

Bolton Lakes

Annual Bolton Lakes Watershed Community Forum

Newhoca Lodge
October 14, 2014

Northeast Aquatic Research
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Bolton Lakes Watershed

Lower Bolton Lake = 2,379 acres

Middle Bolton Lake = 1,946 acres

Upper Bolton Lake = 1,293 acres

Specific drainage basins:

Lower Bolton = 258 acres

Middle Bolton = 532 acres

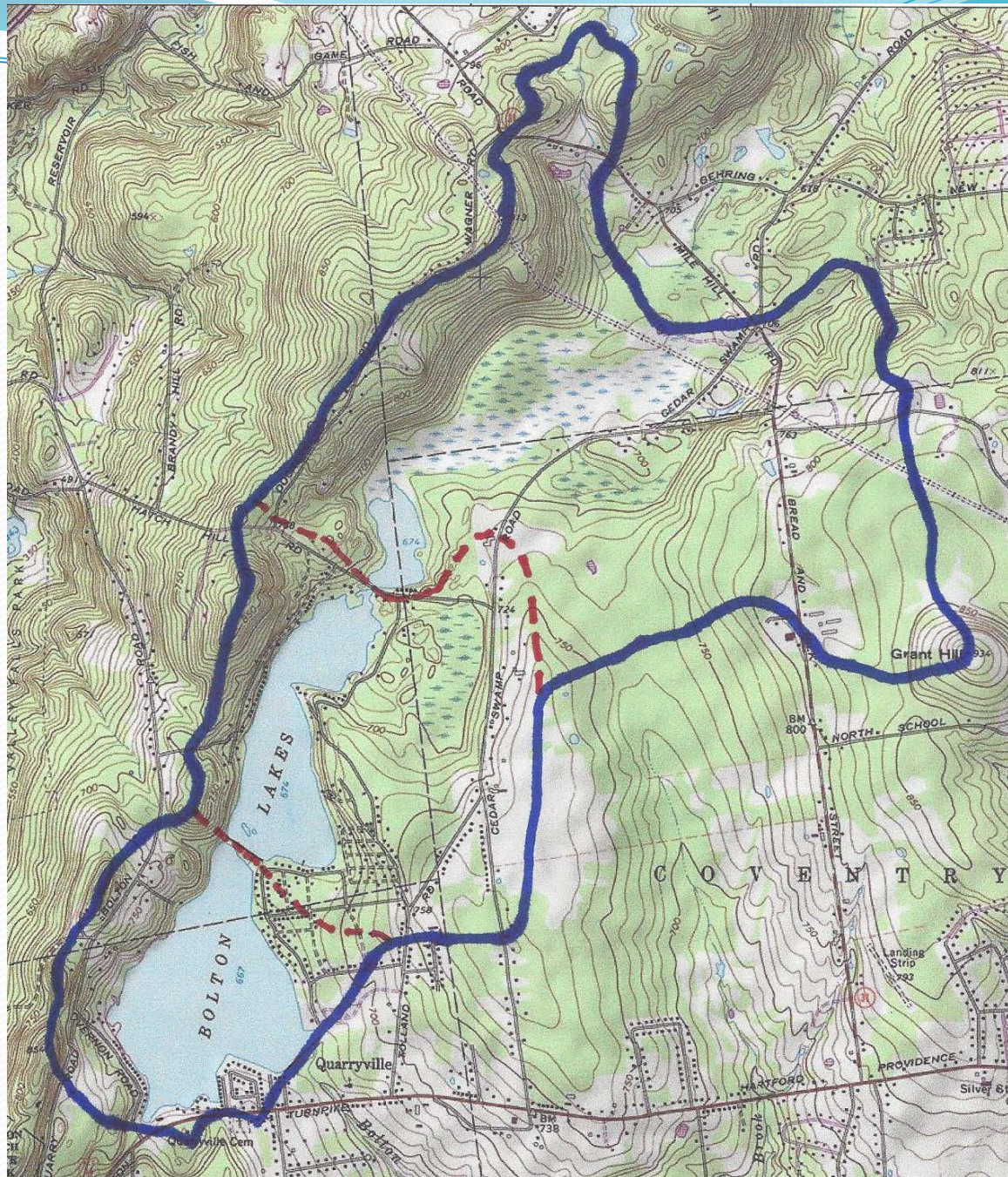
Upper Bolton = 1,243 acres

Percentage upstream basin:

