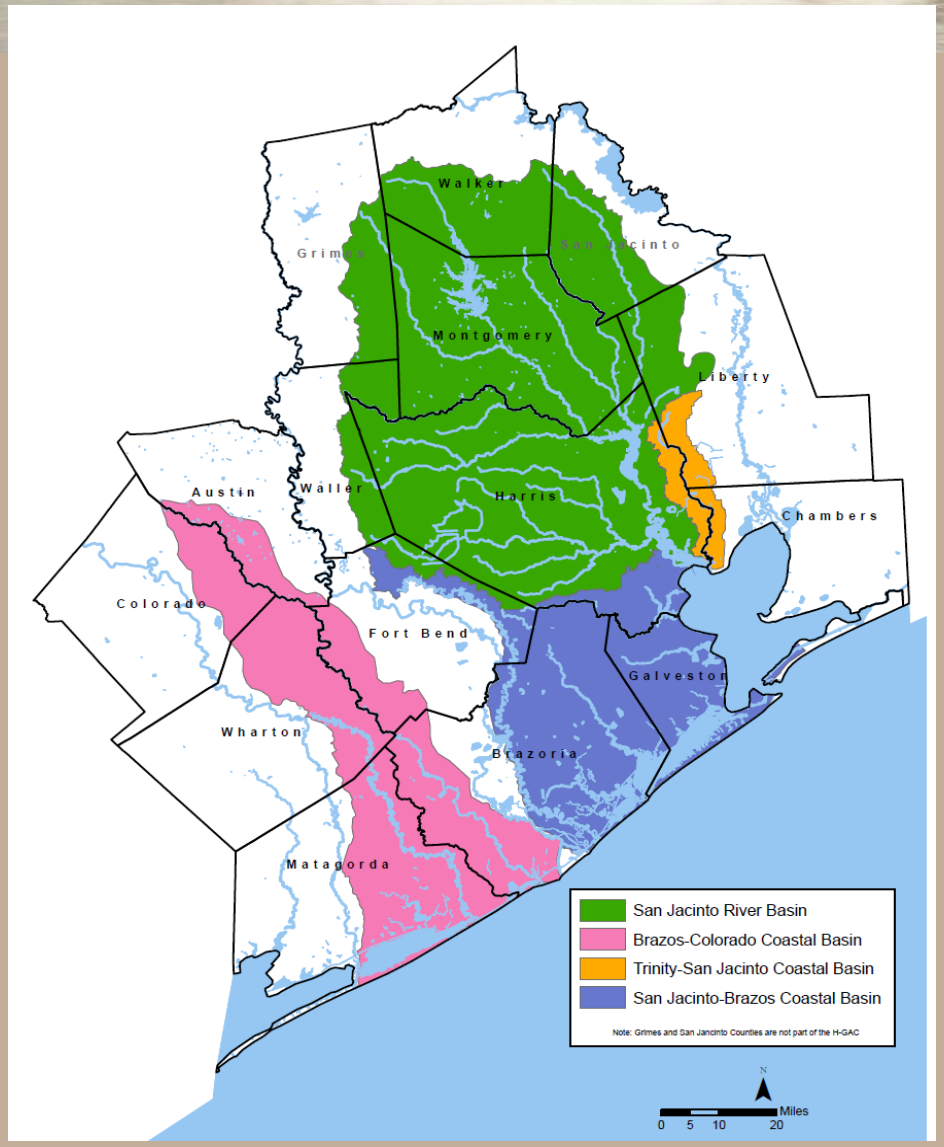
H-GAC's Clean Rivers Program

Todd Running
Houston-Galveston Area Council
LCRA Water Quality Advisory Committee- 2/4/14

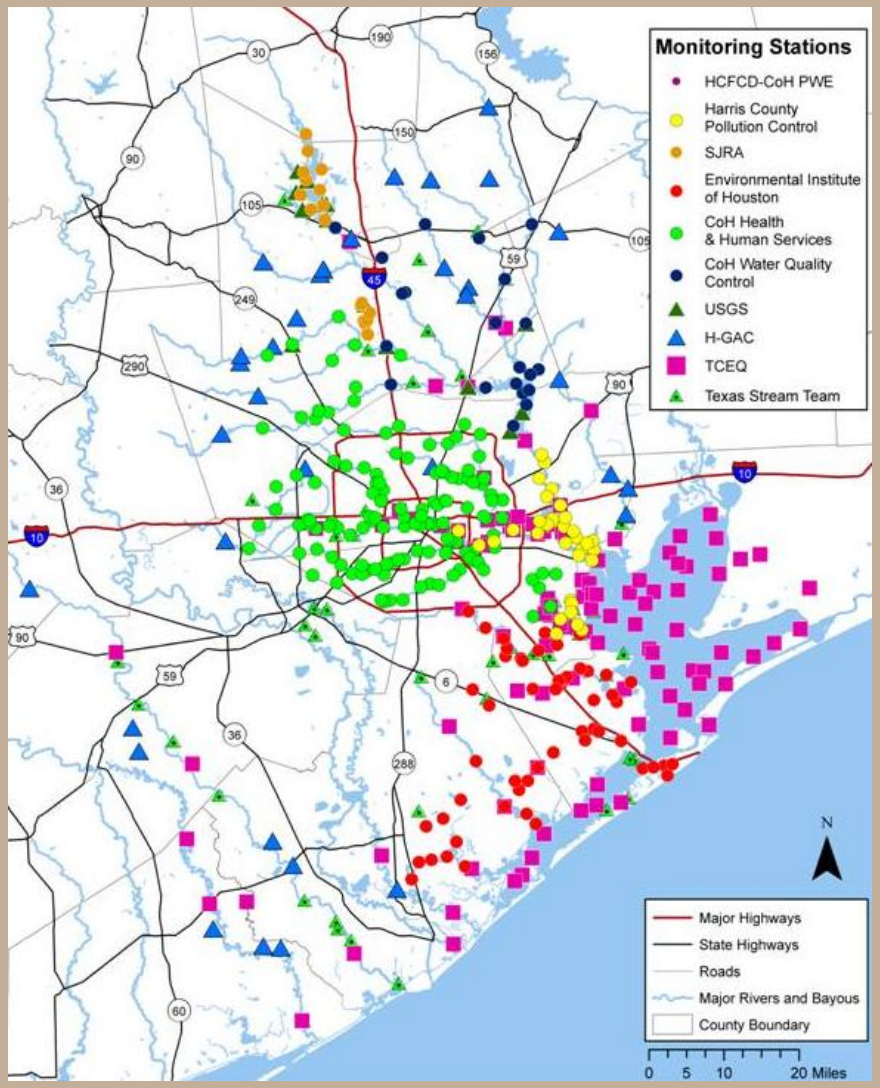
H-GAC's Clean Rivers Program



CRP Assessment Area

- 15 Counties
- One River and Three Coastal Basins
- 16,000 Miles of Streams and Shoreline
- Population of over 5 million

Regional Coordinated Monitoring



Professional Monitoring

- 8 local partners
  + TCEQ
  + USGS
- Over 370 Sites
- Monitored at least quarterly
- All data collected under an approved QAPP

