The Myakka River
Water Quality Monitoring Update

Myakka River Management Coordinating Council
January 22, 1010

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Sarasota County Integrated Water Resources

Sarasota County

Historical Monitoring

Mote Marine Bay Monitoring Contract: Myakka River Sampling

- 1995-2004. 10 segments (5 Upper/5 Lower) with 12 sample points (120 sample sets/yr)
- 2004-2007. 10 segments consolidated into 5 with 12 sample points (60 sample sets/yr)
- 2007-2008. River monitoring eliminated from Bay contract

Sarasota County Monitoring

- County staff began monitoring in November 2007
- Monitoring 12 Stations: 5 river sites and 7 tributary sites
- 144 annual sample events; 1584 data sets
- 26 months of data

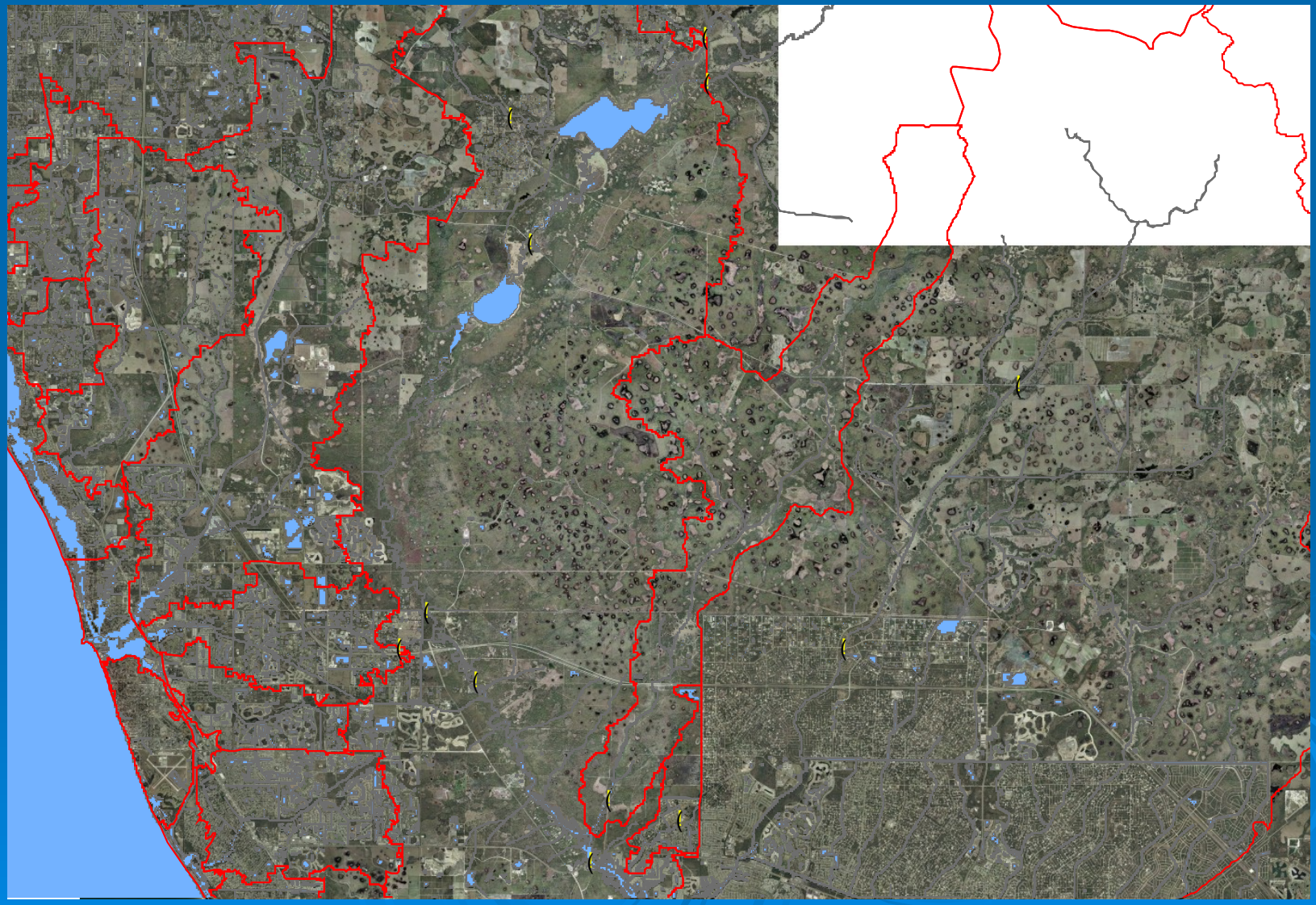
Sarasota County Monitoring

- Parameters: Total Suspended Solids (TSS), Turbidity, Biochemical Oxygen Demand (BOD), Nitrate+Nitrite Nitrogen (Nox), Ammonia Nitrogen (NH_3), Total Kjeldahl Nitrogen (TKN), Orthophosphate (PO_4), Total Nitrogen (TN), Total Phosphorus (TP), Fecal Coliform, Chlorophyll a, Color, and Iron (only in WBID 1981B).
- Field Measurements: Water Temperature (°C), Salinitiy (ppt), Specific Conductance (mmHOS/cm), Dissolved Oxygen Saturation (%), Dissolved Oxygen (mg/L), and pH.

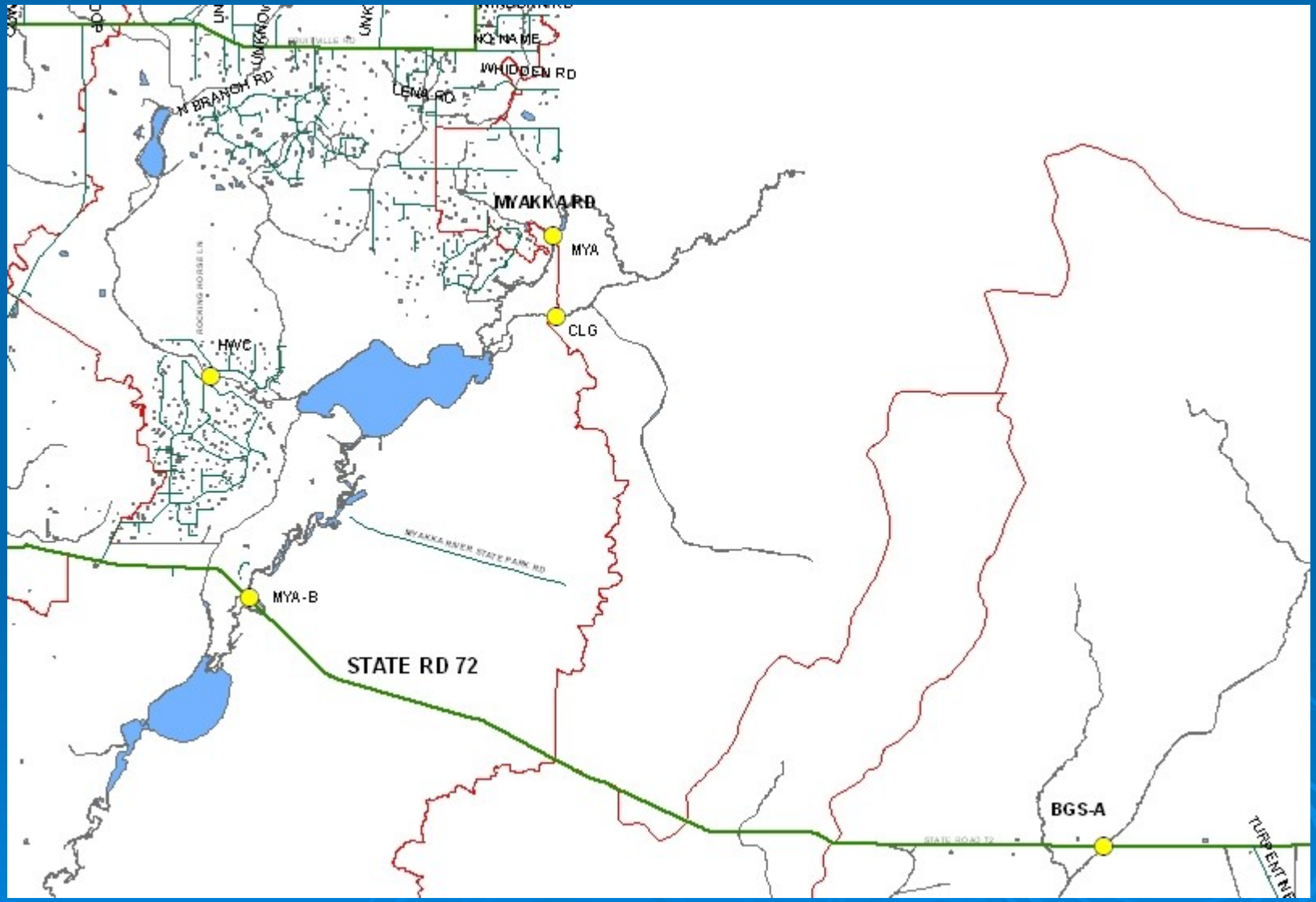
Monitoring Stations

STA_ID	Short_Name	Location
MYA	Myakka River	Bridge at Myakka Rd. North of State Park, Miakka City
CLG	Clay Gully	Bridge in Myakka River State Park
HWC	Howard Creek	Bridge at Rocking Horse Lane, Myakka Valley Trails, Sarasota
MYA-B	Myakka River	Upstream of Bridge at State Road 72 in park, Sarasota
BGS-A	Big Slough	Bridge at State Road 72, Sarasota
MYA-F	Myakka River	Bridge at Border Road, Venice
BGS-B	Big Slough	Bridge on Tropiaire; East of I75;North Port
BBC	Blackburn Canal	Bridge on Jackson Rd.; North of Venice Ave.; Venice
MYA-C	Myakka River	Snook Haven, Venice Ave., Venice; ARMS Station
DPS	Deer Prairie Slough	DPC Preserve; North of US41; North Port
WMS	Little Salt Canal 30-444	Ortiz Blvd. across from the Warm Mineral Springs
MYA-E	Myakka River	Bridge at US41;North Port;West Side