Lower Bolton = 88 %

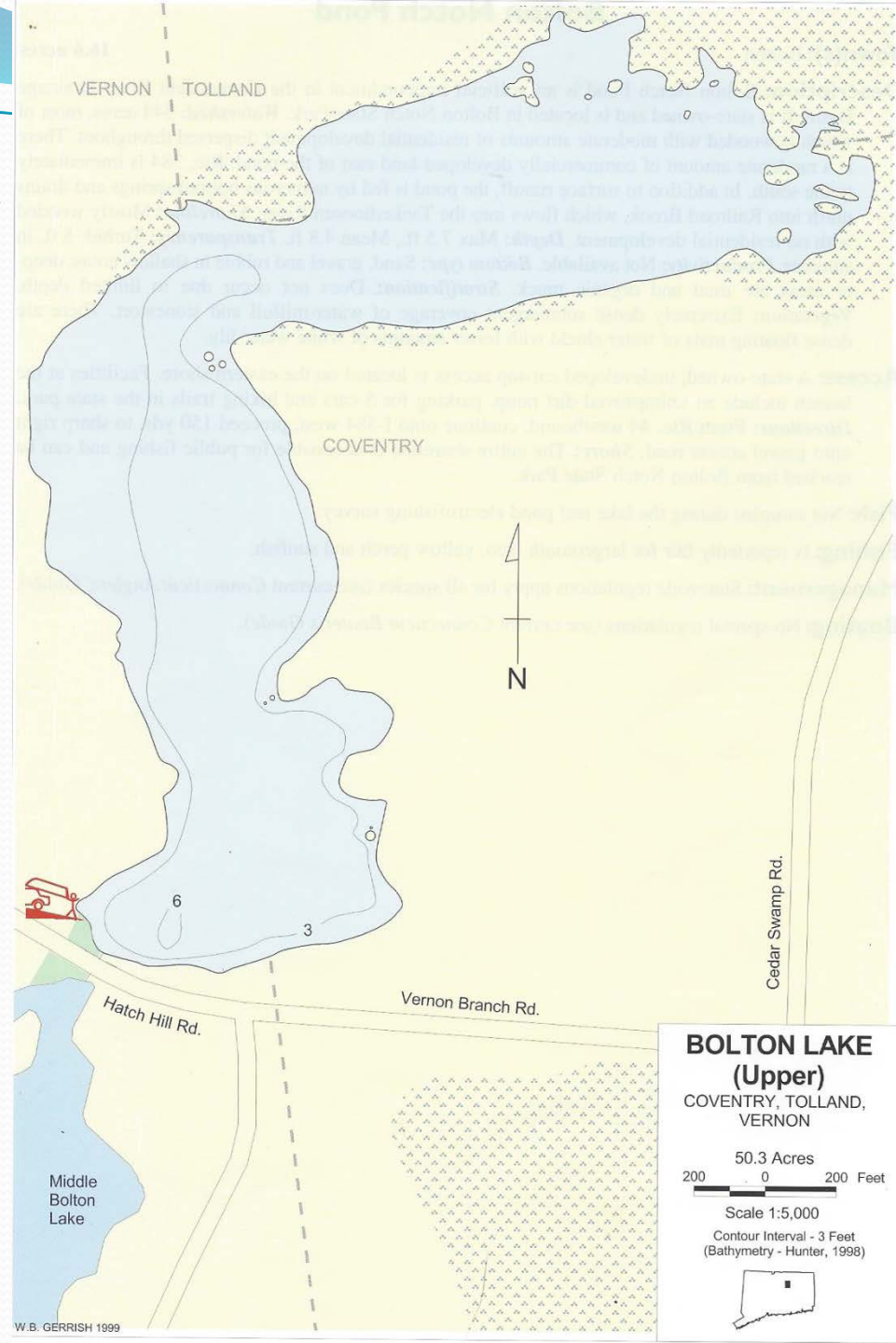
Middle Bolton = 71 %

Upper Bolton = 100 %



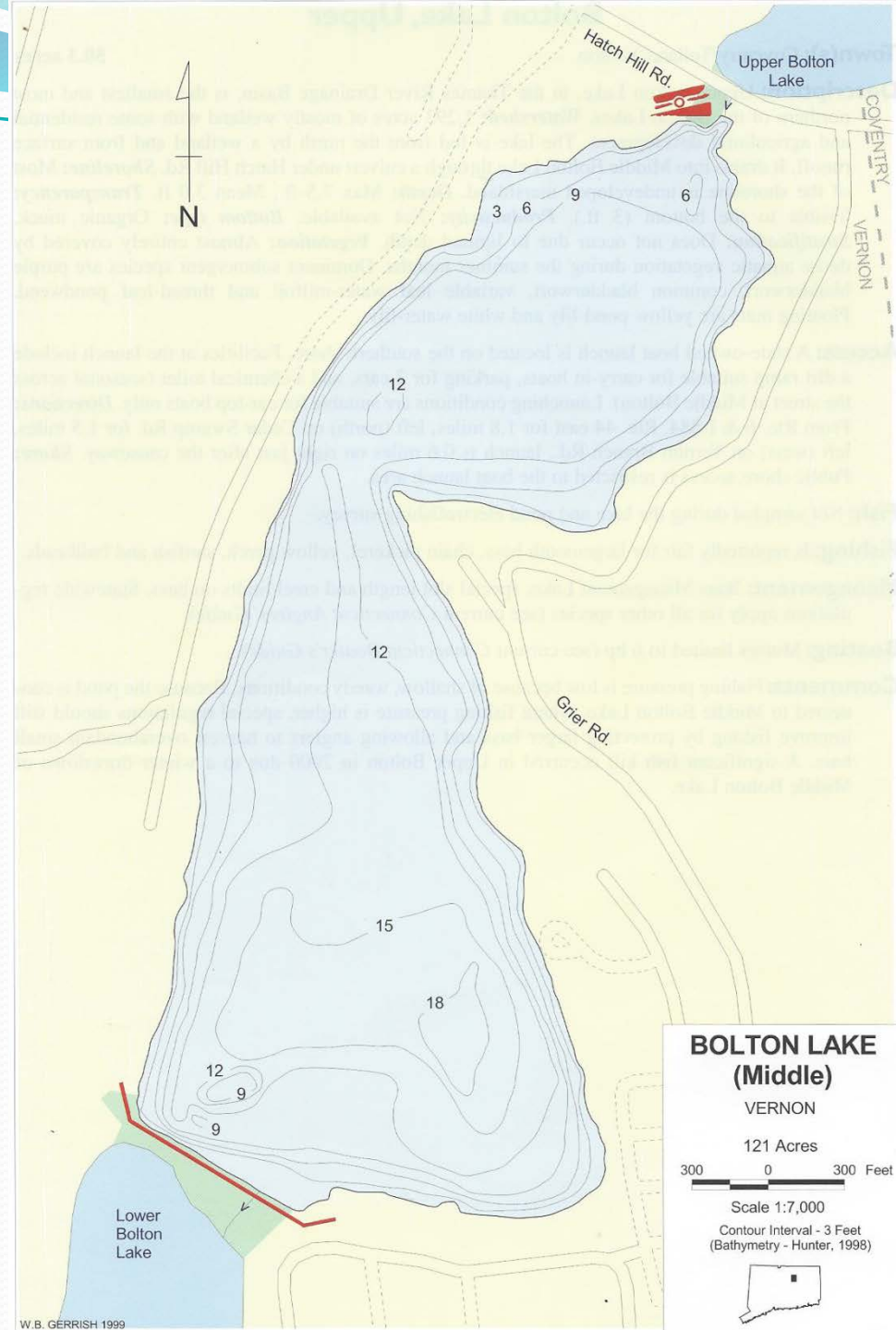
Upper Bolton Lake

- Surface area = 50.3 acres
- Maximum depth = 7 feet
- Total volume = 350 acre-feet ?
- Drainage area = 1,242.7 acres
- Residence time / Flushing rate
 - 0.27 years / 3.7 times per year



