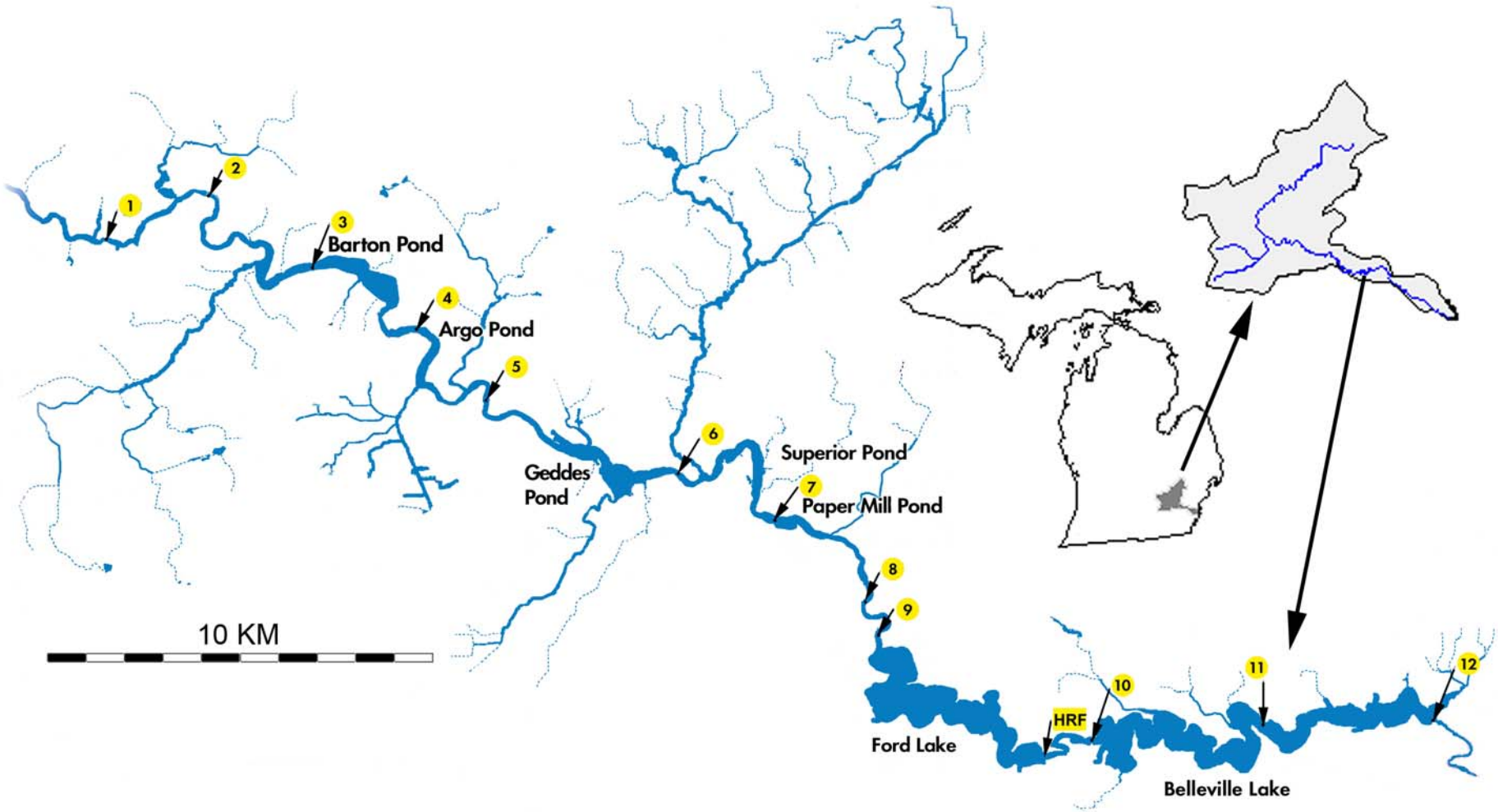
Whole Lake Experiments to Control Harmful Algal Blooms in Multi-Use Watersheds