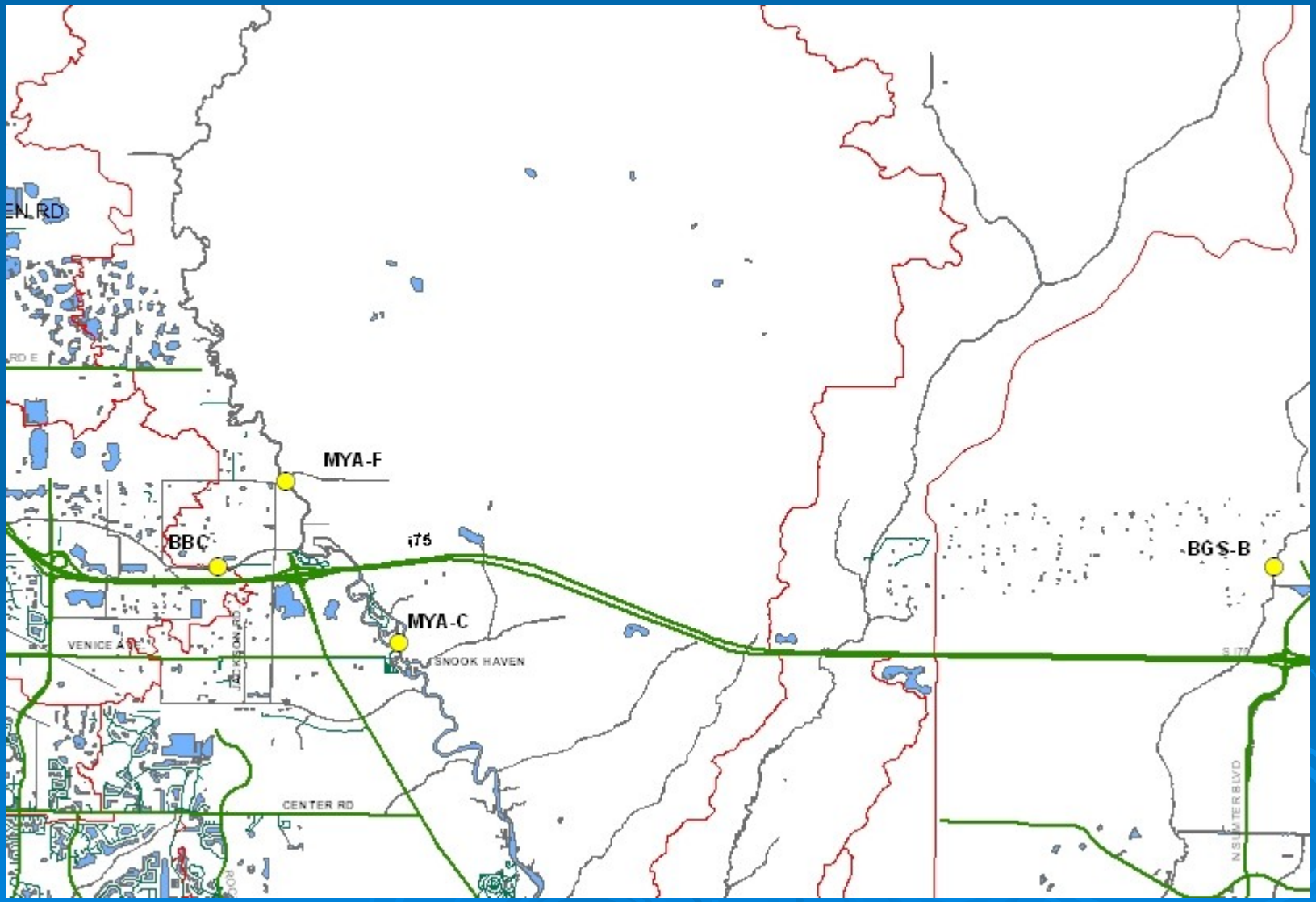
Myakka River Watershed Monitoring Stations



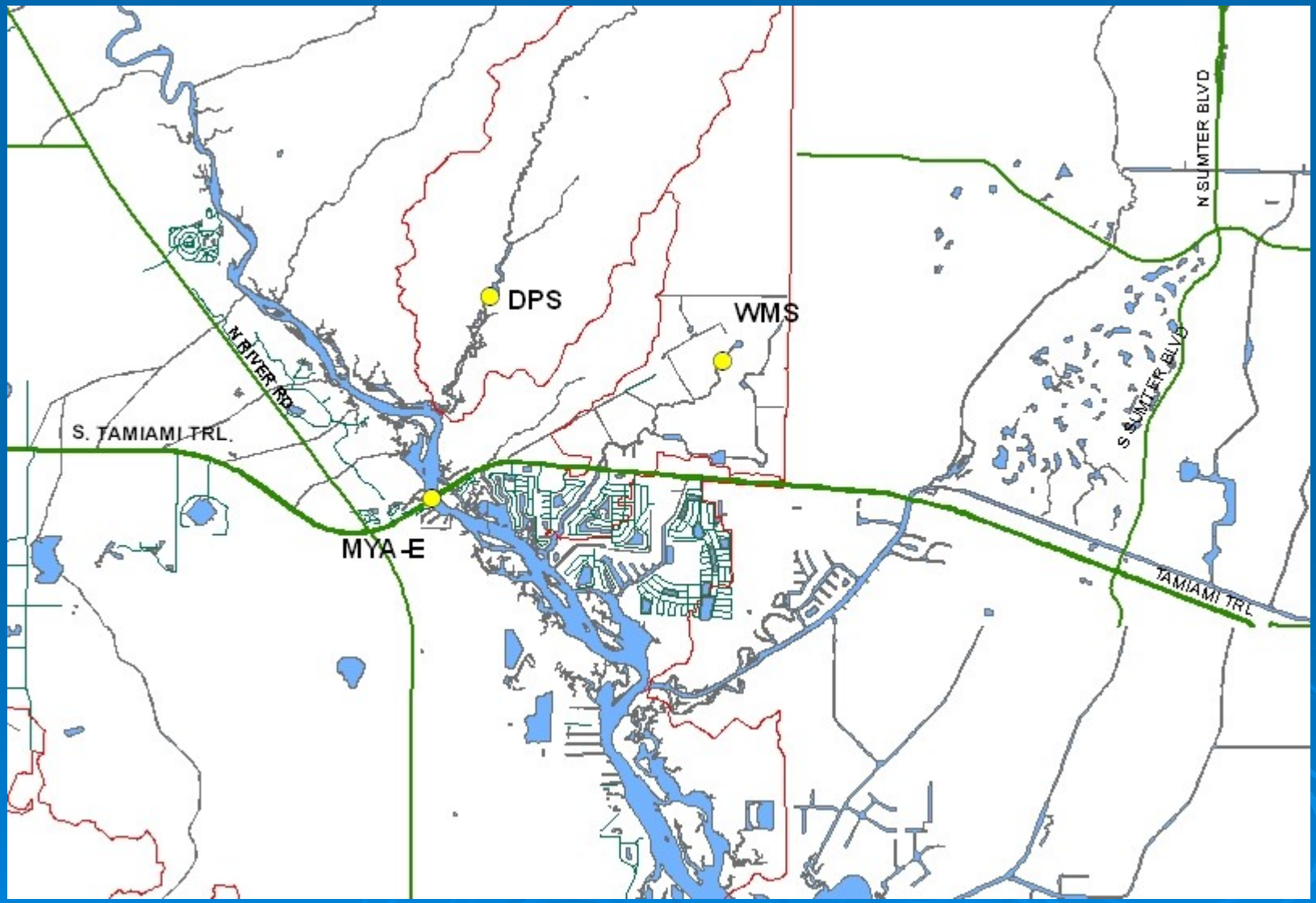
Myakka River Monitoring: North County Sites



Myakka River Monitoring: Central County Sites



Myakka River Monitoring: South County Sites

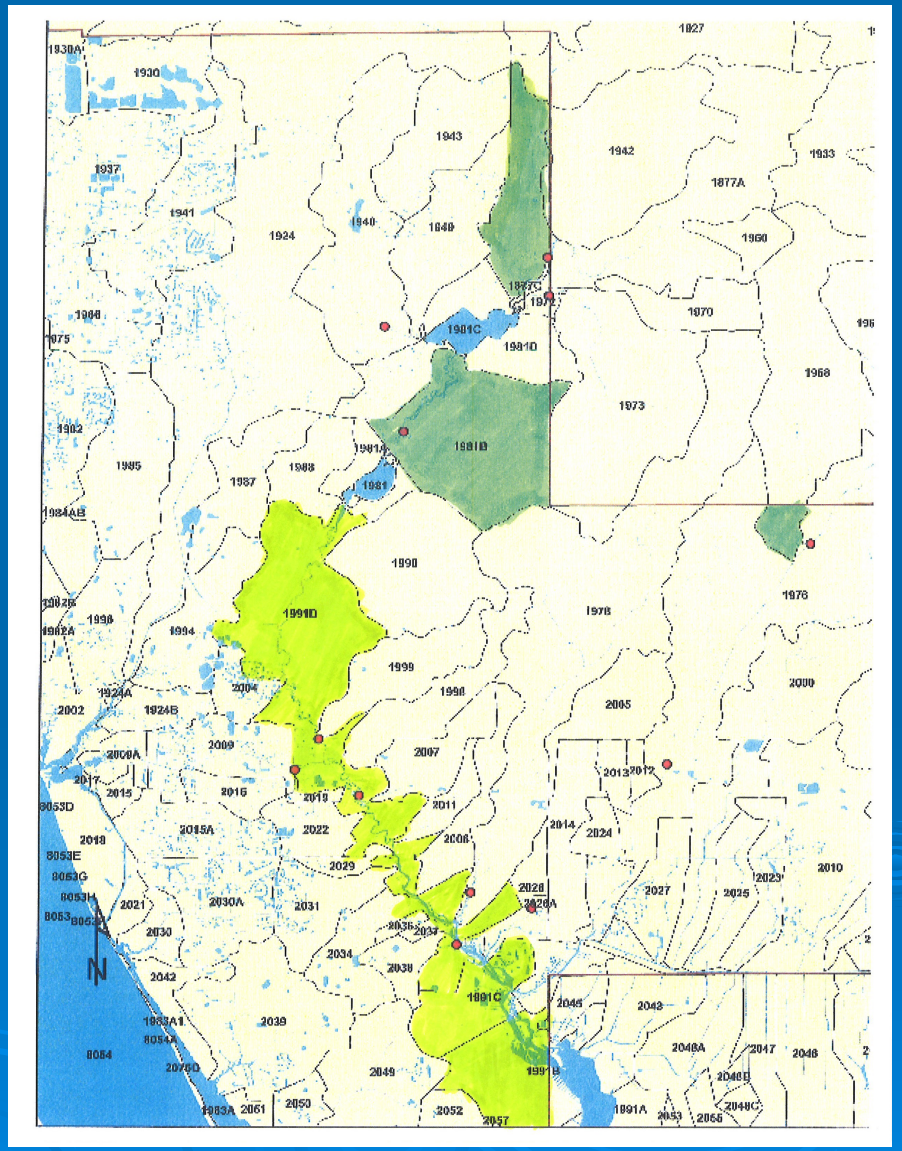


FDEP VERIFIED AND DRAFT IMPAIRED WATERBODIES						
WBID	WATER SEGMENT NAME	WATERBODY TYPE	WATERBODY CLASS	PARAMETER	YEAR	CATEGORY
1869B	Upper Myakka River	Stream	3F	Fecal Coliform	2009	5
1967	Bud Slough	Stream	3F	Fecal Coliform		5
1967	Bud Slough	Stream	3F	Dissolved Oxygen		5
1877A	Upper Myakka River	Stream	3F	Fecal Coliform	2009	5
1877A	Upper Myakka River	Stream	3F	Total Coliforms	2009	5
1877C	Myakka River (North Fork)	Stream	1	Mercury in Fish Tissue		5
1958	Mud Lake Slough	Stream	3F	Total Coliforms	2009	5
1972	Myakka River at Clay Gully	Stream	3F	Mercury in Fish Tissue		5
1978	Deer Prairie Creek	Stream	3F	Iron		4c
1981	Lake Myakka (Lower Segment)	Lake	1	Mercury in Fish Tissue		5
1981B	Myakka River	Stream	1	Dissolved Oxygen	2009	5
1981B	Myakka River	Stream	1	Nutrients (Chl a)	2009	5
1981B	Lower Myakka river	Stream	1	Mercury in Fish Tissue		5
1981C	Lake Myakka (Upper Segment)	Lake	1	Mercury in Fish Tissue		5
1981C	Lake Myakka (Upper Segment)	Lake	1	Nutrients (TSI)		5
1991 D	Myakka River	Stream	3F	Dissolved Oxygen		4d
1991 D	Myakka River	Stream	3F	Mercury in Fish Tissue		5
1991 D	Myakka River	Stream	3F	Nutrients (Chl a)		5
1991C	Lower Myakka River	Estuary	2	Mercury in Fish Tissue		5
1991 A	Lower Myakka River	Estuary	2	Mercury in Fish Tissue		5
1991 B	Lower Myakka River	Estuary	2	Mercury in Fish Tissue		5
1991 B	Lower Myakka River	Estuary	2	Nutrients (Chl a)		5
2026	Little Salt Creek (Warm Mineral Springs)	Estuary	3M	Mercury in Fish Tissue		5

