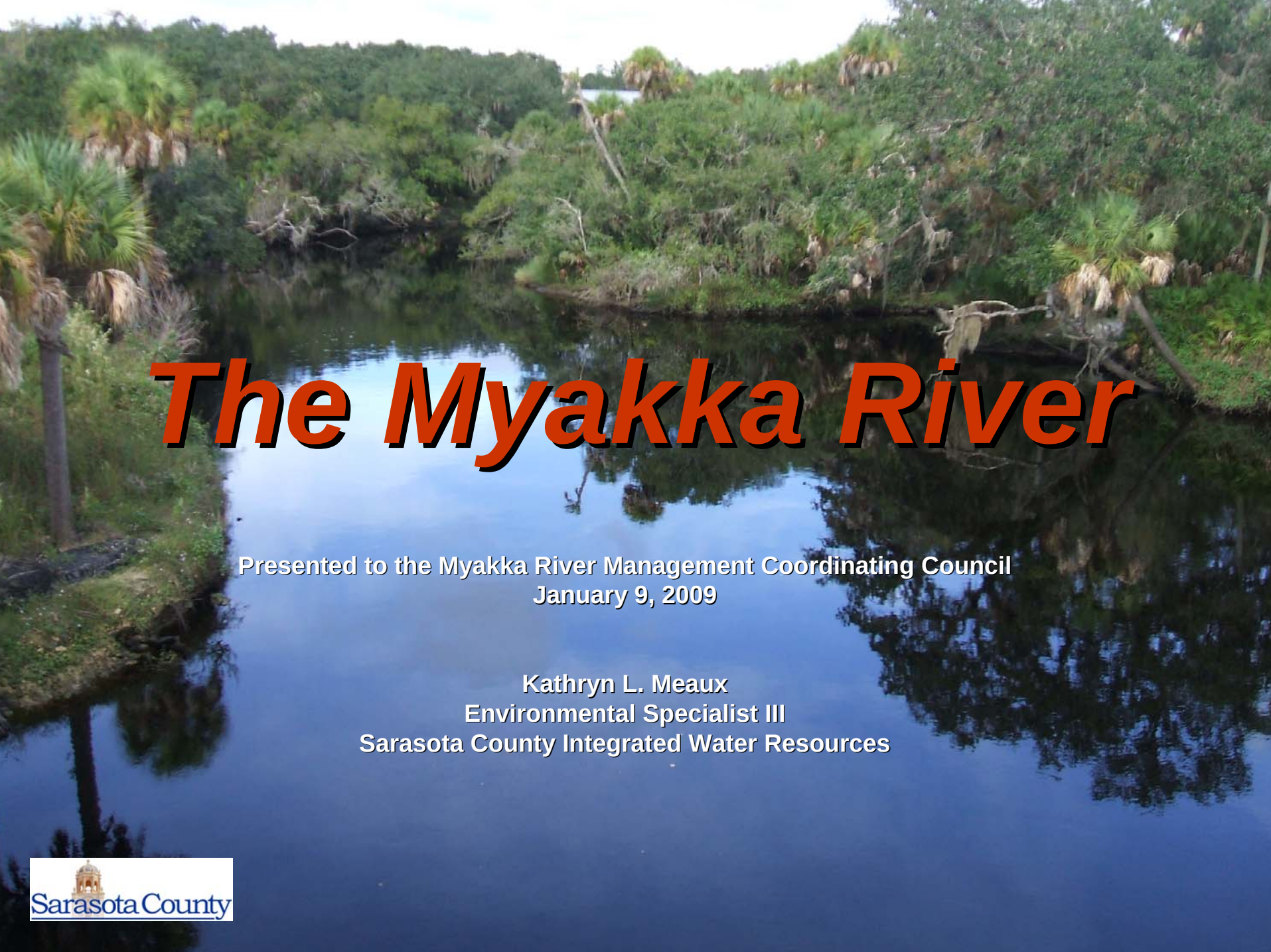


The Myakka River

Presented to the Myakka River Management Coordinating Council
January 9, 2009

Kathryn L. Meaux
Environmental Specialist III
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

Current Monitoring

November 2007

- County staff monitoring “in-house”
- Monitoring river and tributaries
- Sampling 12 stations monthly
- 144 total annual sample sets
- 13 months of data so far

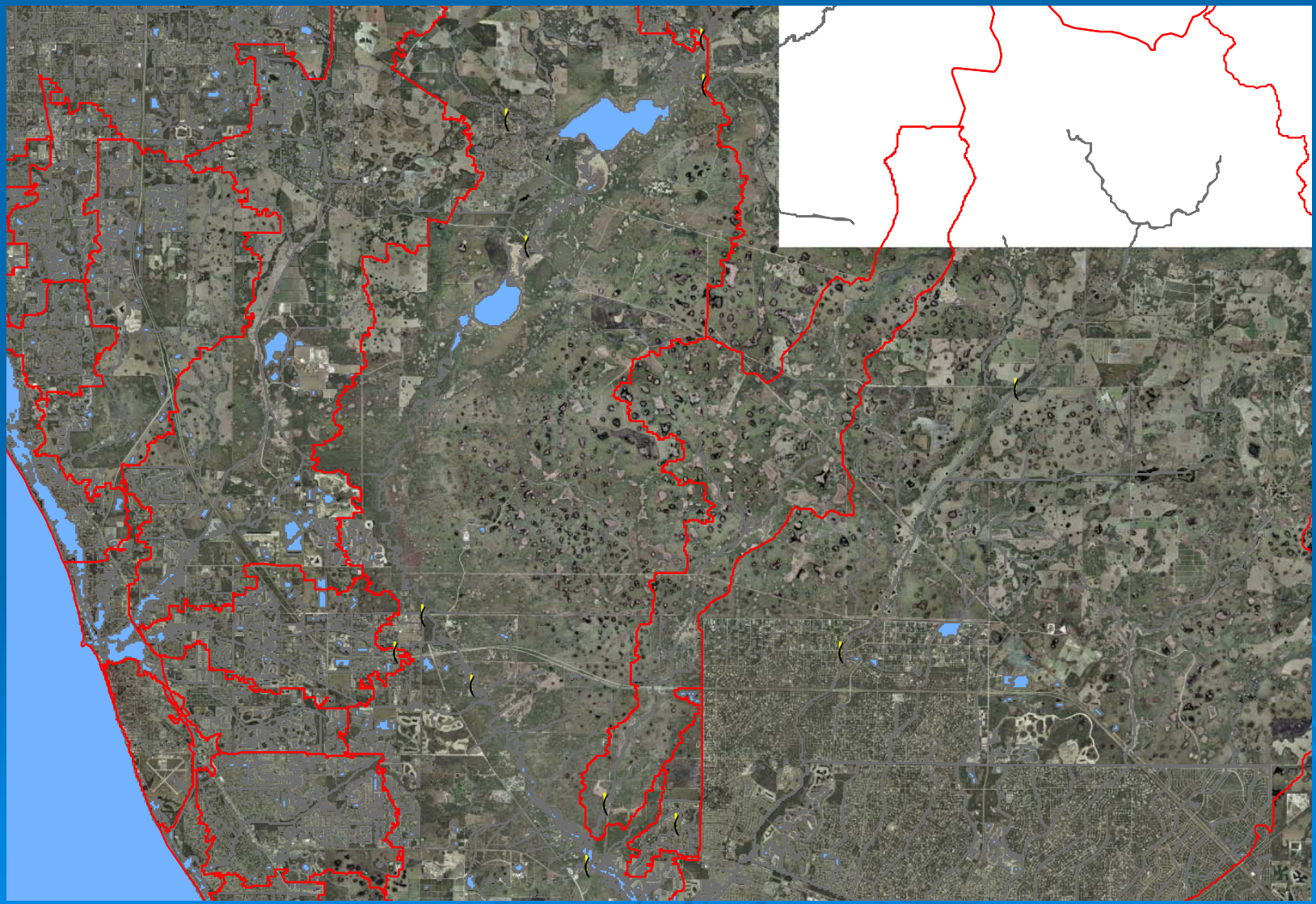
In-House Monitoring

- Parameters: Total Suspended Solids (TSS), Turbidity, Biochemical Oxygen Demand (BOD), Nitrate+Nitrite Nitrogen (Nox), Ammonia Nitrogen (NH_4), Total Kjeldahl Nitrogen (TKN), Orthophosphate (PO_4), Total Nitrogen (TN), Total Phosphorus (TP), Chlorophyll “a” (corrected for Pheophytin), Fecal Coliform (WBID 1877A) 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), pH, Secchi Depth, and Overall Depth.

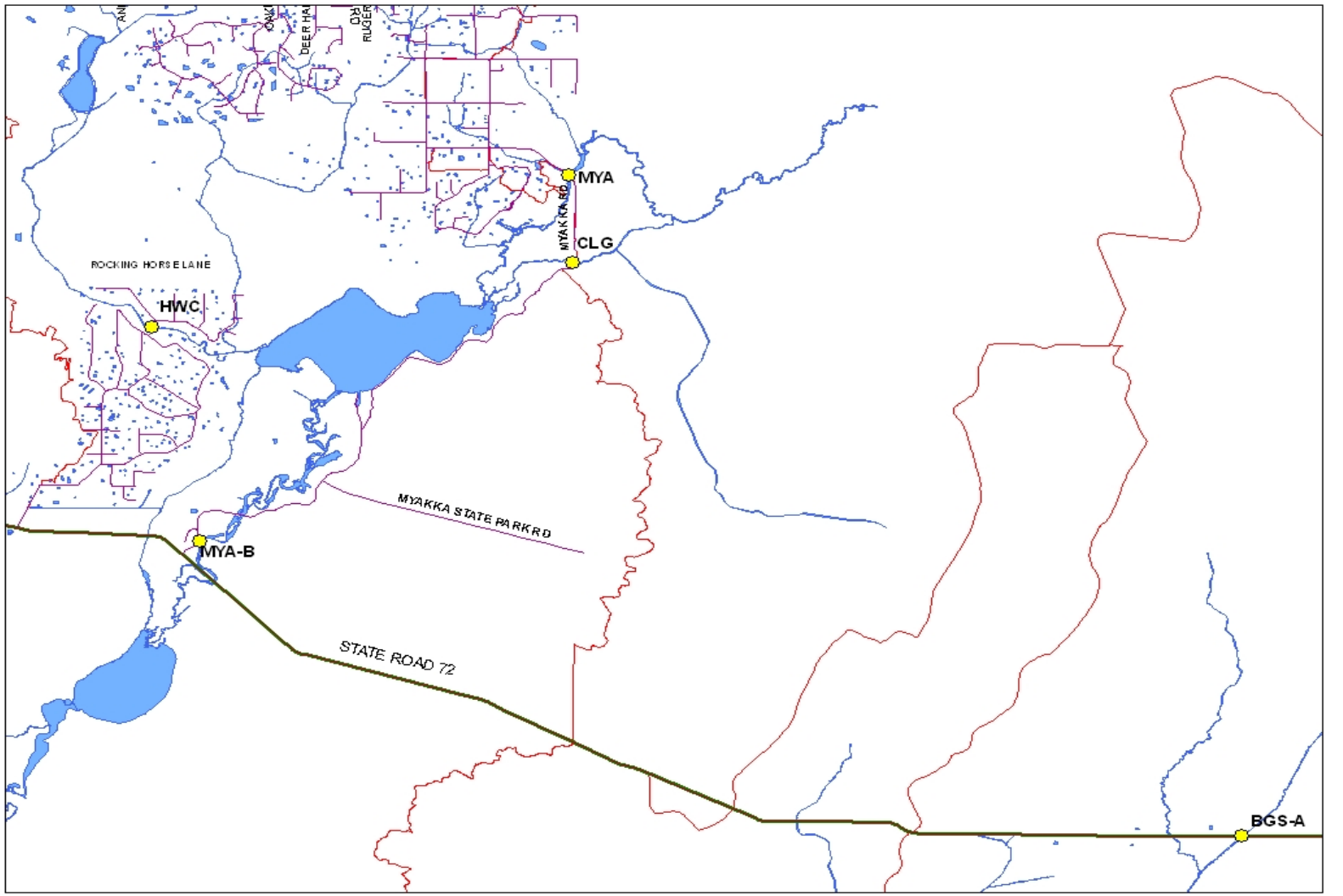
Monitoring Stations

STA_ID	Short_Name	Location
HWC	Howard Creek	Bridge at Rocking Horse Lane, Myakka Valley Trails, Sarasota
MYA	Myakka River	Bridge at Myakka Rd. North of State Park, Miakka City
MYA-B	Myakka River	Upstream of Bridge at State Road 72 in park, Sarasota
MYA-C	Myakka River	Snook Haven, Venice Ave., Venice; ARMS Station
MYA-E	Myakka River	Bridge at US41;North Port;West Side
MYA-F	Myakka River	Bridge at Border Road, Venice
CLG	Clay Gully	Bridge in Myakka River State Park
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
BGS-A	Big Slough	Bridge at State Road 72, Sarasota
BGS-B	Big Slough	Bridge on Tropicaire; East of I75;North Port
BBC	Blackburn Canal	Bridge on Jackson Rd.; North of Venice Ave.; Venice