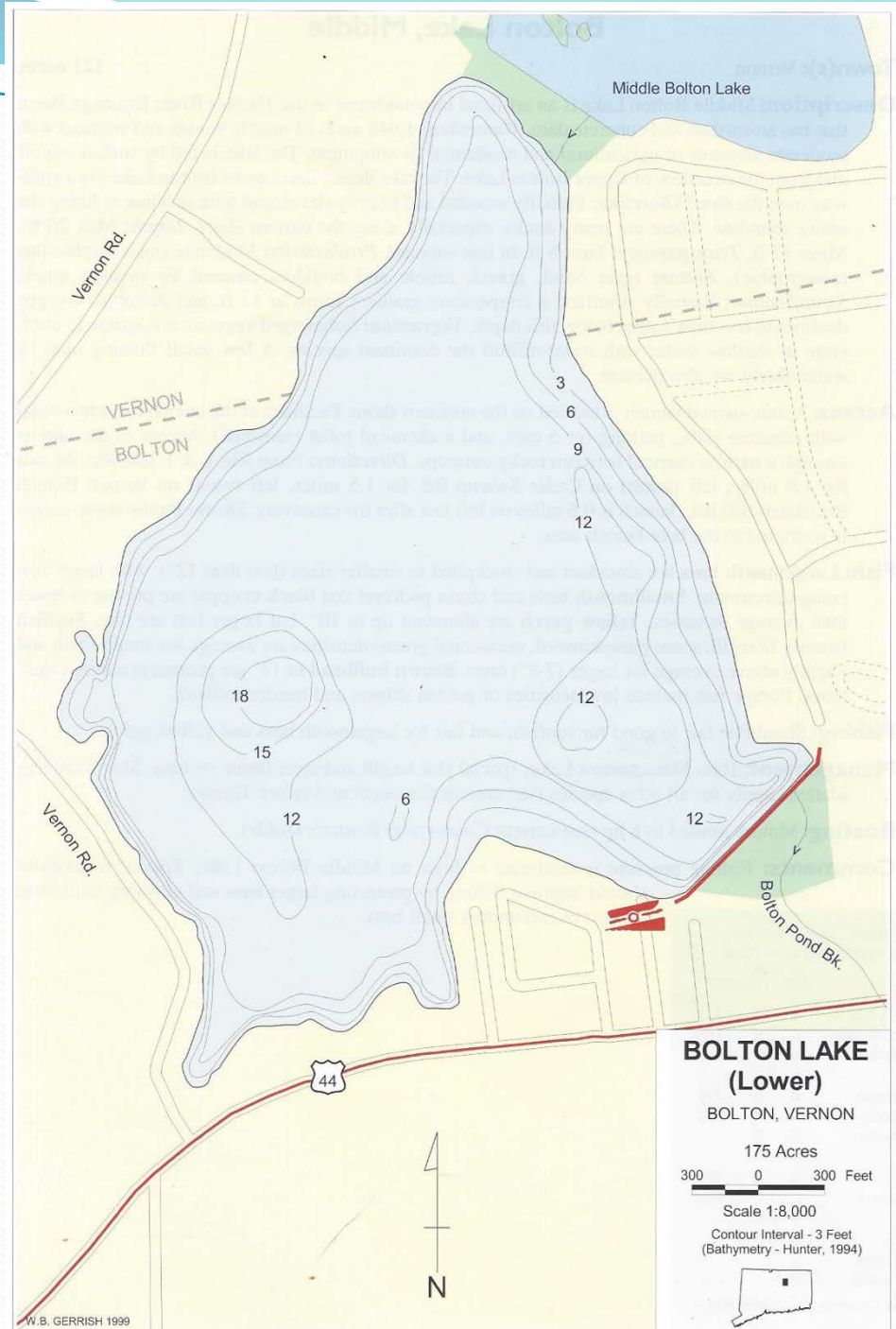
Middle Bolton Lake

- Surface area = 121 acres
- Maximum depth = 18 feet
- Total volume = 1,126 acre-feet
- Drainage area = 1,825 acres
- Mean depth 9.8 feet
- Residence time / Flushing rate
 - 0.89 years / 1.1 times per year



Lower Bolton Lake

- Surface area = 175 acres
- Maximum depth = 18 feet
- Total volume = 1,668 acre-feet
- Drainage area = 2,204 acres
- Mean depth 9.5 feet
- Residence time/Flushing rate
 - 0.72 years / 1.4 times per year

