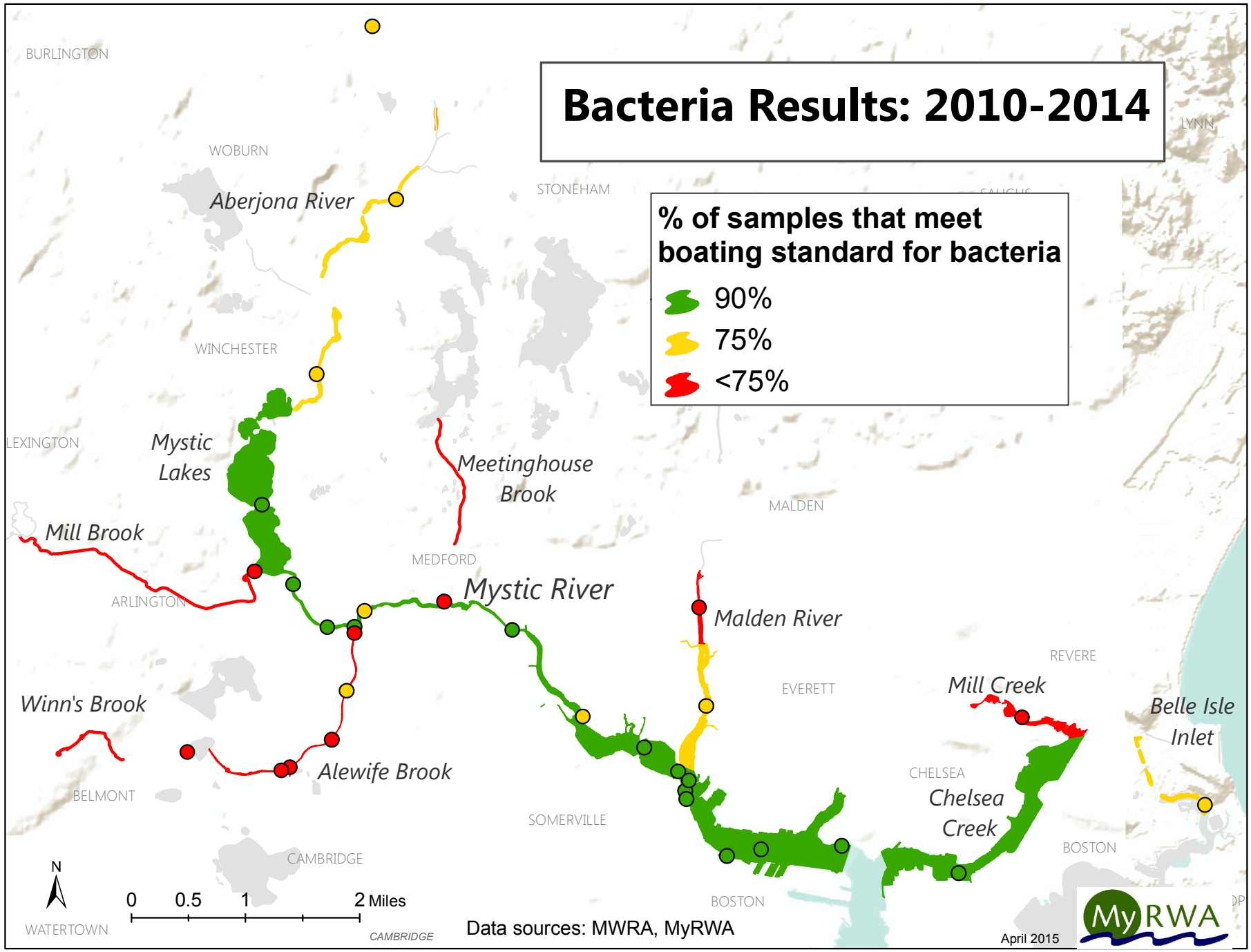
2015 State of the Mystic

Image credit: David Mussina

Agenda

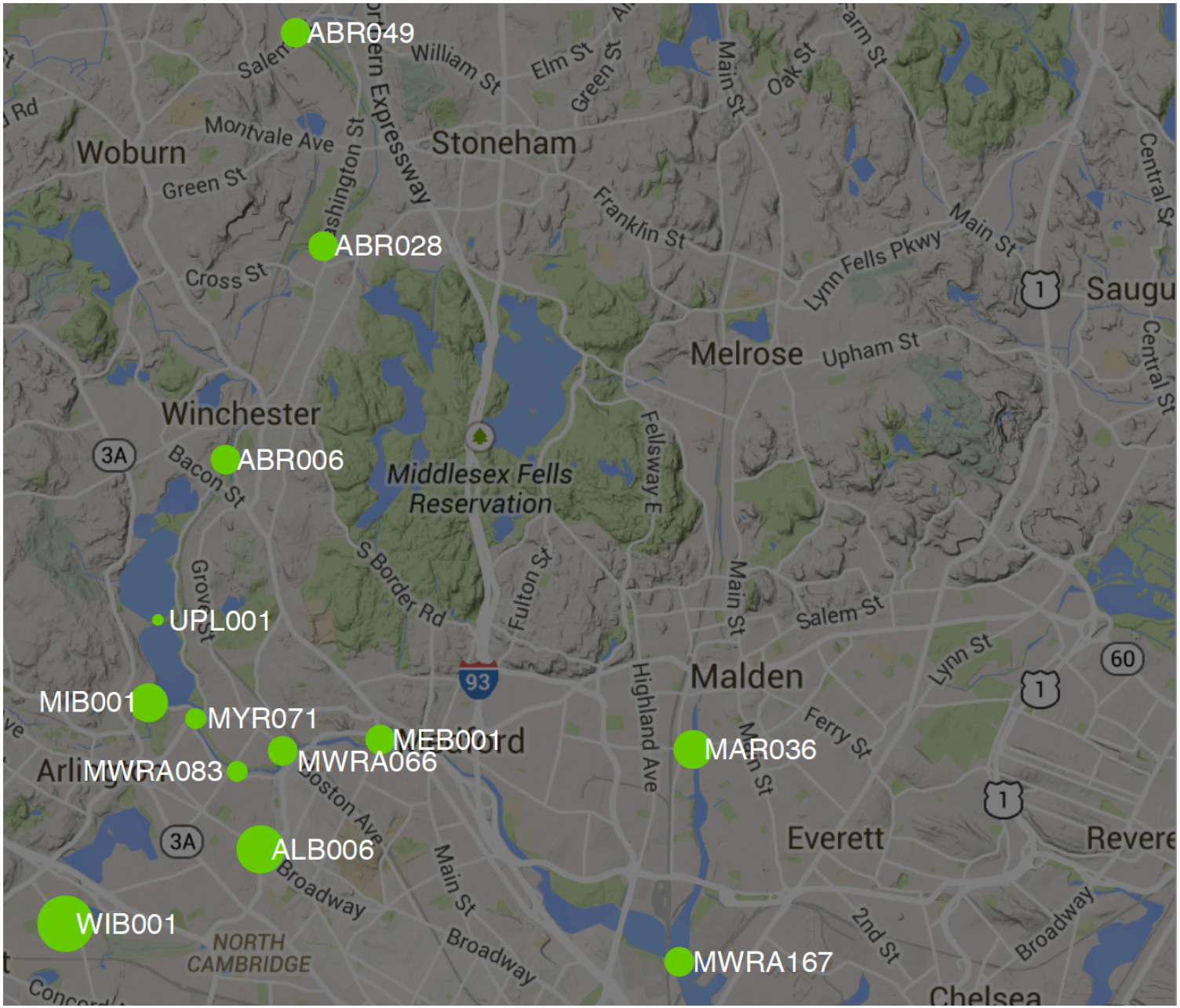
- Big picture
- Nutrients
- Water Chestnut
- River Herring
- Chloride
- Ongoing and Future Projects
- Big Picture

BACTERIA


Bacteria Results: 2010-2014
% of samples that meet boating standard for bacteria
90%
75%
<75%
BURLINGTON
WOBURN
STONEHAM
LYNN
Aberjona River
WINCHESTER
LEXINGTON
Mystic Lakes
Meetinghouse Brook
MALDEN
Mill Brook
MEDFORD
Mystic River
ARLINGTON
Malden River
REVERE
EVERETT
Mill Creek
Winn's Brook
Belle Isle Inlet
Alewife Brook
CHELSEA
BELMONT
Chelsea Creek
SOMERVILLE
BOSTON
CAMBRIDGE
N
0 0.5 1 2 Miles
WATERTOWN
CAMBRIDGE
Data sources: MWRA, MyRWA
April 2015
MyRWA