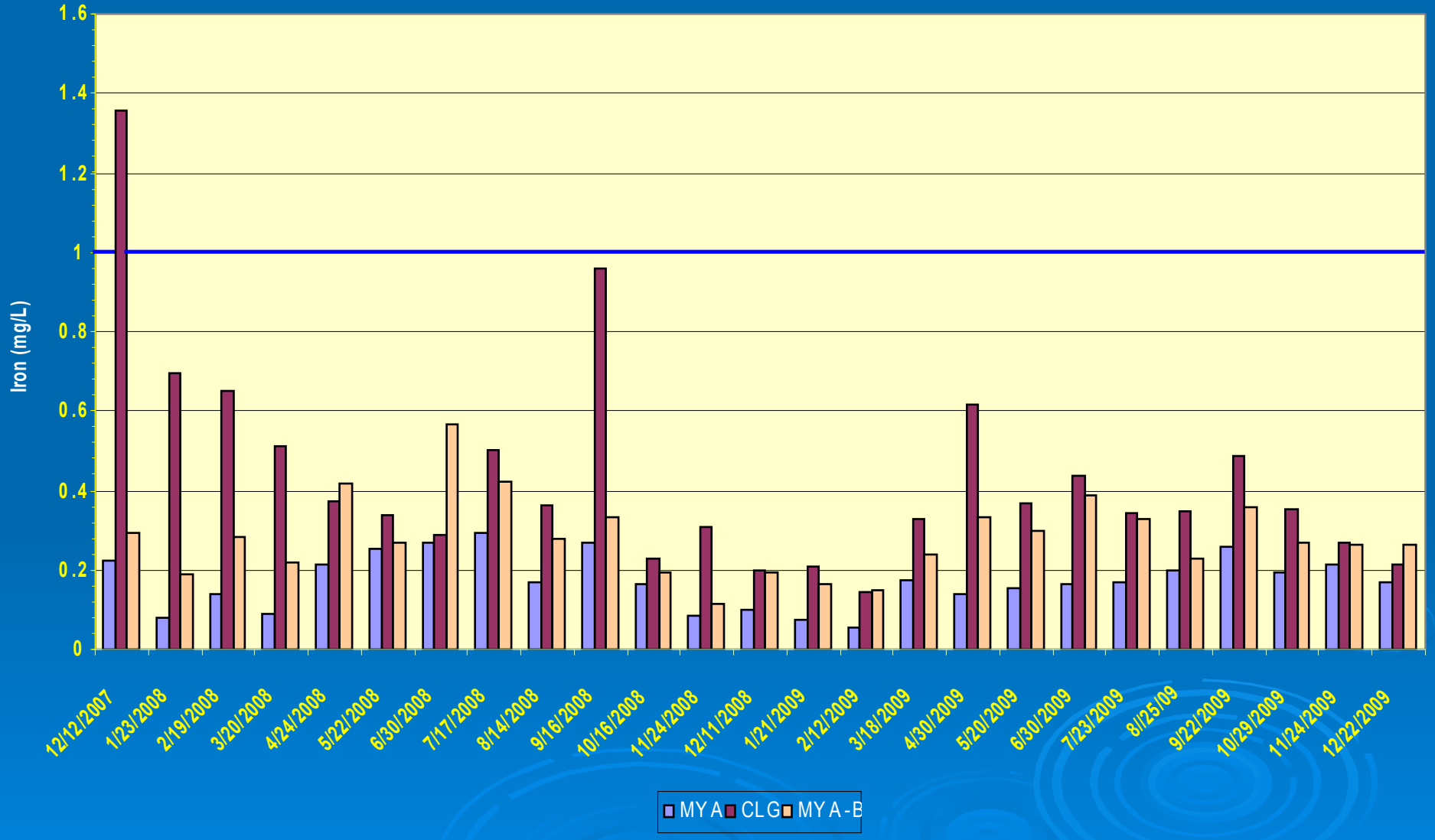
Manatee County WBIDs Sarasota/Manatee WBIDs Sarasota County WBIDs Sarasota/Charlotte WBIDs

TMDL WBIDs of Concern

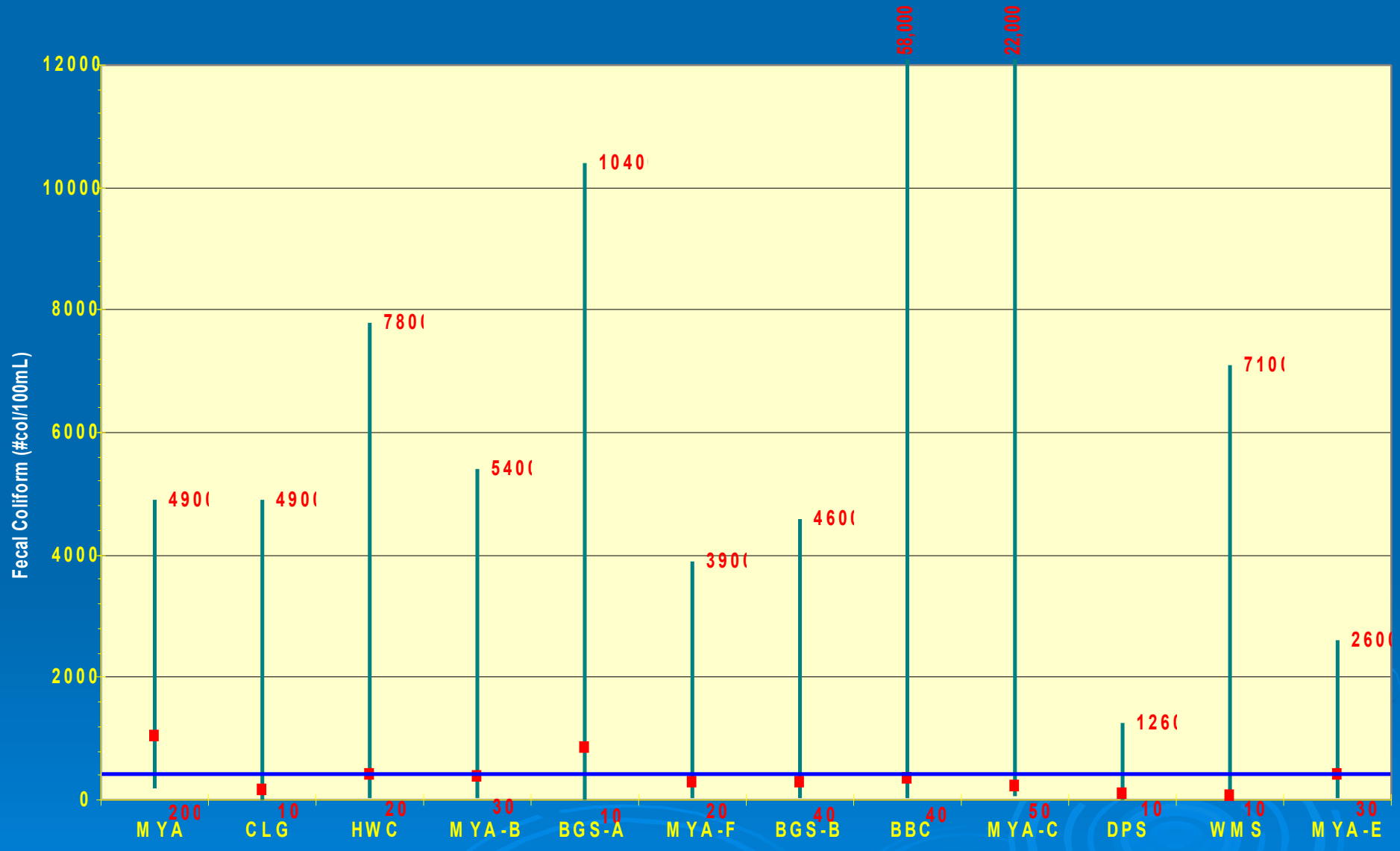
WBID	WATER SEGMENT NAME
1869B	Upper Myakka River
1967	Bud Slough
1967	Bud Slough
1877A	Upper Myakka River
1877A	Upper Myakka River
1877C	Myakka River (North Fork)
1958	Mud Lake Slough
1972	Myakka River at Clay Gully
1978	Deer Prairie Creek
1981	Lake Myakka (Lower Segment)
1981B	Myakka River
1981B	Myakka River
1981B	Lower Myakka river
1981C	Lake Myakka (Upper Segment)
1981C	Lake Myakka (Upper Segment)
1991 D	Myakka River
1991 D	Myakka River
1991 D	Myakka River
1991C	Lower Myakka River
1991 A	Lower Myakka River
1991 B	Lower Myakka River
1991 B	Lower Myakka River
2026	Little Salt Creek (Warm Mineral Springs)