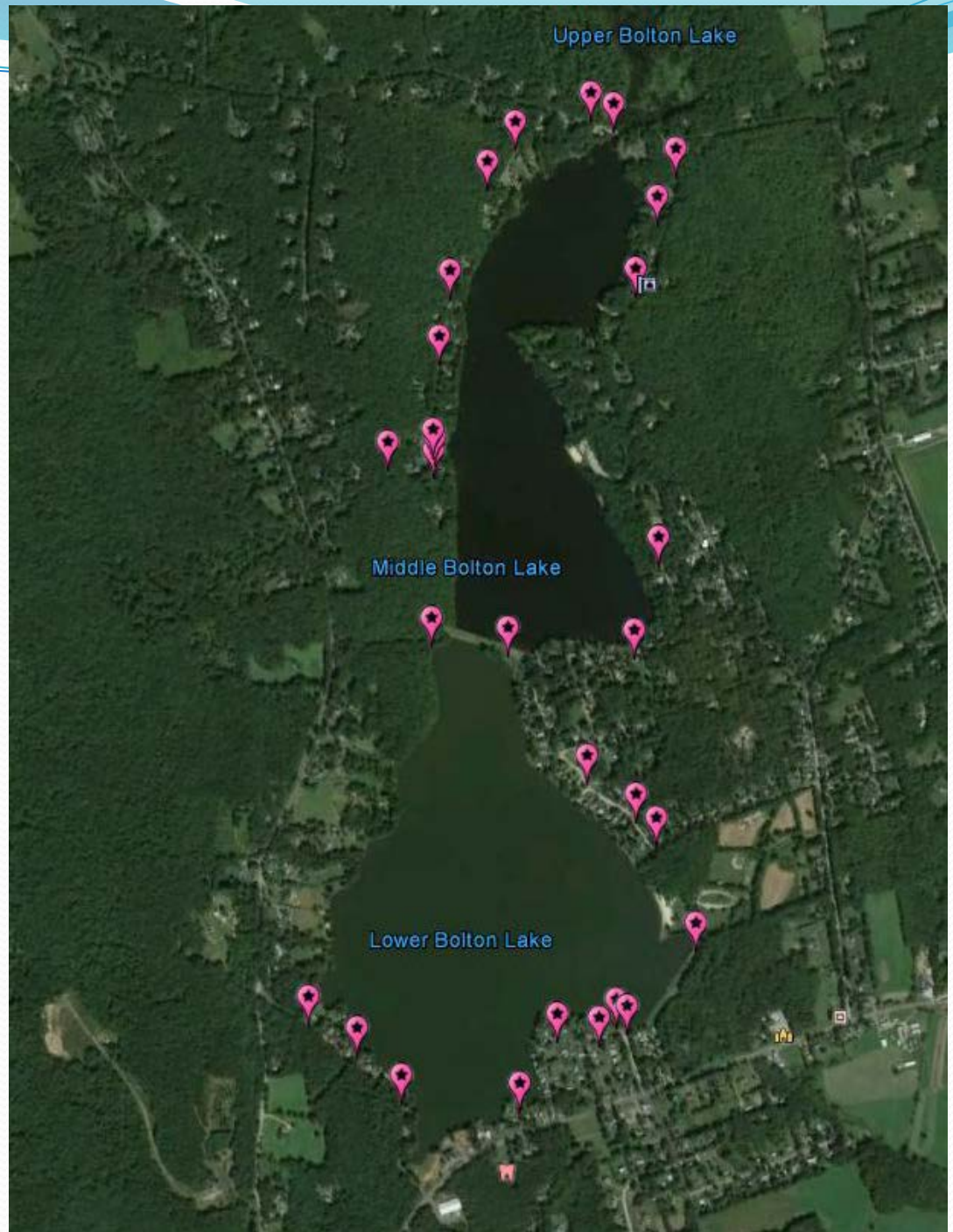


Summary of Morphometric Characteristics

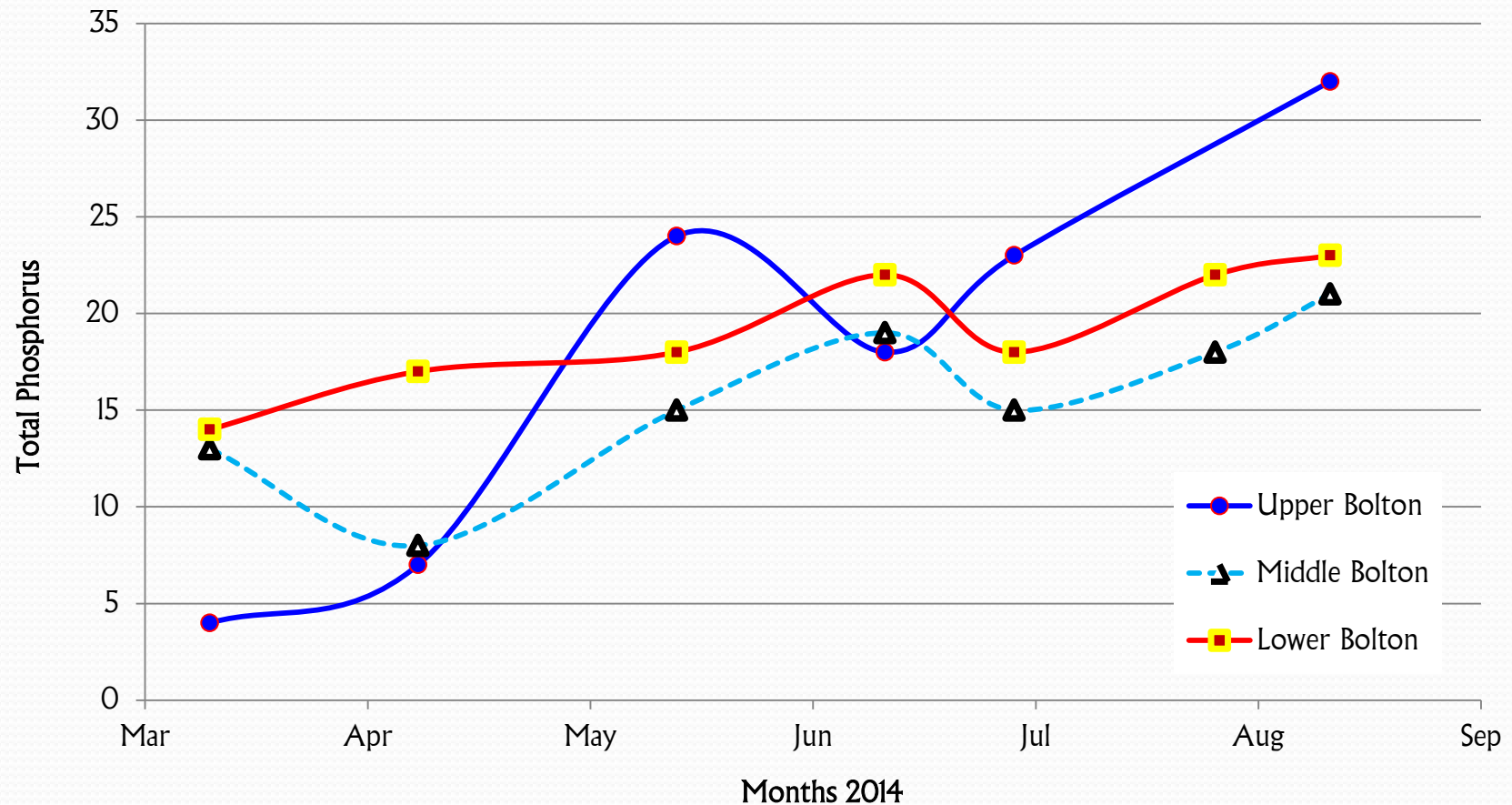
Lake	Area -acres-	Volume -acre-feet-	Basin -acres-	% direct	% upstream	Retention -years-	Flushing Rate
Upper	50 (50)	350	1,293	~	100	0.27	3.7
Middle	121 (60)	1,126	1,946	29	71	0.89	1.1
Lower	175 (151)	1,668	2,379	11	88	0.72	1.4