USDA/CSREES Project Directors' Meeting

John T. Lehman

January 2007

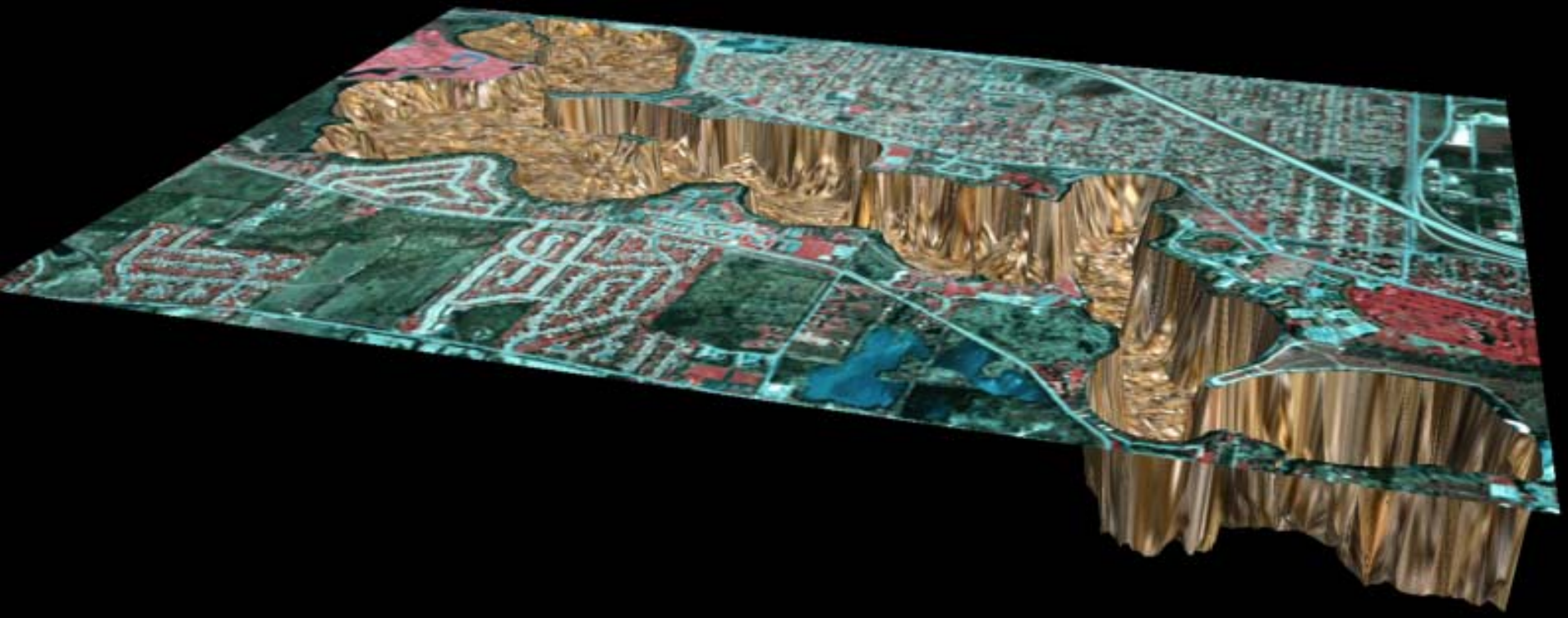
Study Site


1
2
3
Barton Pond
4
Argo Pond
5
Geddes
Pond
6
Superior Pond
7
Paper Mill Pond
8
9
10
HRF
11
12
Ford Lake
Belleville Lake
10 KM