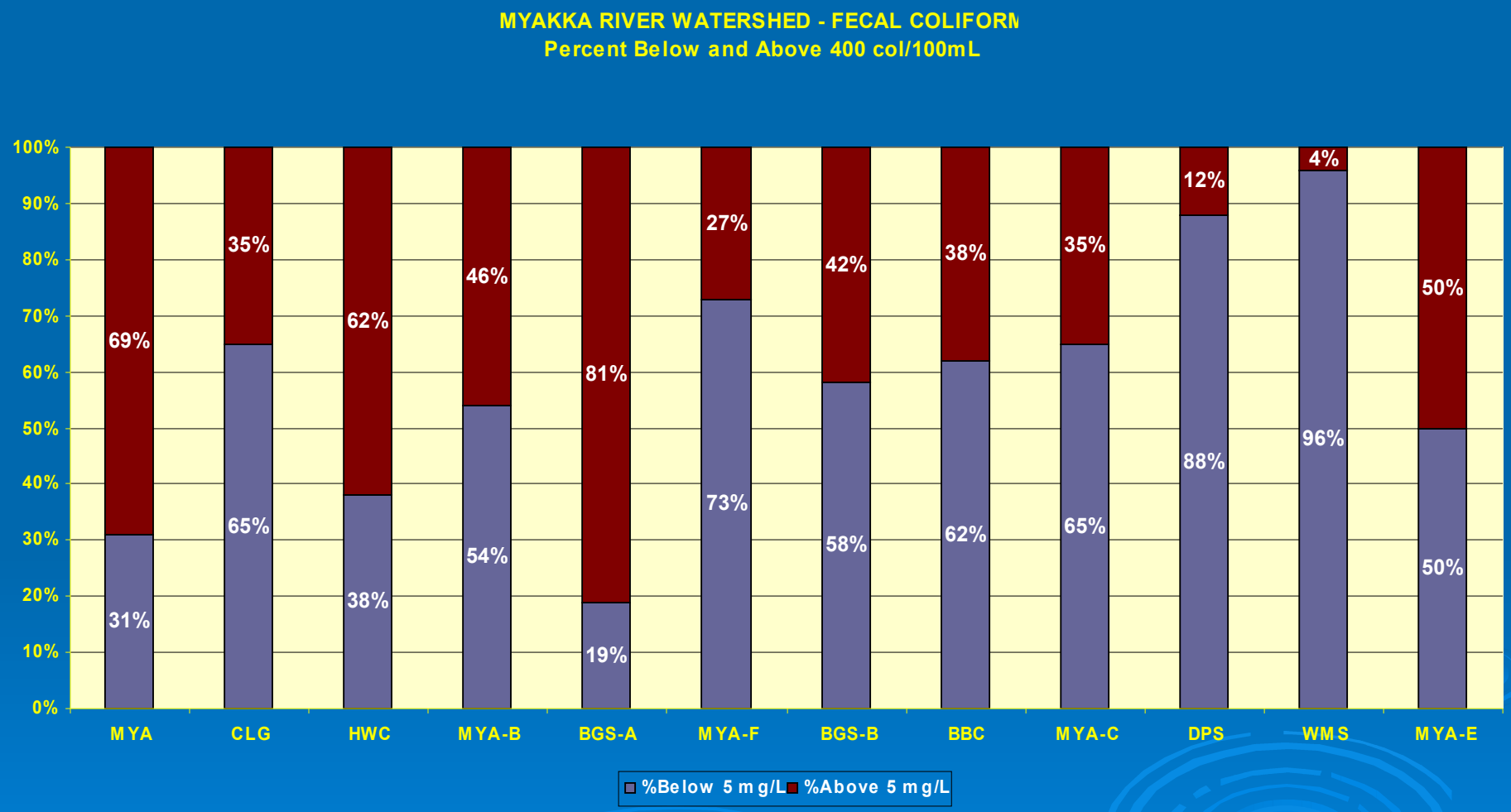


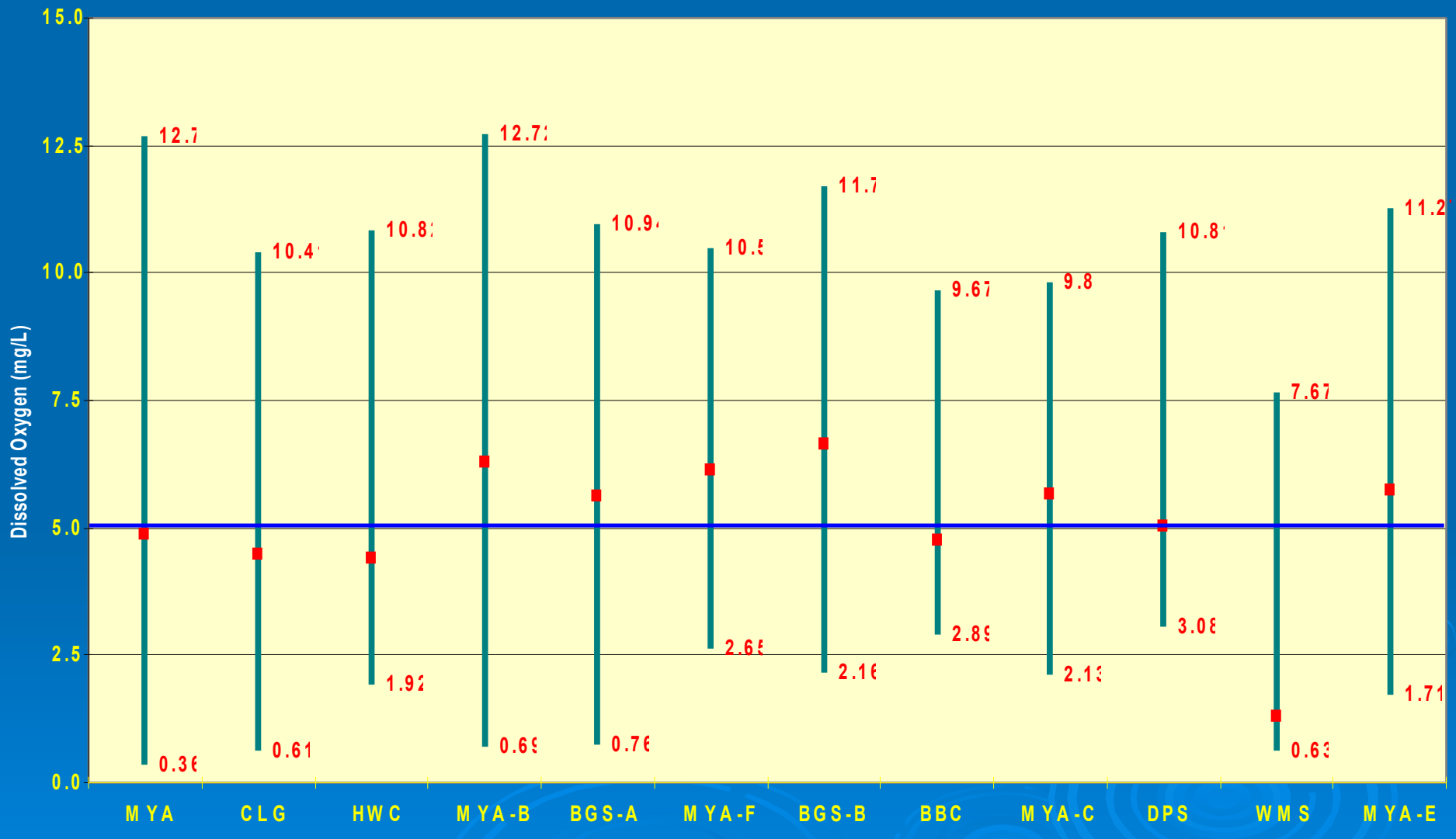
MYAKKA RIVER WATERSHEI
2007-2009

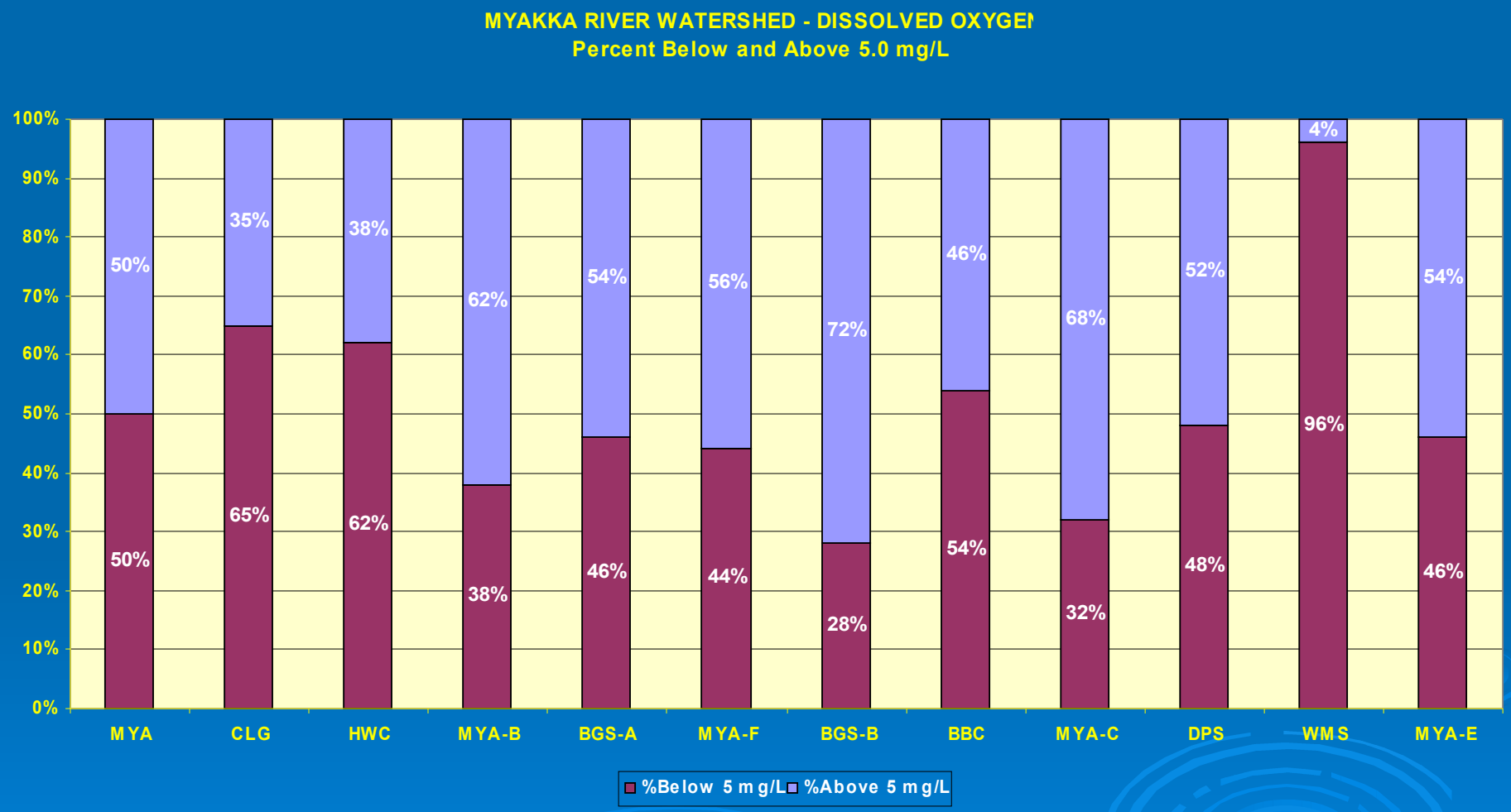


MYAKKA RIVER WATERSHED - FECAL
MIN./MAX./MEDIAN

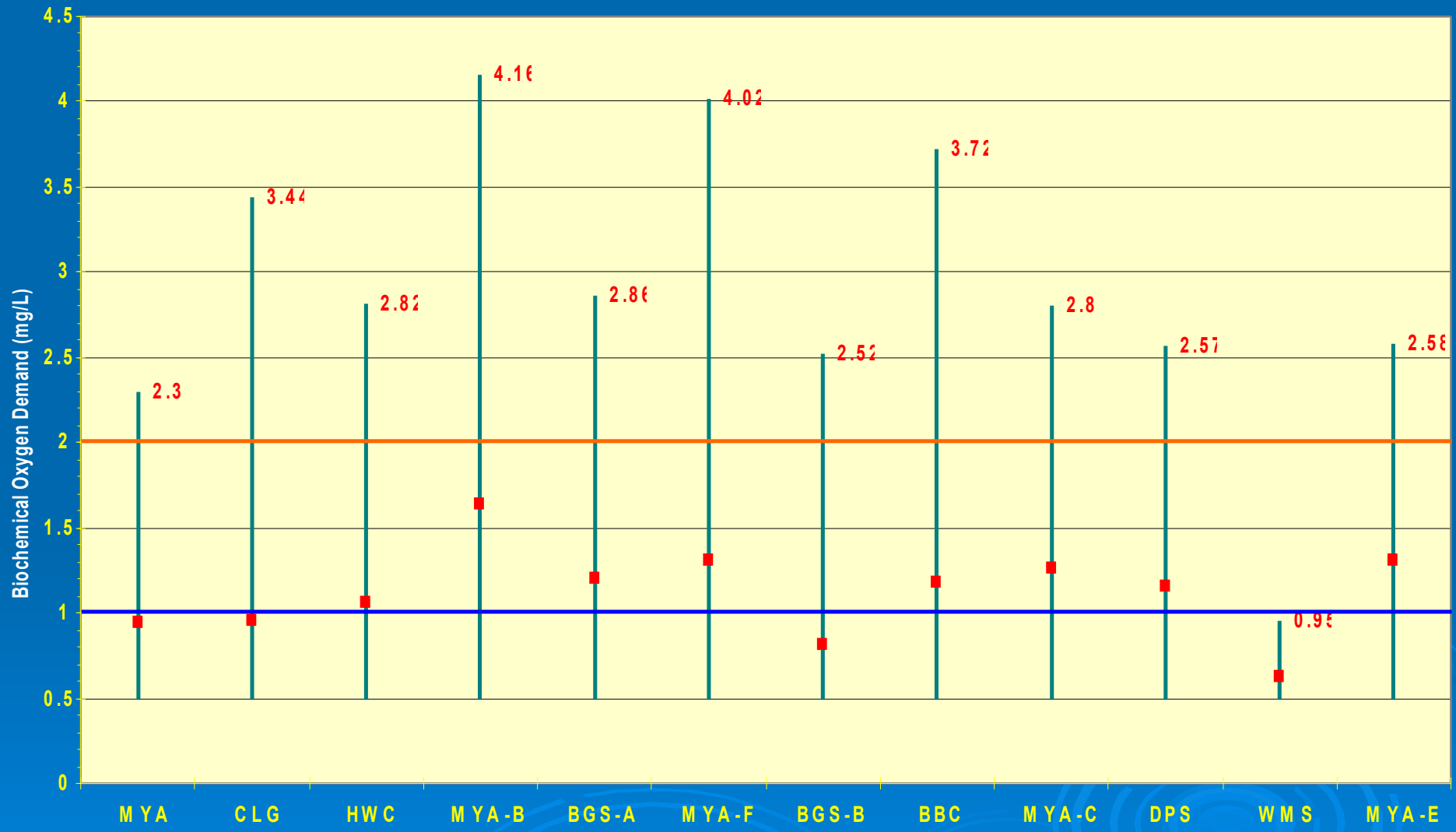


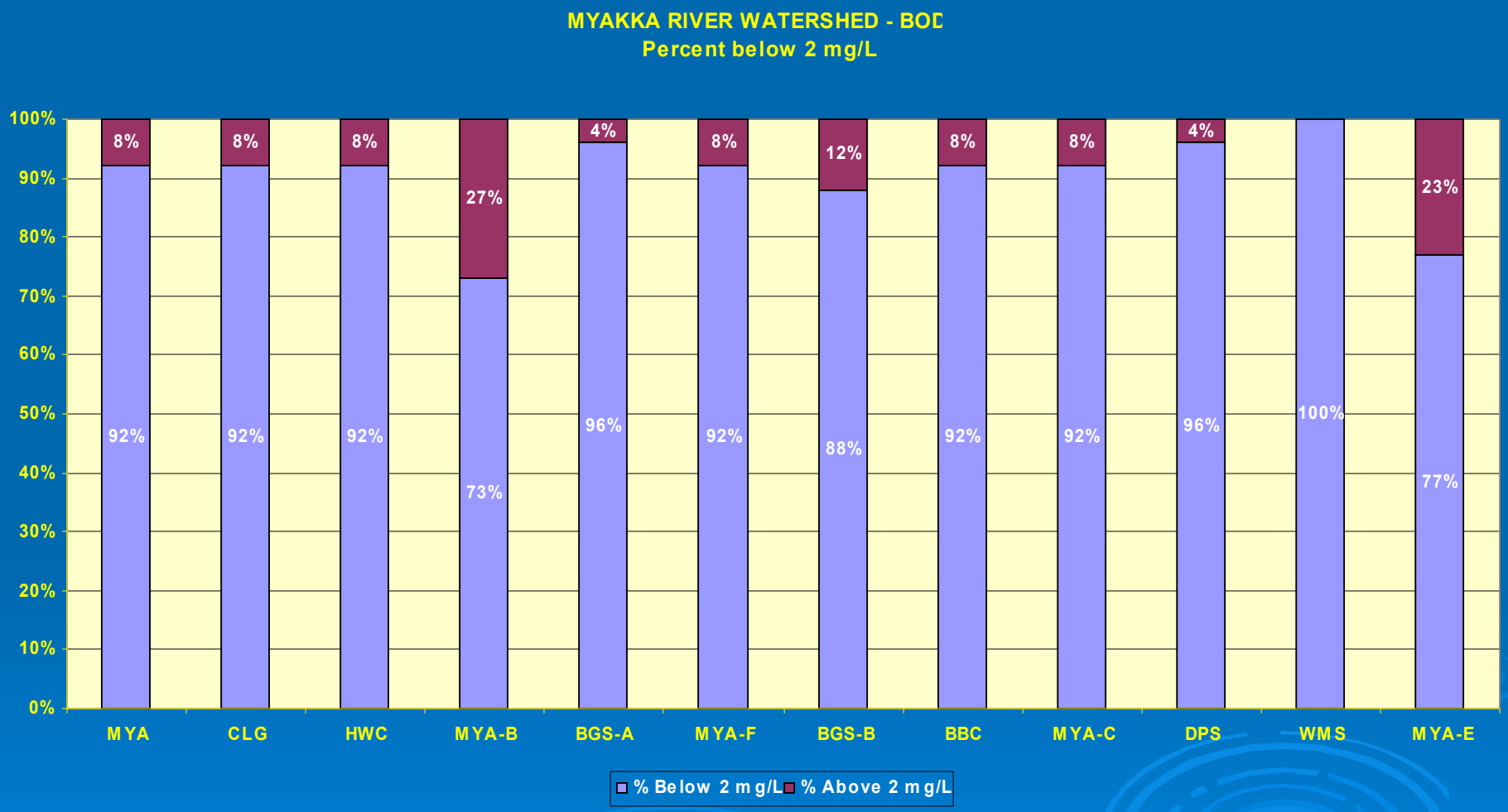

MYAKKA RIVER WATERSHED - FECAL COLIFORM
Percent Below and Above 400 col/100mL
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
69%
31%
35%
65%
62%
38%
46%
54%
81%
19%
27%
73%
42%
58%
38%
62%
35%
65%
12%
88%
4%
96%
50%
50%
MYA
CLG
HWC
MYA-B
BGS-A
MYA-F
BGS-B
BBC
MYA-C
DPS
WMS
MYA-E
%Below 5 mg/L
%Above 5 mg/L