NUTRIENTS

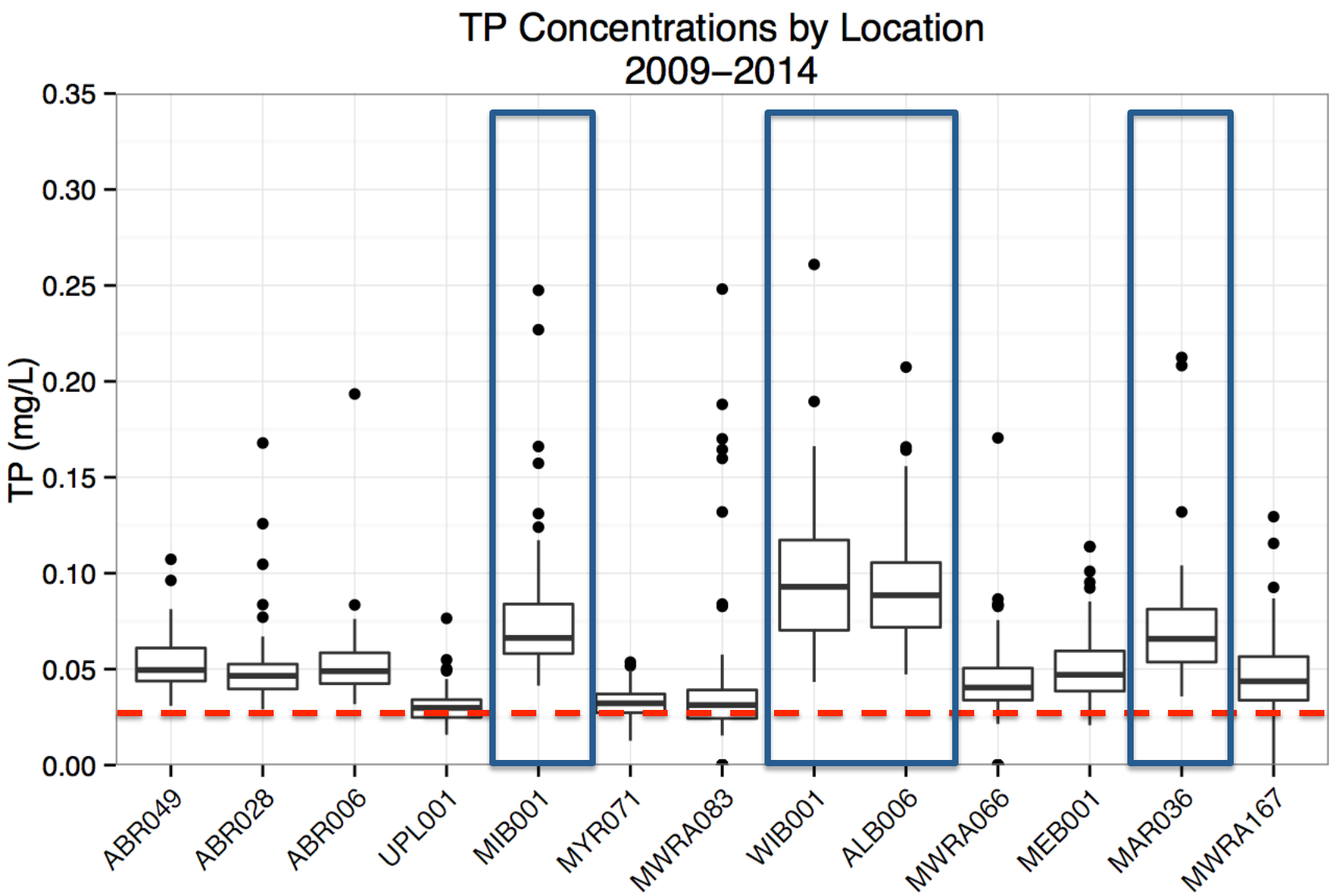
Median Total Phosphorus Concentration



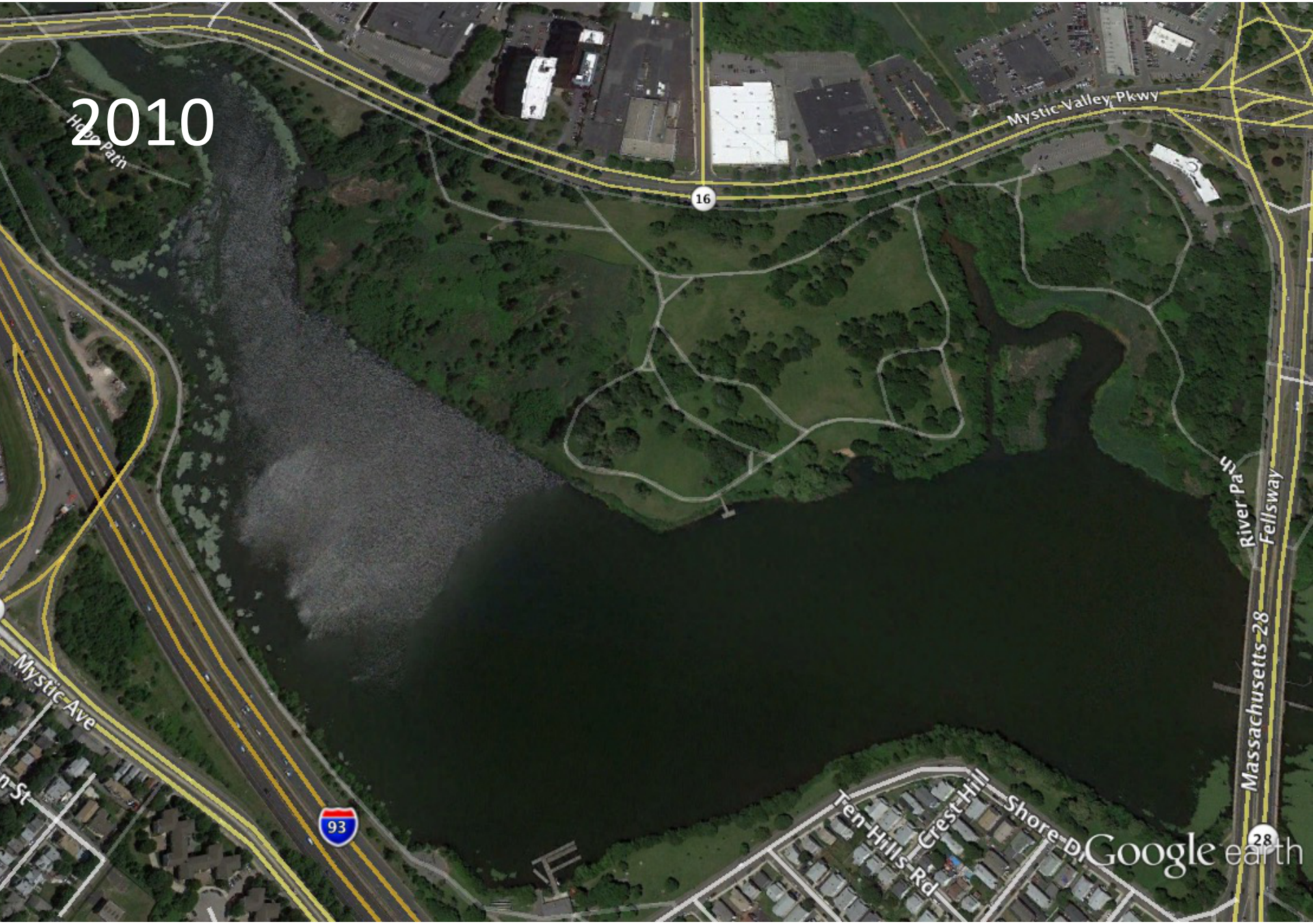
Median TP (ppm)