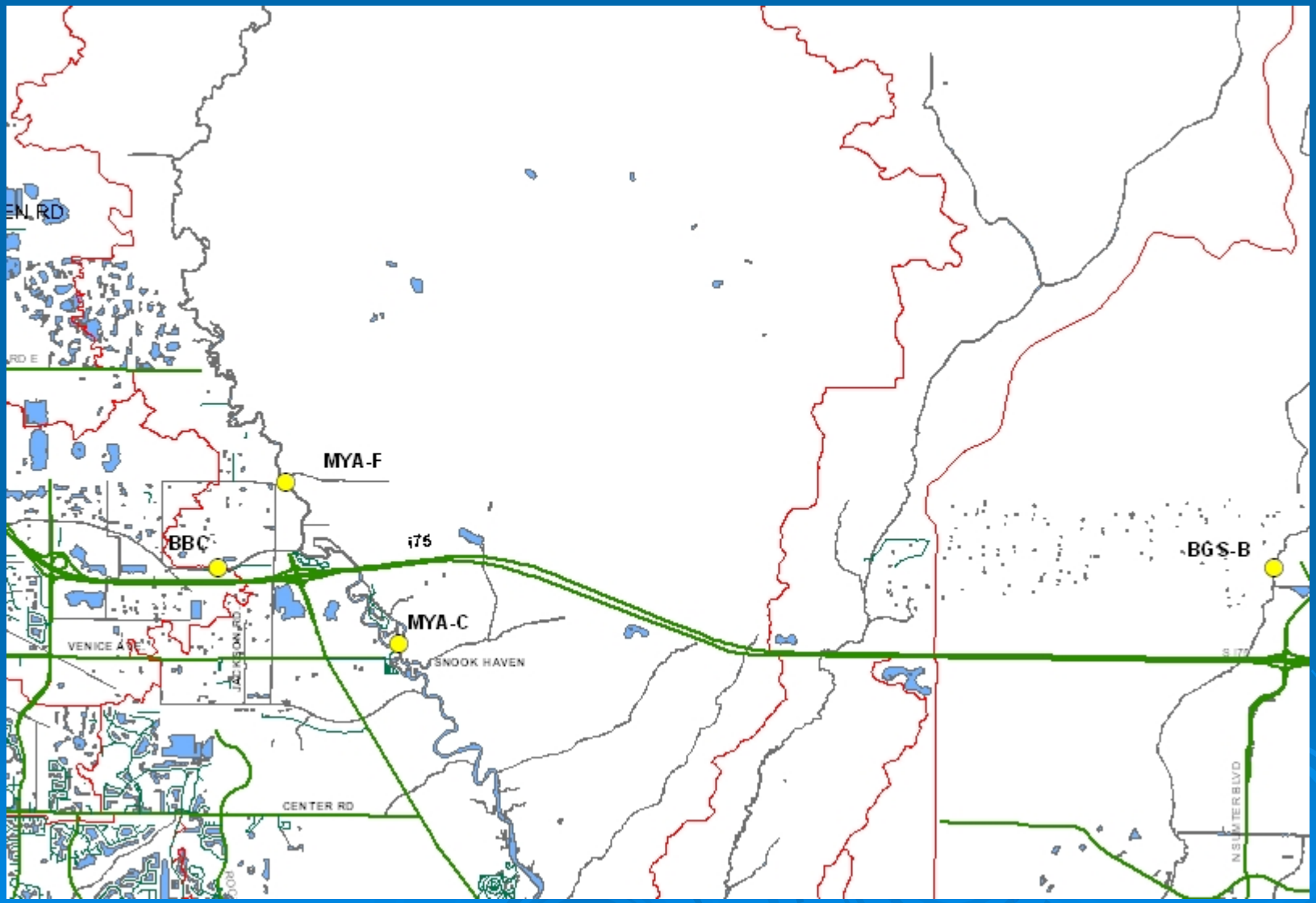
Myakka River Watershed Monitoring Stations



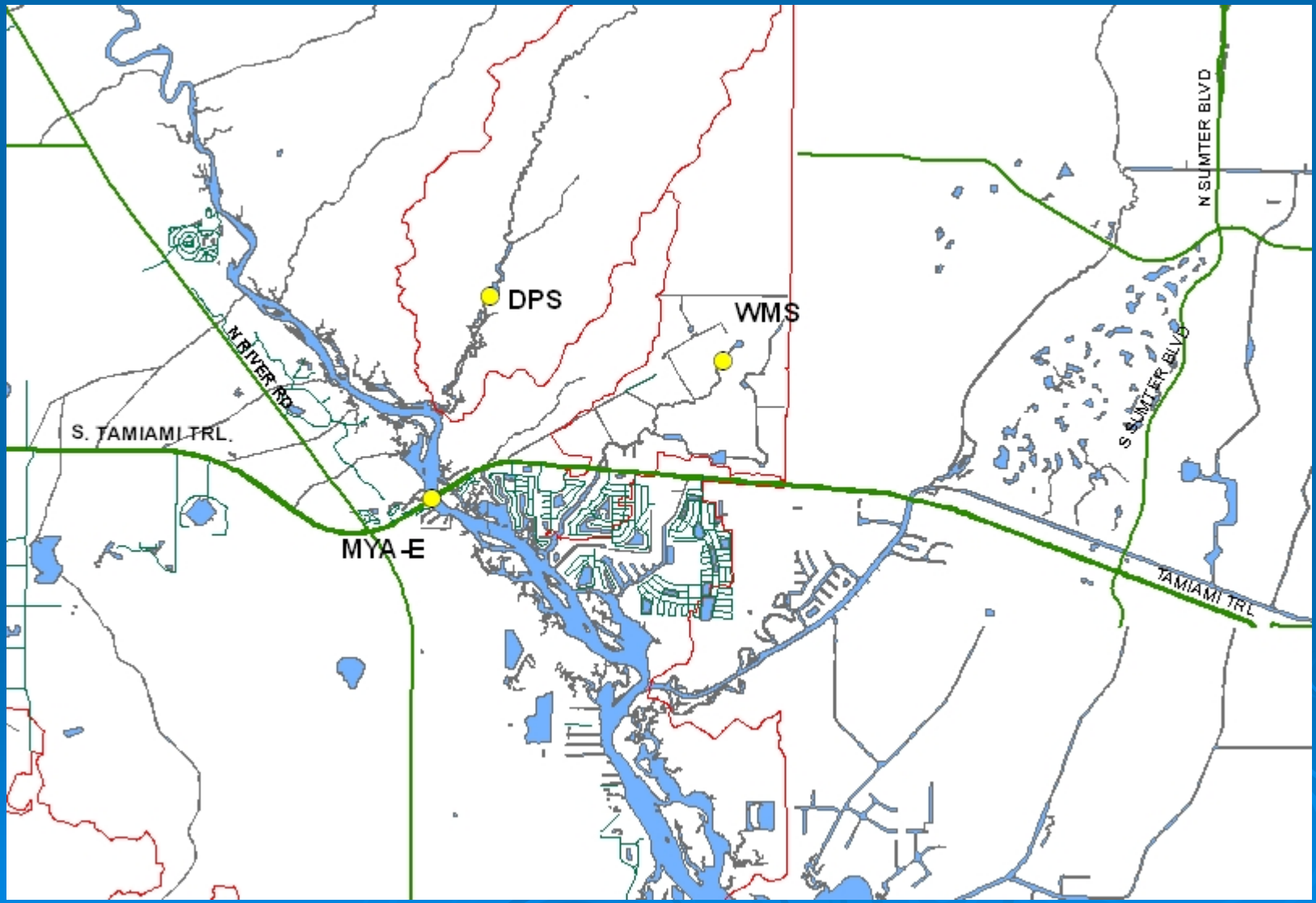
Myakka River Monitoring: North County Sites



Myakka River Monitoring: Central County Sites



Myakka River Monitoring: South County Sites



TMDL UPDATE

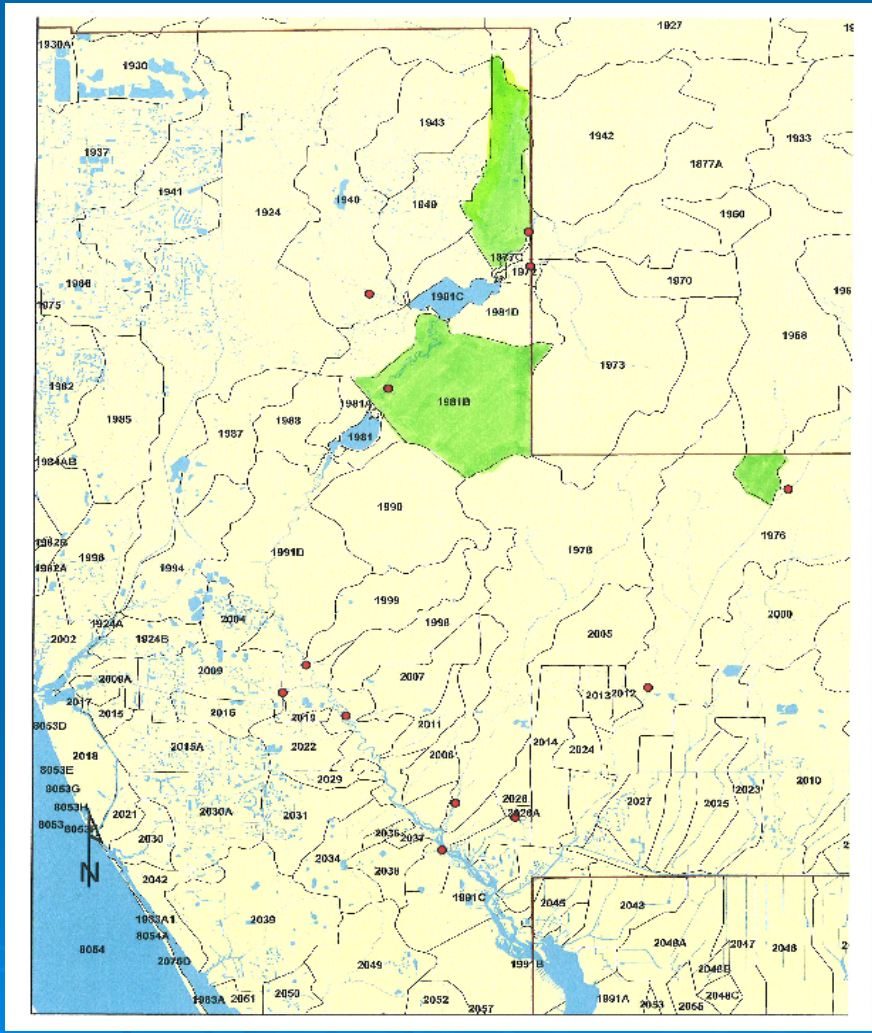
- Group 3 Basins
- Assessed on 5-year rotating basis
- Currently lists verified waterbodies that need TMDLs
- FDEP sampled in 2008
- Assessing new data
- New list expected in late 2009 or early 2010
- TMDLs could change (additional or fewer)