MYAKKA RIVER WATERSHED - DISSOLV
MAX./MIN./MEDIAN
Dissolved Oxygen (mg/L)
15.0
12.5
10.0
7.5
5.0
2.5
0.0
12.7
0.36
10.4
0.61
10.8
1.92
12.7
0.69
10.9
0.76
10.5
2.65
11.7
2.16
9.67
2.89
9.8
2.13
10.8
3.08
7.67
0.63
11.2
1.71
MYA
CLG
HWC
MYA-B
BGS-A
MYA-F
BGS-B
BBC
MYA-C
DPS
WMS
MYA-E

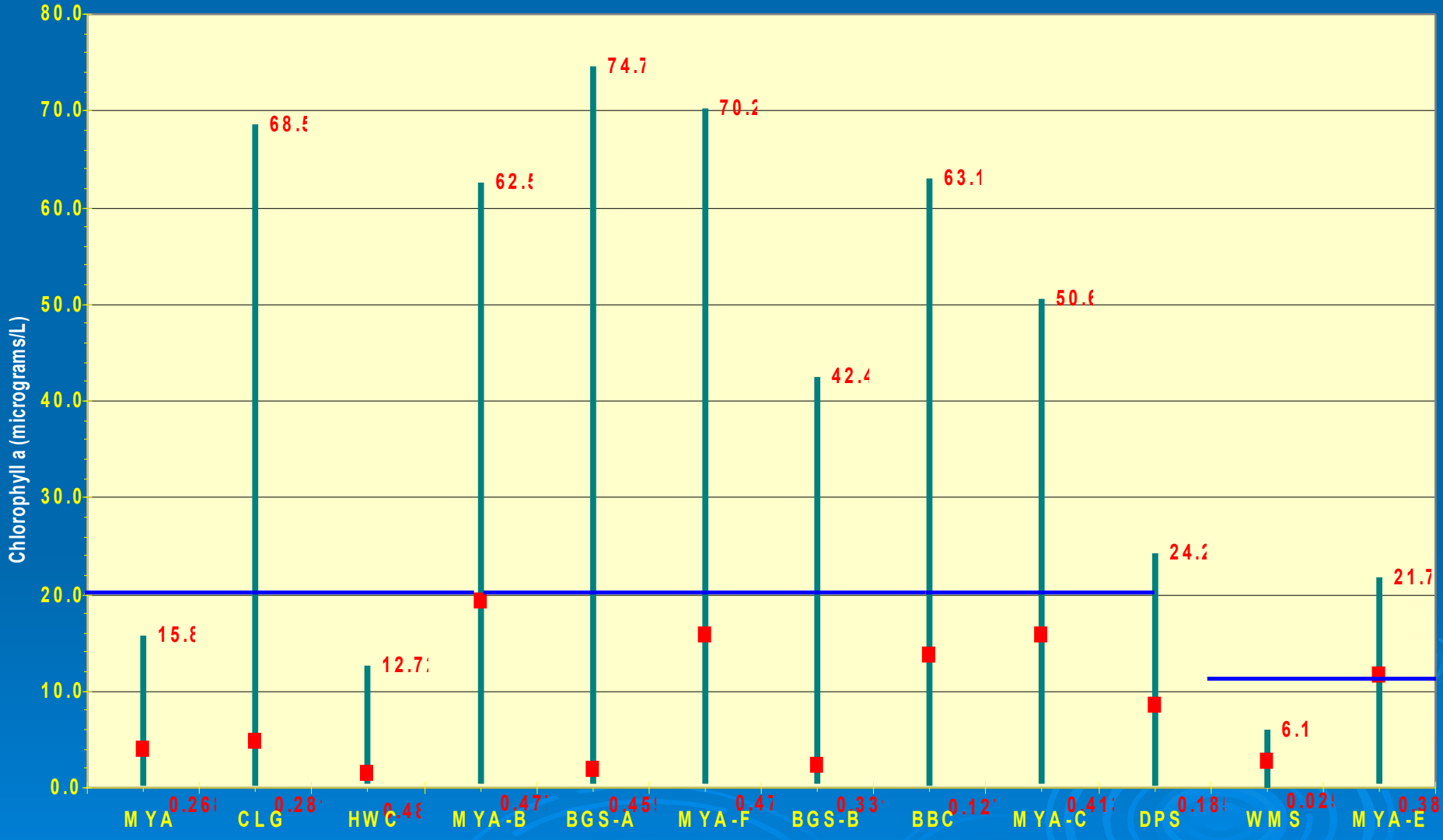

MYAKKA RIVER WATERSHED - DISSOLVED OXYGEN
Percent Below and Above 5.0 mg/L
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
50%
50%
35%
65%
38%
62%
62%
38%
54%
46%
56%
44%
72%
28%
46%
54%
68%
32%
52%
48%
4%
96%
54%
46%
MYA
CLG
HWC
MYA-B
BGS-A
MYA-F
BGS-B
BBC
MYA-C
DPS
WMS
MYA-E
%Below 5 mg/L
%Above 5 mg/L

