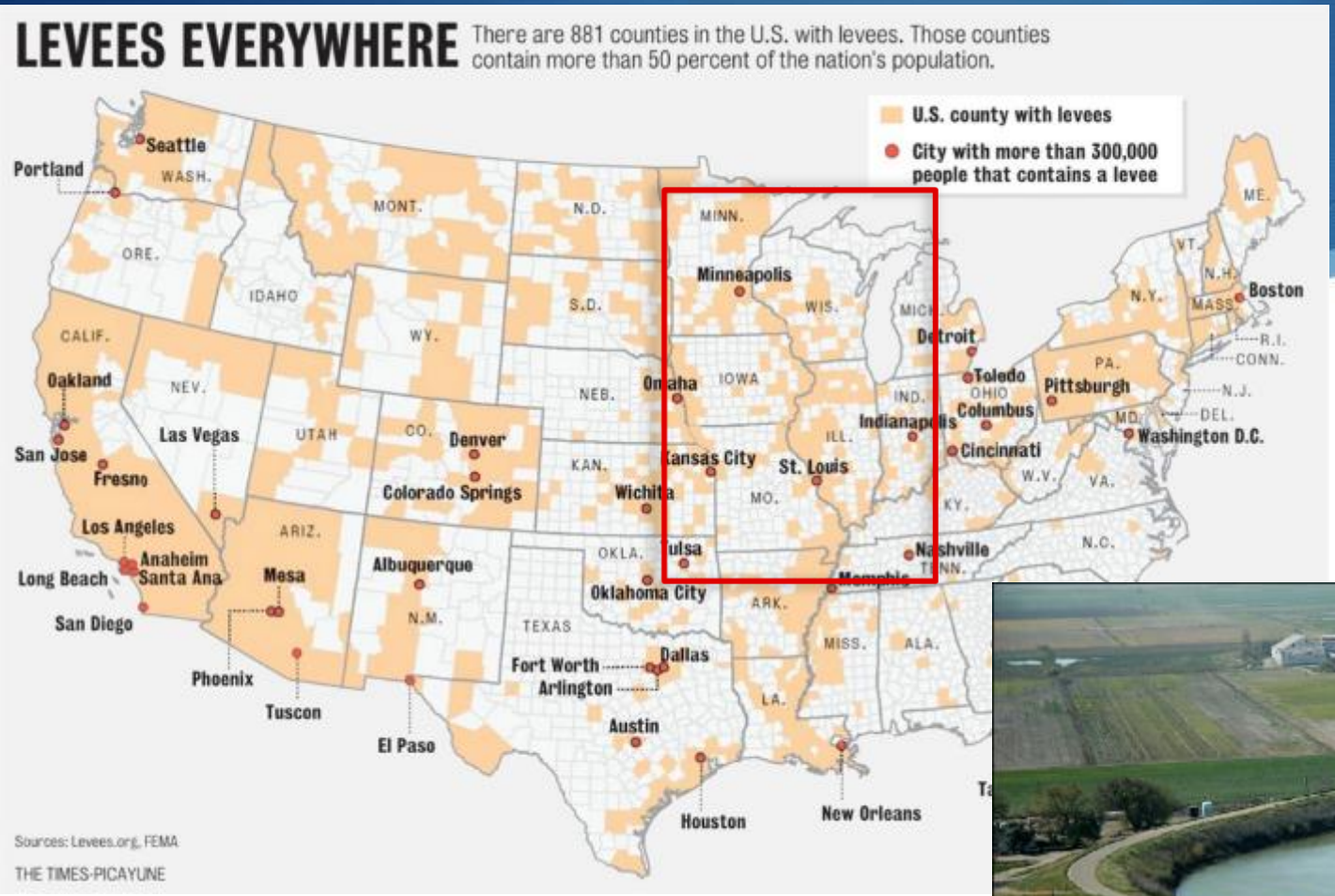
Floodplain Disconnection



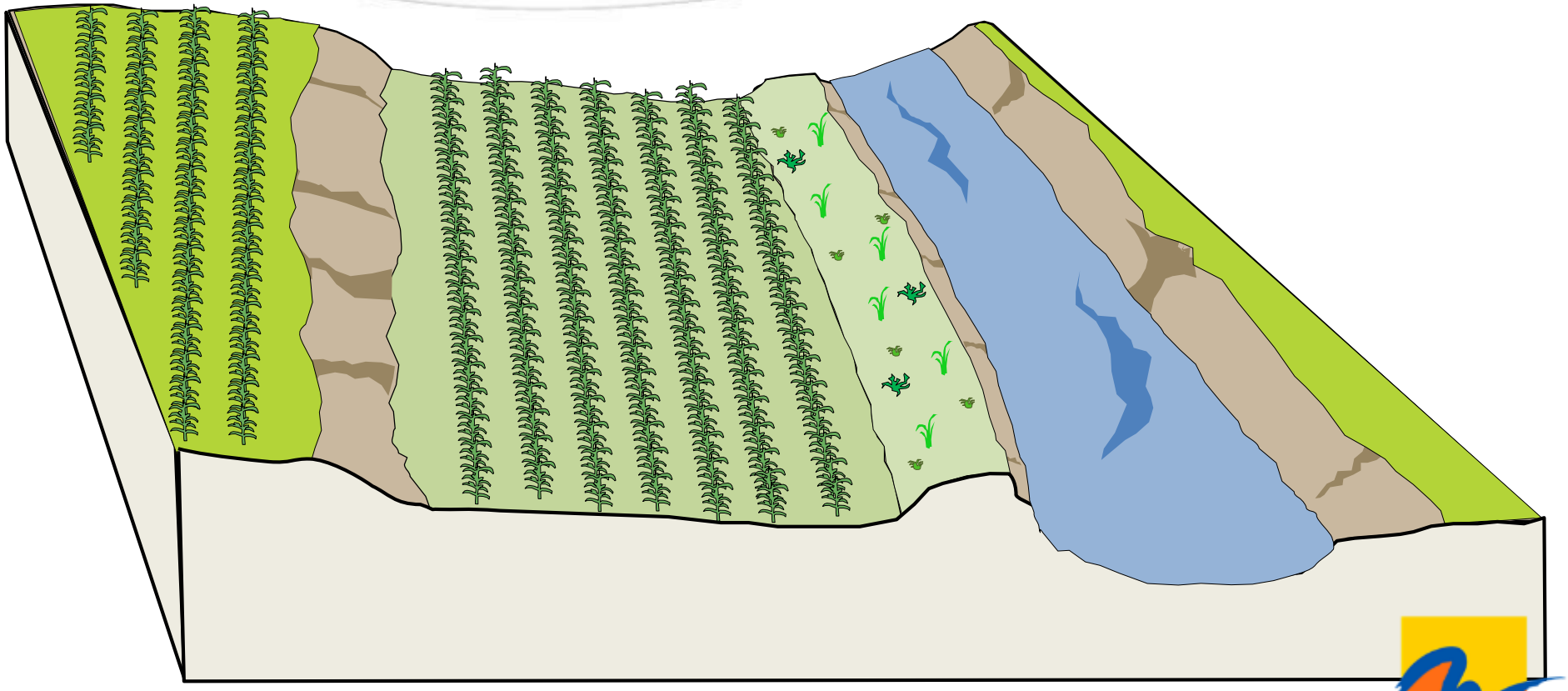
~8,000 miles of levees in the Upper Mississippi River Basin (Galloway Report, 1995)

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?