2003 Verified FDEP TMDLs

WBID	Water Segment Name	Waterbody Type	Waterbody Class	Parameter	Year
1869B	Upper Myakka River	Stream	3F	Fecal Coliform	2009
1877A	Upper Myakka River	Stream	3F	Fecal Coliform	2009
1877A	Upper Myakka River	Stream	3F	Total Coliform	2009
1933	Owen Creek	Stream	3F	Fecal Coliform	2009
1955	Wildcat Slough	Stream	3F	Fecal Coliform	2009
1958	Mud Lake Slough	Stream	3F	Fecal Coliform	2009
1958	Mud Lake Slough	Stream	3F	Total Coliform	2009
1981B	Myakka River	Stream	1	Dissolved Oxygen	2009
1981B	Myakka River	Stream	1	Iron	2009
1981B	Myakka River	Stream	1	Nutrients	2009
Manatee County WBID					
Sarasota and Manatee County WBID					

Current WBIDs of Concern

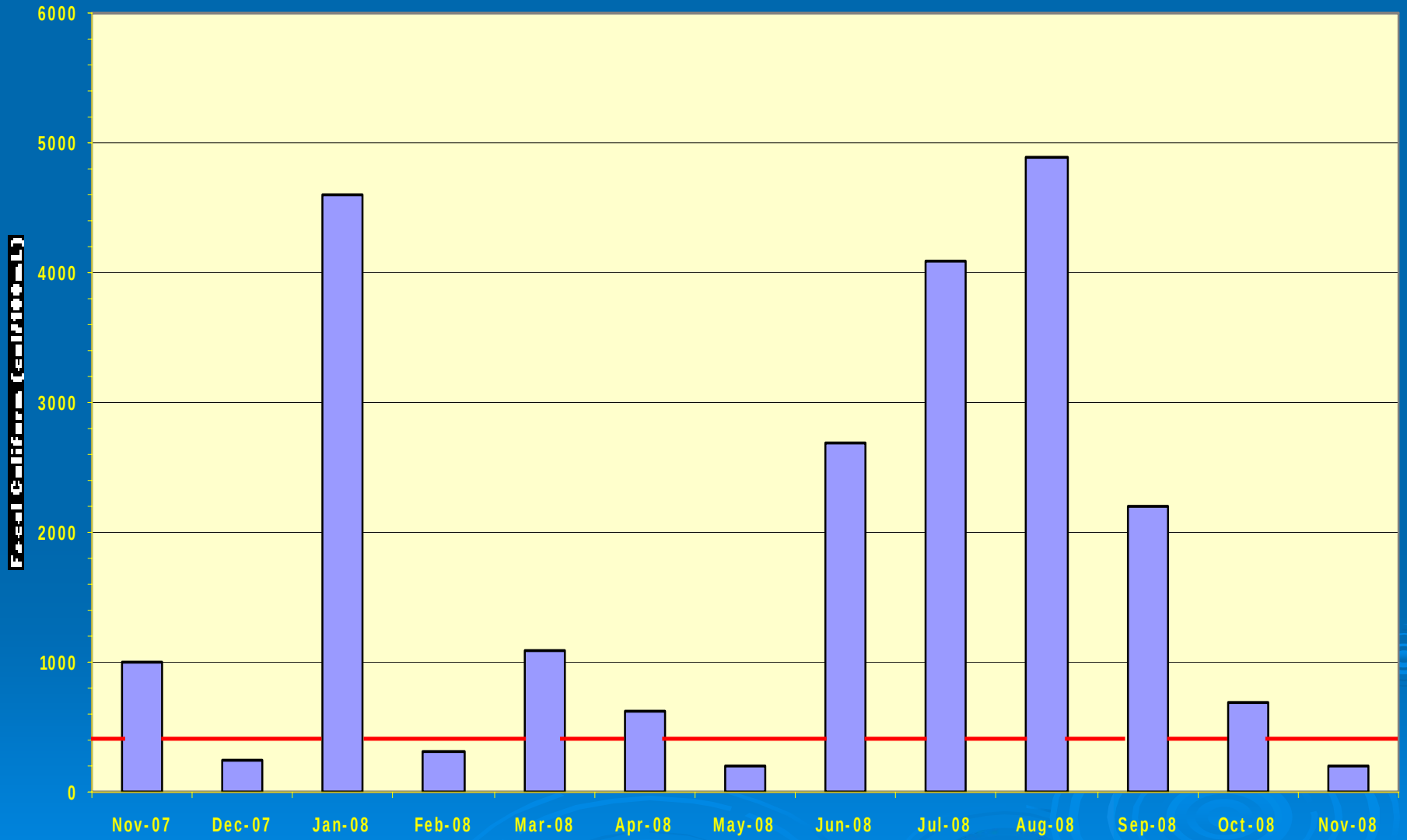
WBID	Water Segment	Waterbody Type
1869B	Upper Myakka River	Stream
1877A	Upper Myakka River	Stream
1877A	Upper Myakka River	Stream
1933	Owen Creek	Stream
1955	Wildcat Slough	Stream
1958	Mud Lake Slough	Stream
1958	Mud Lake Slough	Stream
1981B	Myakka River	Stream
1981B	Myakka River	Stream
1981B	Myakka River	Stream
Manatee County WBID		
Sarasota and Manatee County WBID		



WATER QUALITY DATA

- **TMDL WBIDs**
  - **WBID 1981B – Largest portion in Sarasota County; Myakka River between upper and lower lakes; Iron, DO, Nutrients (Chl ”a”) TMDLs**
  - **WBID 1877A – Large portion is in Manatee County; Upper River; North of Park Fecal Coliform TMDL**
  - **WBID 1958 – Mud Lake Slough; Largest portion in Manatee County; Not Sampling; No Data**
  - **Watershed – DO, Chlorophyll, TN, TP**

WBID 1877A - Fecal Coliform

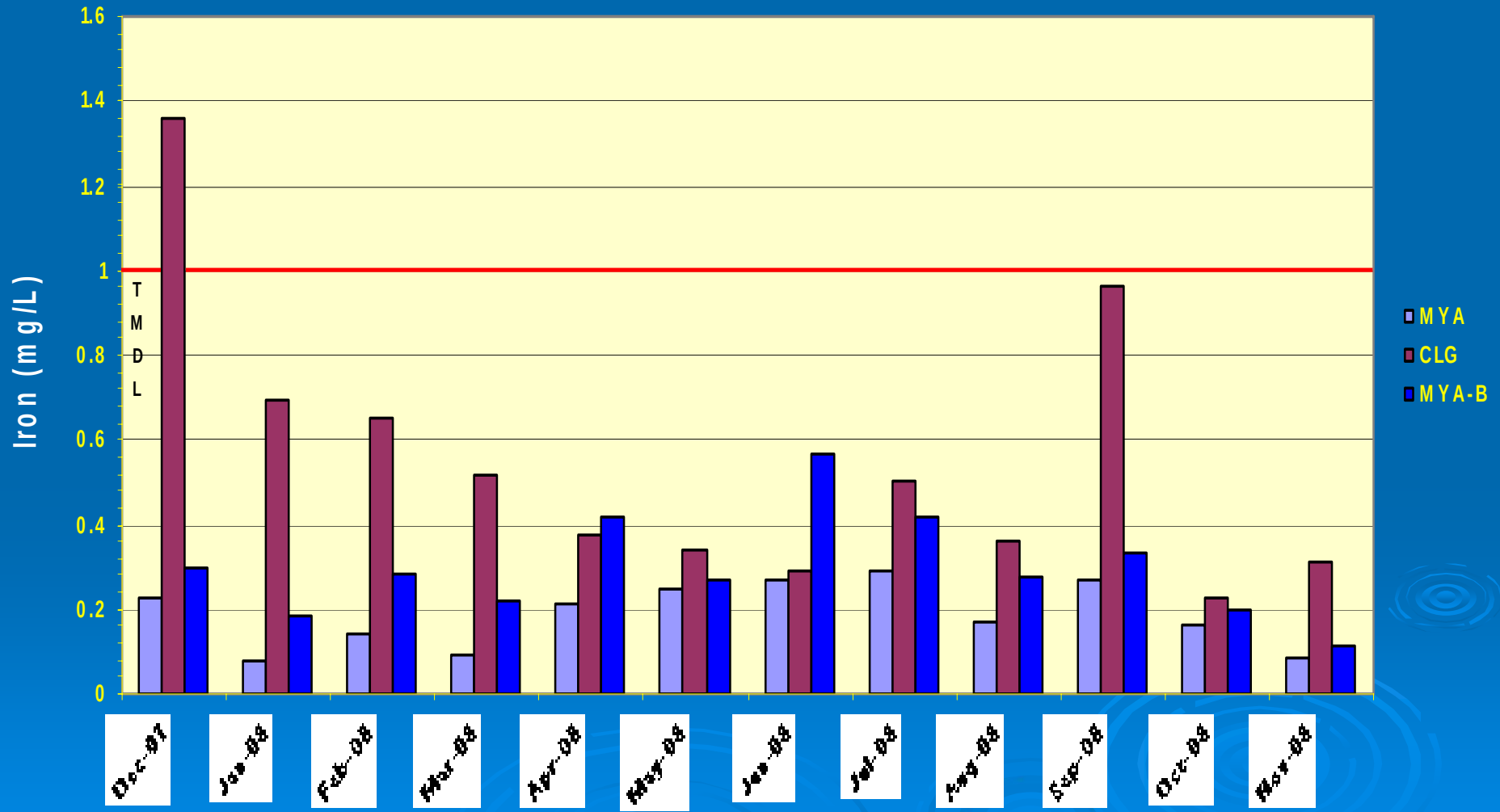


IRON TMDL – WBID 1981B

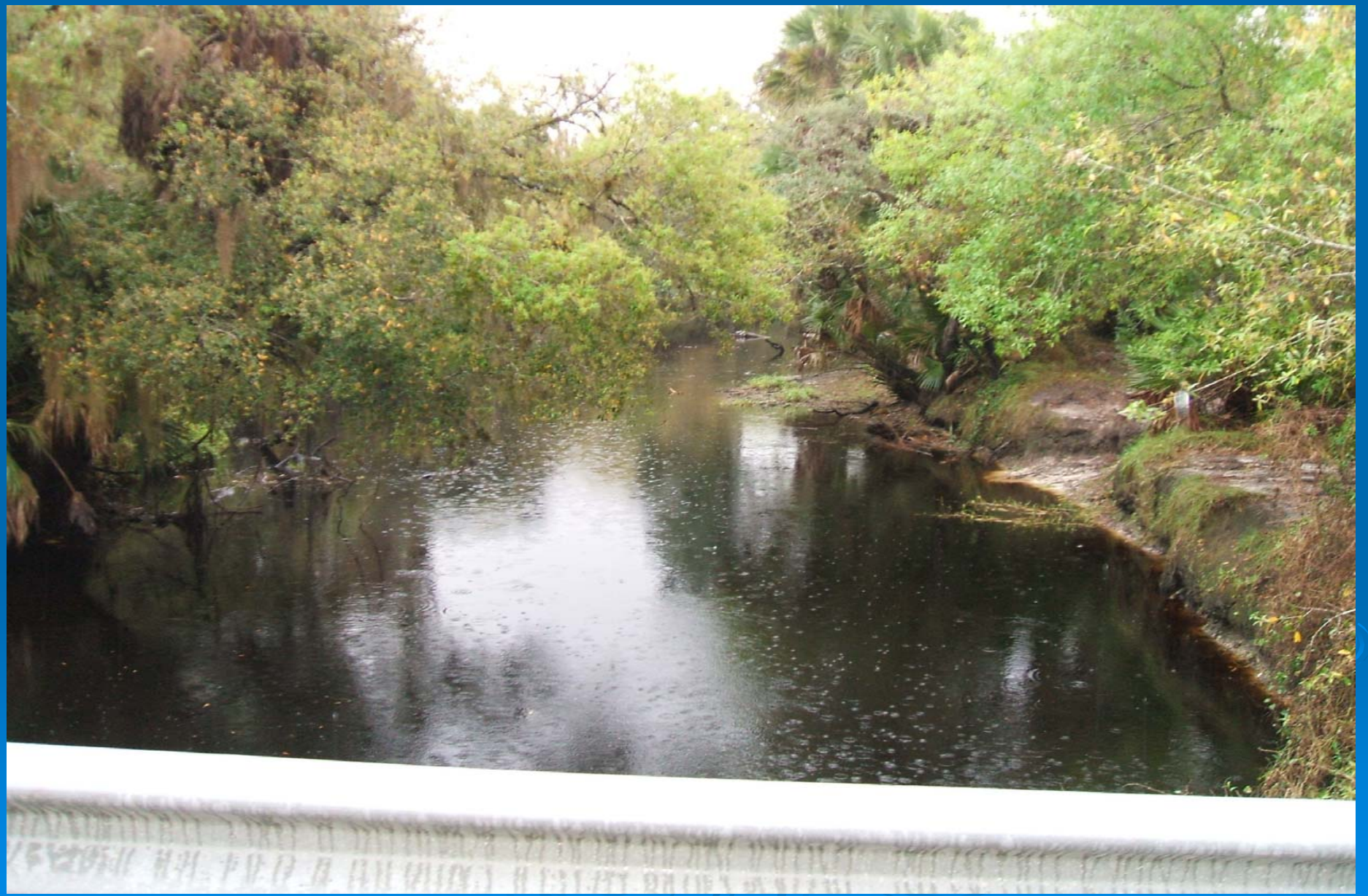
- **Iron appears to be from natural sources**
  - The 4th most abundant element in the earth's crust
  - Natural waters contain variable amounts of iron depending on the geological area
  - Sarasota County ground water typically contains elevated levels of iron
  - Iron is in its soluble form in soils with pH < 7.0
  - Wetlands upstream could be contributing
  - Clay Gully appears to be major contributor