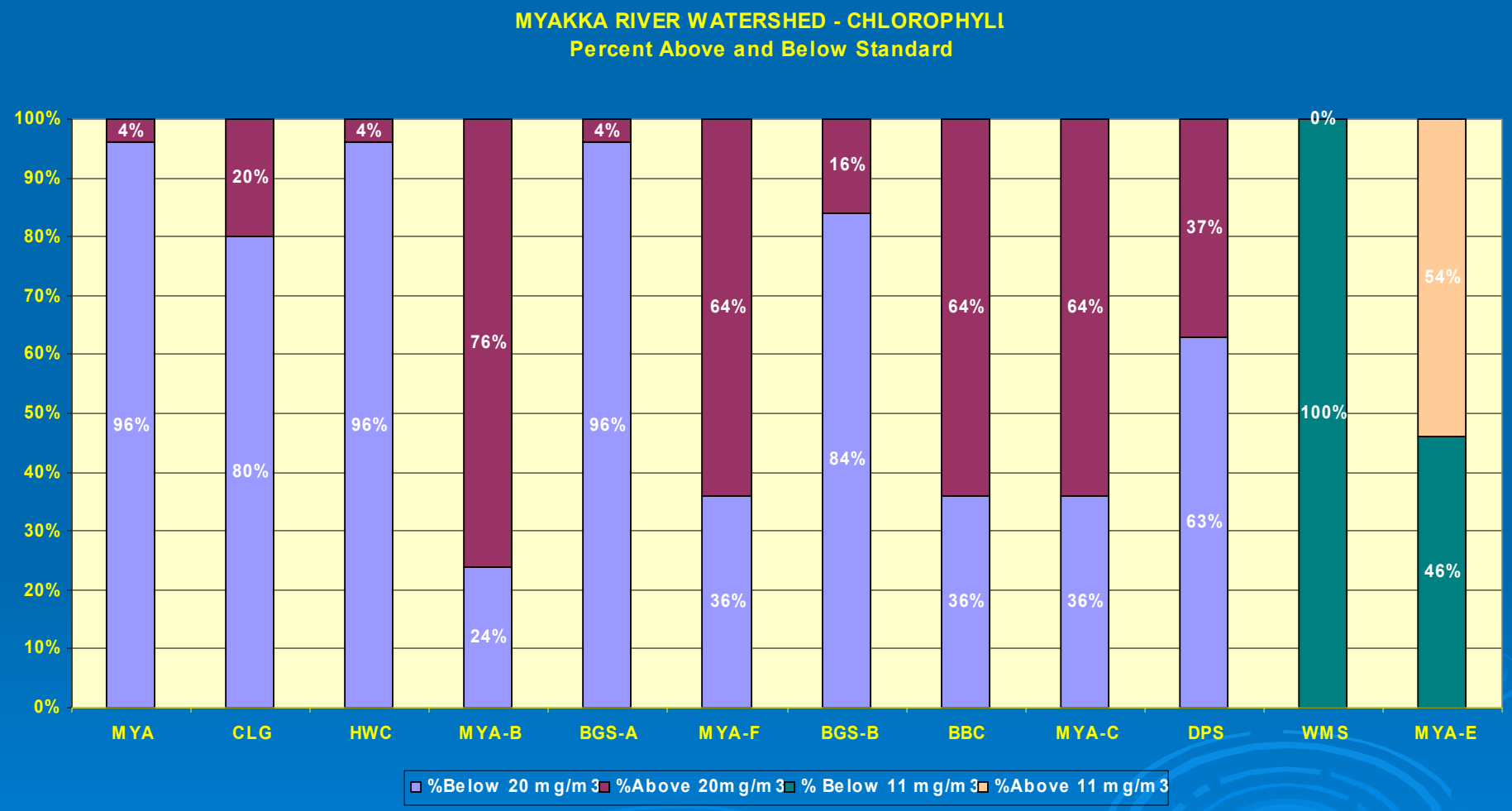
MYAKKA RIVER WATERSHE
MAX./MIN./MEDIAN



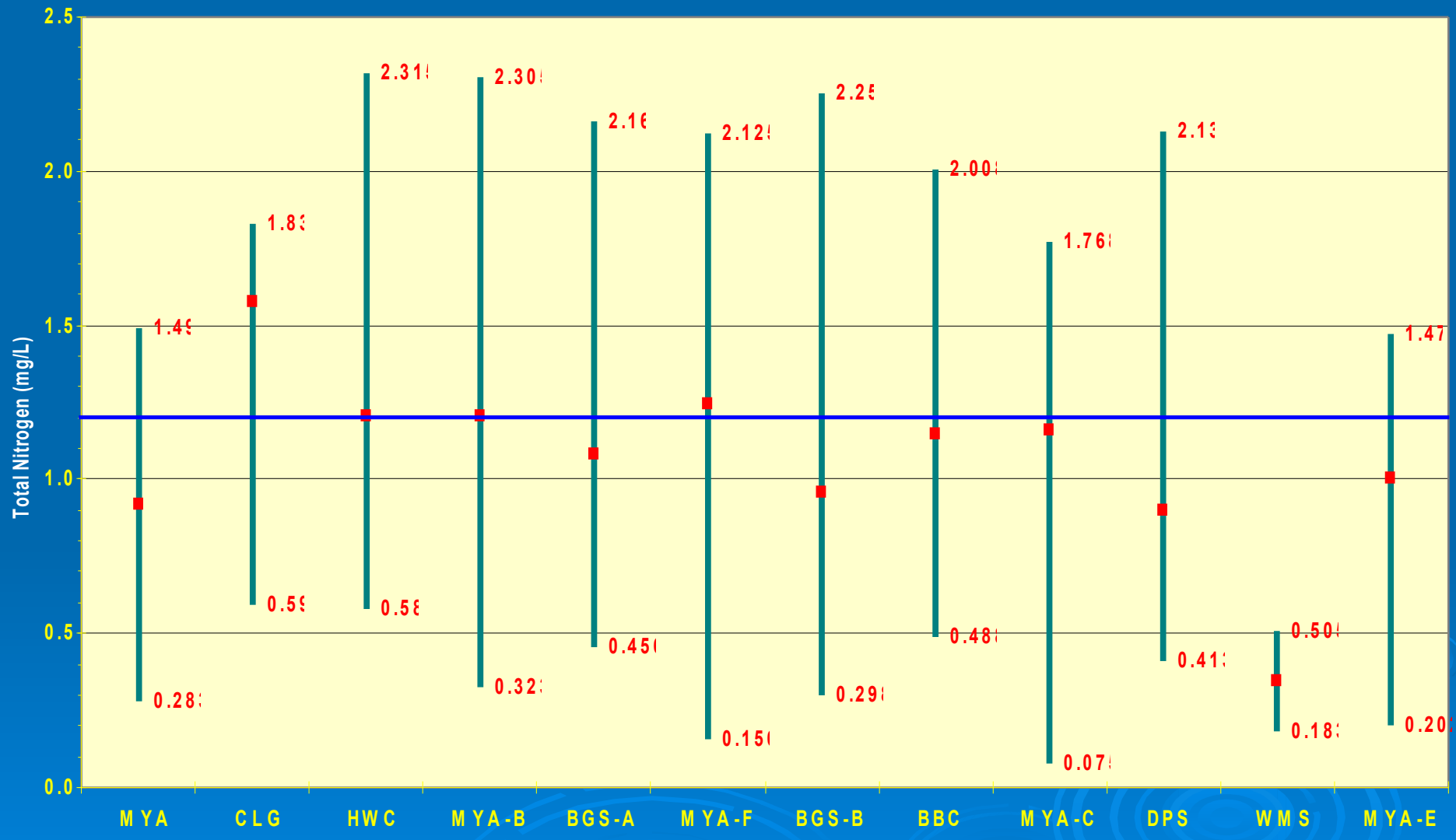

MYAKKA RIVER WATERSHED - BOD
Percent below 2 mg/L
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
8%
92%
8%
92%
8%
92%
27%
73%
4%
96%
8%
92%
12%
88%
8%
92%
8%
92%
4%
96%
100%
23%
77%
MYA
CLG
HWC
MYA-B
BGS-A
MYA-F
BGS-B
BBC
MYA-C
DPS
WMS
MYA-E
% Below 2 mg/L
% Above 2 mg/L

MYAKKA RIVER WATERSHED - CHLC
MAX./MIN./MEDIAN

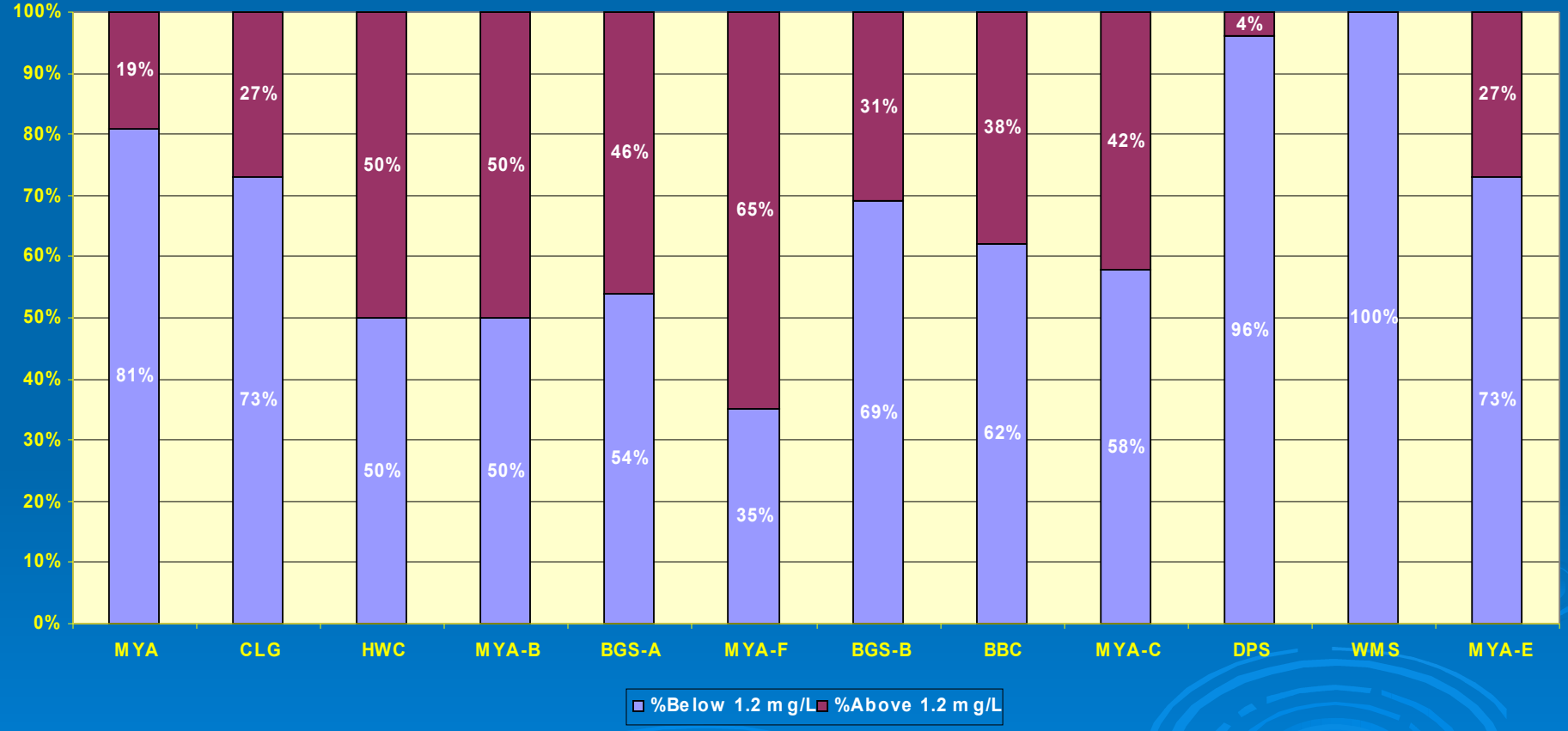



MYAKKA RIVER WATERSHED - CHLOROPHYLl
Percent Above and Below Standard
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
4%
96%
20%
80%
4%
96%
76%
24%
4%
96%
64%
36%
16%
84%
64%
36%
64%
36%
37%
63%
0%
100%
54%
46%
MYA
CLG
HWC
MYA-B
BGS-A
MYA-F
BGS-B
BBC
MYA-C
DPS
WMS
MYA-E
%Below 20 mg/m3
%Above 20mg/m3
% Below 11 mg/m3
%Above 11 mg/m3