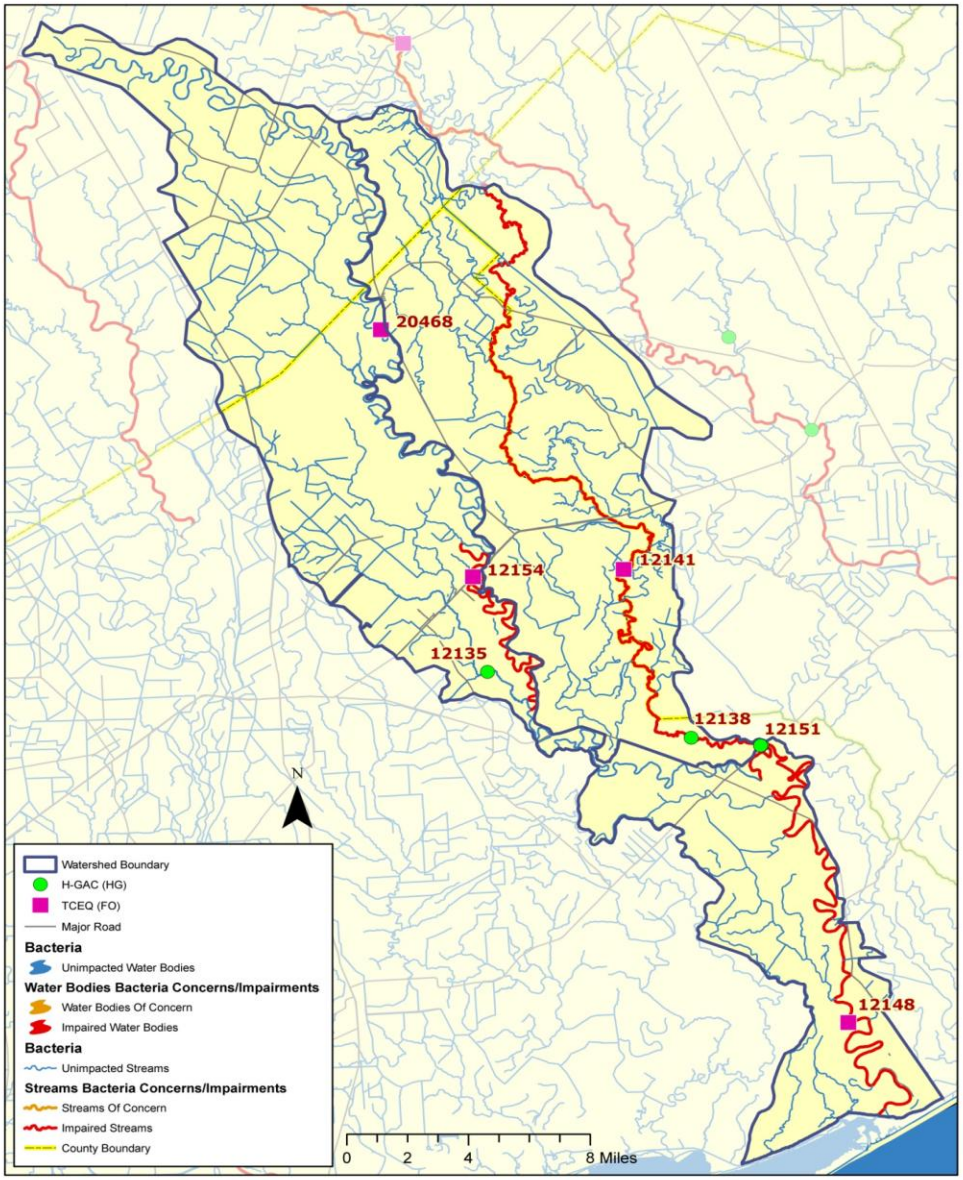
Stream Team Monitoring

- 92 Volunteers
- 65 Sites

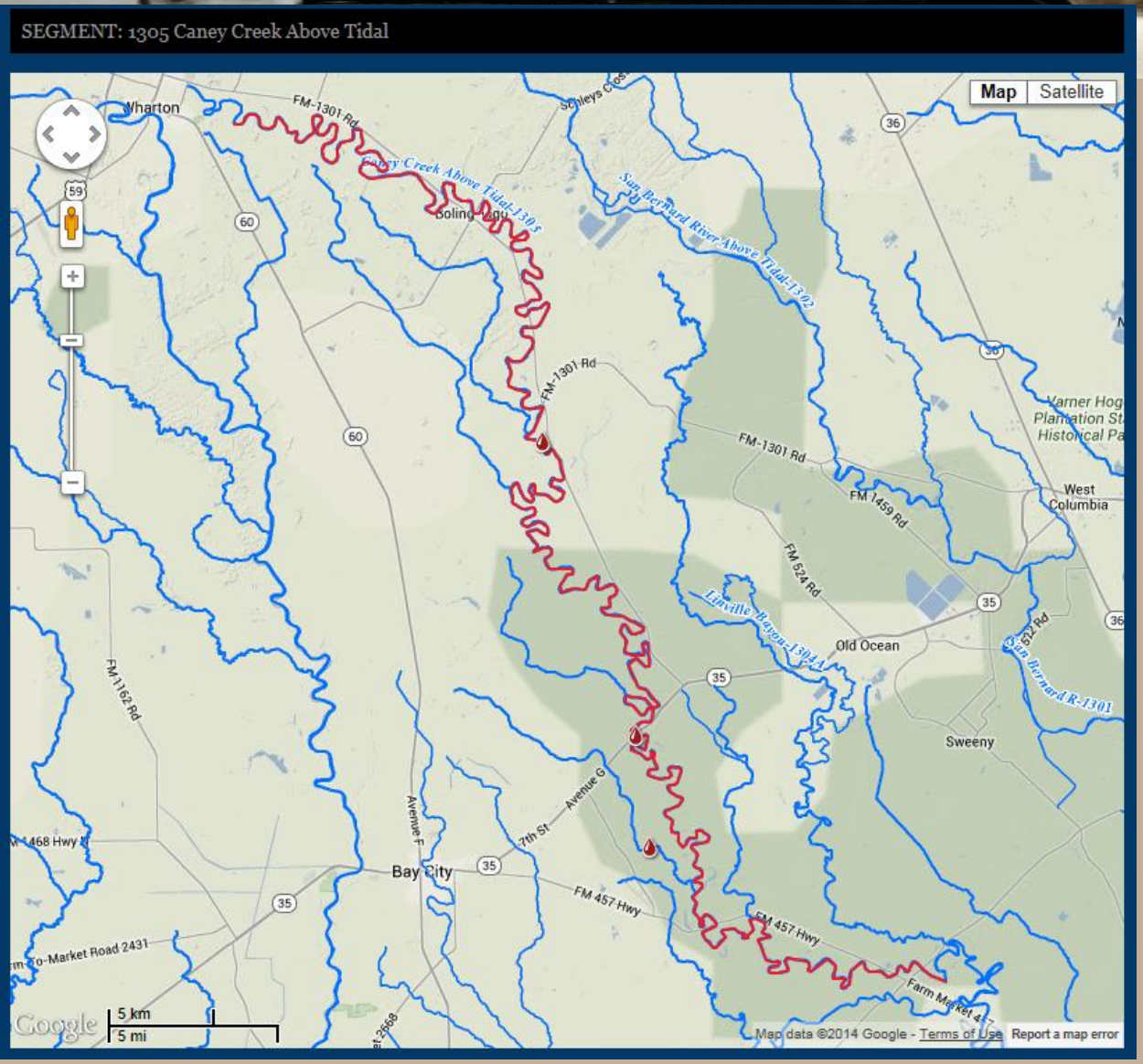
Monitoring Locations in Caney Creek and Linville Bayou

Site ID	Segment	Location	Monitored by
12148	1304	Caney Creek Tidal mid channel at Chambless Rd	TCEQ - FO
12151	1304	Caney Creek Tidal at concrete bridge, 210 M downstream of confluence of Linville Bayou	H-GAC
12138	1304A	Linville Bayou downstream of Sims Rd	H-GAC
12141	1304A	Linville Bayou 35 m upstream of FM 324 / Hasema Rd	TCEQ - FO
12154	1305	Caney Creek at SH 35 NE of Van Vleck	TCEQ – FO
12135	1305A	Hardeman Slough at Allenhurst Rd NE of FM 2540 near Allenhurst Community	H-GAC
20468	1305	Caney Creek at Hill Rd, s of Pledger	TCEQ - FO