Monitored Inlets

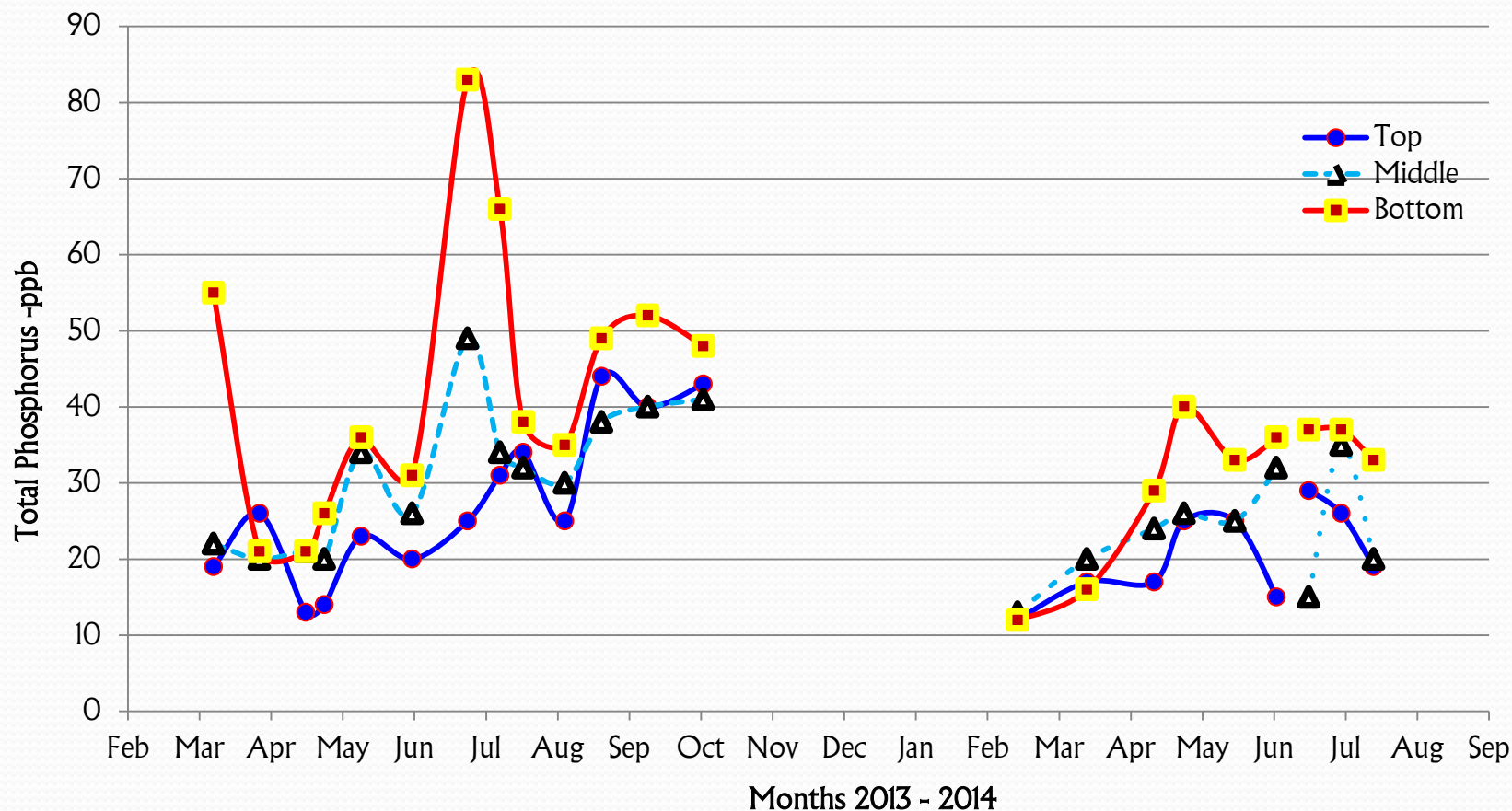
26 inlets to Middle and Lower
Bolton Lakes
monitored for storm event
phosphorus inputs



