

FireWater: A novel replicated whole pond experiment shows prairie fires cause nutrient loading and subsequent increases in phytoplankton

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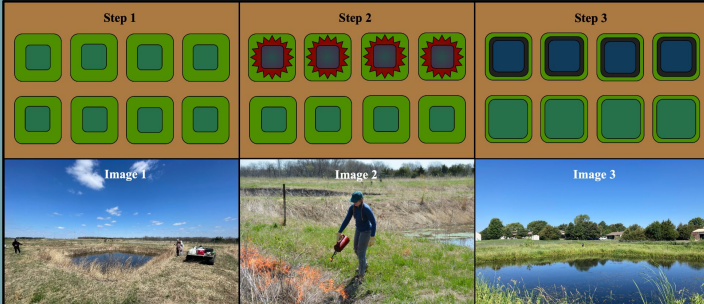
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Background

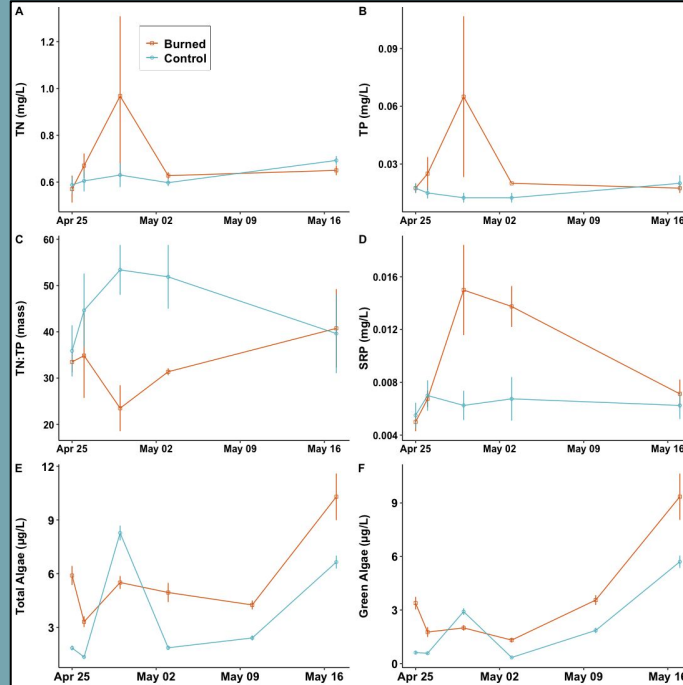
- ▶ Fire is an integral process within many ecosystems¹
- ▶ Fire has increased considerably in lake watersheds in the past 15 years²; links between fire ecology and limnology remain understudied
- ▶ Burning is expected to release nutrients, causing eutrophication and increased algal growth

Objective: To determine how exposure to fire alters water quality within grassland ecosystems



Methods

1. Partial pond filling, estimation of biomass, sampling
2. Burning and immediate sampling
3. Completion of pond filling and sampling



View our references and additional contact information



Adeline Kelly is a 4th year undergraduate at the University of Kansas studying Ecology, Evolutionary, and Organismal Biology and Environmental Studies

Results

- ▶ Total nitrogen and total phosphorus peaked following burning (Fig A, B)
- ▶ TN:TP decreased following burning, increased throughout the remainder of the study (Fig C)
- ▶ SRP peaked following burning, then decreased (Fig D)
- ▶ Algal growth increased in the latter half of the study, mainly in the form of green algae (Fig E, F)

Conclusion

- ▶ Burning released nutrients and altered the TN:TP ratio, didn't promote cyanobacteria
- ▶ Release of SRP likely spurred algal growth
- ▶ Burning may worsen eutrophication issues in grassland water bodies
- ▶ Future studies could examine interannual effects of Spring burning