Caney Creek and Linville Bayou Monitoring



Caney Creek Above Tidal

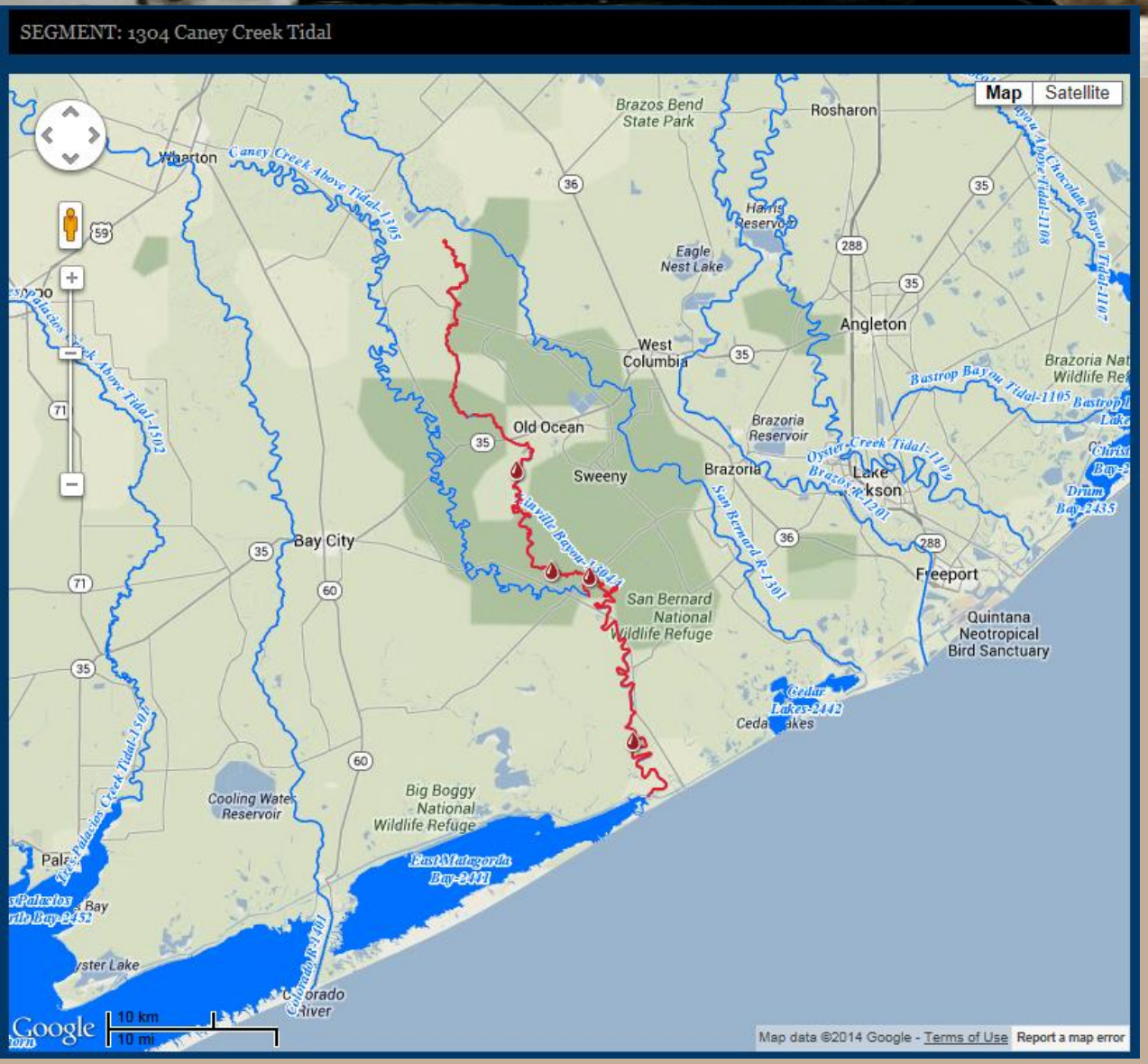


H-GAC and TCEQ Monitoring

3 Sites

- 2 on Caney
- 1 on Hardeman Slough
- Monitored Quarterly

Caney Creek Tidal & Linville Bayou

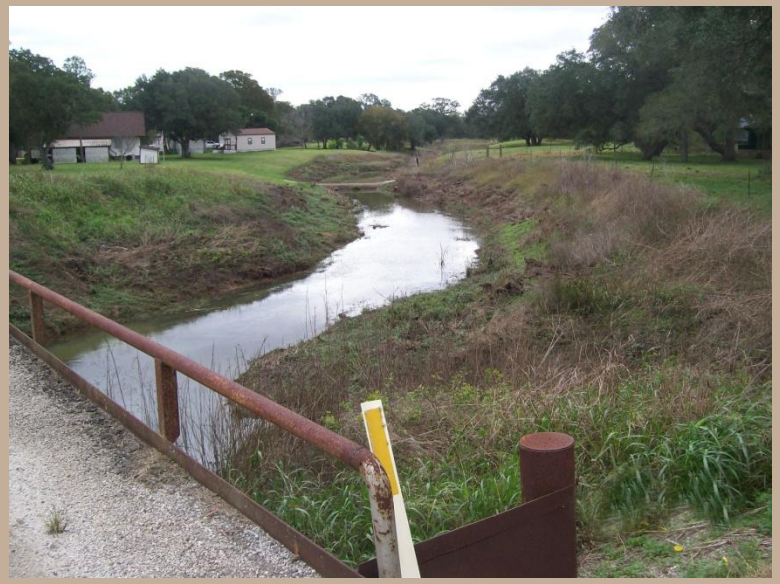


H-GAC and TCEQ Monitoring

4 Sites

- 2 on Caney Creek Tidal
- 2 on Linville
- Monitored Quarterly

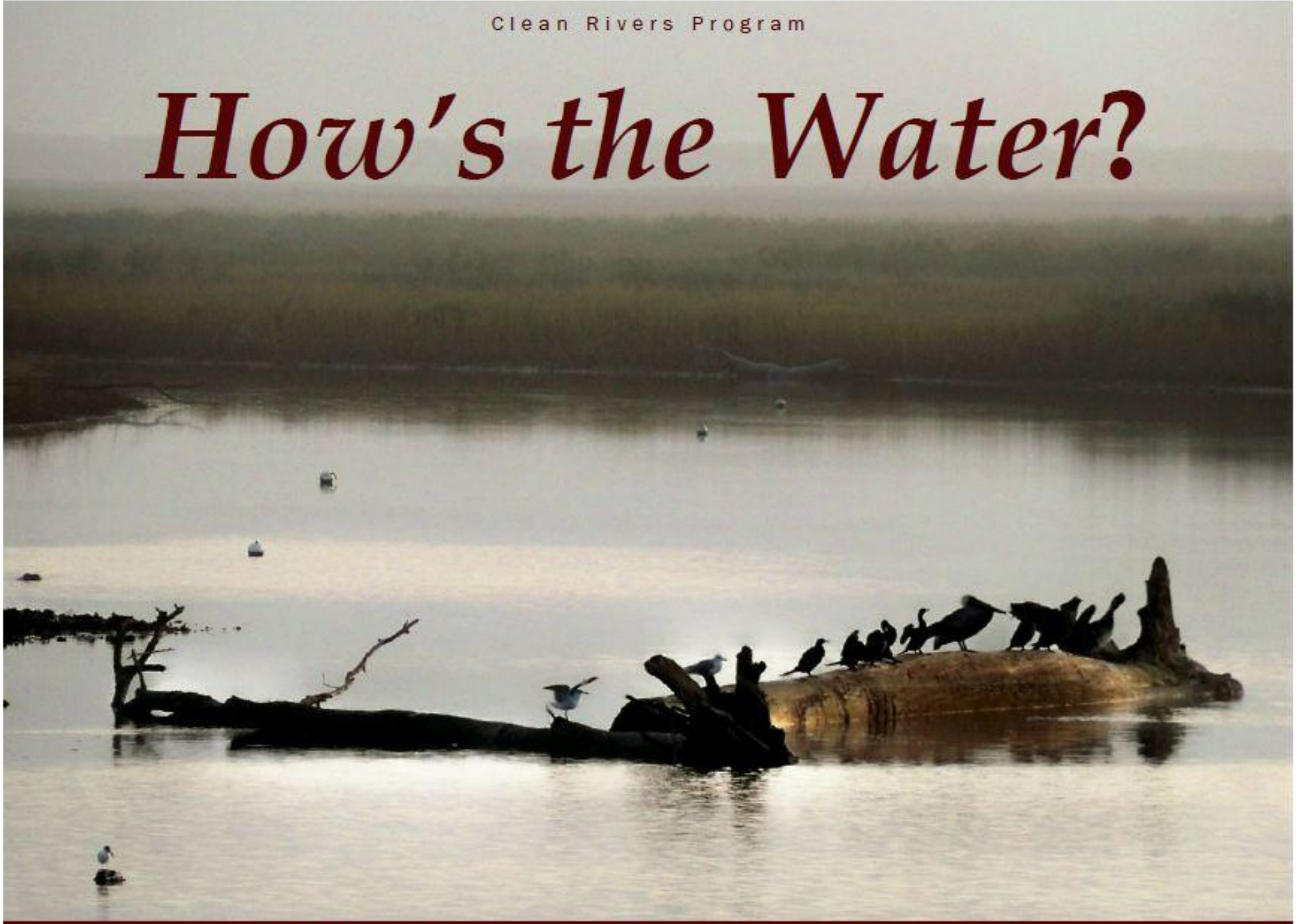
First Two Quarters of Monitoring



First Two Quarters of Monitoring

Clean Rivers Program

How's the Water?