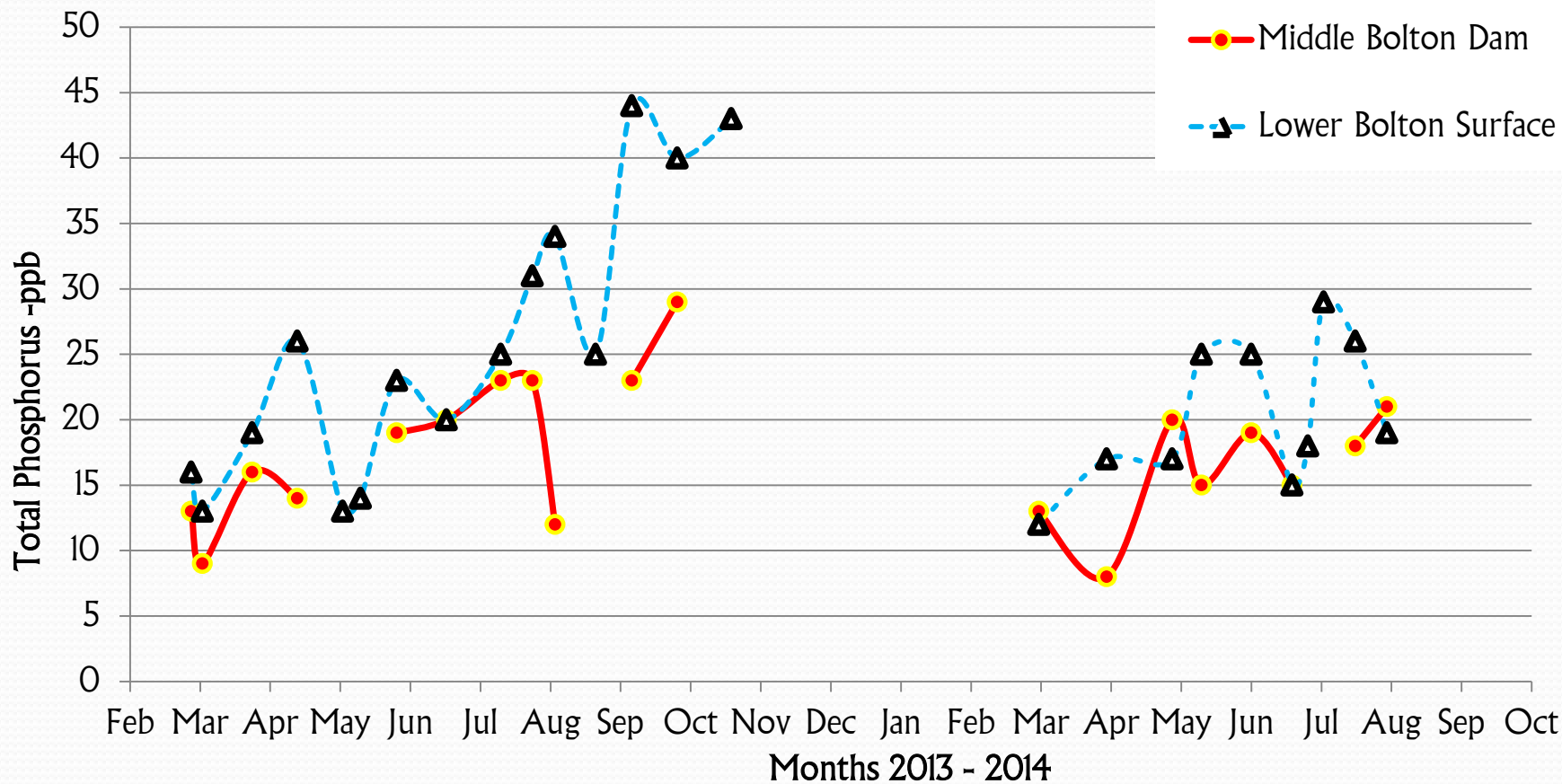
Phosphorus concentrations at three dams



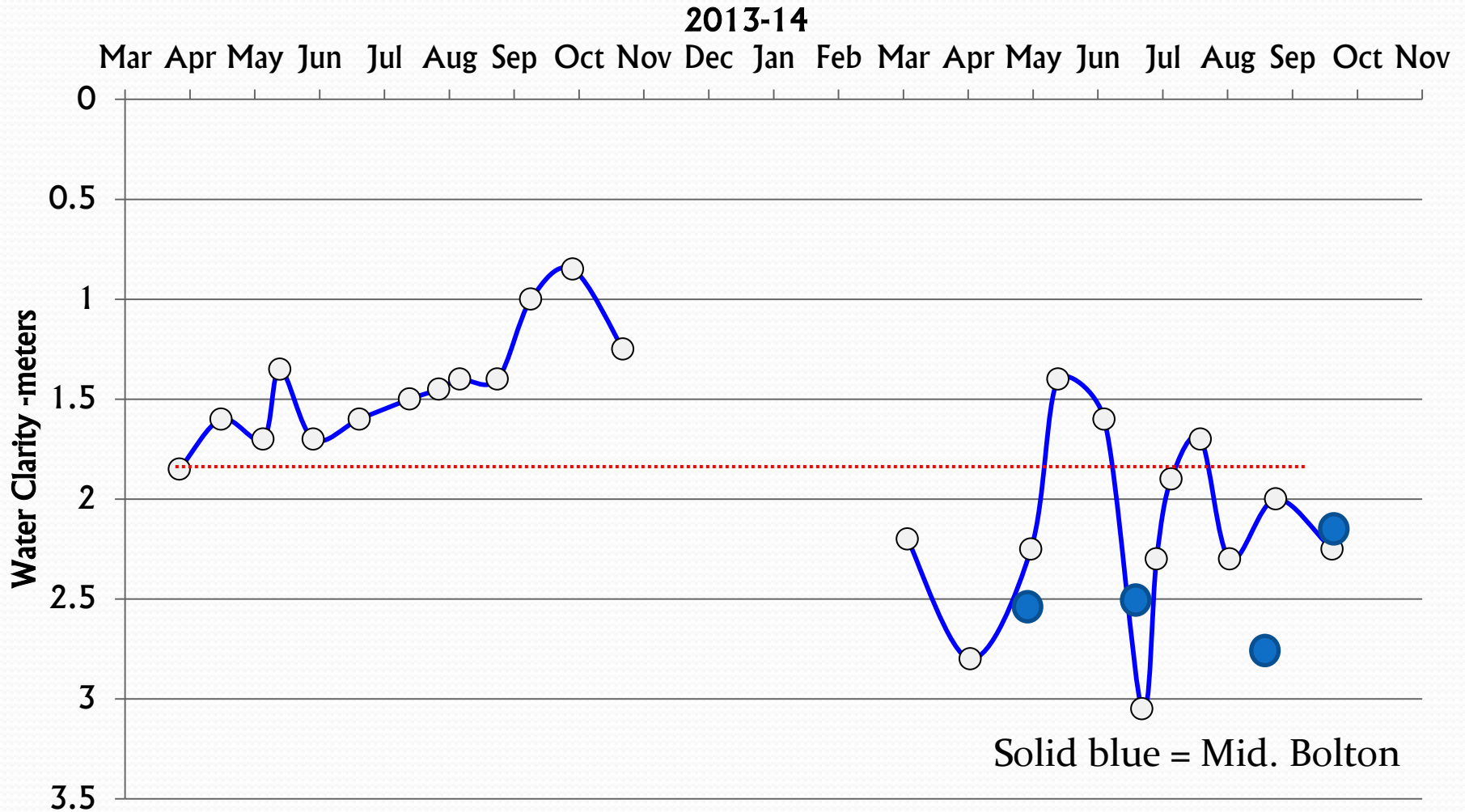
Total phosphorus concentrations in Lower Bolton Lake



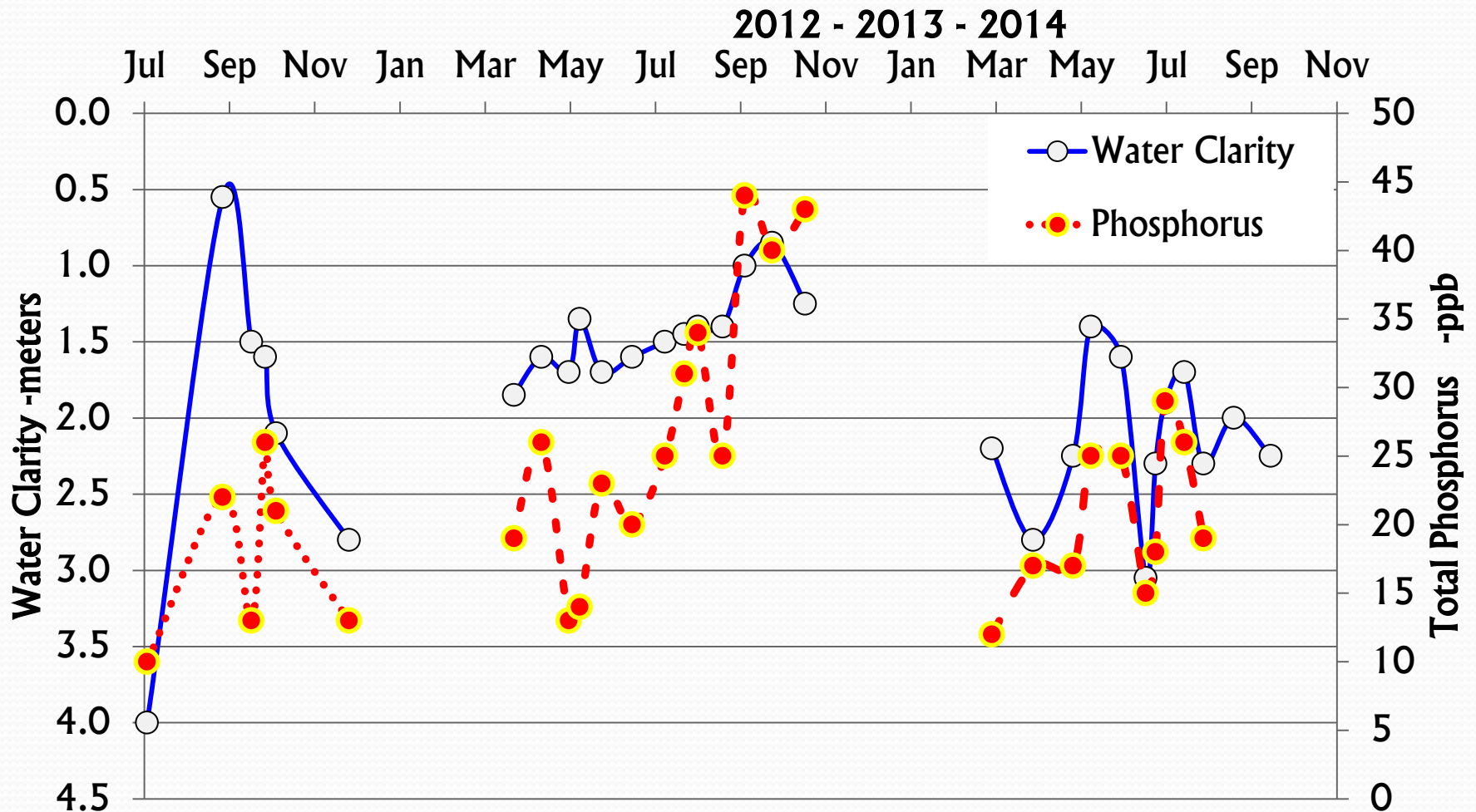
Phosphorus concentrations MBL outlet and LBL surface



