

Mitigation of Harmful Cyanobacteria Blooms

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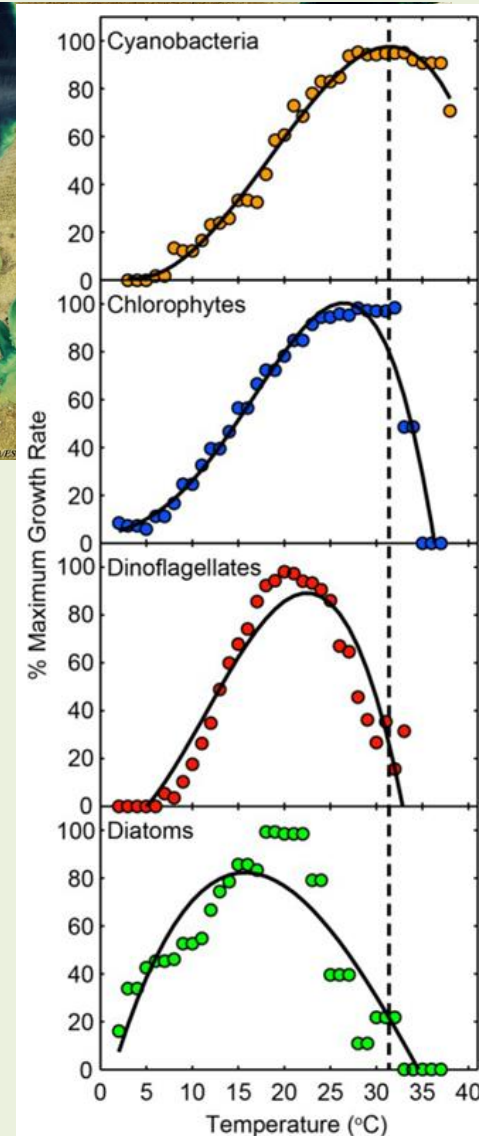
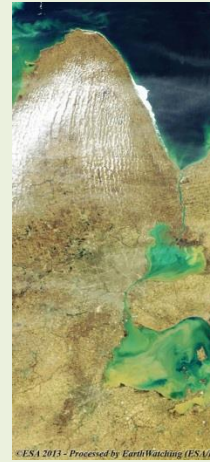
Blooms are Increasing

- Increasing prevalence of large freshwater blooms, primarily cyanobacteria
- Toxin or odor & taste issues



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- Increasing prevalence of large freshwater blooms, primarily cyanobacteria
- Toxin or odor & taste issues
- Likely to increase with warming temperatures & IPCC predictions of major storms & extended droughts



Accepted Practices

- Prevention: Reduce nutrient loads
- Mitigations
 - Preventative
 - Flushing
 - Aeration/mixing

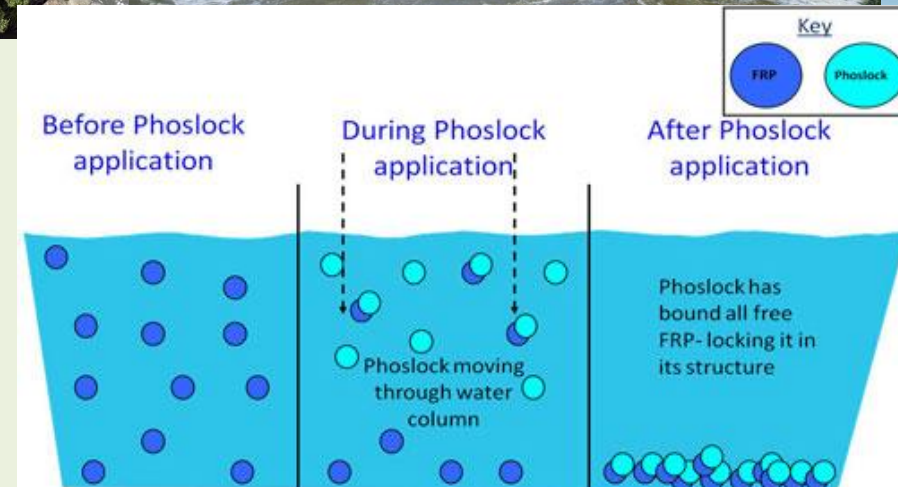
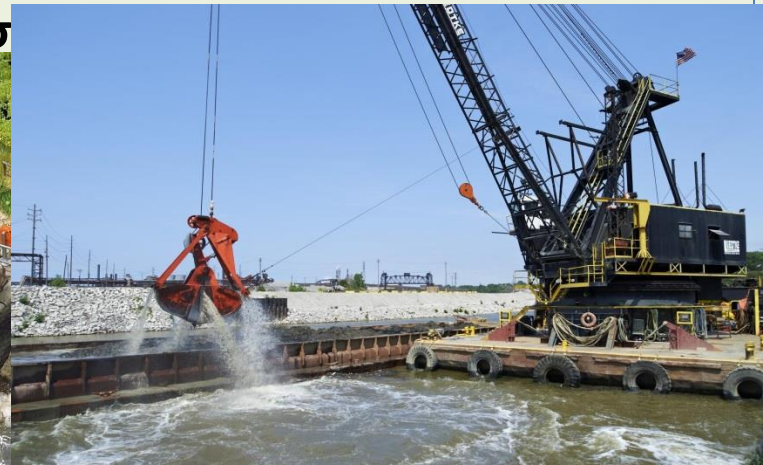
Political will & \$\$\$ for BMPs, TMDLs, ENR, green development



