LCCMR emerging issues proposal

Accelerating the Revegetation of Peatland Restoration Projects to Enhance Success

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Rationale for project

- Peatlands very important carbon sinks and water storage areas
- Need: DNR and USFWS have millions of dollars to do peatland restoration. We are working with them on plans for three restoration sites north of Red Lake (2025-2029)
- Revegetation of open water has been less successful in peatland restoration
- Need to test success of different plants at reducing greenhouse gas emissions and providing hydrologic benefits

Peatland restoration in Minnesota

- Water levels can be restored
- However, 10+ years later, revegetation is poor within blocked ditches
- Reduces ecological function
- Need to do better

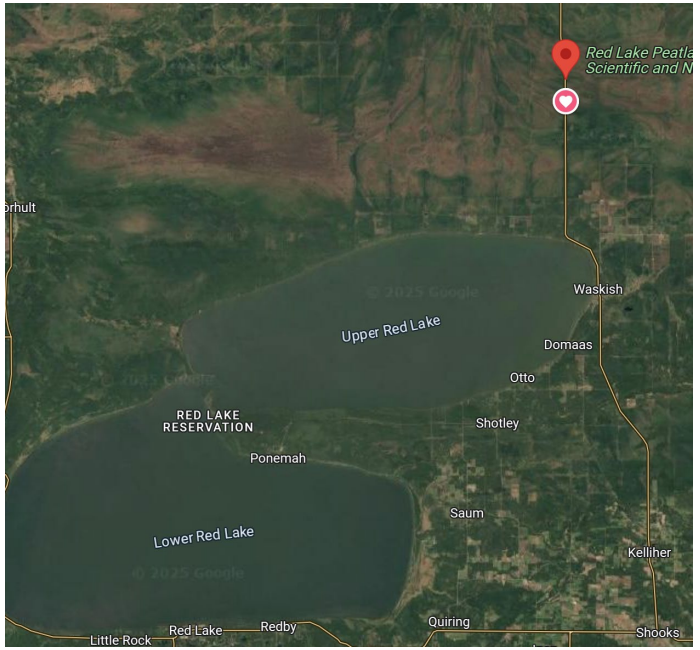
Ditched peatland in Minnesota

Restored peatland, Minnesota

How to address the problem

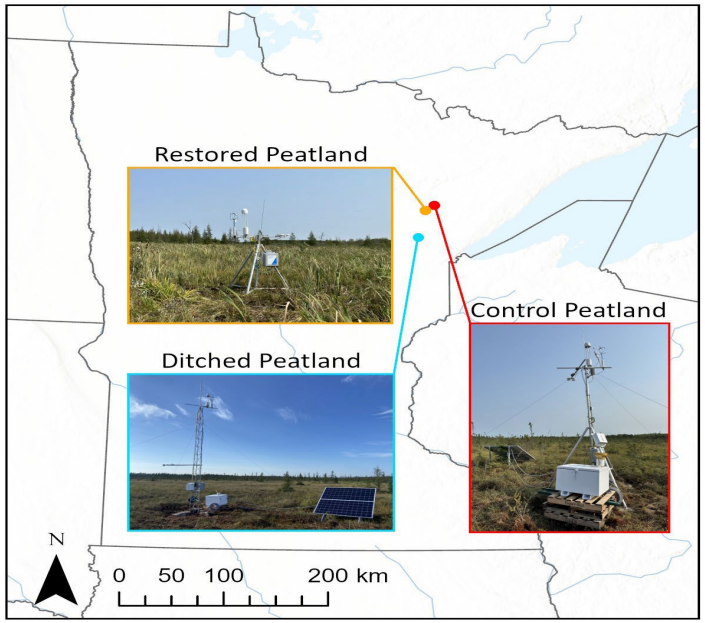
- Assess different water levels and plant species in mesocosms
- Identify best conditions and plant types for peatland restoration
  - lower pH in our experimental wetland facility to that of natural bog
  - Test moss and different plant types

Experimental wetlands on St. Paul campus



Red Lake area peatlands

Informs restoration



Field study sites in northern MN

Outcomes and benefits

- Updating a peatland research station to test future bog ecological questions and research strategies
- Better understand water levels that improve restoration outcomes
- Better understand how to re-establish moss, a key component of healthy bog ecosystems
- Information directly transferred to partners: MN DNR and USFWS
- Leading to better restoration outcomes in northern Minnesota