Myakka River - WBID 1981B

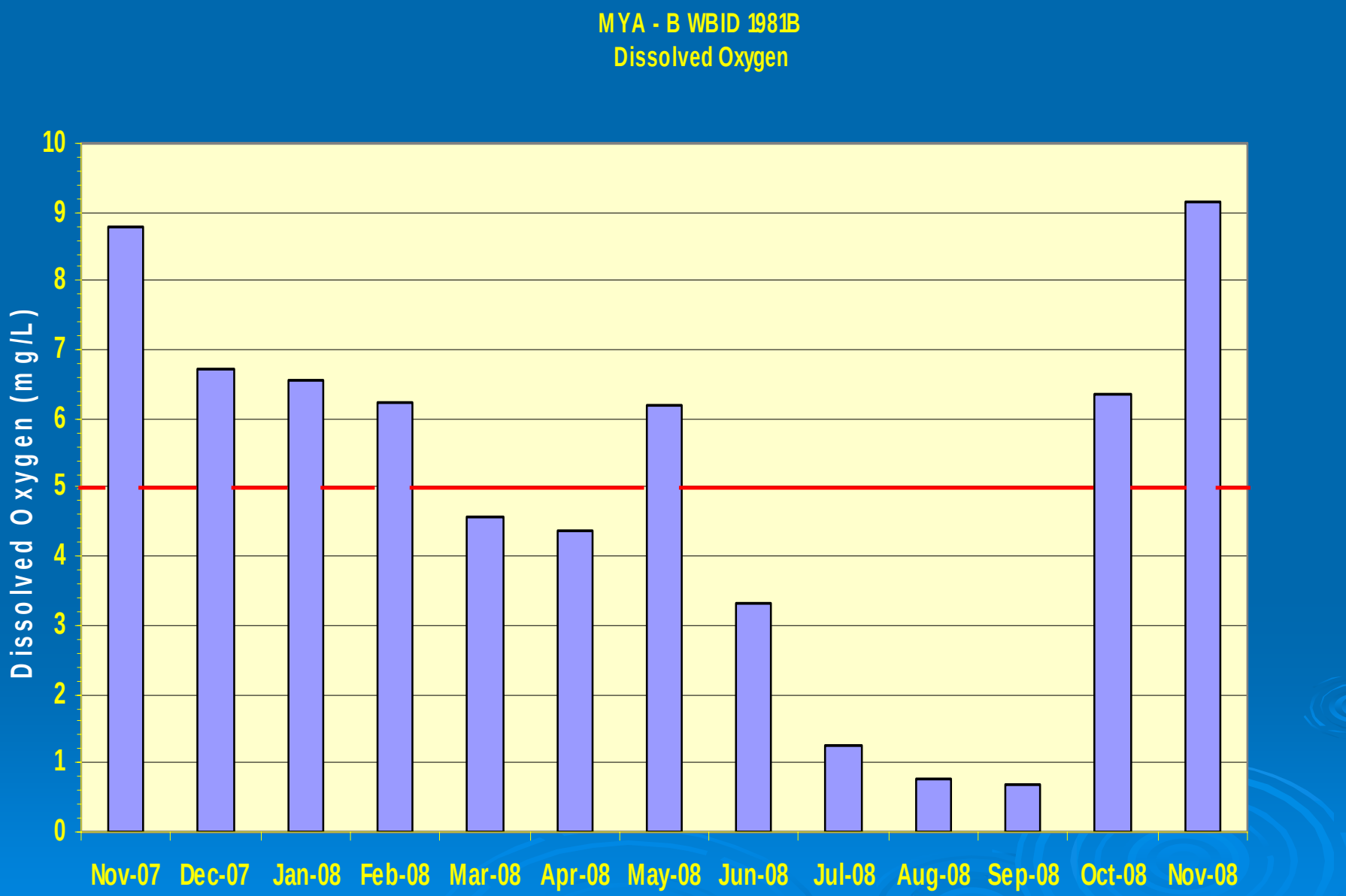
IRON



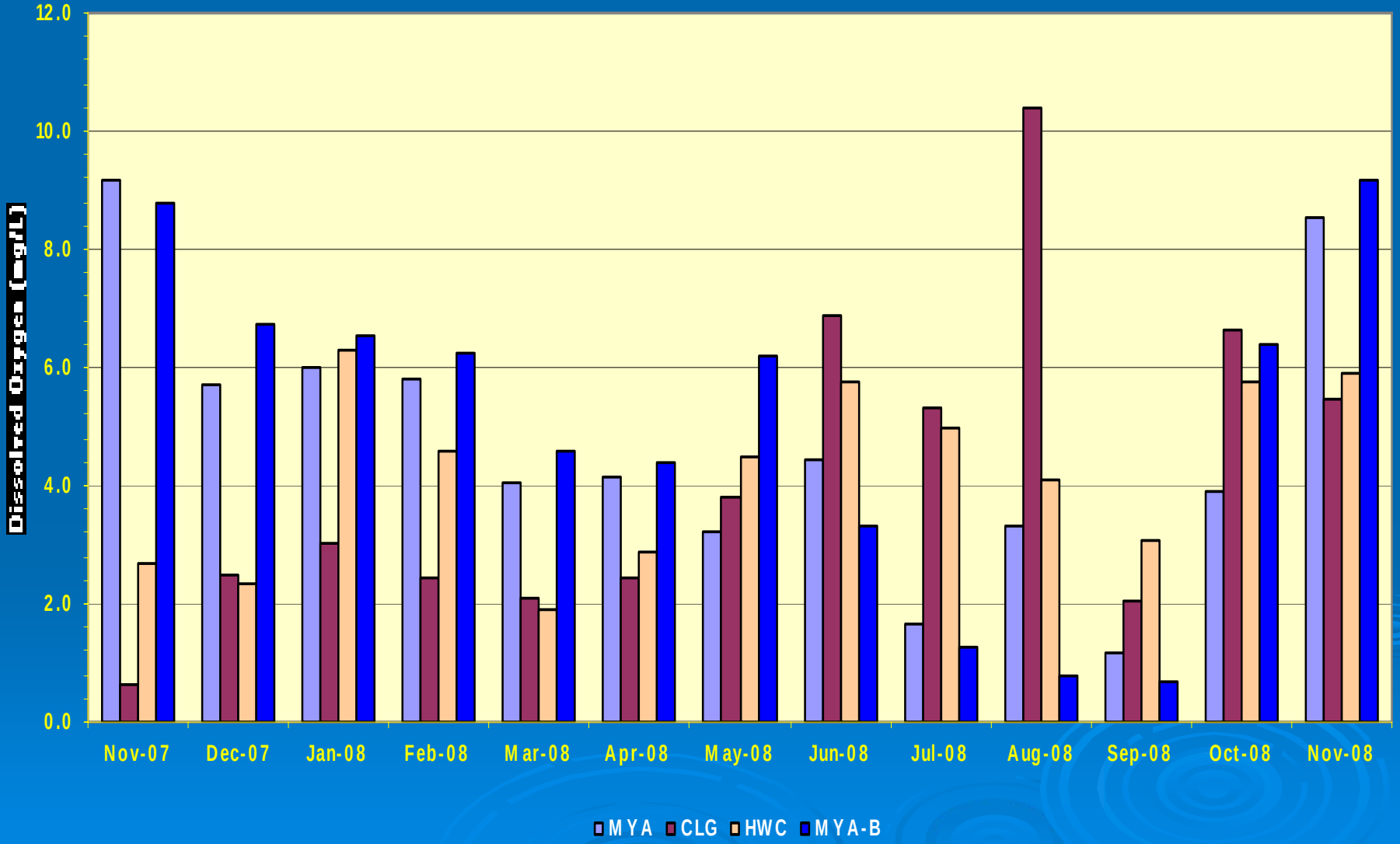
Clay Gully – WBID 1972



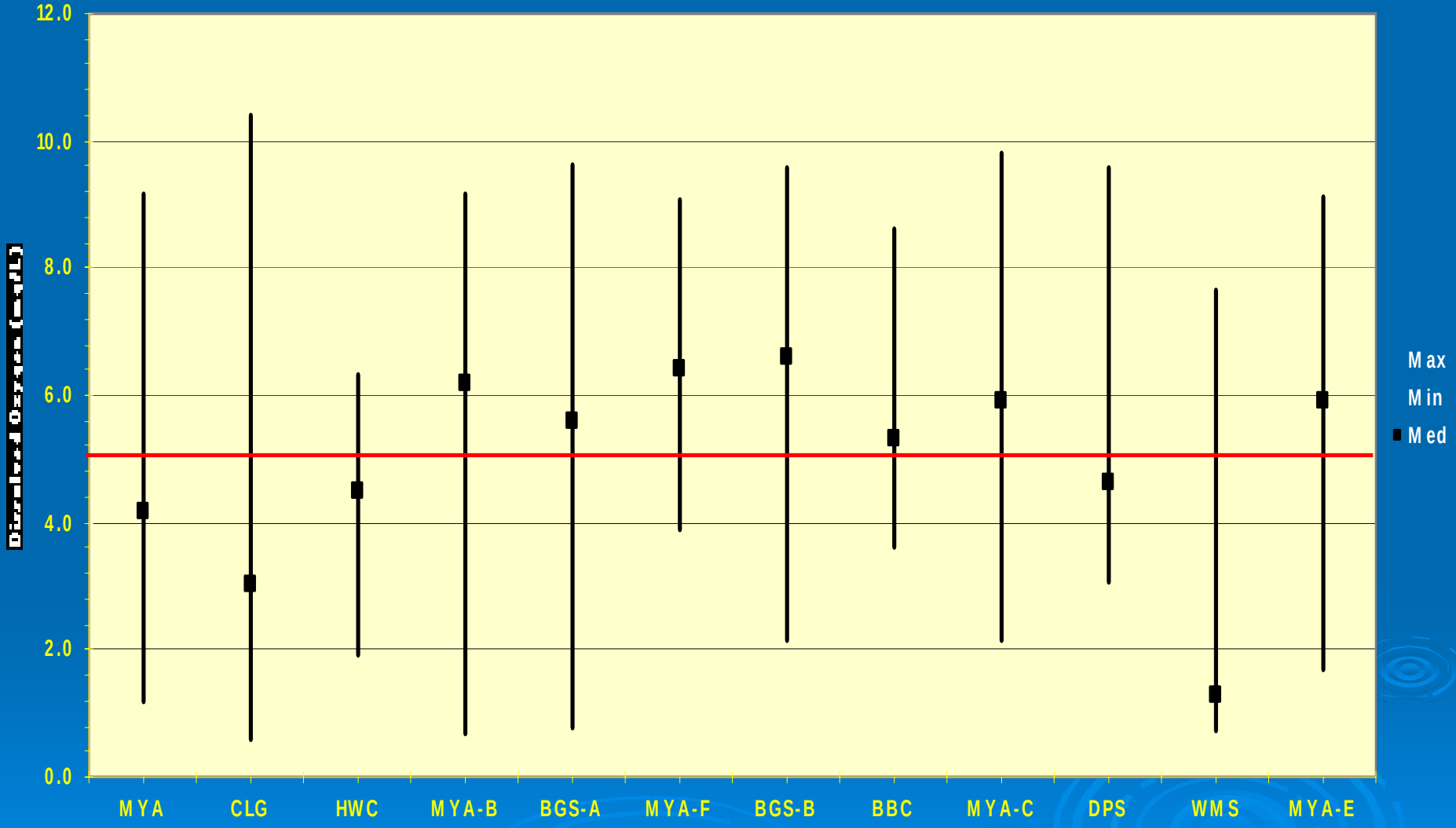
Clay Gully

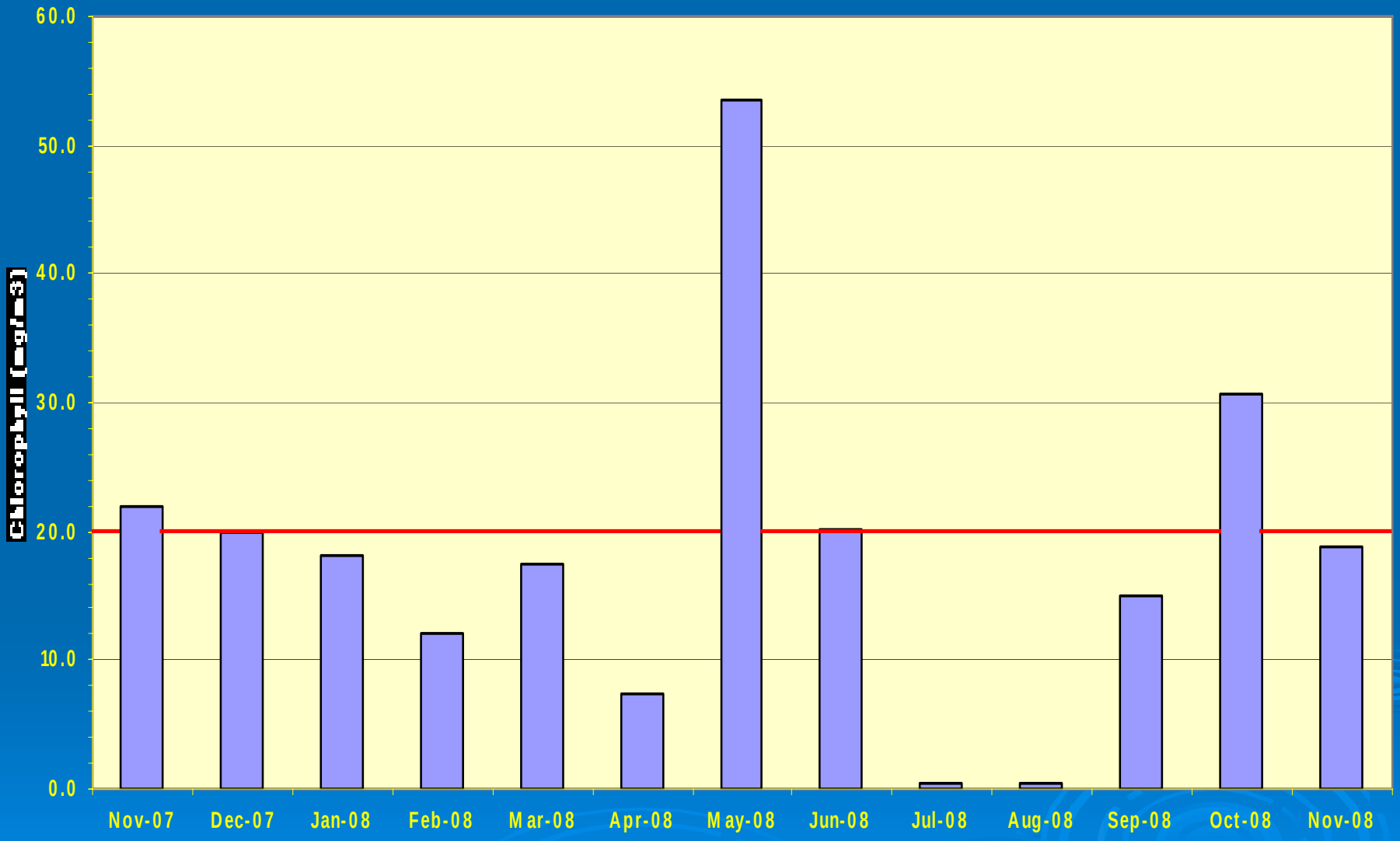

MYA - B WBID 1981B
Dissolved Oxygen
Dissolved Oxygen (mg/L)
10
9
8
7
6
5
4
3
2
1
0
Nov-07
Dec-07
Jan-08
Feb-08
Mar-08
Apr-08
May-08
Jun-08
Jul-08
Aug-08
Sep-08