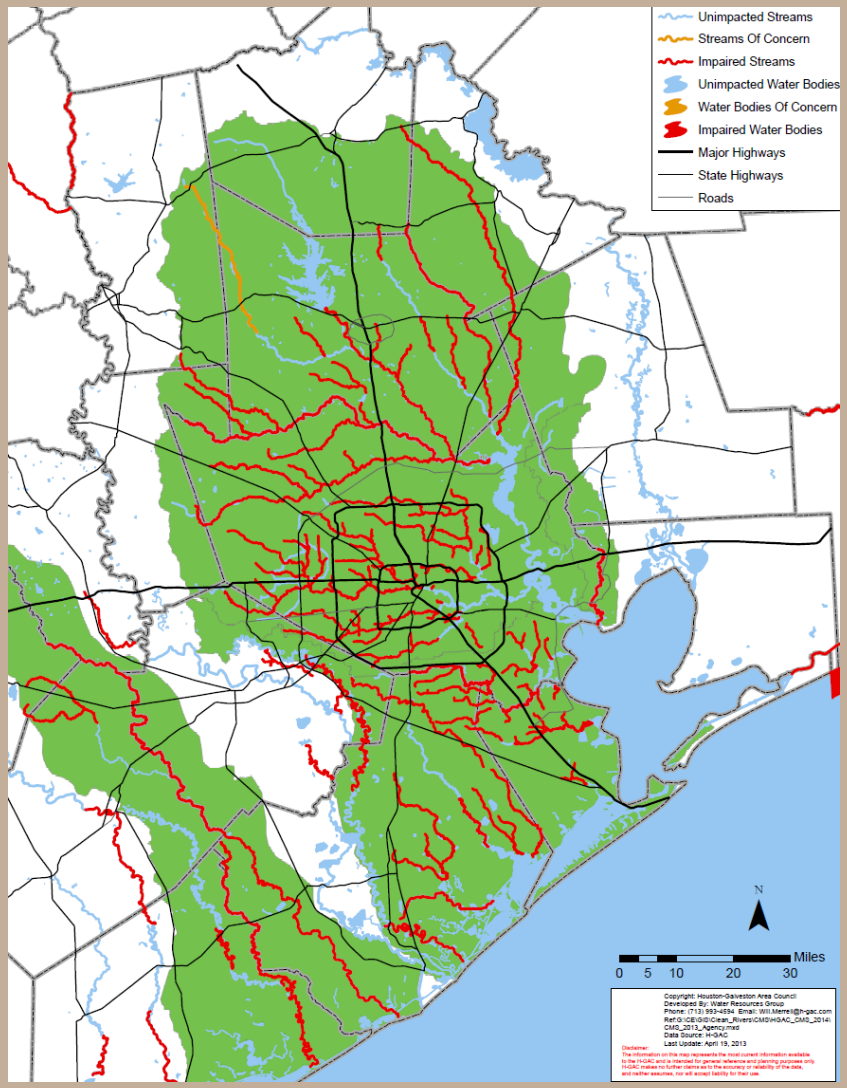


2013 Houston-Galveston Area Council Basin Highlights Report

Watershed	Seg	DO	Bact	chlor	nut	Dioxin	other	Frogs
Cedar Bayou	0901		100	100		100		**1**
Cedar Bayou Above Tidal	0902							**5**
Buffalo Bayou Above Tidal	1014	8.6	84.4		72.8			**3**
Buffalo Bayou Tidal	1013	30.8	63.3		36.4		27	**3**
Caney Creek	1010	16.1	34.6					**4**
Cypress Creek	1009	41	84.6		84.6		10.4	**2**
East Fork San Jacinto River	1003		100					**3**
Greens Bayou Above Tidal	1016	5.4	91.2		80.3			**3**
Houston Ship Channel	1006	3.5	47.2	4.9	63.8	36.7	36.7	**2**
Houston Ship Channel/Buffalo Bayou Tidal	1007	17.9	73.9		87.7	24.2	24.2	**2**
Houston Ship Channel/San Jacinto River Tidal	1005				83.8	100		**2**
Lake Conroe	1012	4.9		16.4				**5**
Lake Creek	1015	66.5	40.2					**3**
Lake Houston	1002		6.8	14.5	42.2		0.1	**4**
Peach Creek	1011		100					**3**
San Jacinto River Tidal	1001					43.4		**3**
Spring Creek	1008	37.6	71.7	1.1	22.3		11.7	**3**
West Fork San Jacinto River	1004		61		27.3			**3**
Whiteoak Bayou Above Tidal	1017	3.5	84.6		80.8			**2**
Armand Bayou Tidal	1113	62.9	59.7	12	17.9	25		**3**
Bastrop Bayou Tidal	1105	80.2	86.3		6.6			**3**
Chocolate Bayou Above Tidal	1108	100	100				100	**2**
Chocolate Bayou Tidal	1107		100			100		**1**
Clear Creek Above Tidal	1102	60.5	79.5		76.6	47.6	12.8	**1**
Clear Creek Tidal	1101	41.6	72.8	8.3	17.9	27.6		**2**
Dickinson Bayou Above Tidal	1104		41.3				41.3	**3**
Dickinson Bayou Tidal	1103	62.5	86.9	10.1		48.4		**1**
Old Brazos River Channel Tidal	1111			100				**5**
Oyster Creek Above Tidal	1110	66.3	24.2	24.2				**3**
Oyster Creek Tidal	1109		100					**3**
San Bernard River Above Tidal	1302	61.8	62.6		9.5			**3**
San Bernard River Tidal	1301		100	100				**3**

Watershed	Seg	DO	Bact	chlor	nut	PCB	other	Frogs
Barbour's Cut	2436				100	100		**2**
Bastrop Bay / Oyster Lake	2433							**5**
Bayport Ship Channel	2438			100	100	100		**2**
Black Duck Bay	2428			100	100	100		**2**
Burnett Bay	2430			100	100	100		**2**
Chocolate Bay	2432	35.6	62.6		4.8	38.7		**3**
Christmas Bay	2434							**5**
Clear Lake	2425	8.4	18.4	65.1	80	92.3		**2**
Drum Bay	2435							**5**
East Bay	2423	30		100		100		**2**
Lower Galveston Bay	2439			100		100		**2**
Moses Lake	2431			19.6	19.6	54.4		**3**
San Jacinto Bay	2427			100	100	100		**2**
Scott Bay	2429			100	100	100		**2**
Tabbs Bay	2426				72	72		**3**
Texas City Ship Channel	2437			100	100	100		**2**
Upper Galveston Bay	2421			89.5	95.7	100		**2**
West Bay	2424	9	4.3	11.4	1.3	88.5		**2**
Gulf of Mexico	2501						44	**5**