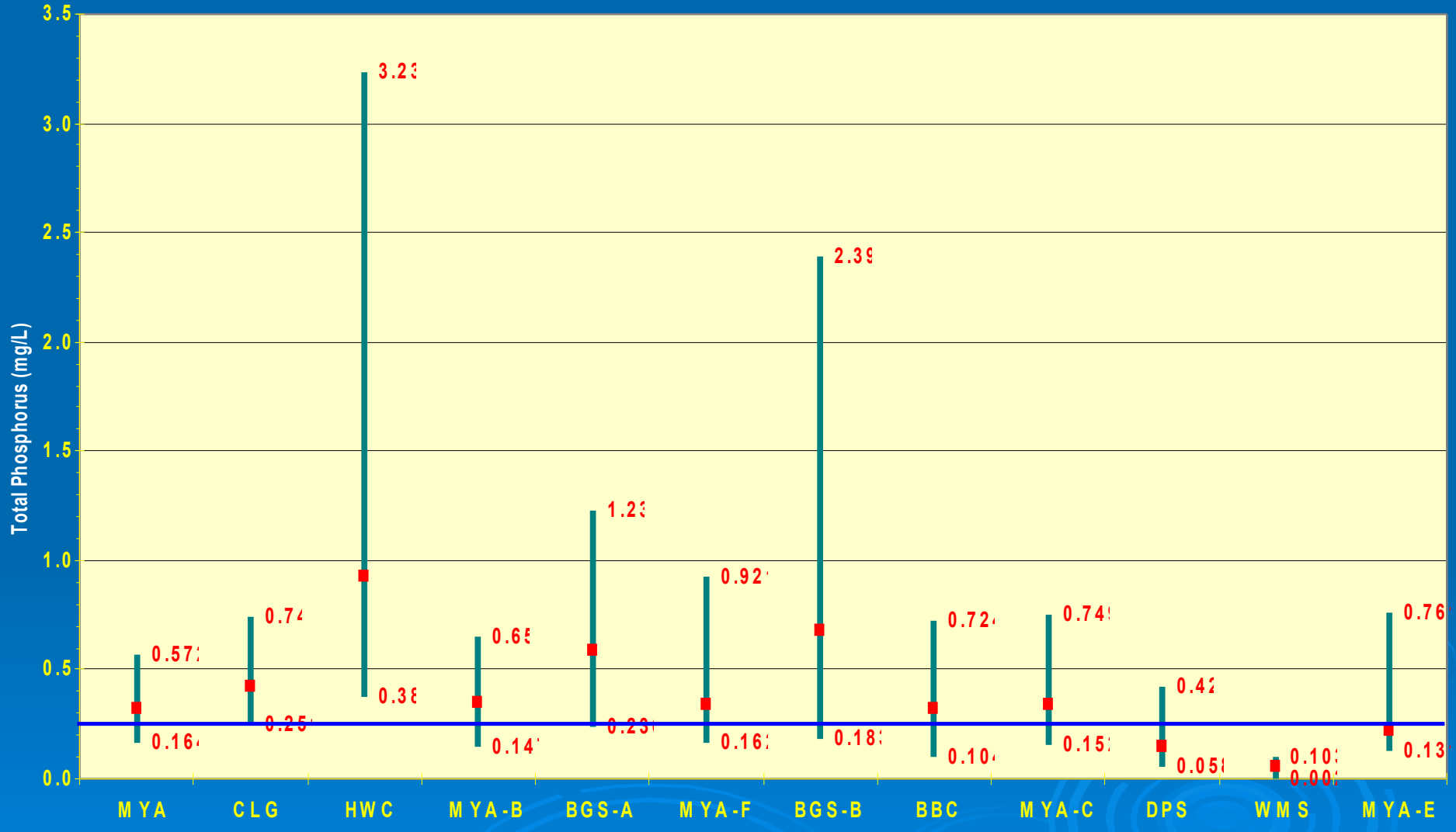
MYAKKA RIVER WATERSHED - TOTAL
MAX./MIN./MEDIAN



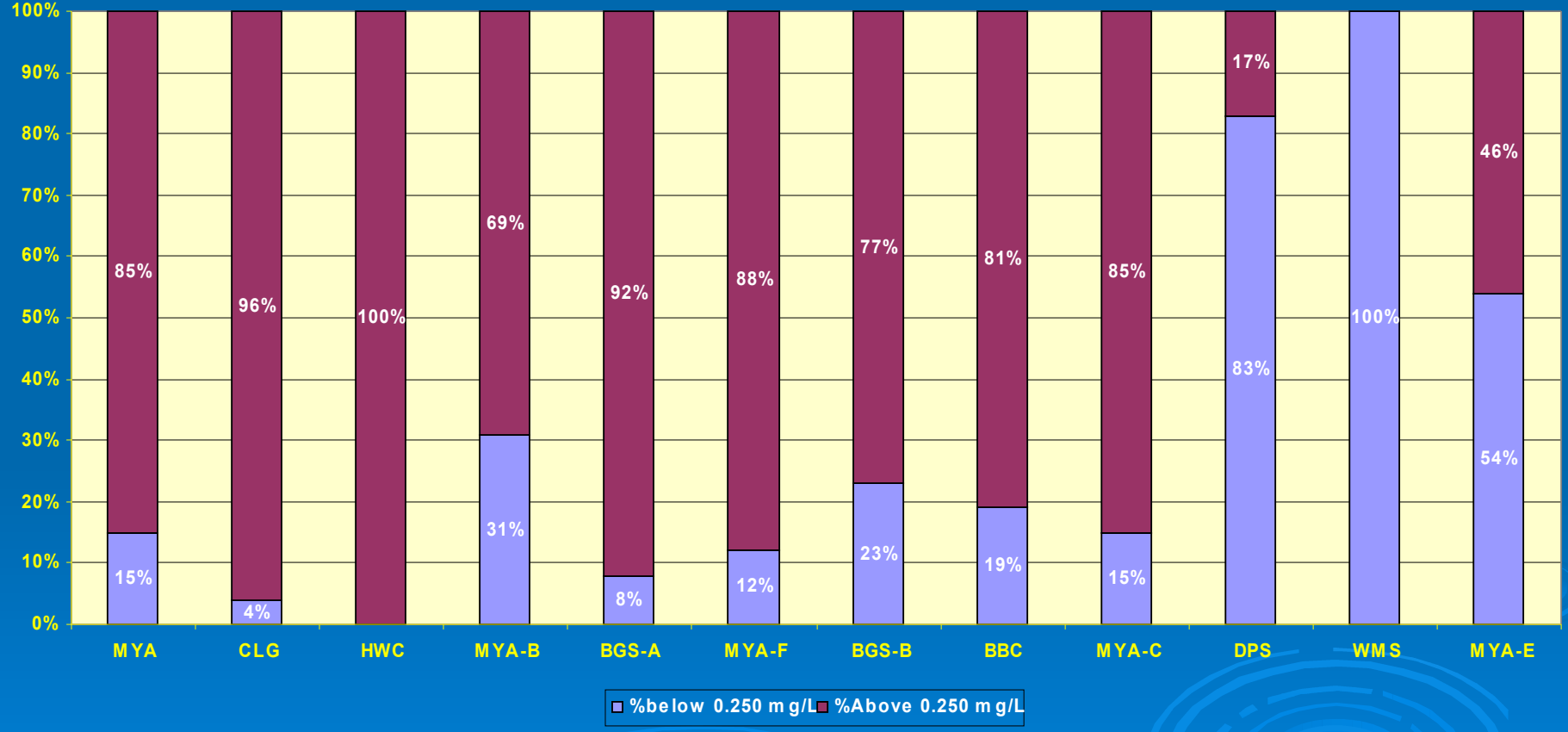
MYAKKA RIVER WATERSHED - TOTAL NITROGEN
Percent Below/Above 50th Percentile of Florida Stream