Water Clarity in Lower and Middle Bolton

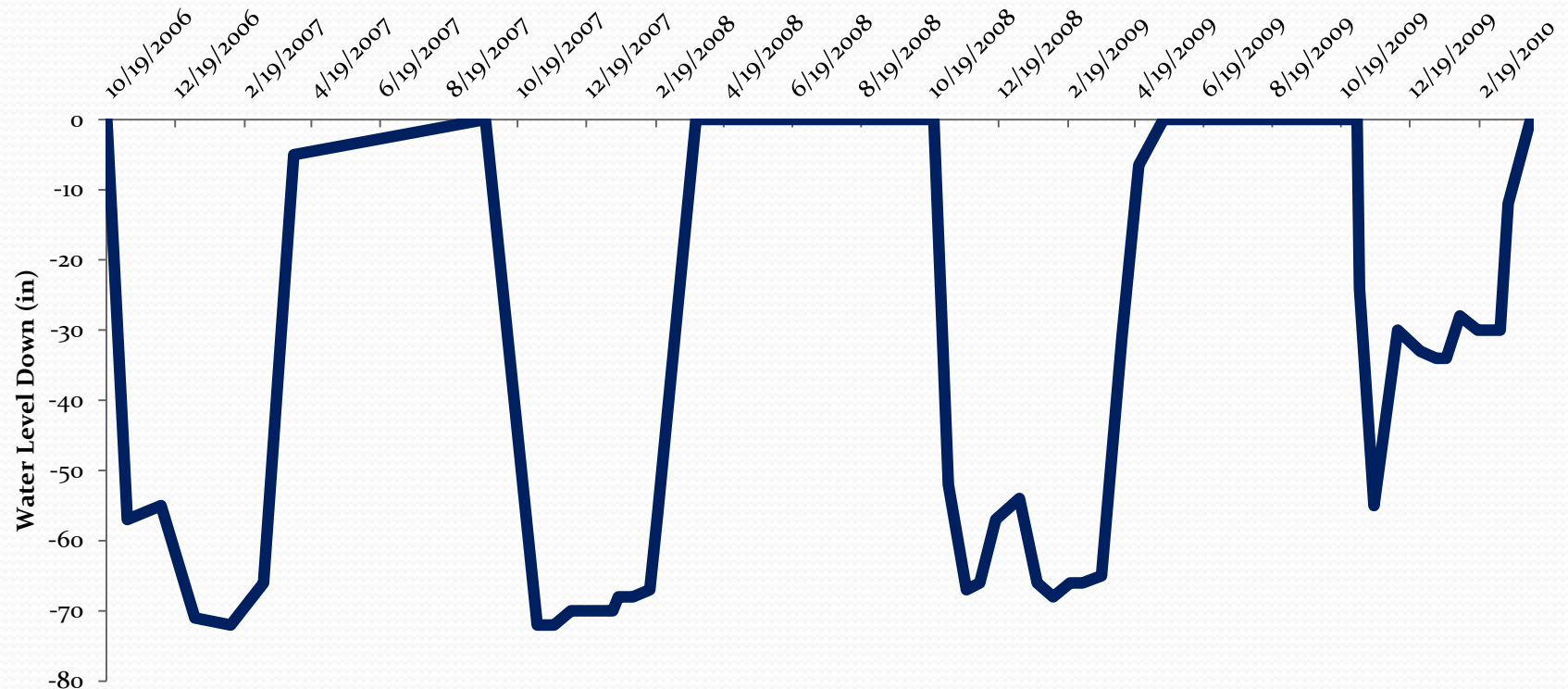


Water Clarity and Phosphorus in LBL



Winter Water Level Drawdown of Middle Bolton Lake

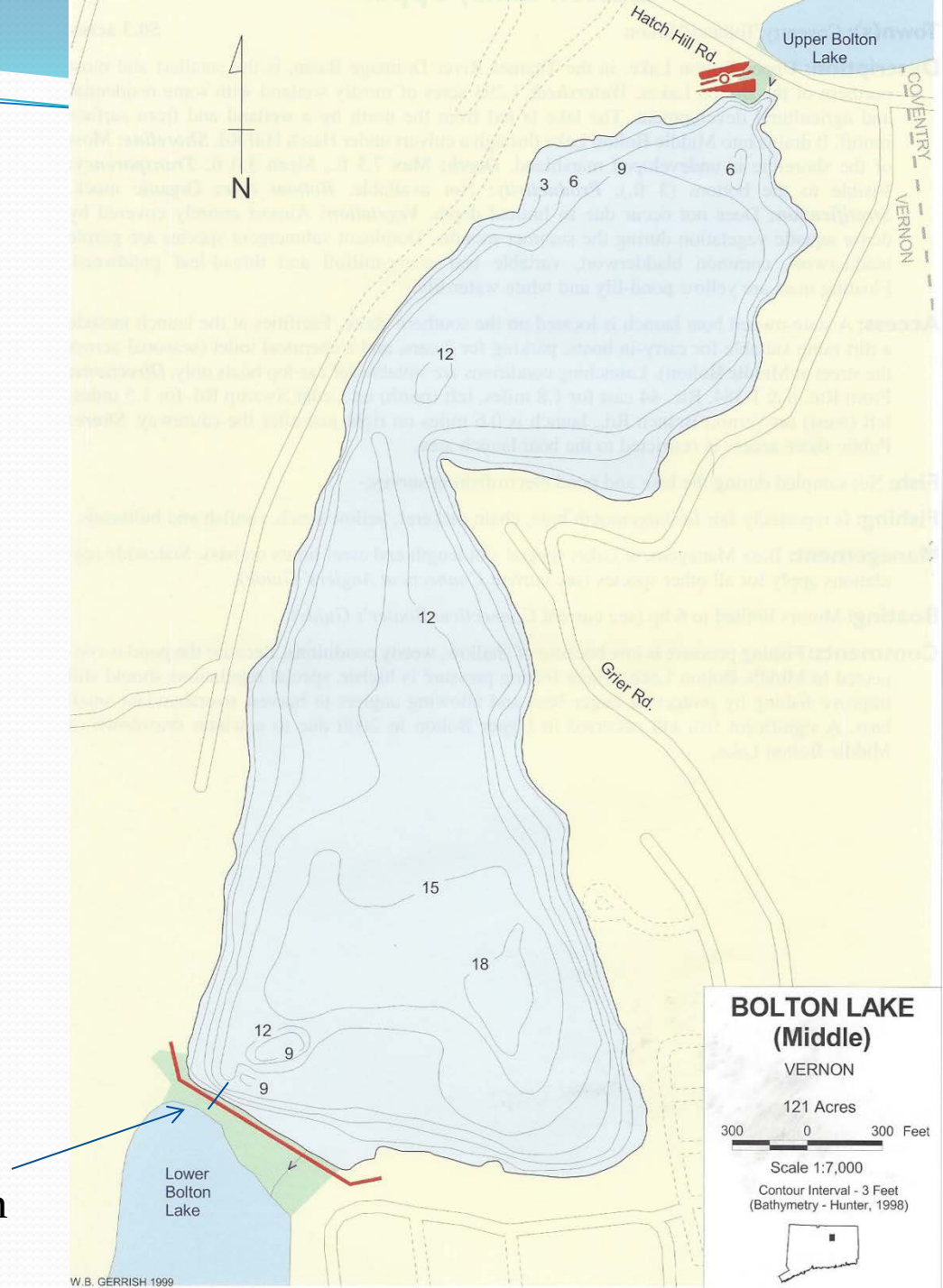
Middle Bolton Lake Levels During Deep Drawdowns 2006 -
2010