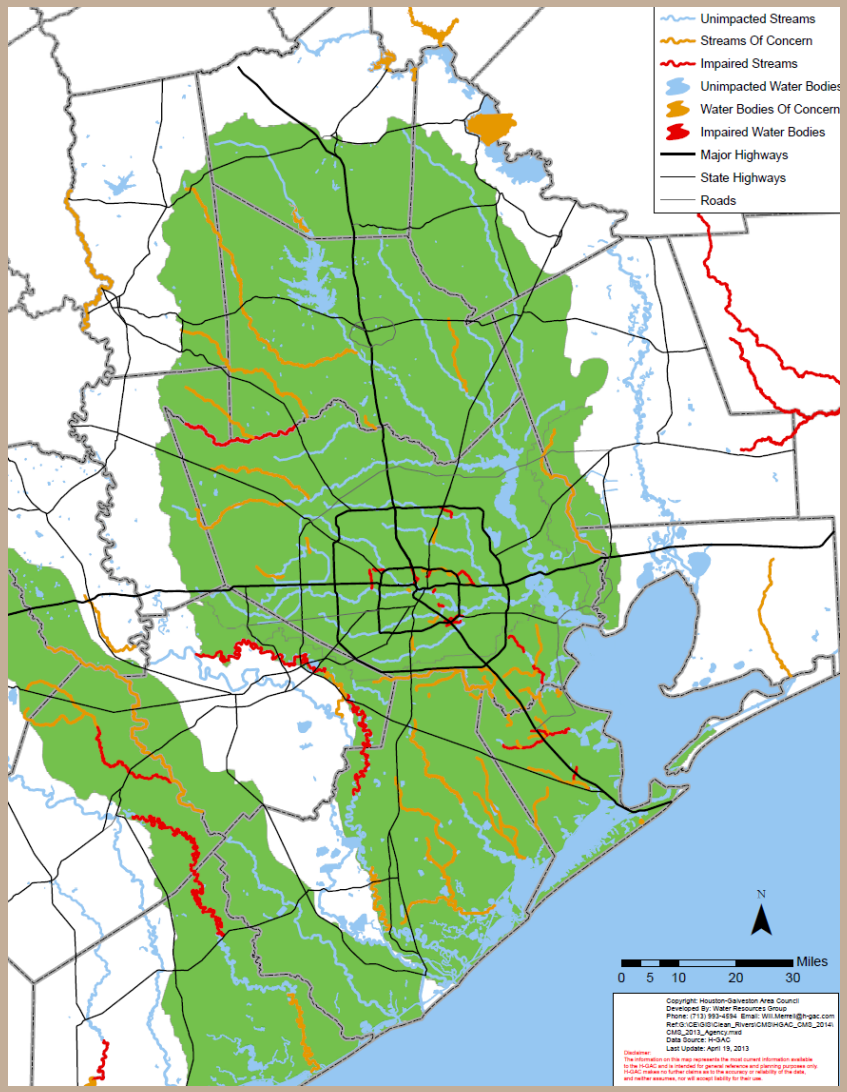
Bacteria Impairments in the H-GAC Area



Approximately 50% of stream miles are impaired by bacteria.

26% 17%

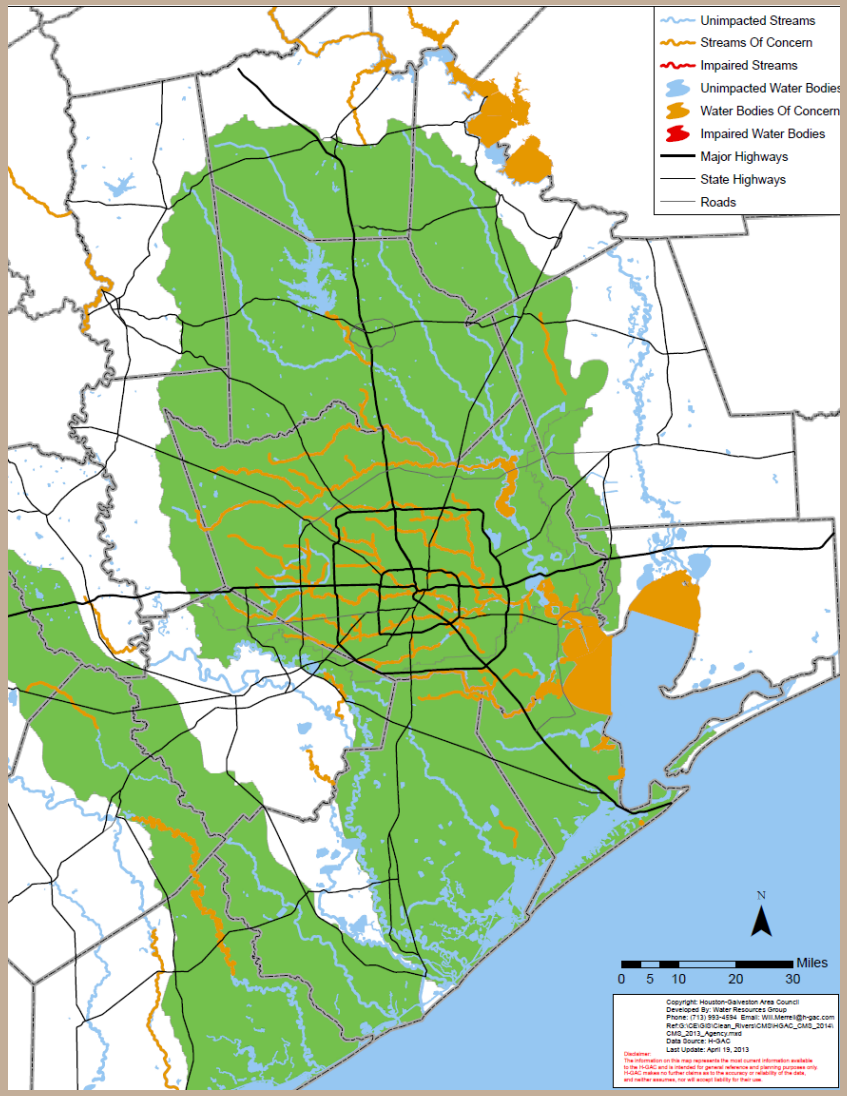
DO Impairments in the H-GAC Area



Approximately 24% of stream miles are impaired or have a concern regarding Dissolved Oxygen (DO).