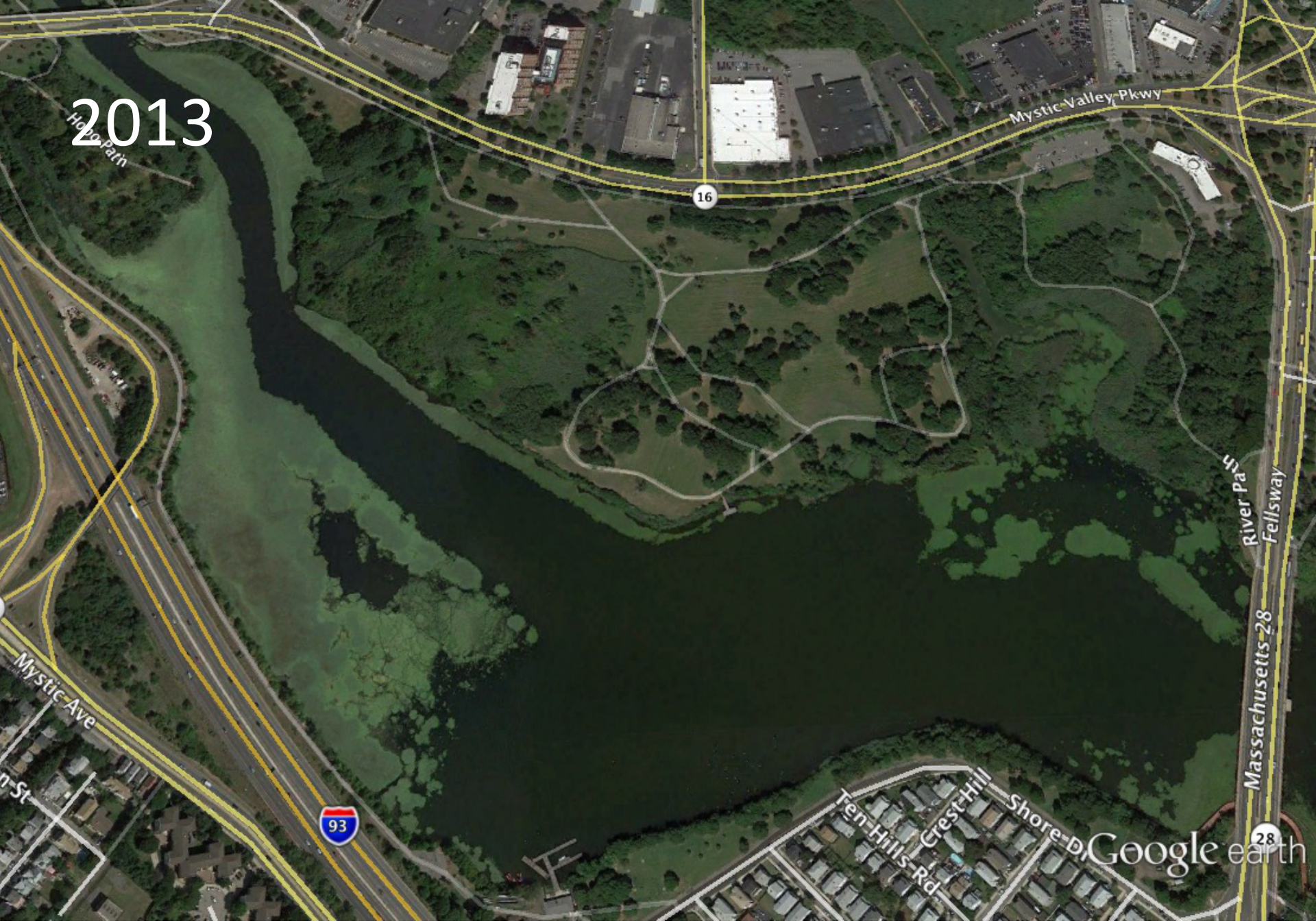
- 0.02–0.03
- 0.03–0.04
- 0.04–0.05
- 0.06–0.07
- 0.08–0.09
- 0.09–0.1