The Environmental Problem

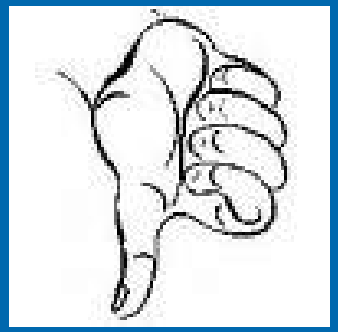
ALGAE

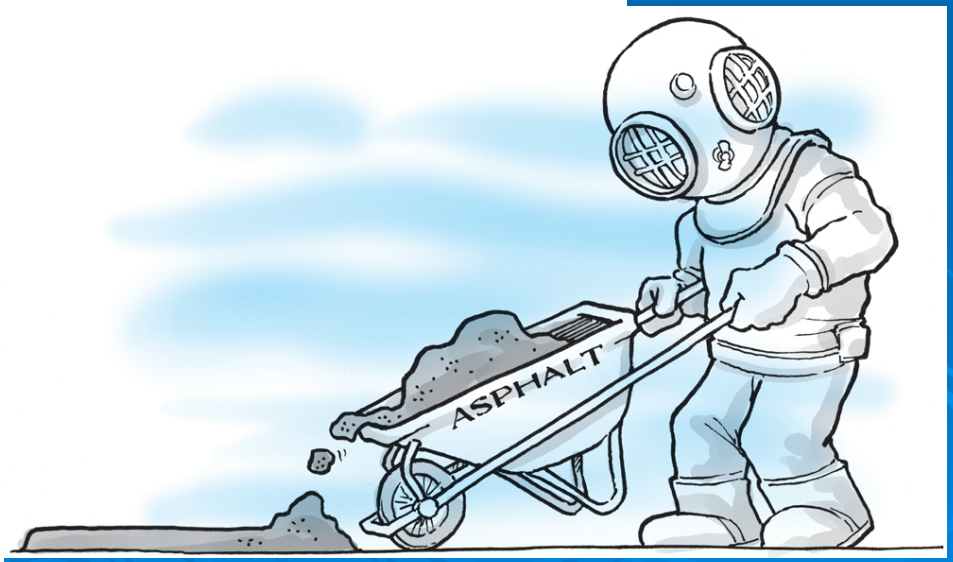
Ford Lake- The Experiment Site

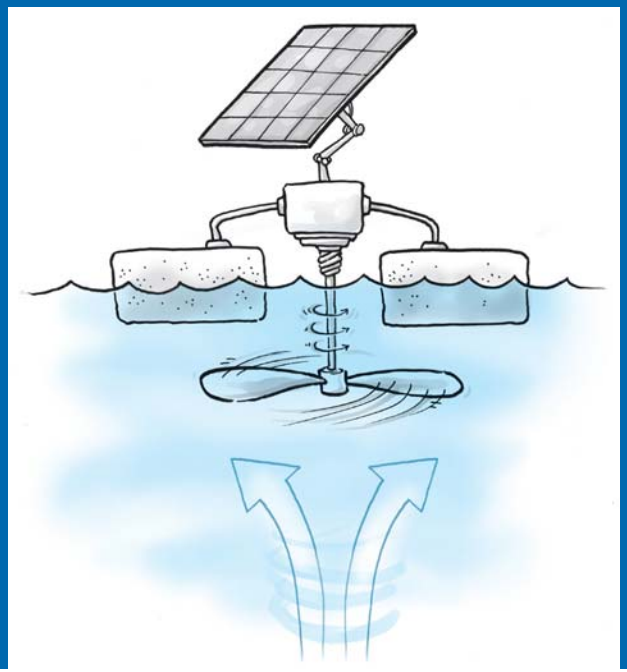


Courtesy: G.J. Cope, Nformation Design 2006

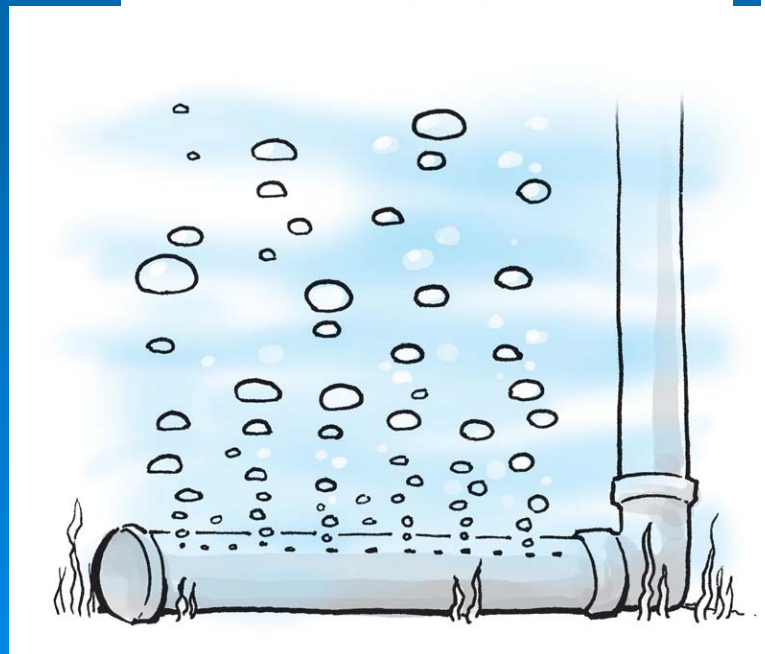
Options Explored: Brochure and Public Outreach Lectures