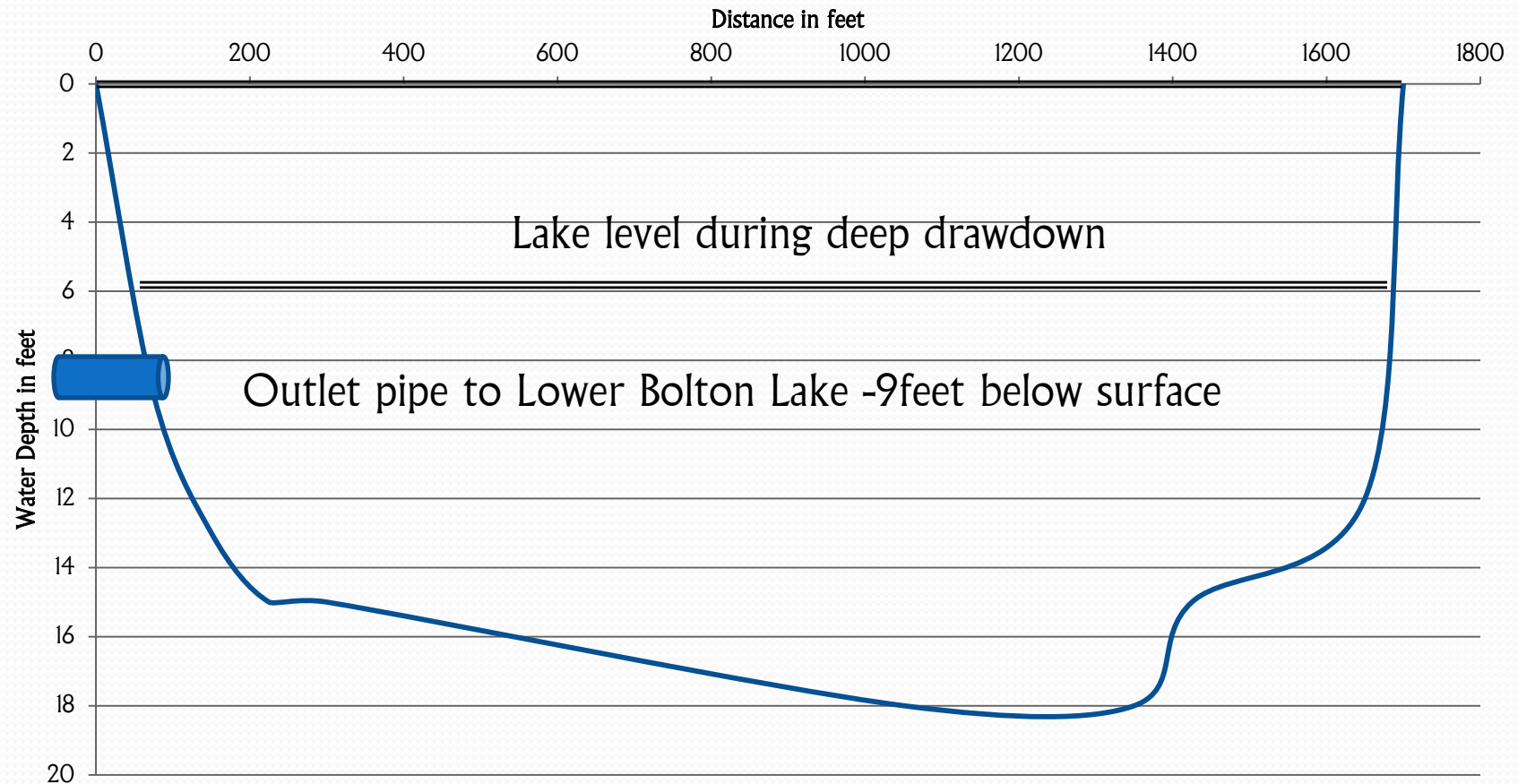
Bathymetric Map of Middle Bolton Lake

Approximately 50 acres of shoreline (40%) is exposed during 6 foot drawdown
About 20 acres (16%) during a 3 foot drawdown and
10 acres (8%) during an 1.5 foot drawdown

Approx. location of drain pipe from Middle to Lower Bolton Lake



Cross-section of Middle Bolton Lake



Watershed Management Plan

Management of
the watershed
for what
purpose?

Lake Water
Quality?

Control
Bluegreen algae
blooms?

Other ?

Bolton Lakes Watershed An Update

Bolton, Vernon, Tolland & Coventry



Eastern Connecticut Environmental Review Team Report

**Eastern Connecticut
Resource Conservation & Development Area Inc.**

Creeping Normalcy

“Perhaps the commonest circumstance under which societies fail to perceive a problem is when it takes the form of a slow trend concealed by wide up-and-down fluctuations”

- Jared Diamond
Collapse