MyRWA

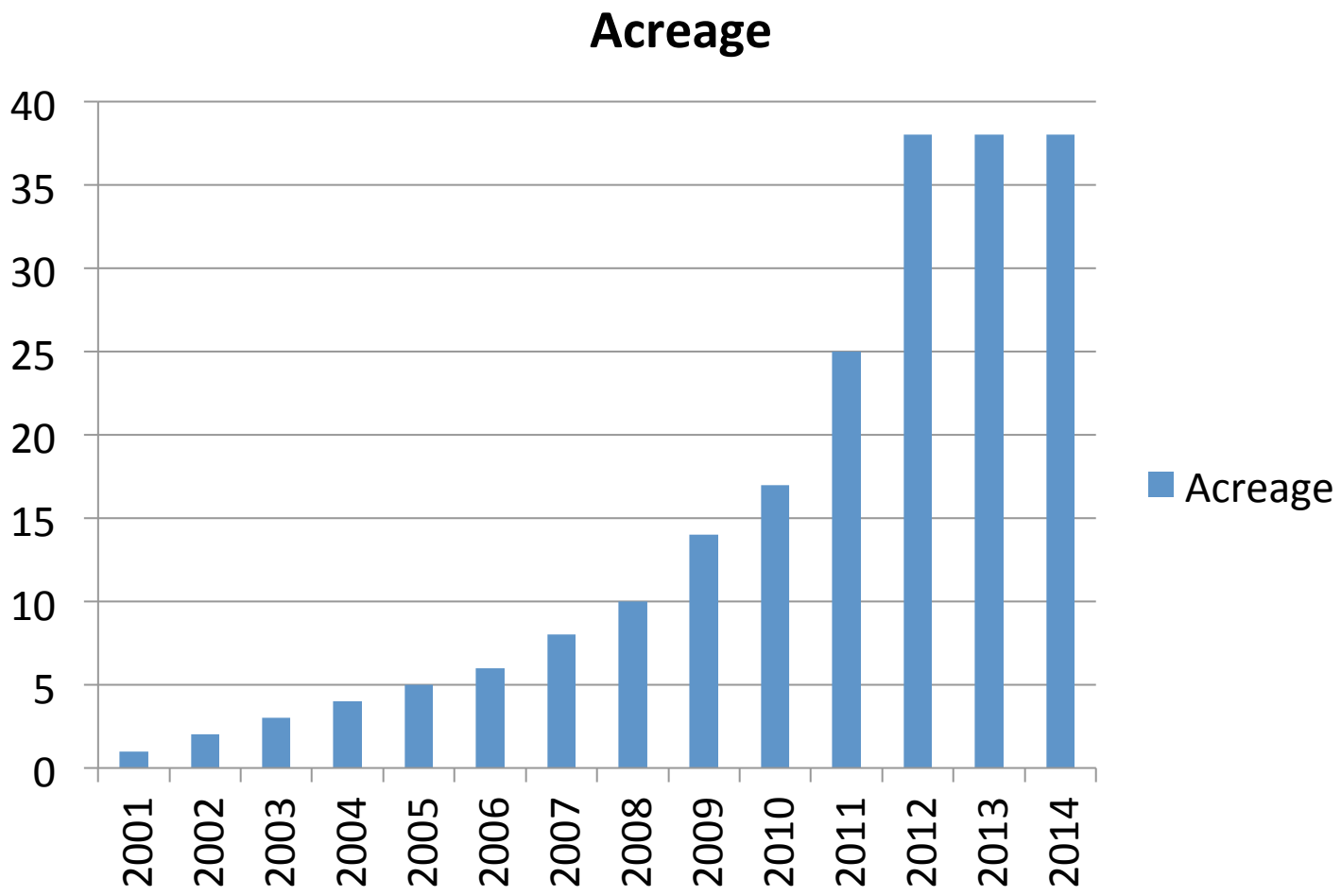

TP Concentrations by Location
2009–2014
TP (mg/L)
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
ABR049
ABR028
ABR006
UPL001
MIB001
MYR071
MWRA083
WIB001
ALB006
MWRA066
MEB001
MAR036
MWRA167