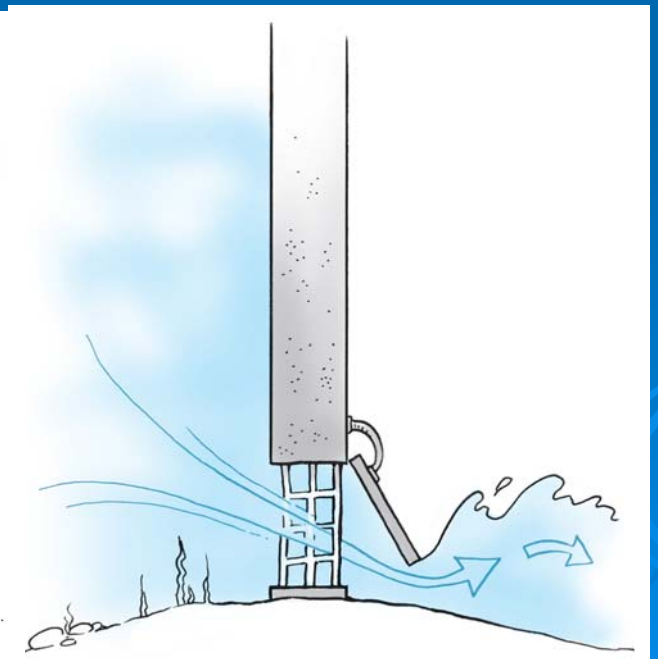


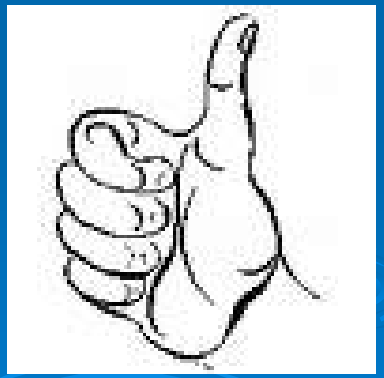


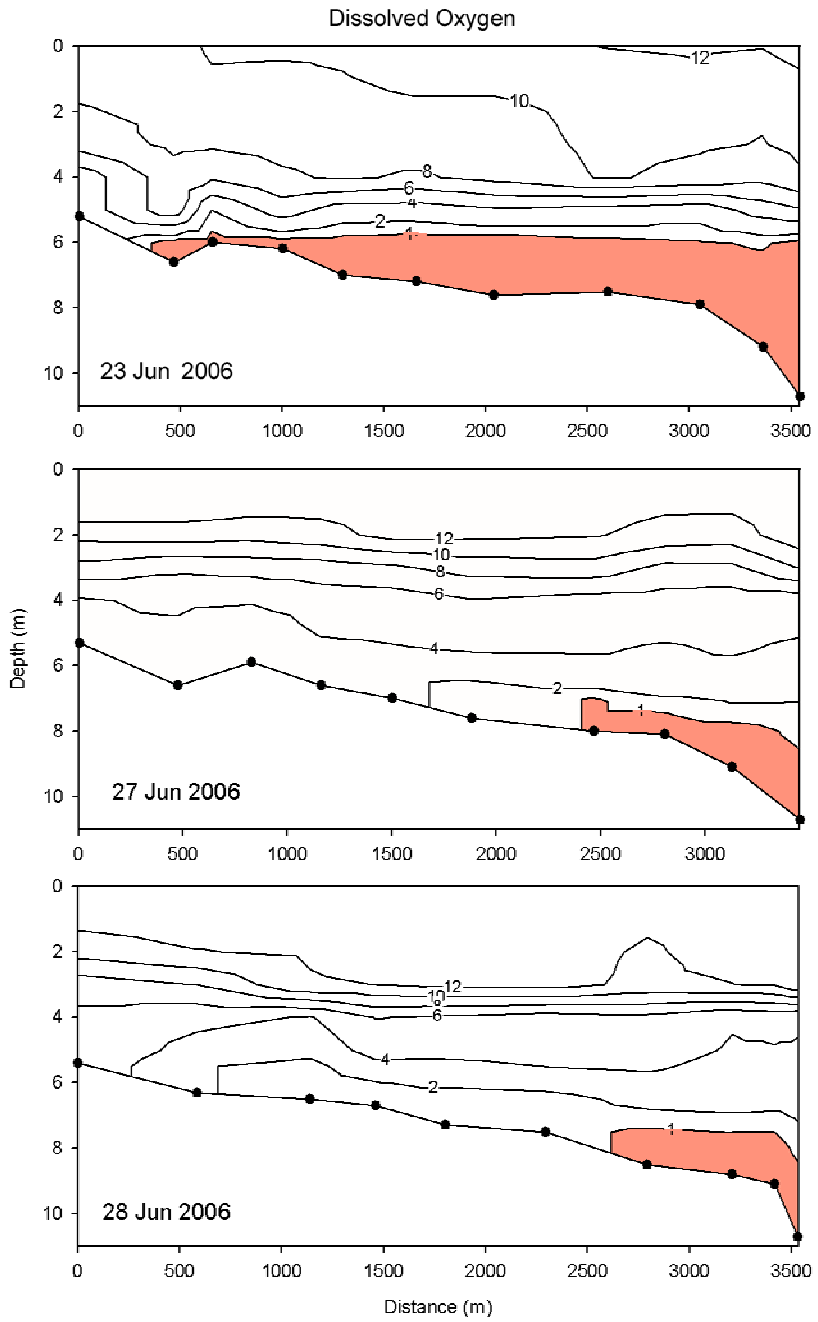


Options worth experiments, endorsed by unanimous vote of municipal Board of Trustees, and sanctioned by DNR and DEQ