4% 9%

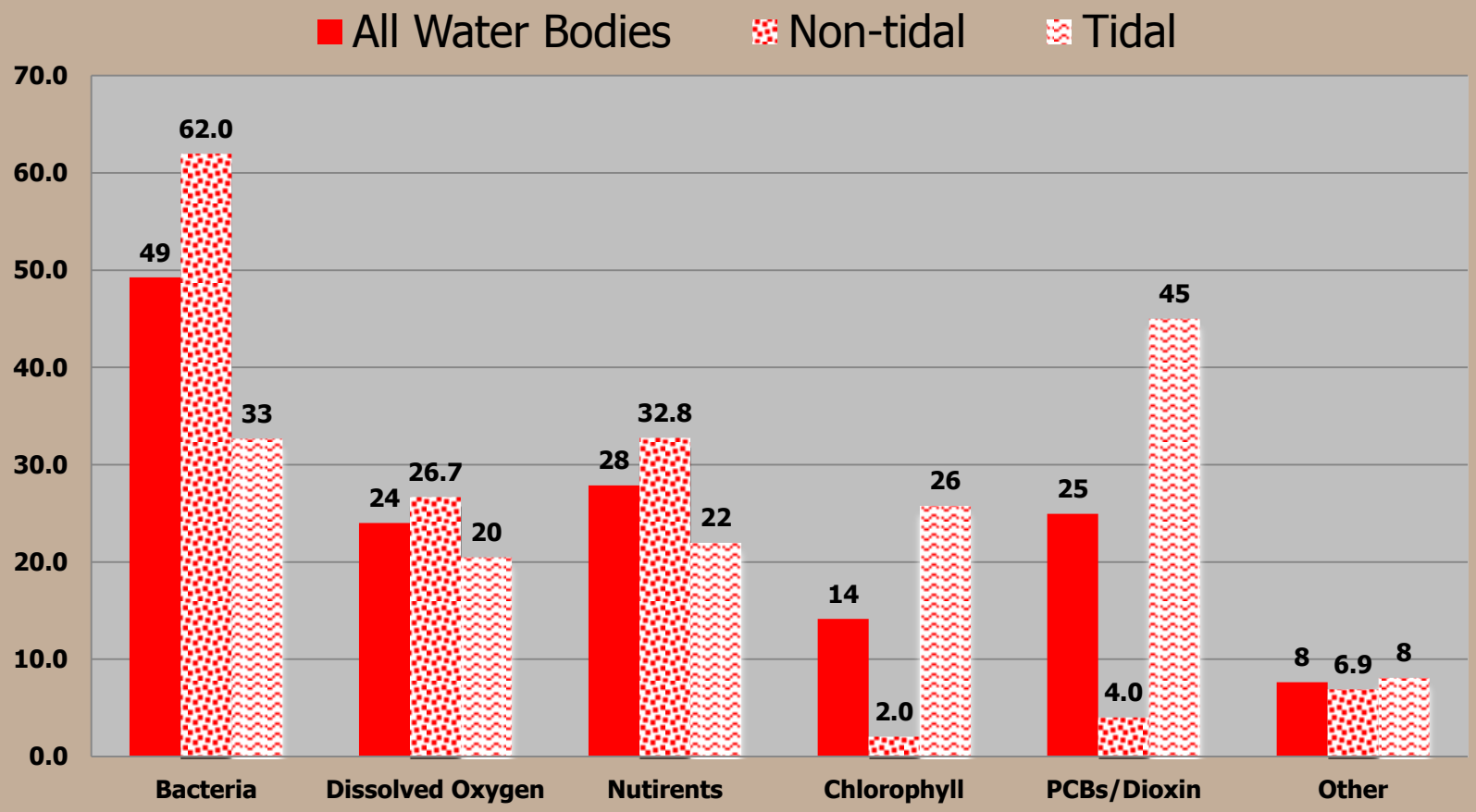
Nutrient Concerns in the H-GAC Area

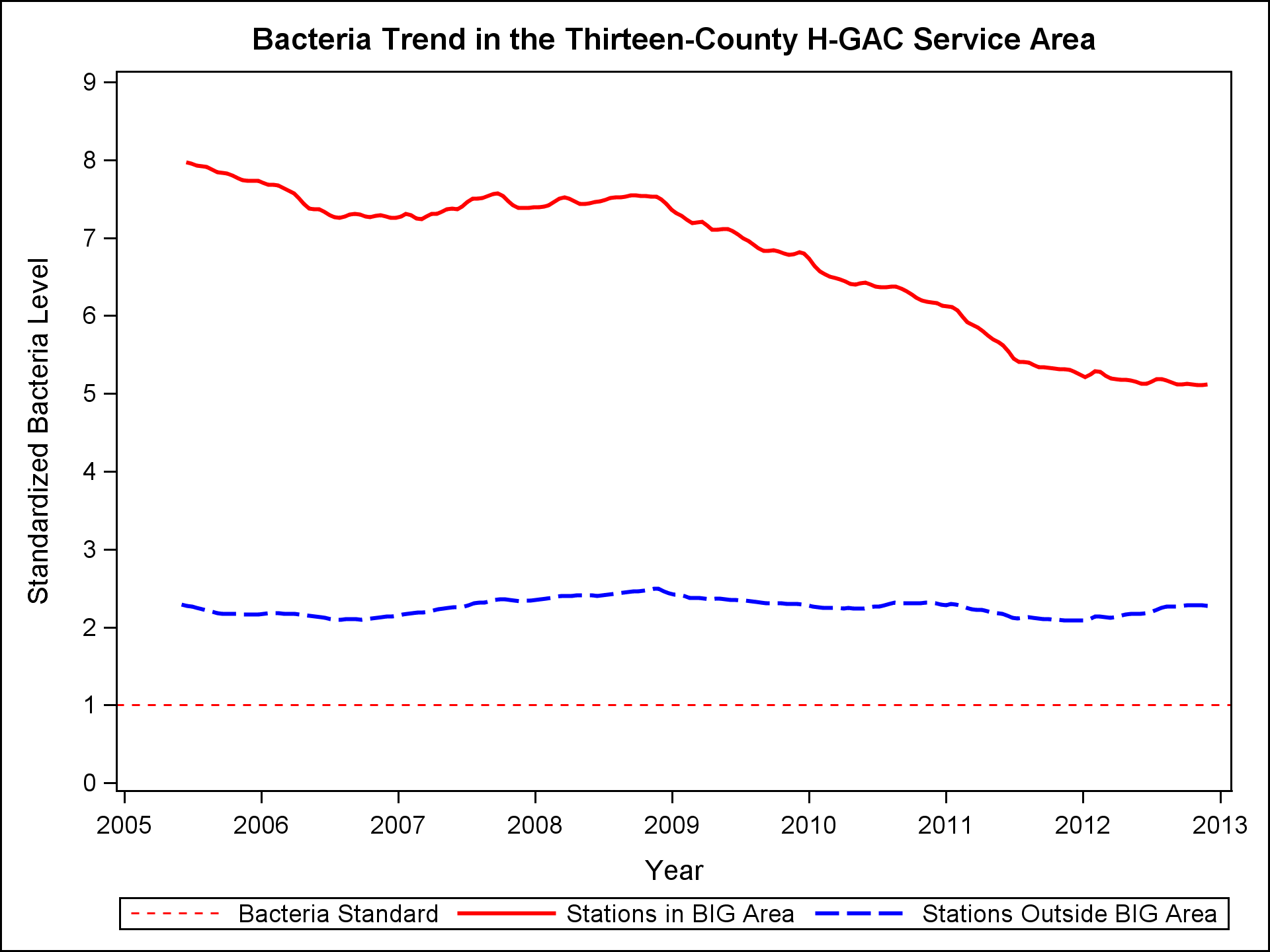


Approximately 29% of stream miles have a nutrient concern.