Oct-08
Nov-08

Upper Myakka River - Dissolved Oxygen

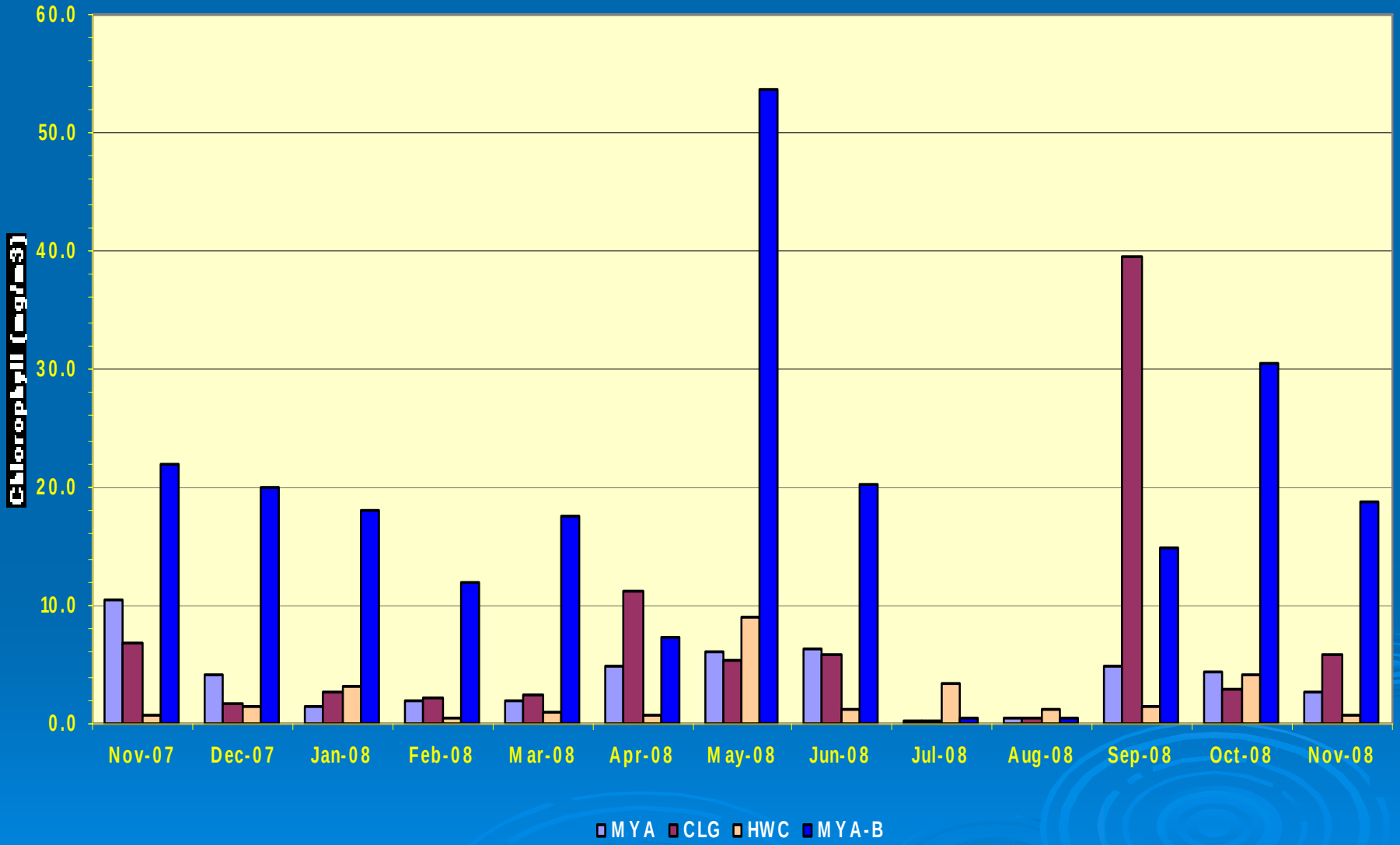


Myakka River Watershed - Dissolved Oxygen
Max./Min./Median

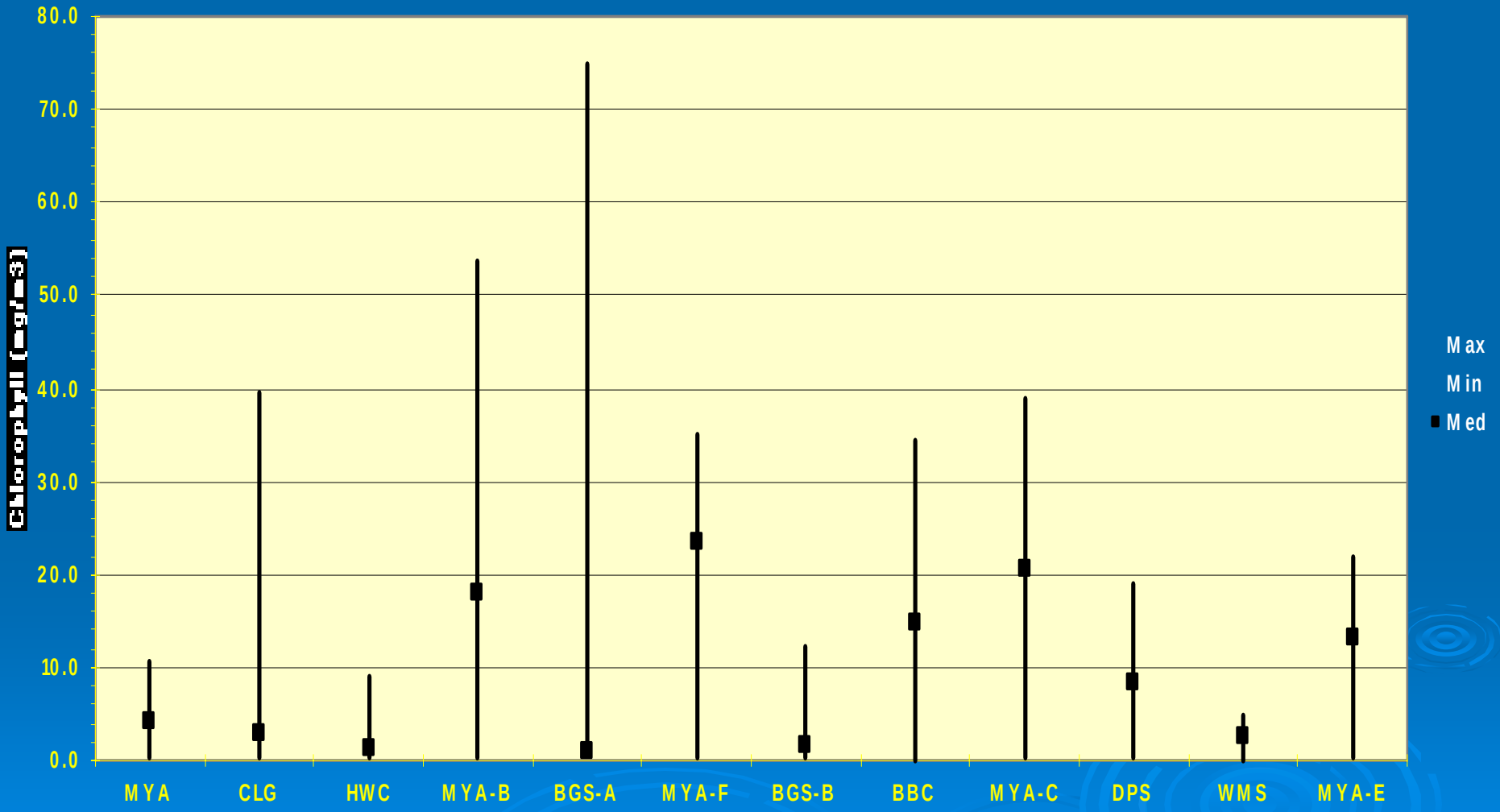



WBID 1981B - Chlorophyll "a"
Chlorophyll (mg/m^3)
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Nov-07
Dec-07
Jan-08
Feb-08
Mar-08
Apr-08
May-08
Jun-08
Jul-08
Aug-08
Sep-08
Oct-08
Nov-08