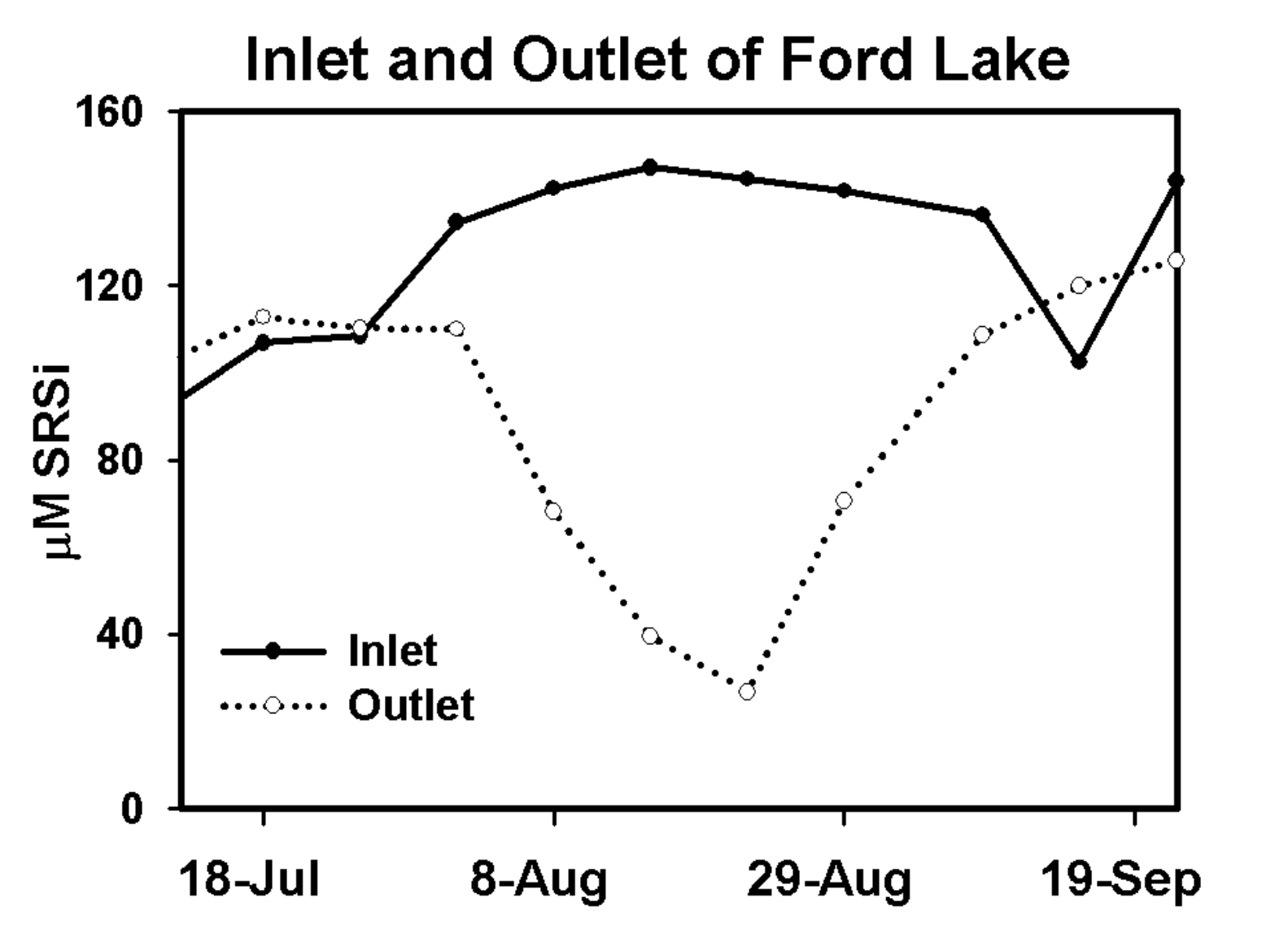






Reducing the zone of anoxia by model-guided experimental withdrawal: lake in cross-section