Accepted Practices

- Prevention: Reduce nutrient loads
- Mitigations
 - Preventative
 - Flushing
 - Aeration/mixing
 - Dredging
 - Alum/Phoslock®

Political will & \$\$\$ for BMPs, TMDLs, ENR,



Accepted Practices

- Prevention: Reduce nutrient loads

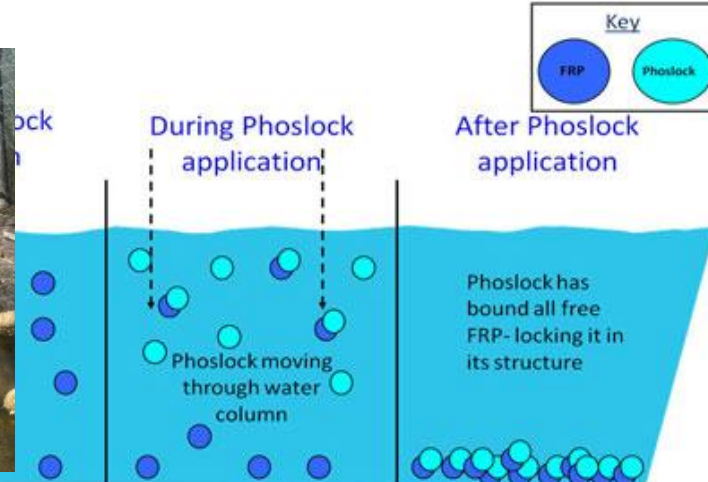
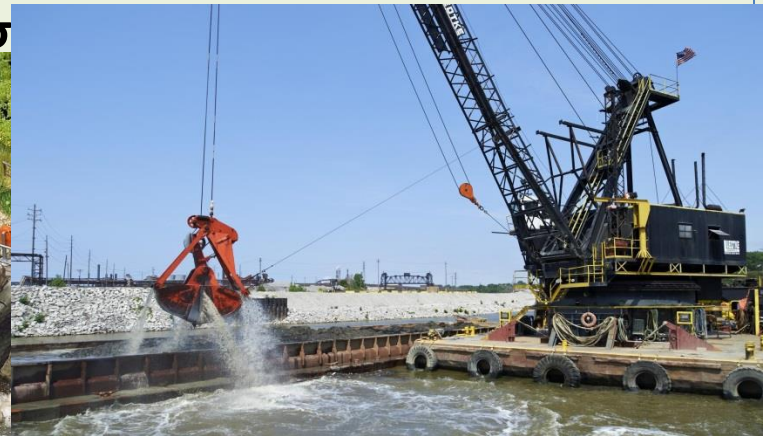


Political will & \$\$\$ for BMPs, TMDLs, ENR,

- Mitigations

– Preventative

- Flushing
- Aeration/mixing
- Dredging
- Alum/Phoslock®
- Barley straw



Accepted Practices

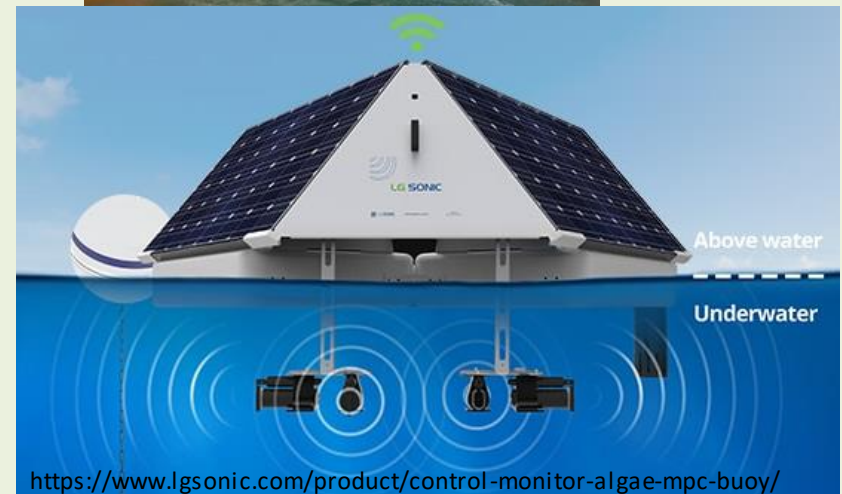
Bloom Intervention

- Flocculation/capping
- Peroxide



Problematic & Emerging Practices

- Use with caution
 - CuSO_4
- Undocumented
 - Ultrasound
- Emerging
 - Nanobubbles



G. Chapas, pers. commun.

Thank you!

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