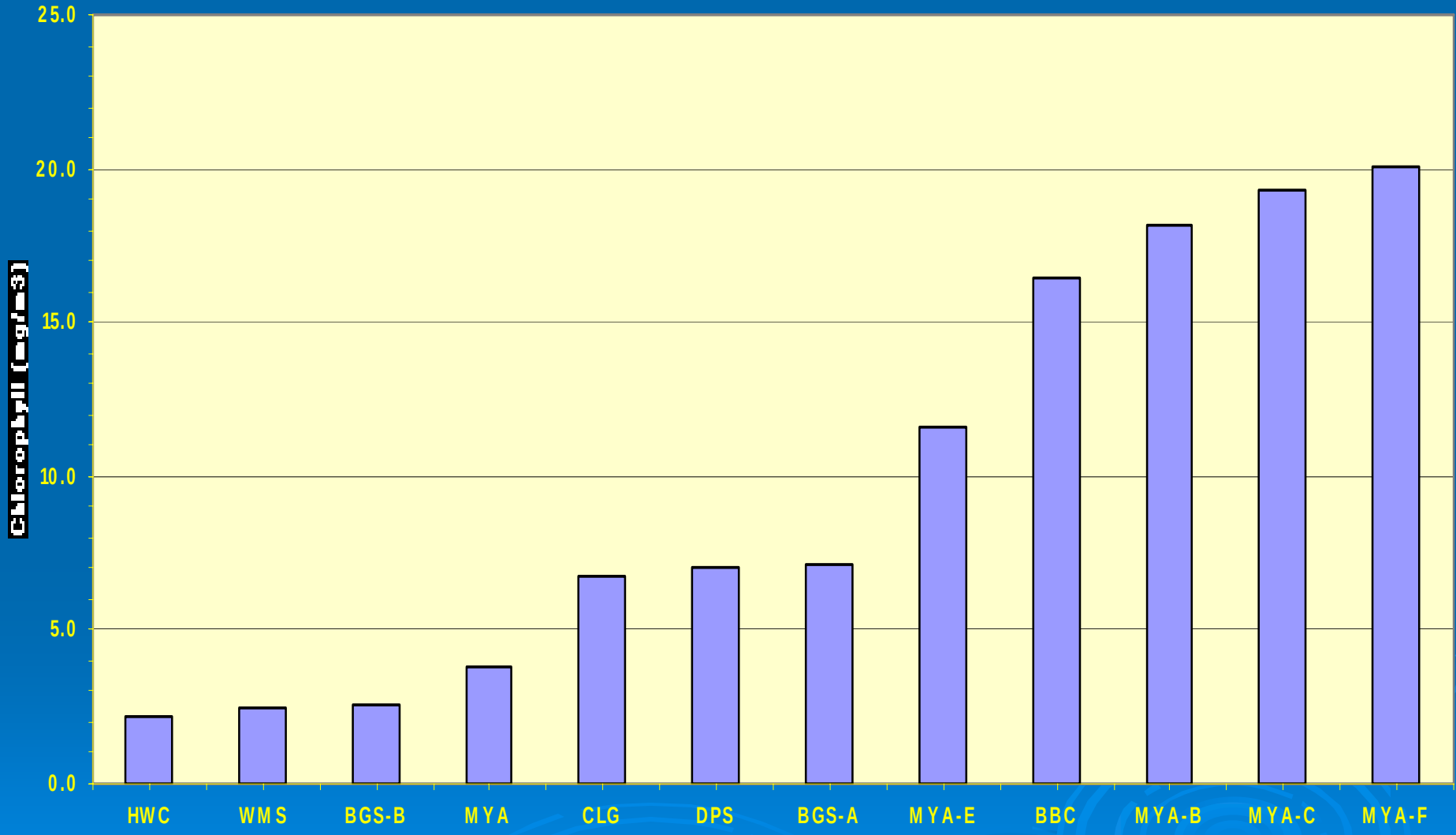
Upper Myakka River - Chlorophyll "a"



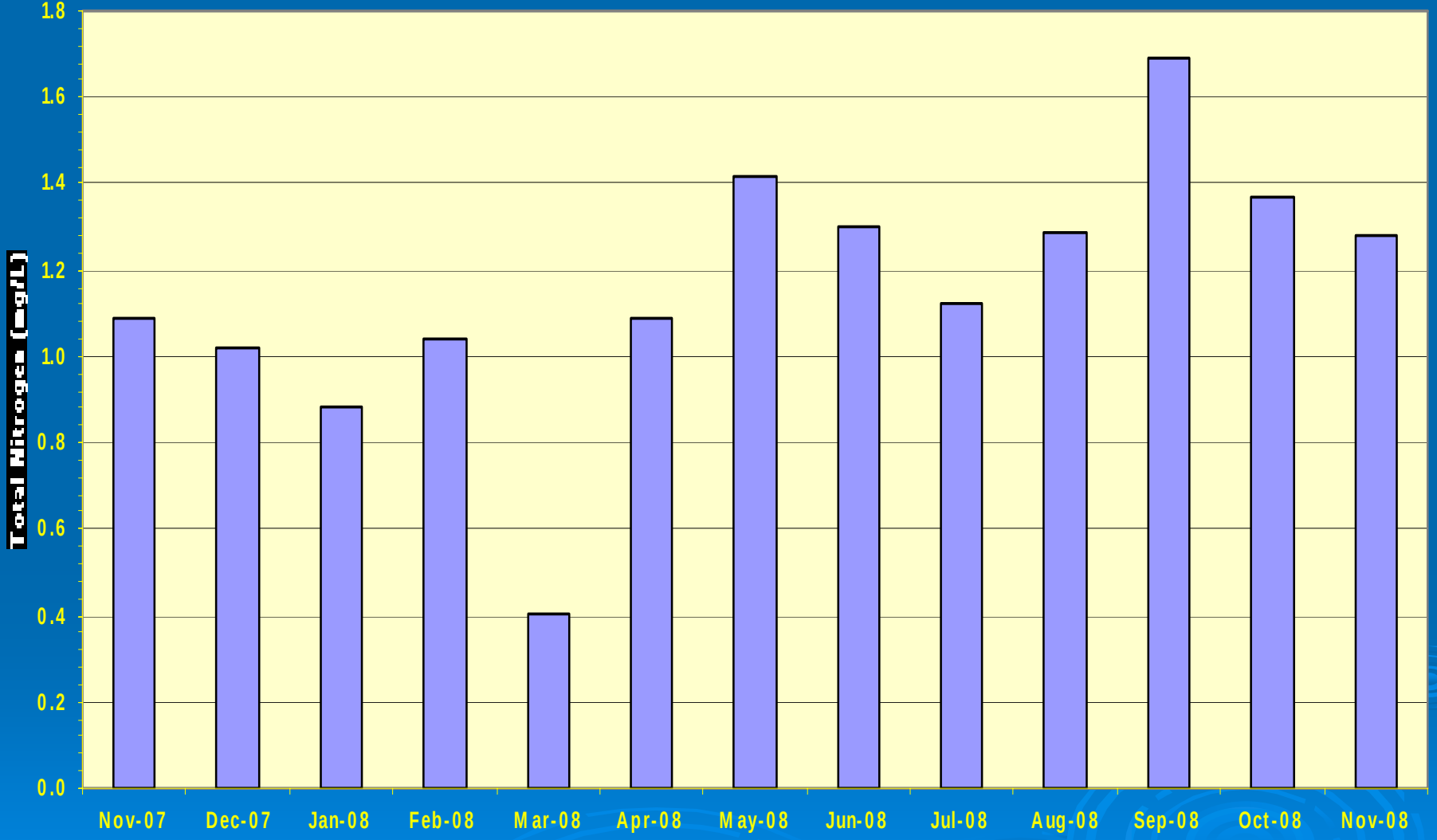
Myakka River Watershed - Chlorophyll
Max.Med.Med.



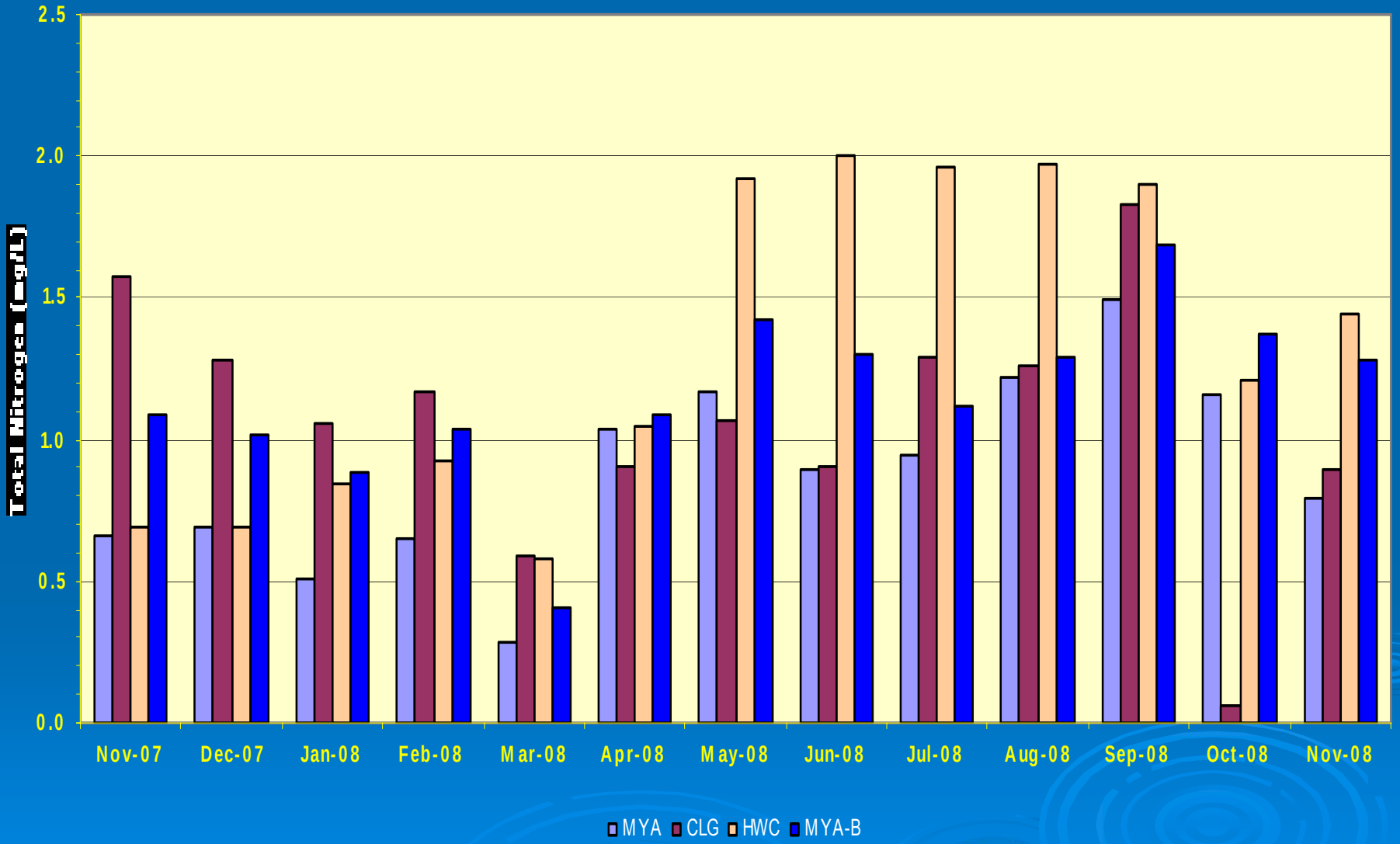
Myakka River Watershed - Average Chlorophyll