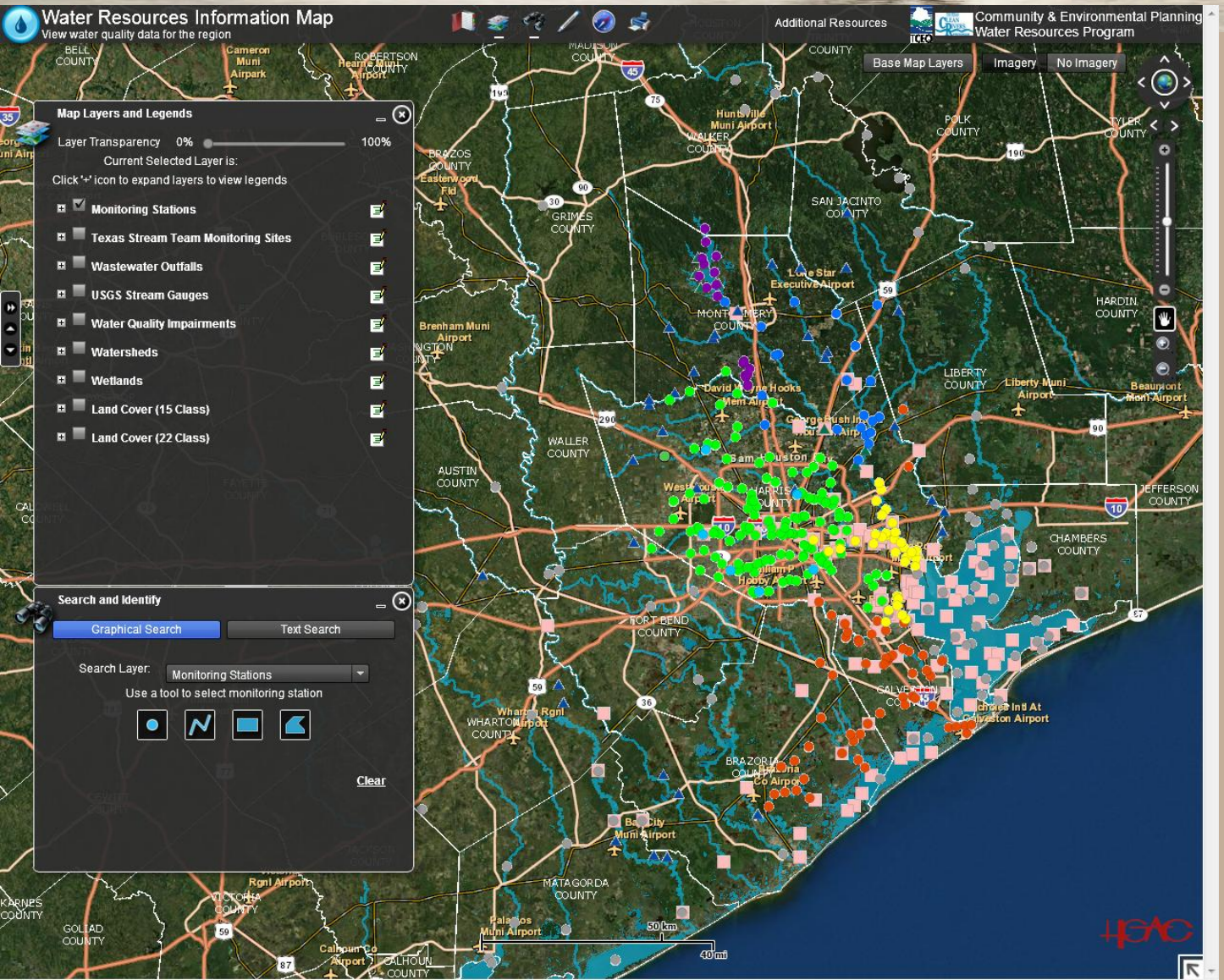
20% 35%

Impairments and Concerns - 2012 Integrated Report




Bacteria Trend in the Thirteen-County H-GAC Service Area
Standardized Bacteria Level
0
1
2
3
4
5
6
7
8
9
2005
2006
2007
2008
2009
2010
2011
2012
2013
Year
Bacteria Standard
Stations in BIG Area
Stations Outside BIG Area

Water Resources Information Map (WRIM)



- View monitoring stations and stream assessments
- View watersheds
- View land cover
- Search for specific watersheds, monitoring stations, and water bodies

www.h-gac.com/go/wrim

What's Ahead?

Continue Quarterly Monitoring

FY15 Coordinated Monitoring Meeting (Early April)

CRP Steering Committee Meeting (Late April)

2014 Basin Highlights Report (May 15)

Watershed Characterization for Caney Creek (Fall 2014)

Update on Caney Creek Above Tidal RUAA

Conducted By Environmental Institute of Houston in Spring 2010

98 Miles of Creek Surveyed

21 survey sites (surveyed twice)

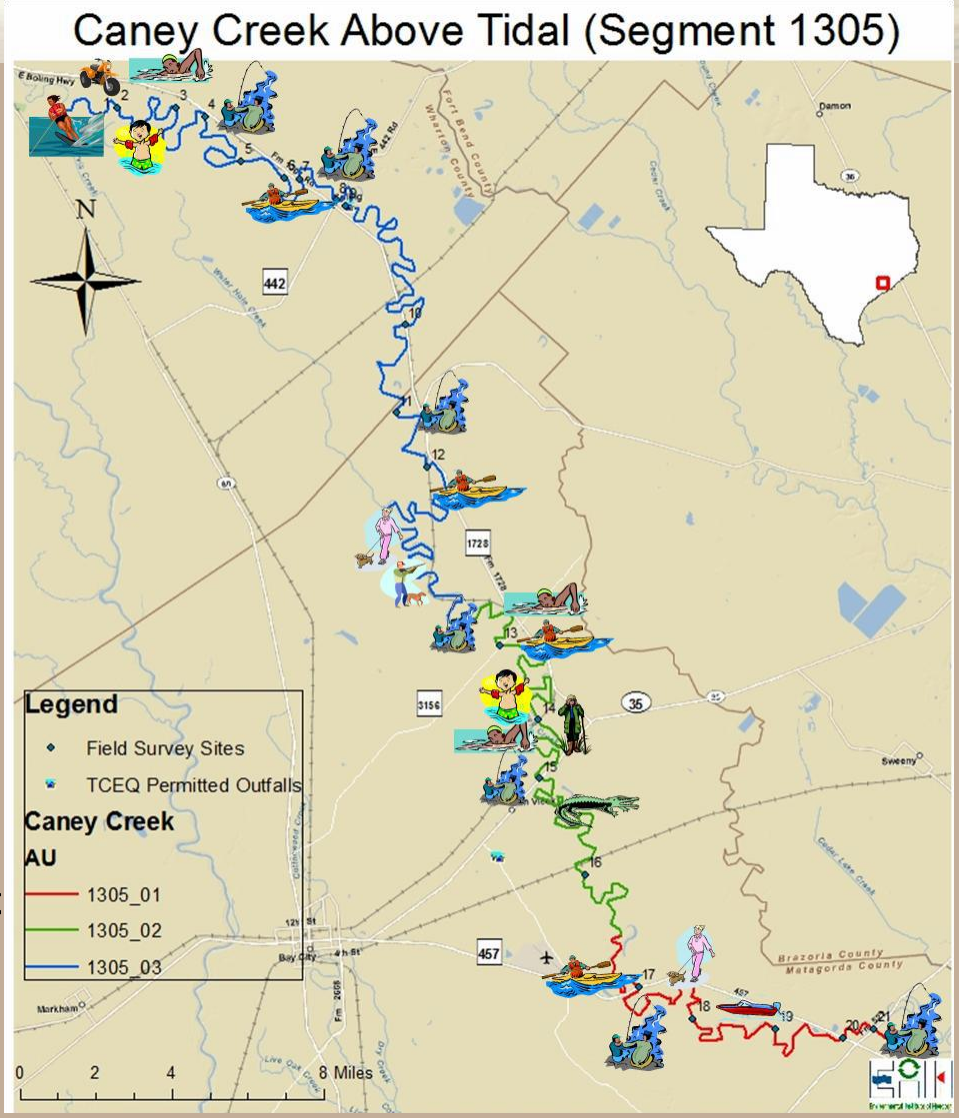
Documented a variety of recreation activities

- Field Phase
  - Kids using a canoe and an individual wading
- Interview Phase
  - 11 had been swimming in the creek
  - 33 had observed recreation activities
  - 19 had heard about recreational uses of creek

Update on Caney Creek Above Tidal RUAA

Recreation Symbols Key

- Swimming
- Water Skiing
- Wading-Children
- Kayak/Canoe
- Boating
- Fishing
- ATV/Motorcycle
- Walking
- Wildlife Watching
- Hunting
- Alligator

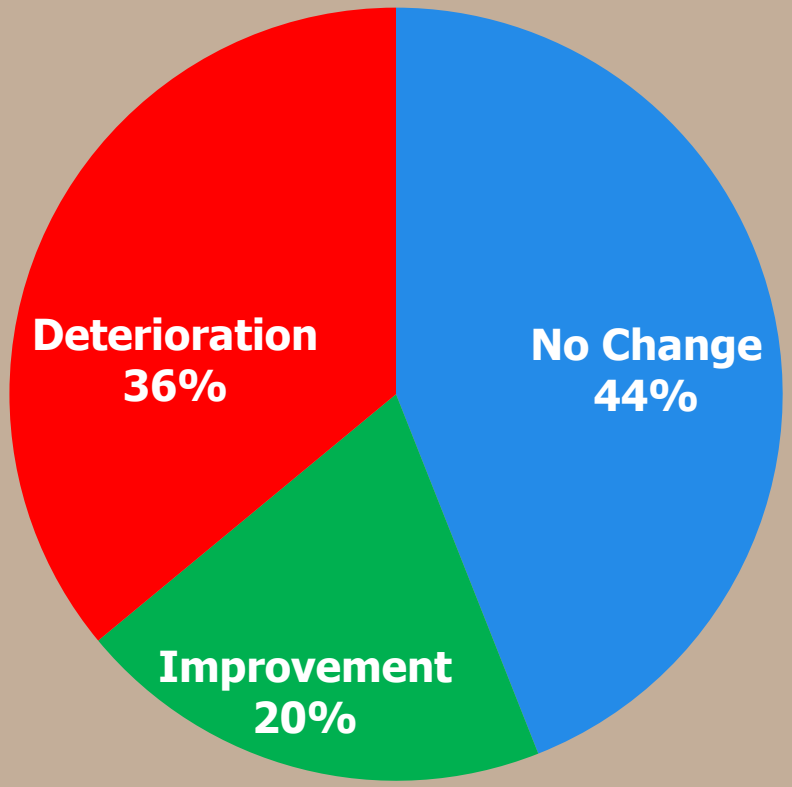


Questions?