Water Chestnut

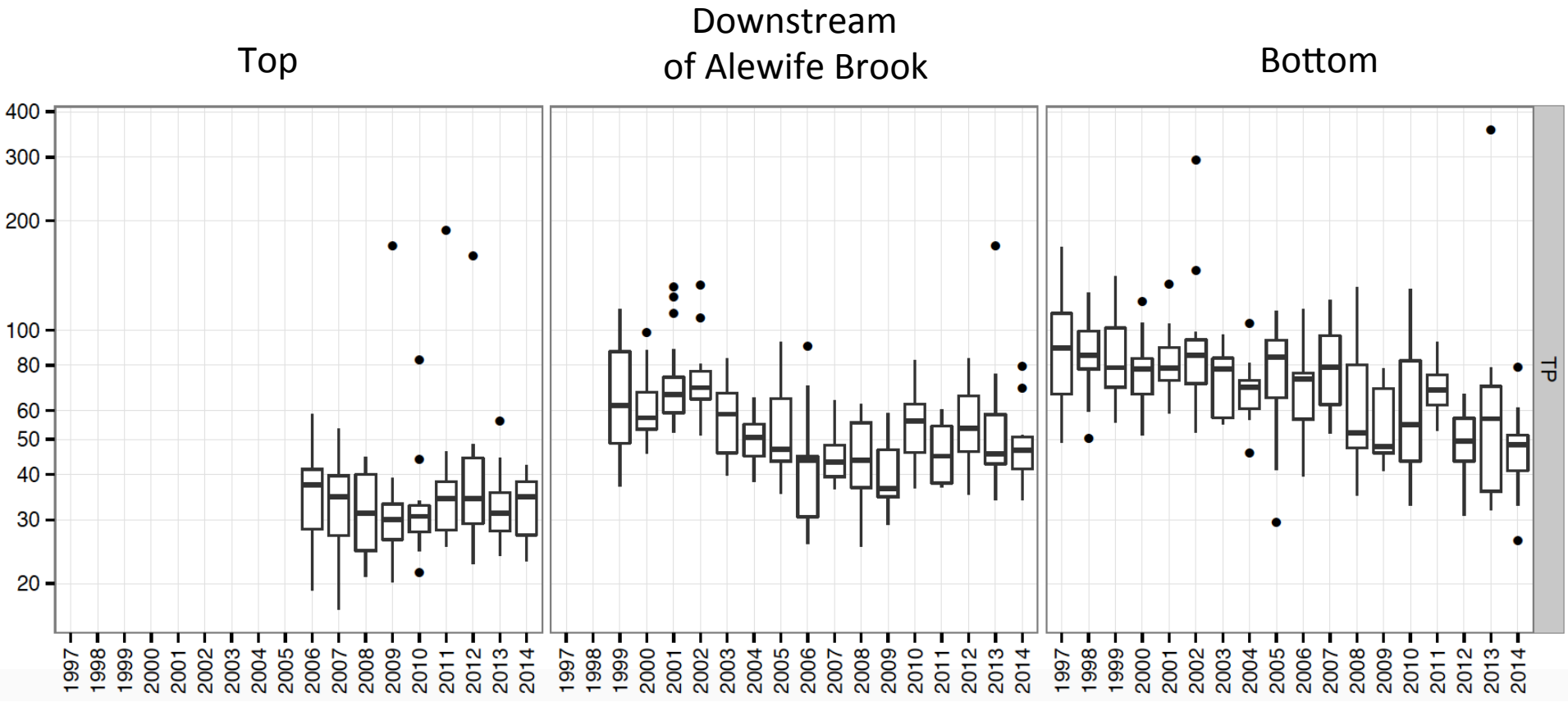

2010
Mystic Valley Pkwy
16
Mystic Ave
93
Ten Hills Rd
Crest Hill
Shore Dr
Massachusetts 28
Fellsway
28
Google earth


2013
Mystic Valley Pkwy
16
Mystic Ave
93
Massachusetts 28
Fellsway
River Path
Ten Hills Rd
Crest Hill
Shore Dr
28
Google earth