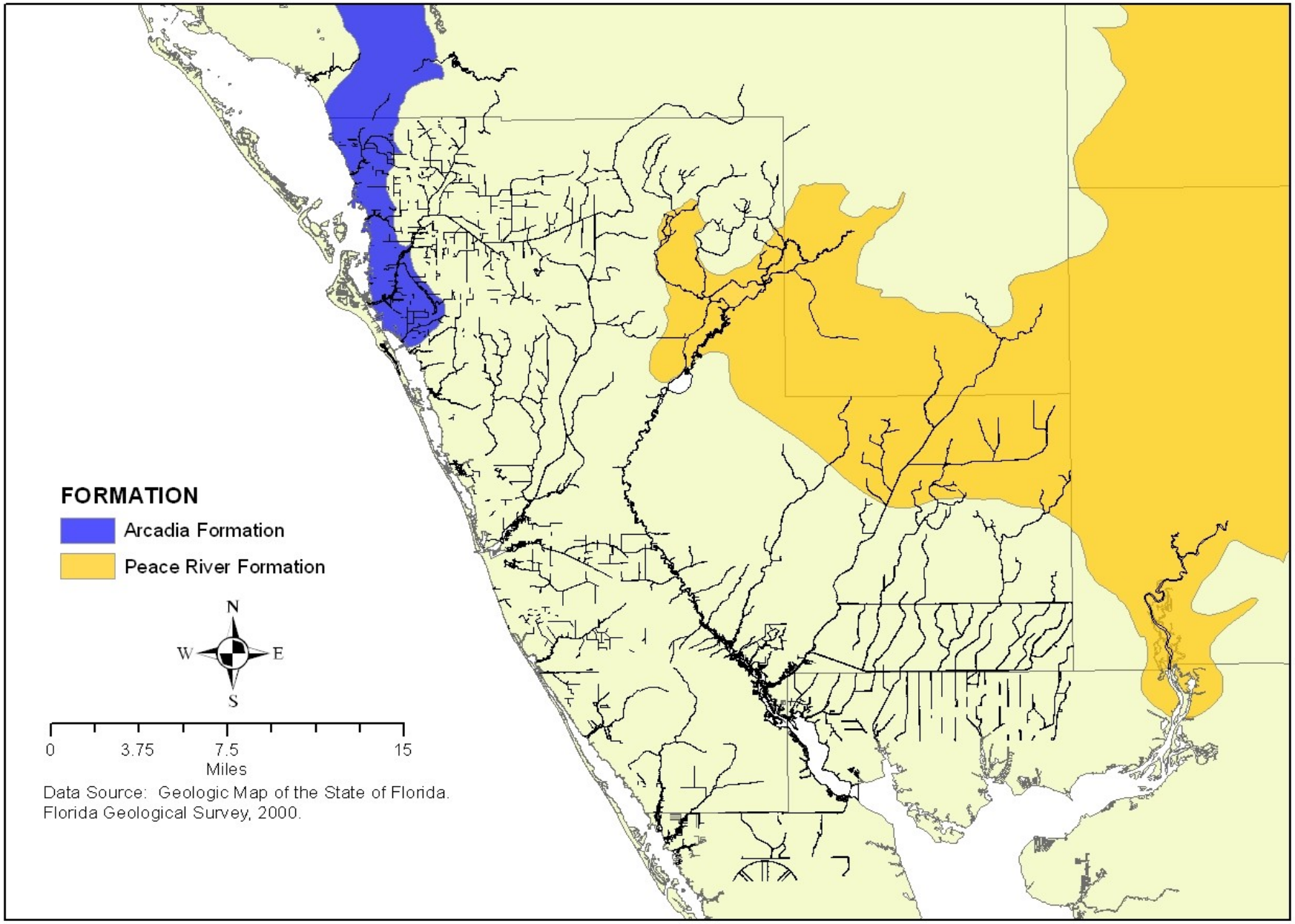
MYAKKA RIVER WATERSHED - TOTAL PH
MAX.MIN.MEDIAN



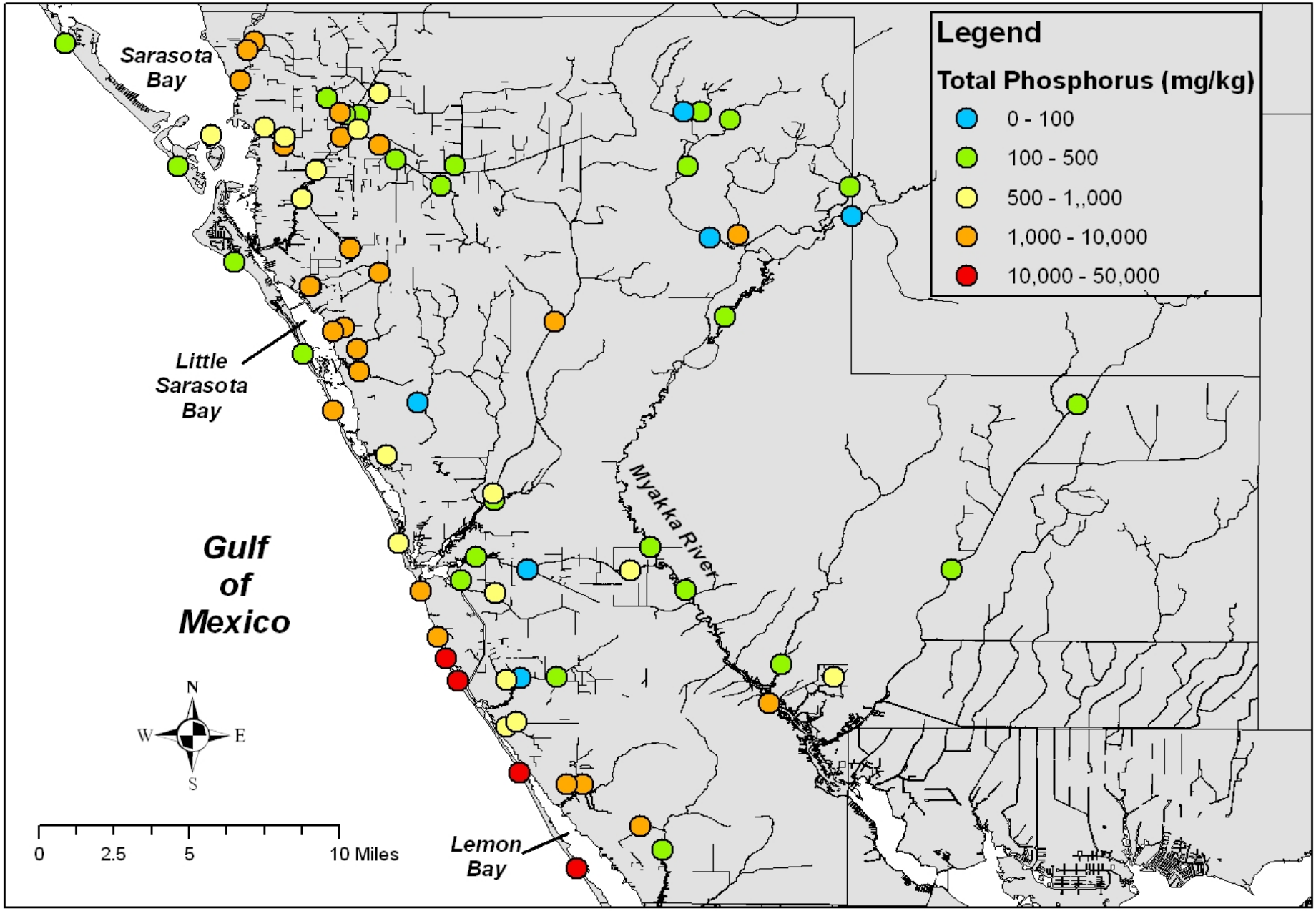
MYAKKA RIVER WATERSHED - TOTAL PHOSPHORUS
Percent Below/Above 70th Percentile of Florida Stream



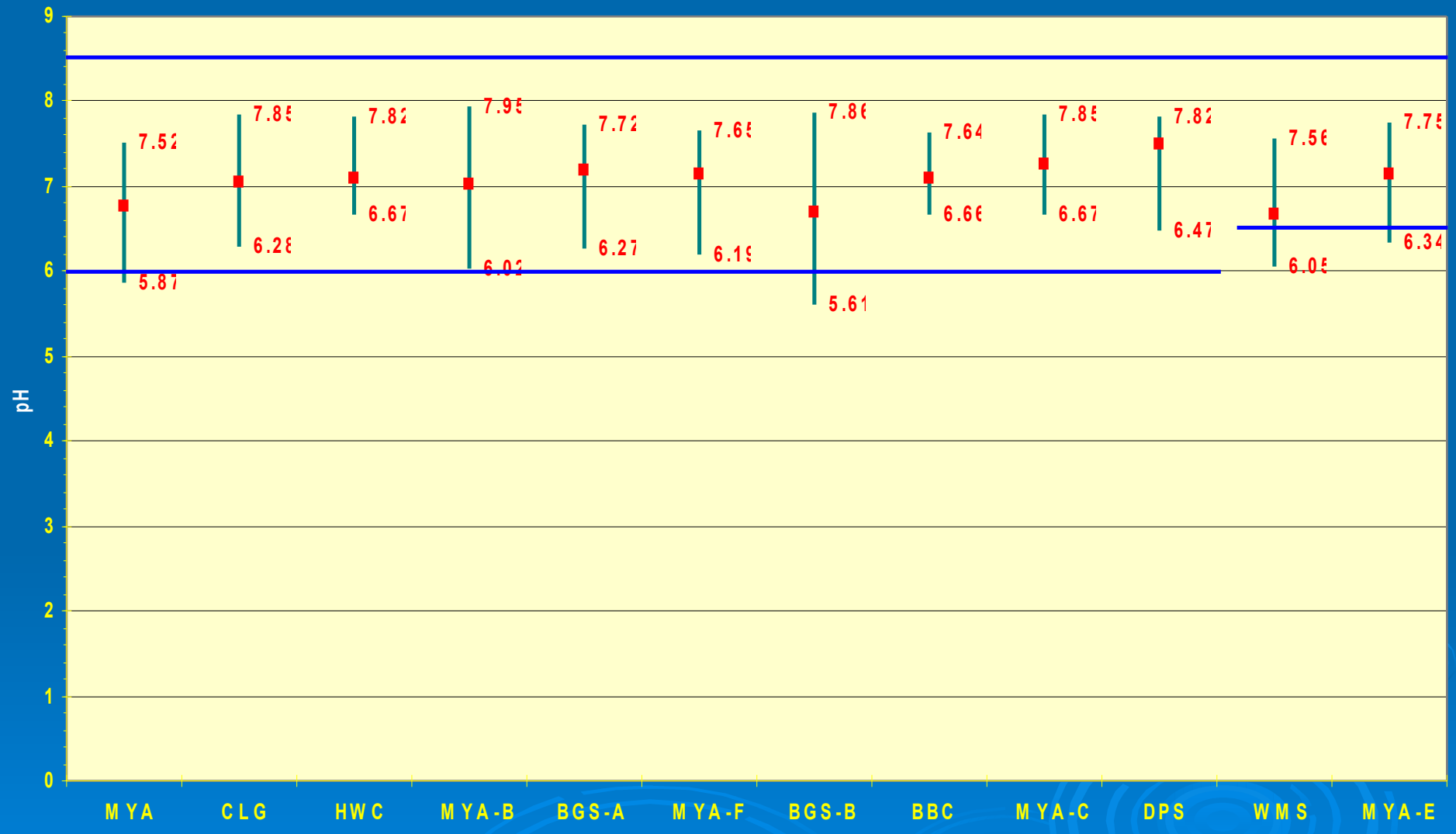
Location of Phosphorus Rich Sediments in Reference to Sarasota County

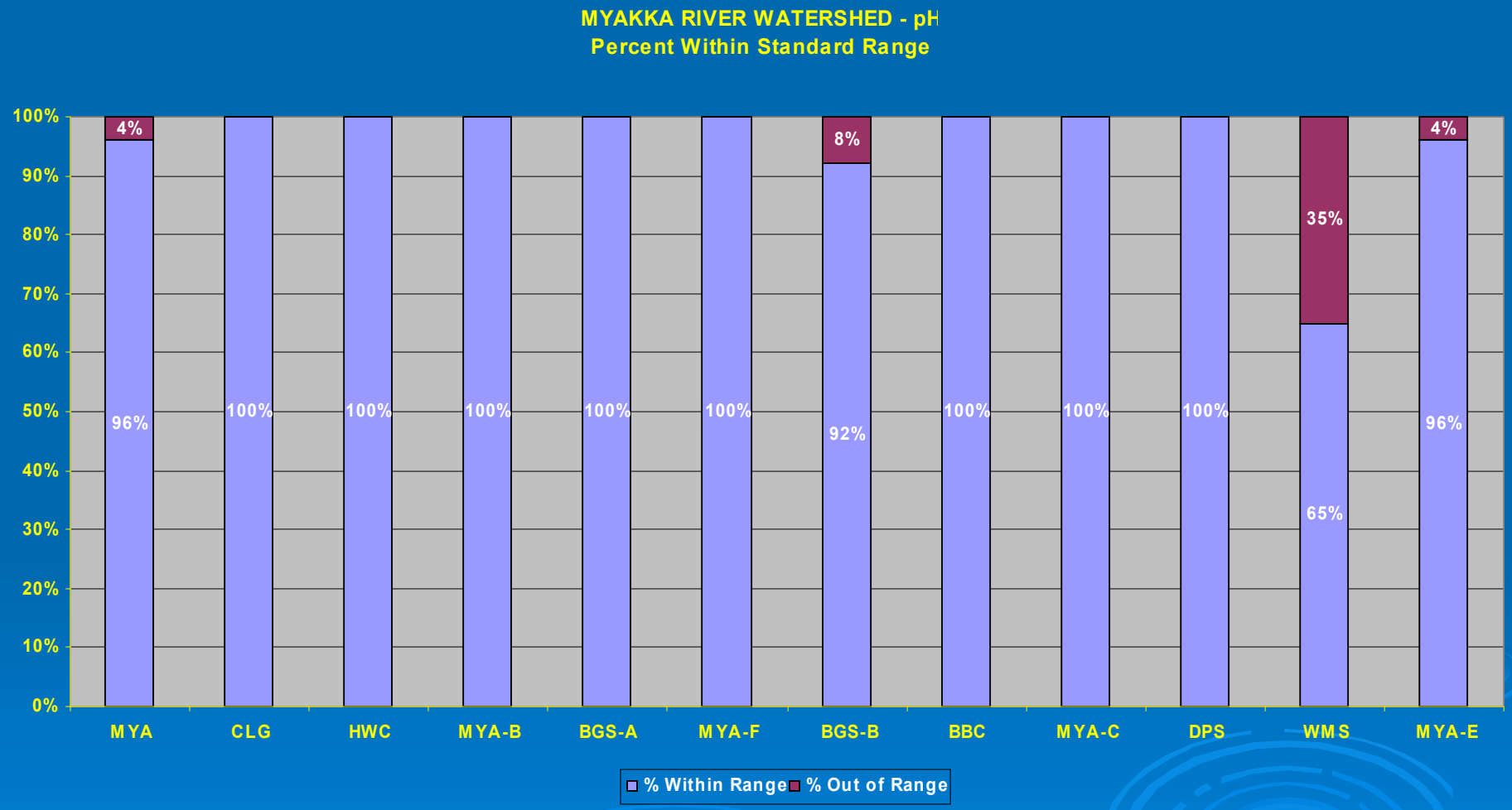


Results of Total Phosphorus Soil Screening



MYAKKA RIVER WATERSI
MAX./MIN./MED.




MYAKKA RIVER WATERSHED - pH
Percent Within Standard Range
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
4%
96%
100%
100%
100%
100%
100%
8%
92%
100%
100%
100%
35%
65%
4%
96%
MYA
CLG
HWC
MYA-B
BGS-A
MYA-F
BGS-B
BBC
MYA-C
DPS
WMS
MYA-E
% Within Range
% Out of Range

Summary

- The data supports the delisting of WBID 1981B for Iron.
- Fecal coliform median values are typically below the FDEP threshold of 400 col/100mL. Most sites show significant response to rainfall. The watershed is primarily agricultural (cropland, pastureland, citrus, sod, wetlands, low-density residential). The source is likely wildlife and livestock.
- DO values vary widely. They do drop below 5.0 mg/L in WBID 1981B and throughout watershed. But, historical data (CHEC 1999) indicate that background DO concentrations throughout the basin generally fall below 5 mg/L due to geomorphology, hydrology, and natural processes and are probably not a result of anthropogenic impacts.

Summary Cont'd

- BOD values are consistently below 2.0 mg/L
- Chl a values in river channel consistently above WQ standards.
- TN values consistent with 50% of FL streams.
- TP values consistent with 70% of FL streams. They could be related to natural soil phosphate content.
- pH consistently within acceptable ranges
- Monitoring data is valuable in supporting protection of the river
- Additional years of sampling required to establish any trends or seasonal variations


Thank You!