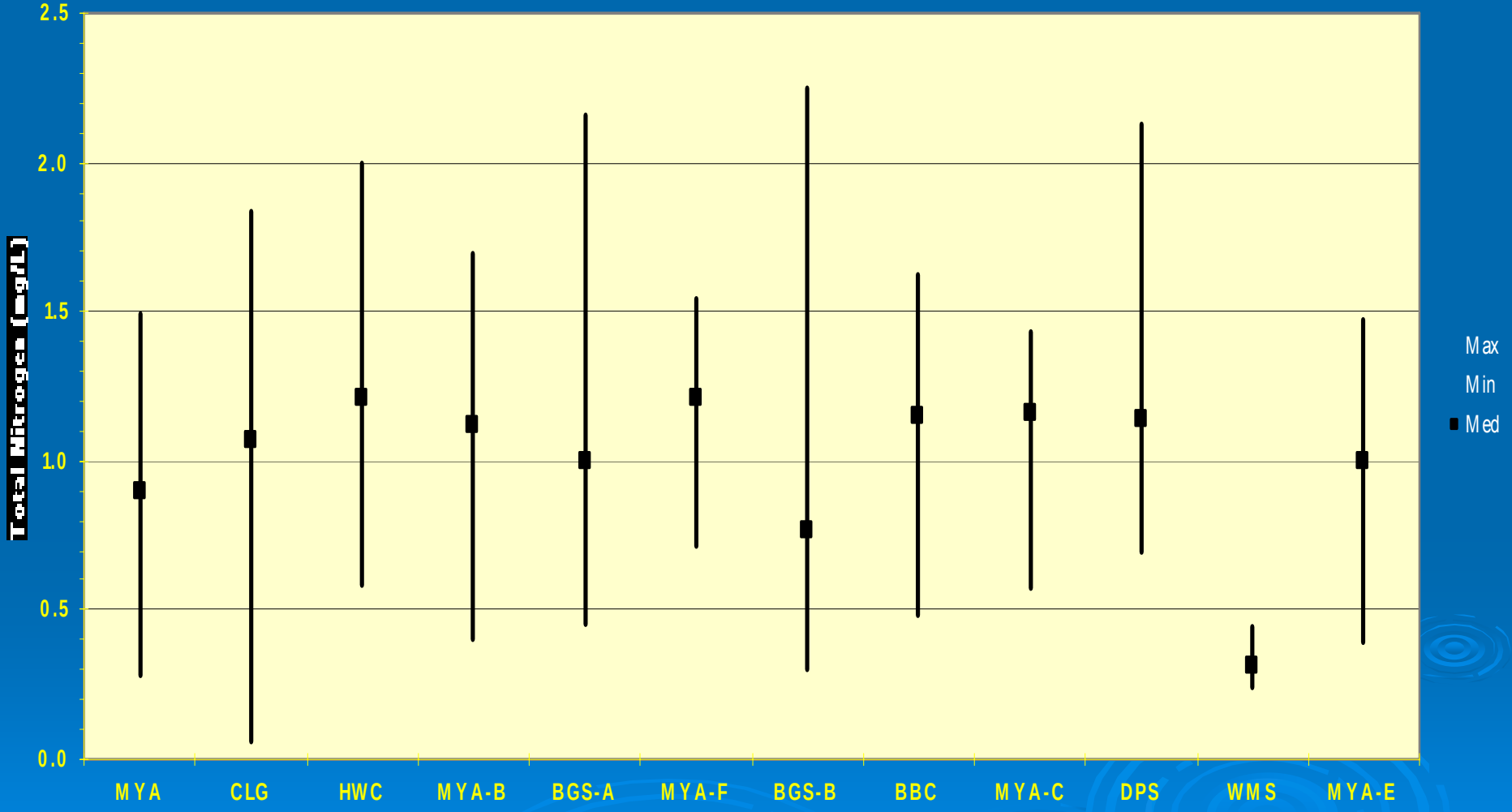
WBID 1981B - Total Nitrogen



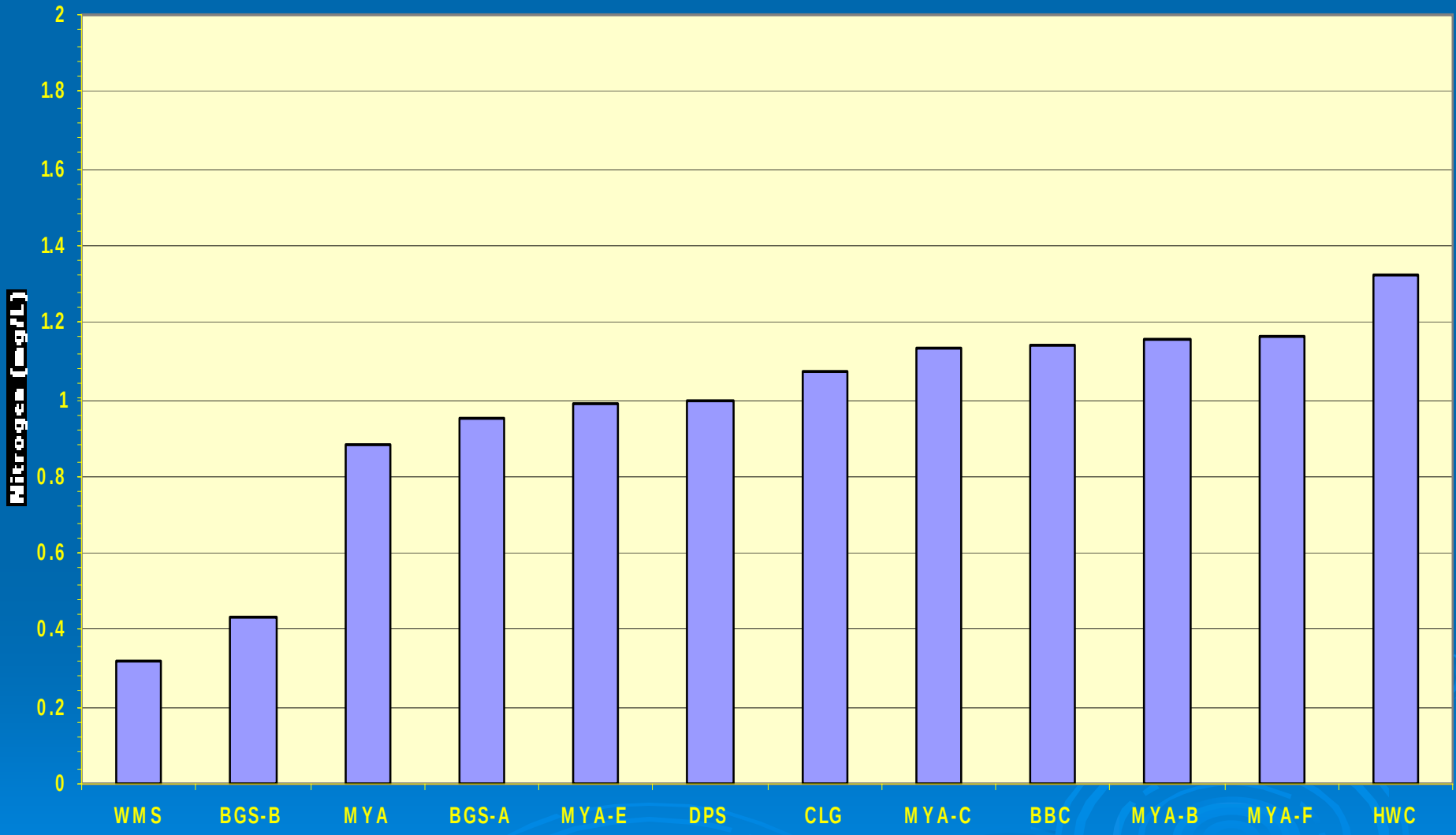
Upper Myakka River - Total Nitrogen



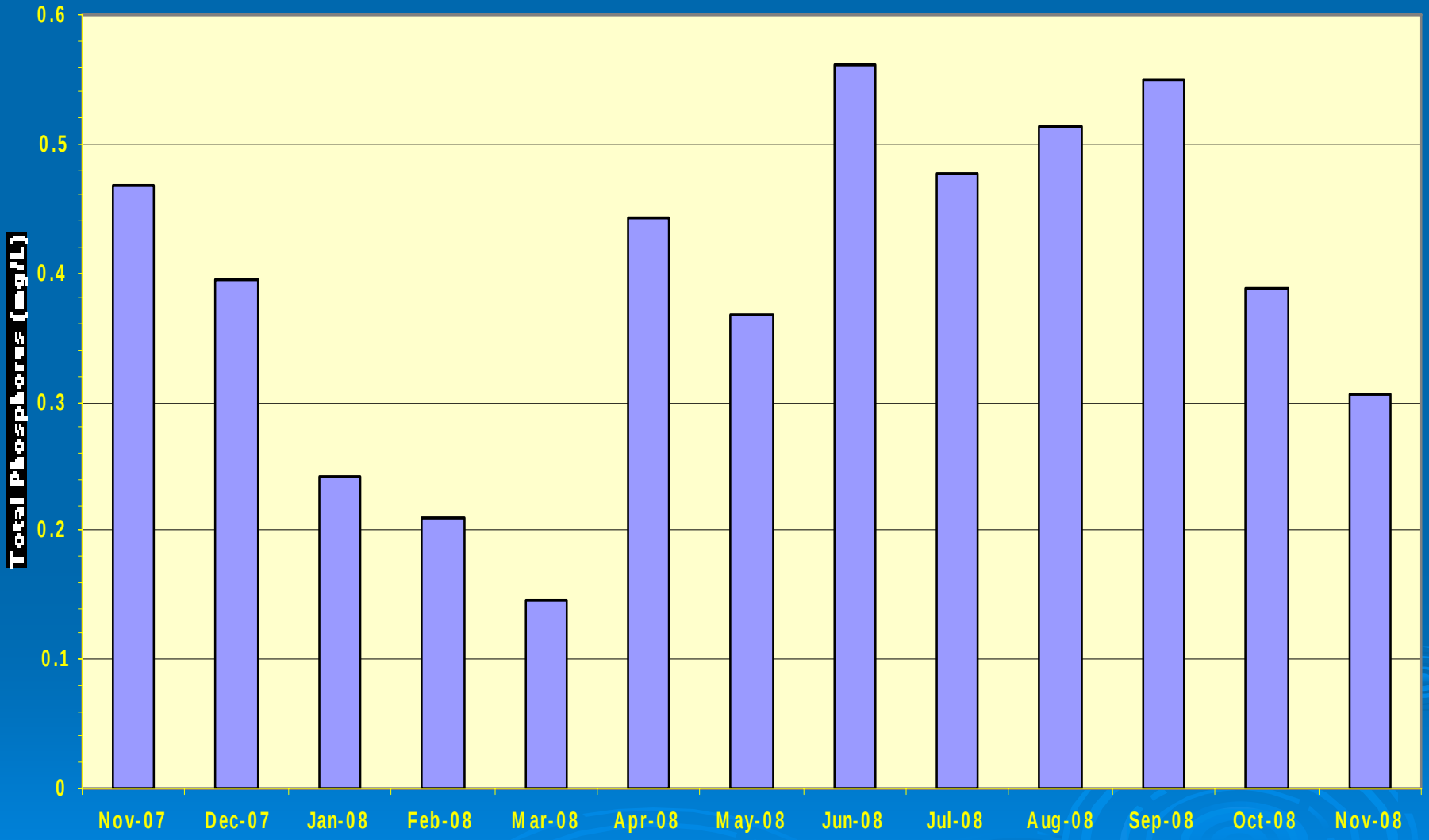
Myakka River Watershed - Total Nitrogen
Max./Min./Median