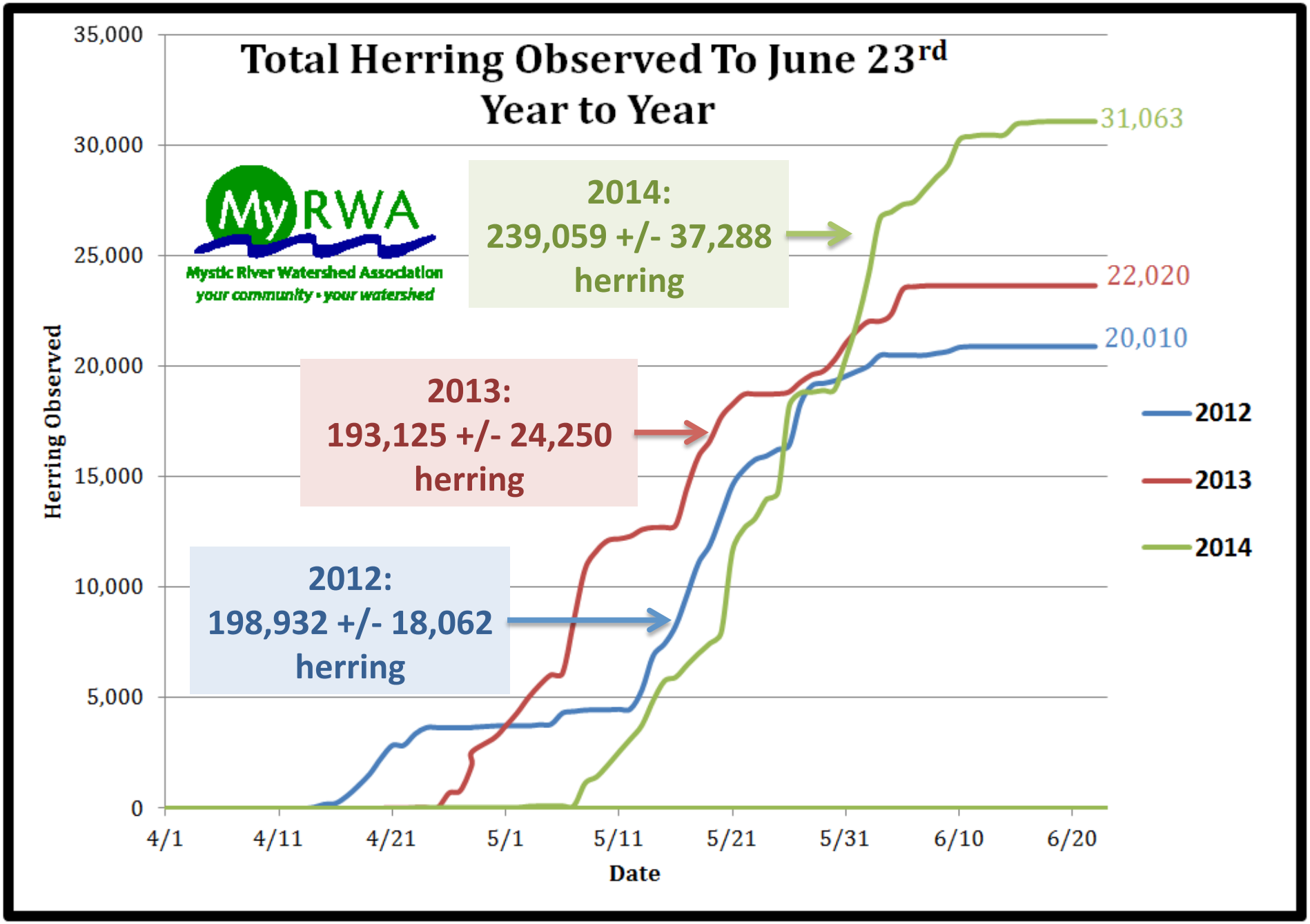
Estimated Acreage



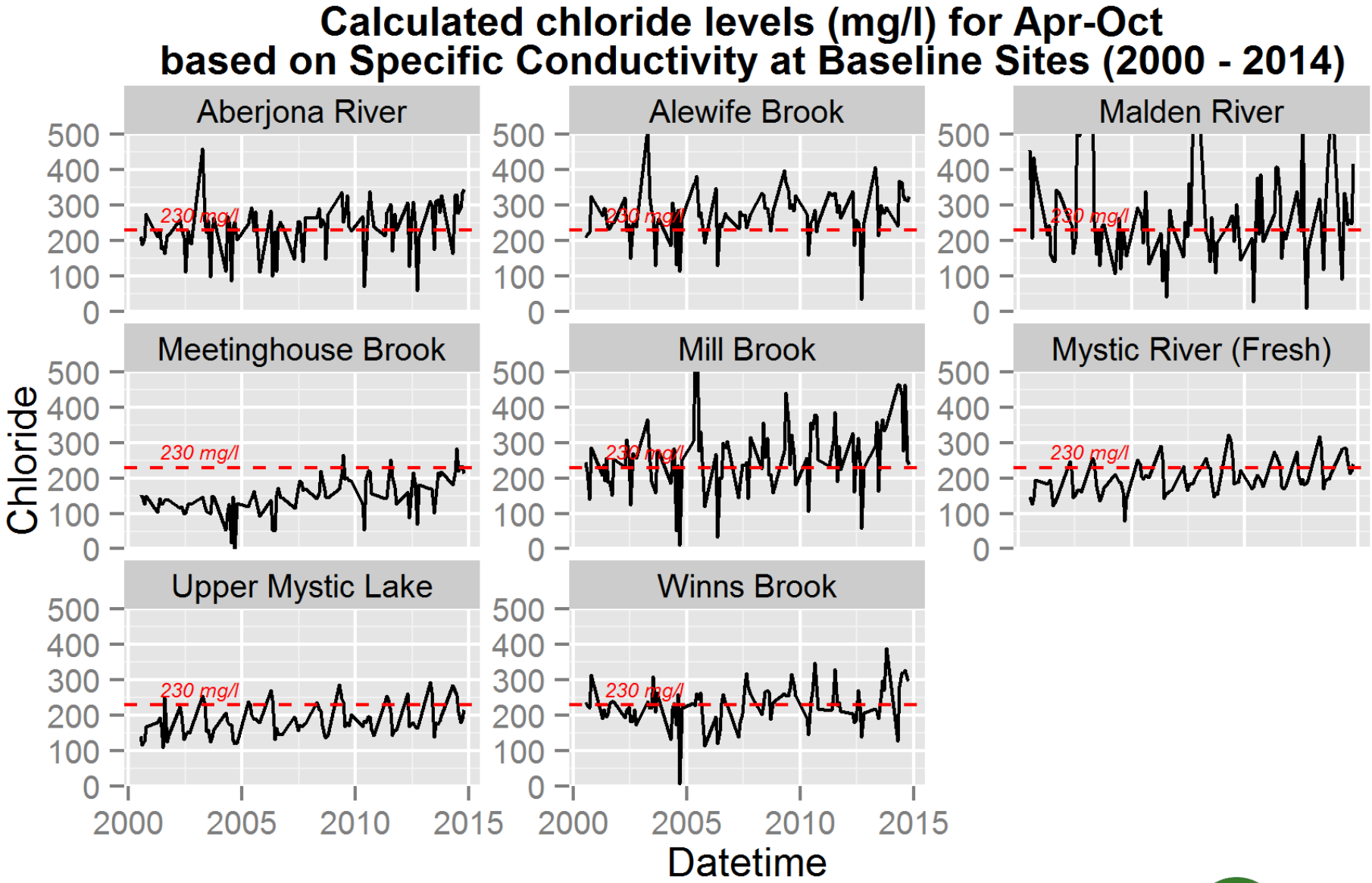
Phosphorus concentrations in Mystic River