Inducing a Diatom Bloom



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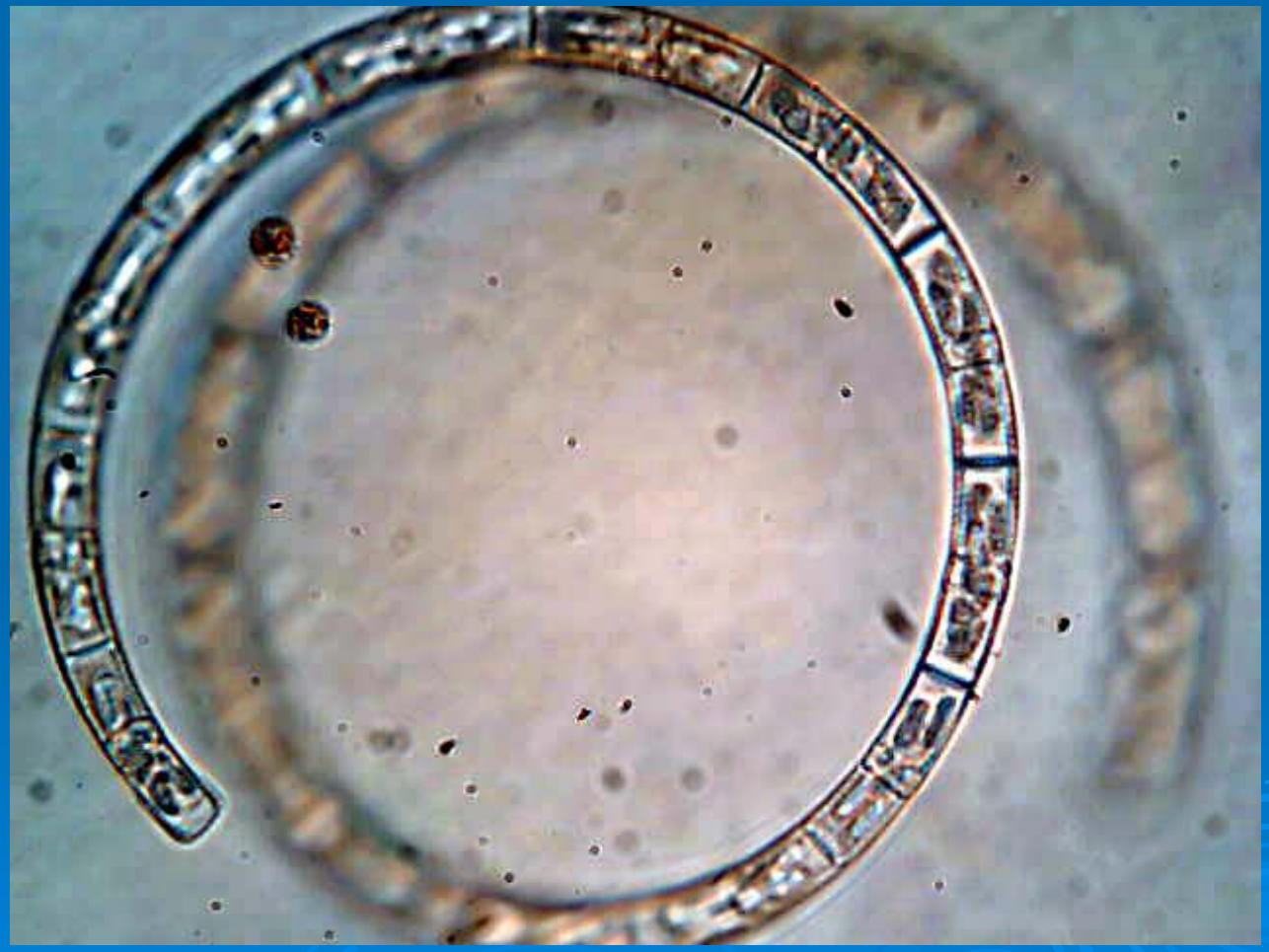
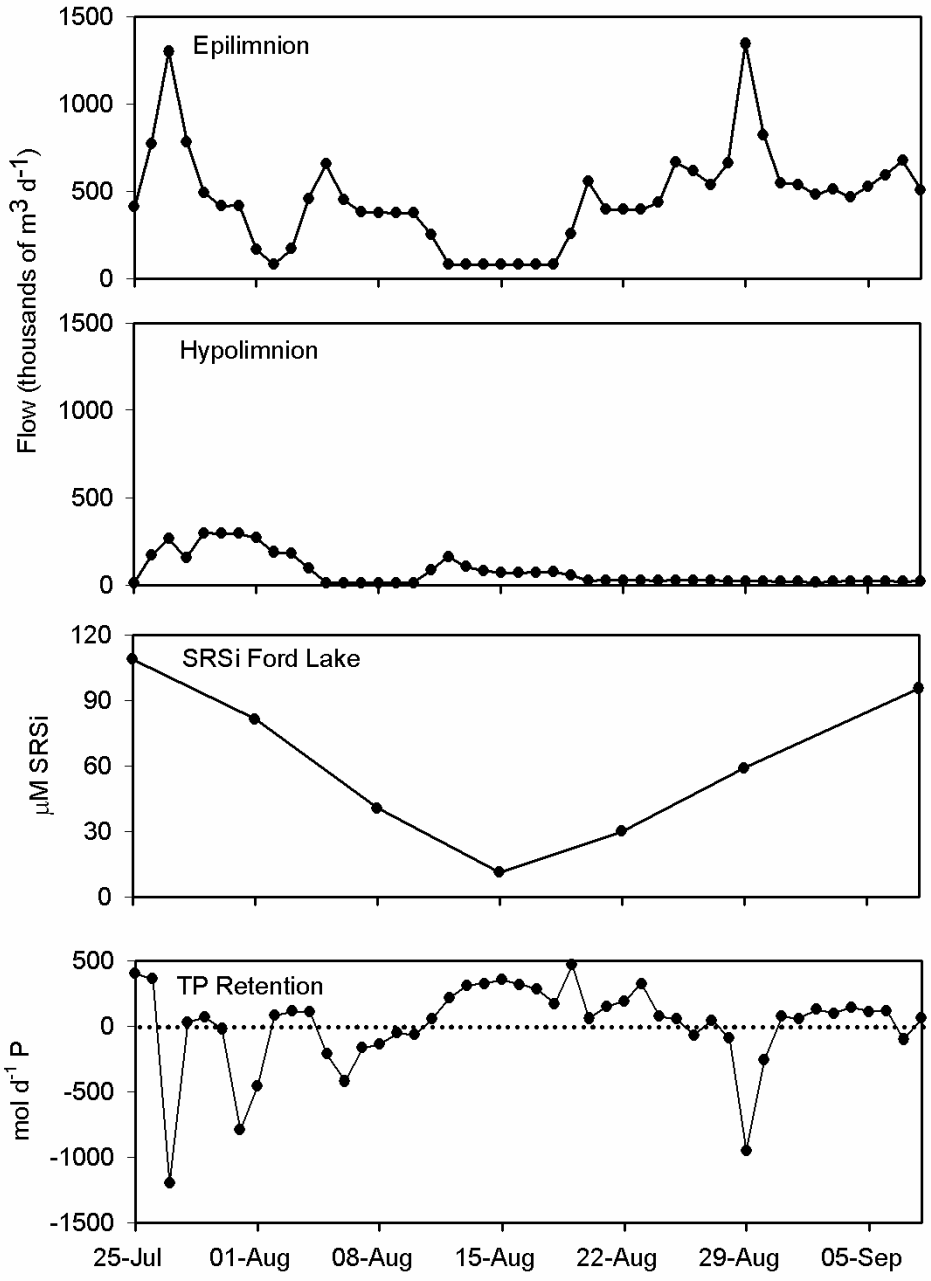