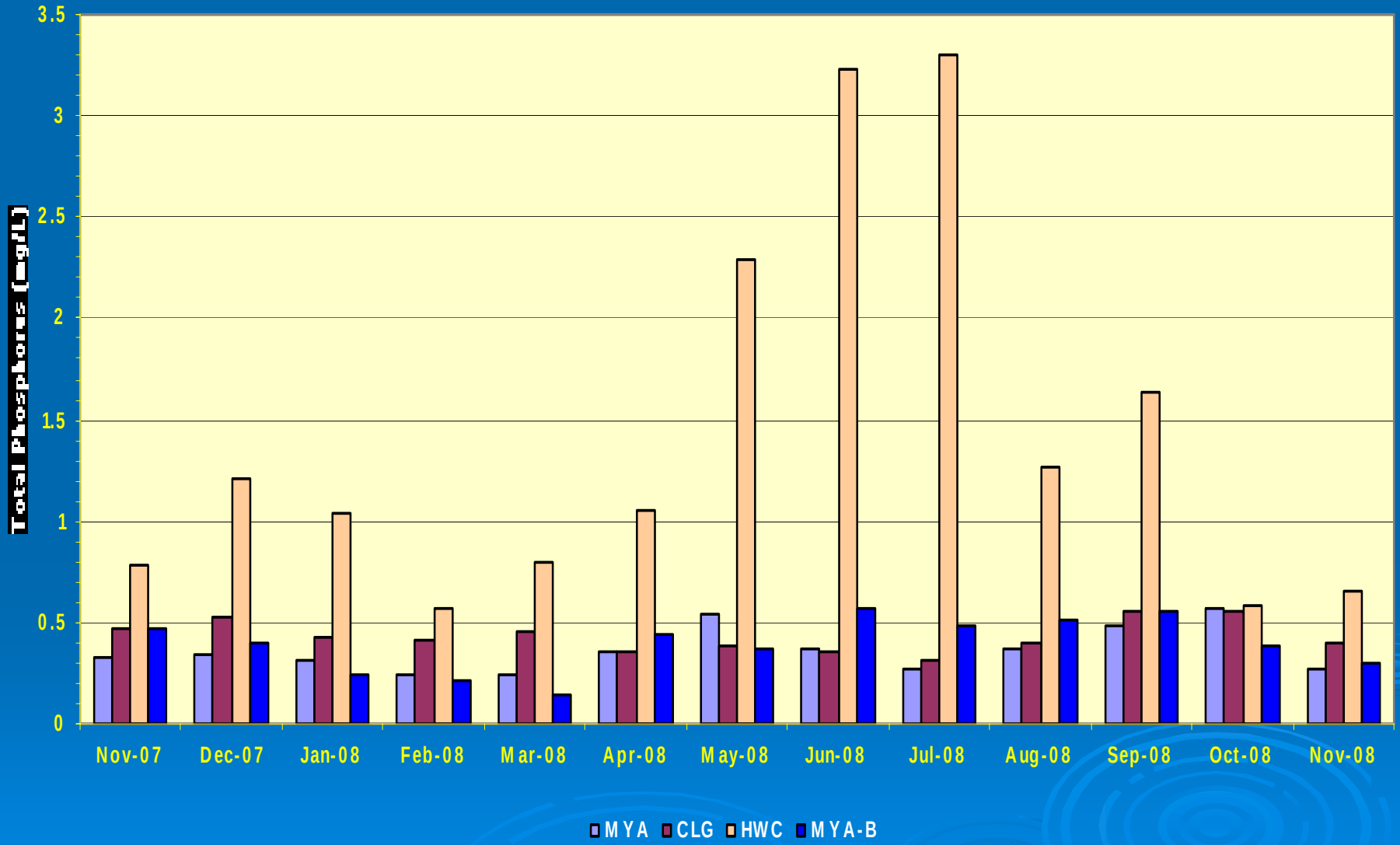
Myakka River Watershed - Average Nitrogen



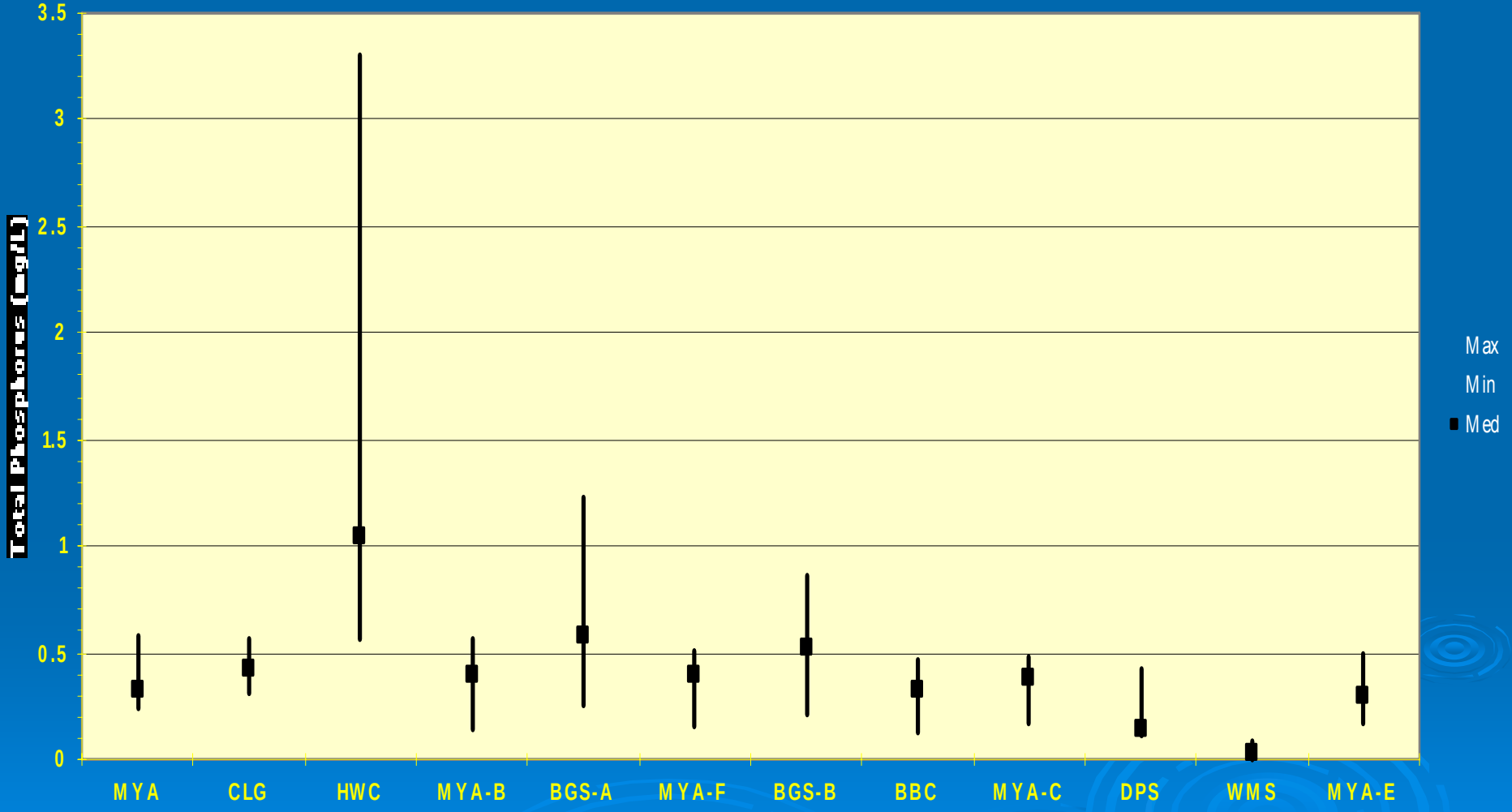
WBID 1981B - Total Phosphorus



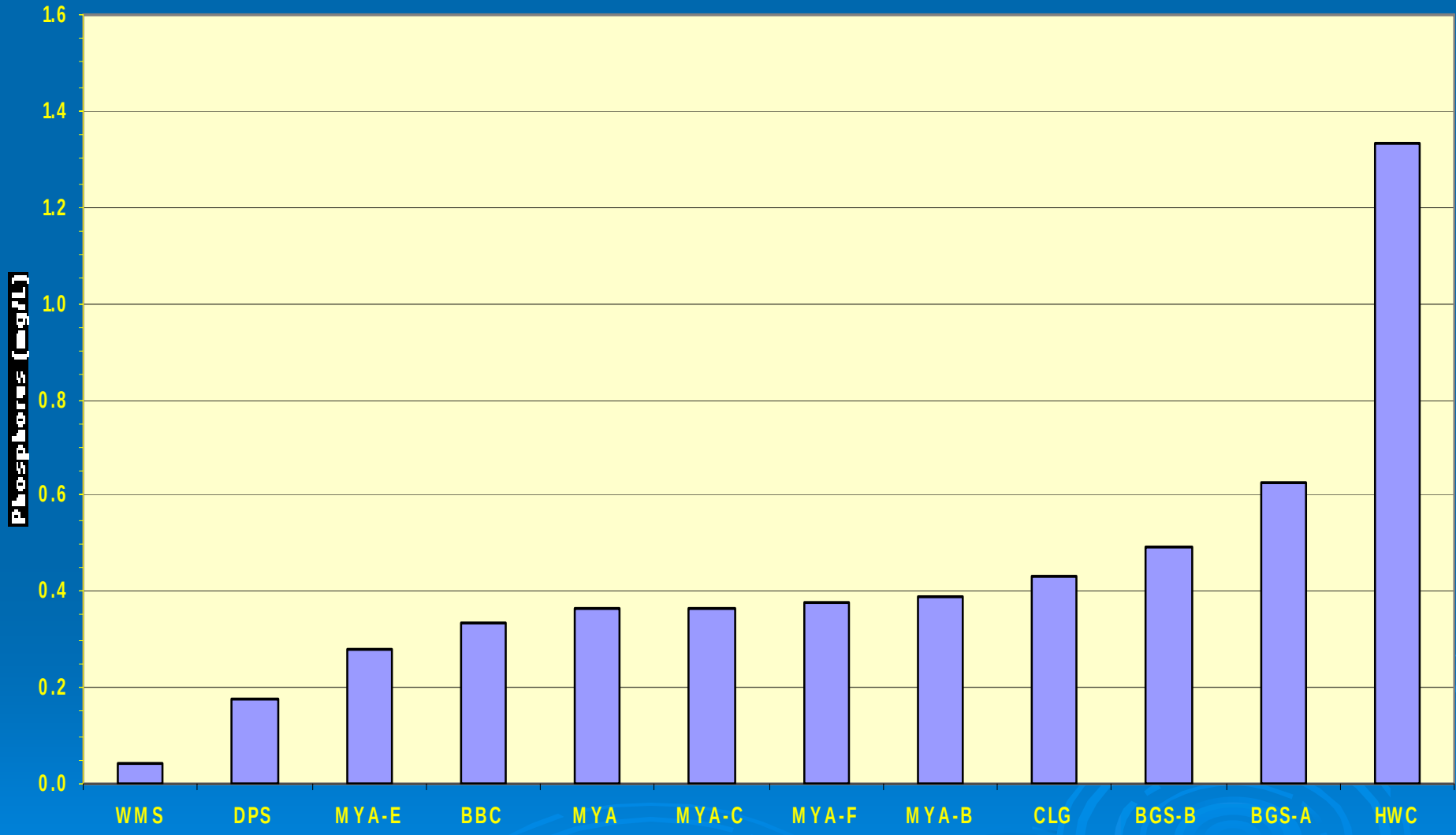
Upper Myakka River - Total Phosphorus



Myakka River Watershed - Total Phosphorus
Max./Min./Median



Myakka River Watershed - Average Phosphorus



Observations

- The data supports the fecal coliform TMDL for WBID 1877A. The source is likely wildlife and cattle.
- The iron value has only exceeded the 1 mg/L TMDL standard once. Clay Gully appears to be a natural source. Additional sampling may support delisting.
- DO values do drop below 5.0 mg/L in WBID 1981B. 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.
- The chlorophyll and nutrient values may be lower because of long-term drought conditions
- Howard Creek appears to be a significant source of phosphorus.
- More data needed to evaluate seasonality especially if drought ends


The End