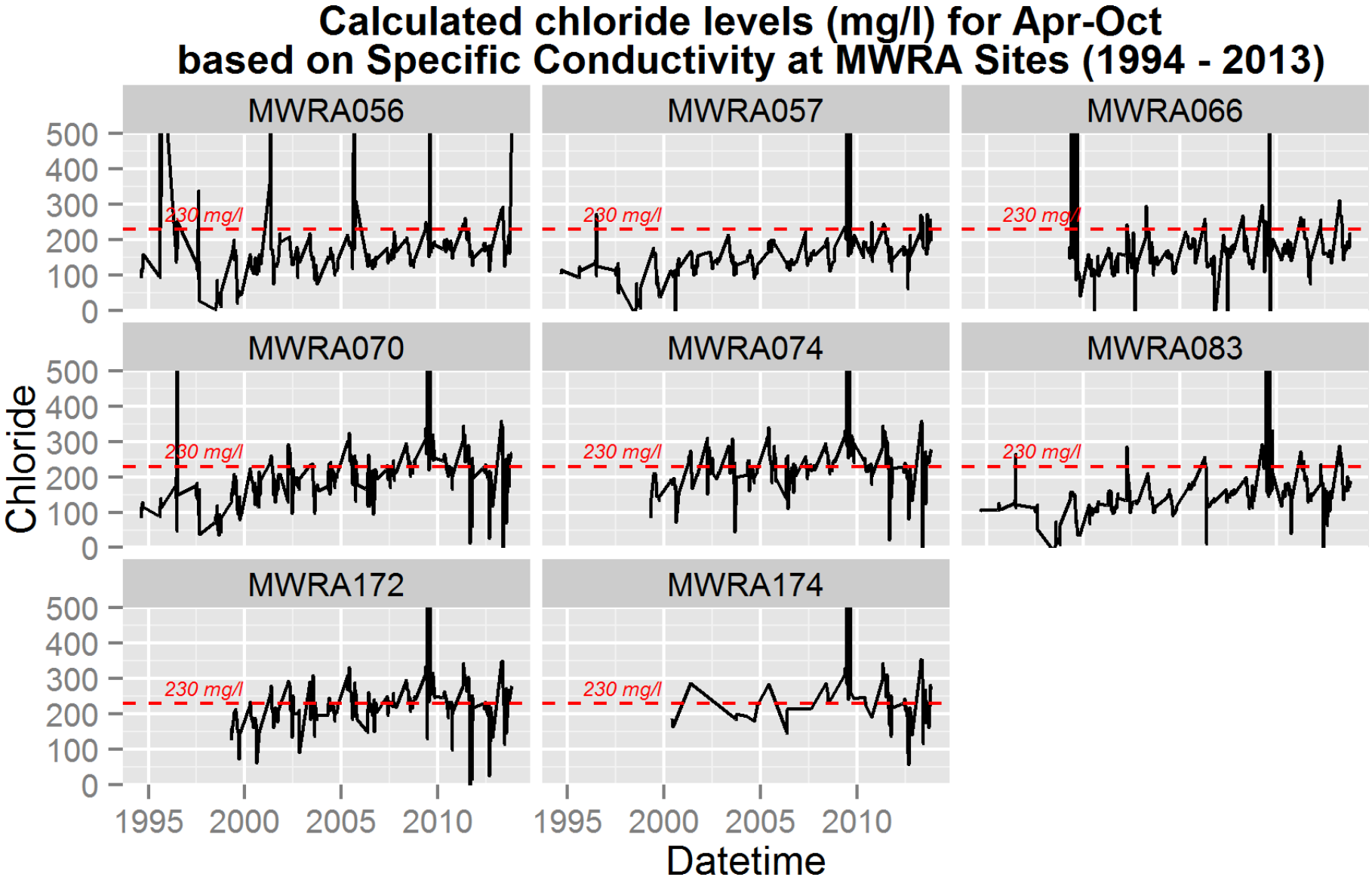


River herring


Total Herring Observed To June 23rd
Year to Year
MyRWA
Mystic River Watershed Association
your community • your watershed
2014:
239,059 +/- 37,288
herring
2013:
193,125 +/- 24,250
herring
2012:
198,932 +/- 18,062
herring
31,063
22,020
20,010
2012
2013
2014
Herring Observed
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
4/1
4/11
4/21
5/1
5/11
5/21
5/31
6/10
6/20
Date

Chloride


Calculated chloride levels (mg/l) for Apr-Oct
based on Specific Conductivity at Baseline Sites (2000 - 2014)
Aberjona River
Alewife Brook
Malden River
Meetinghouse Brook
Mill Brook
Mystic River (Fresh)
Upper Mystic Lake
Winns Brook
230 mg/l
Chloride
0
100
200
300
400
500
2000
2005
2010
2015
Datetime


Calculated chloride levels (mg/l) for Apr-Oct
based on Specific Conductivity at MWRA Sites (1994 - 2013)
MWRA056
MWRA057
MWRA066
MWRA070
MWRA074
MWRA083
MWRA172
MWRA174
230 mg/l
Chloride
0
100
200
300
400
500
1995
2000
2005
2010
Datetime

Ongoing and future projects

- 604B Project in Arlington and Belmont
- Urban Waters Project (EPA)
- Water Chestnut Removal
- Measurement of flows with 3 gauges w/USGS
- Measurement of phosphorus loads
- Develop a recreation flagging program