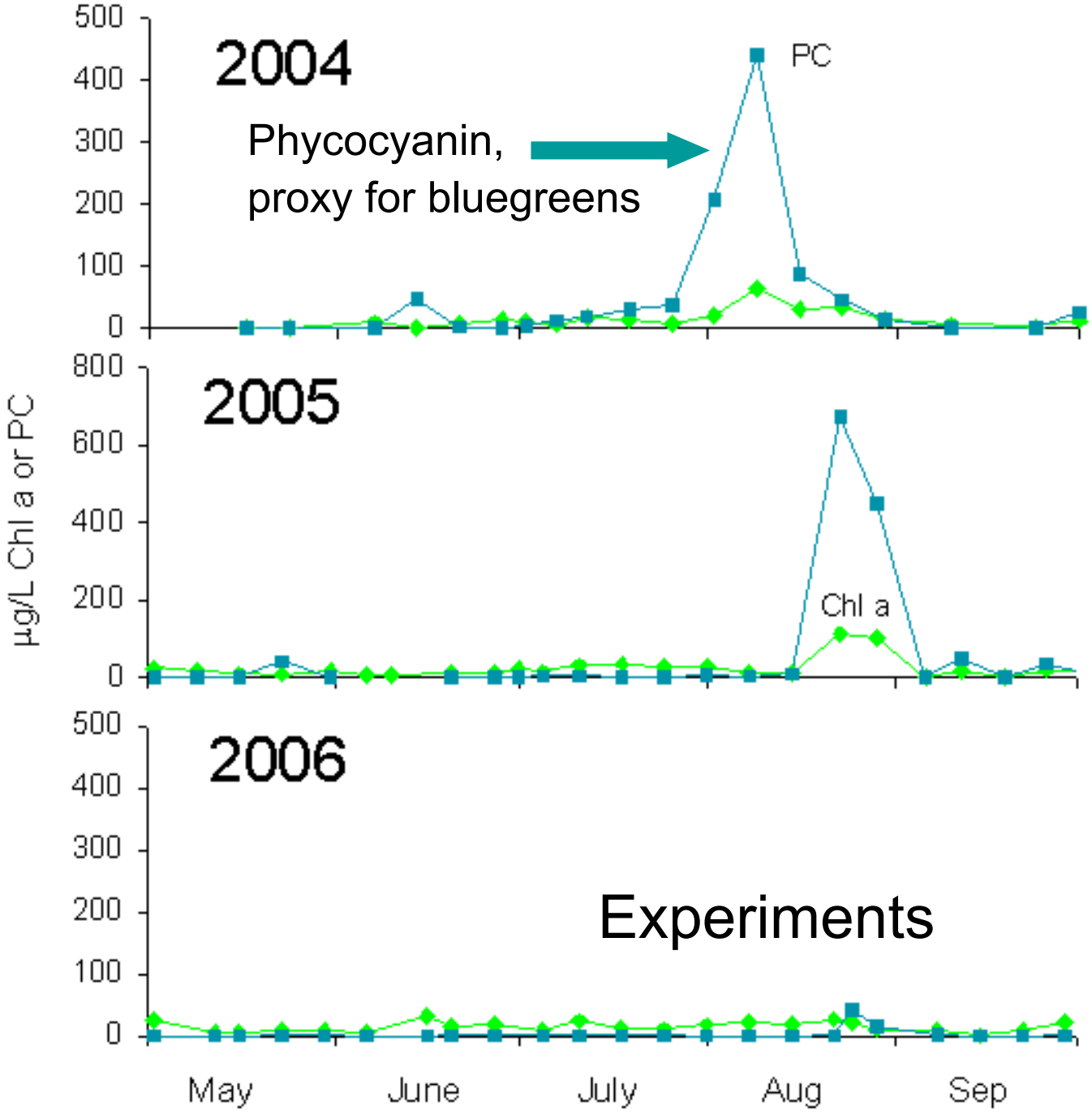




Experimental Discharge Scenario

Triggering a Diatom Bloom

Changing Lake from Phosphorus Source to Phosphorus Sink


2004
PC
Phycocyanin,
proxy for bluegreens
2005
Chl a
2006
Experiments
µg/L Chl a or PC
500
400
300
200
100
0
800
600
400
200
0
500
400
300
200
100
0
May
June
July
Aug
Sep