Houston-Galveston Area Council

Todd Running
todd.running@h-gac.com
713-993-4549

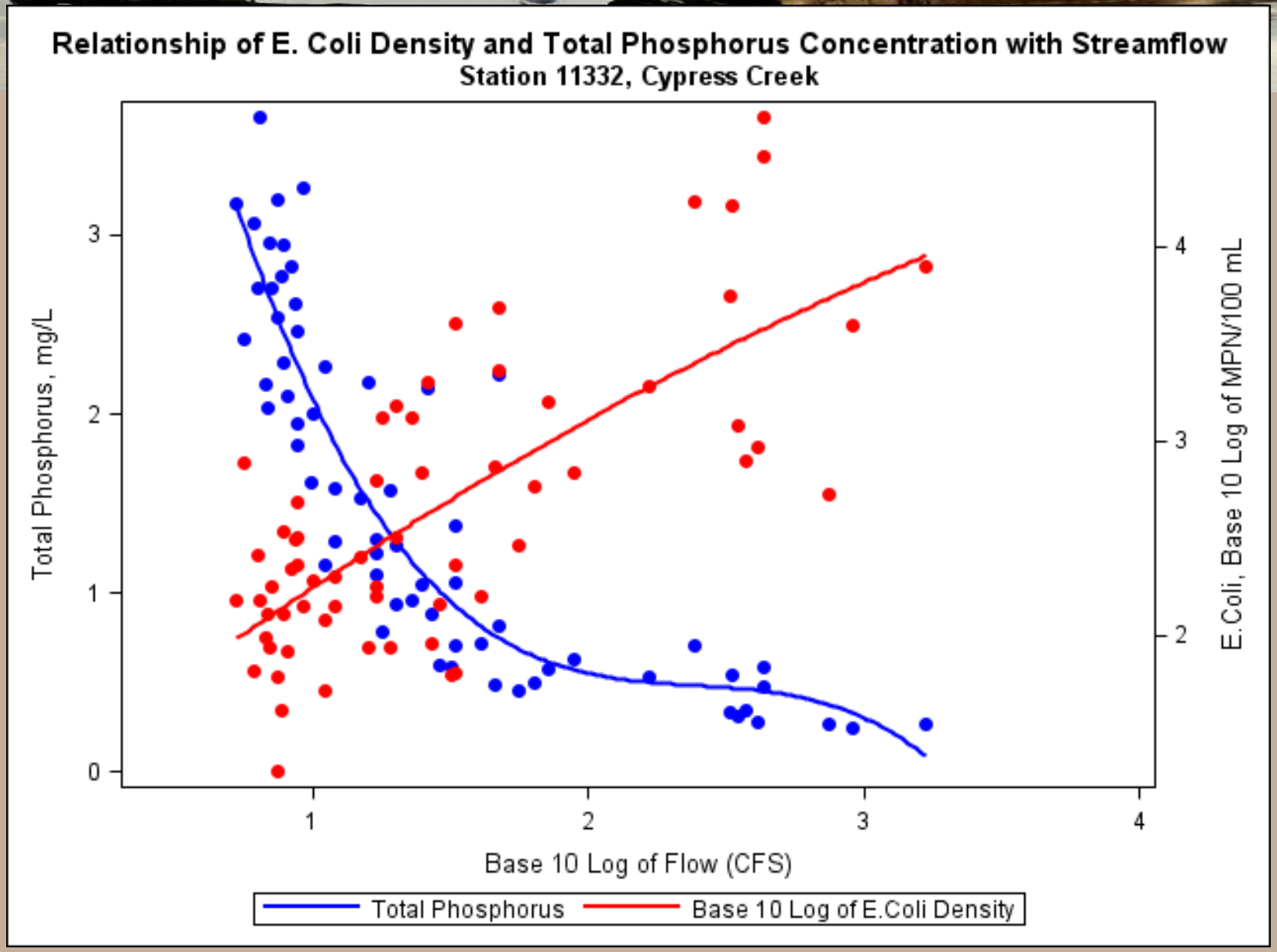
Nutrients - Seven-Year Trends



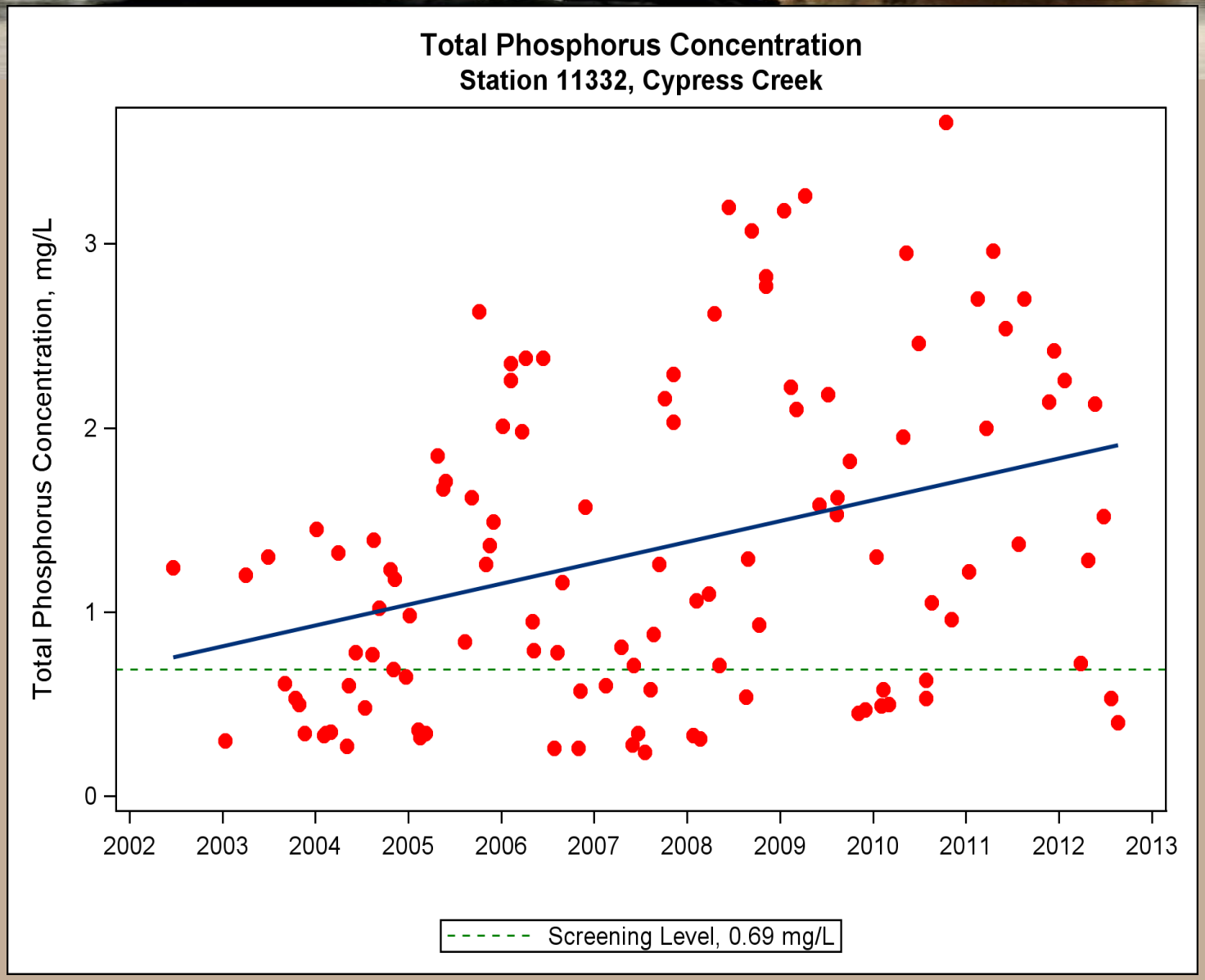
Nutrients: Trends and Relationships

- This year's Highlights Report focused on nutrients and dissolved oxygen issues
- Trends were identified using several statistical methods; only trends that existed prior to the beginning of the drought and that were supported by more than one analysis were selected for discussion
- Relationships between stream flow, rainfall, and other parameters were examined

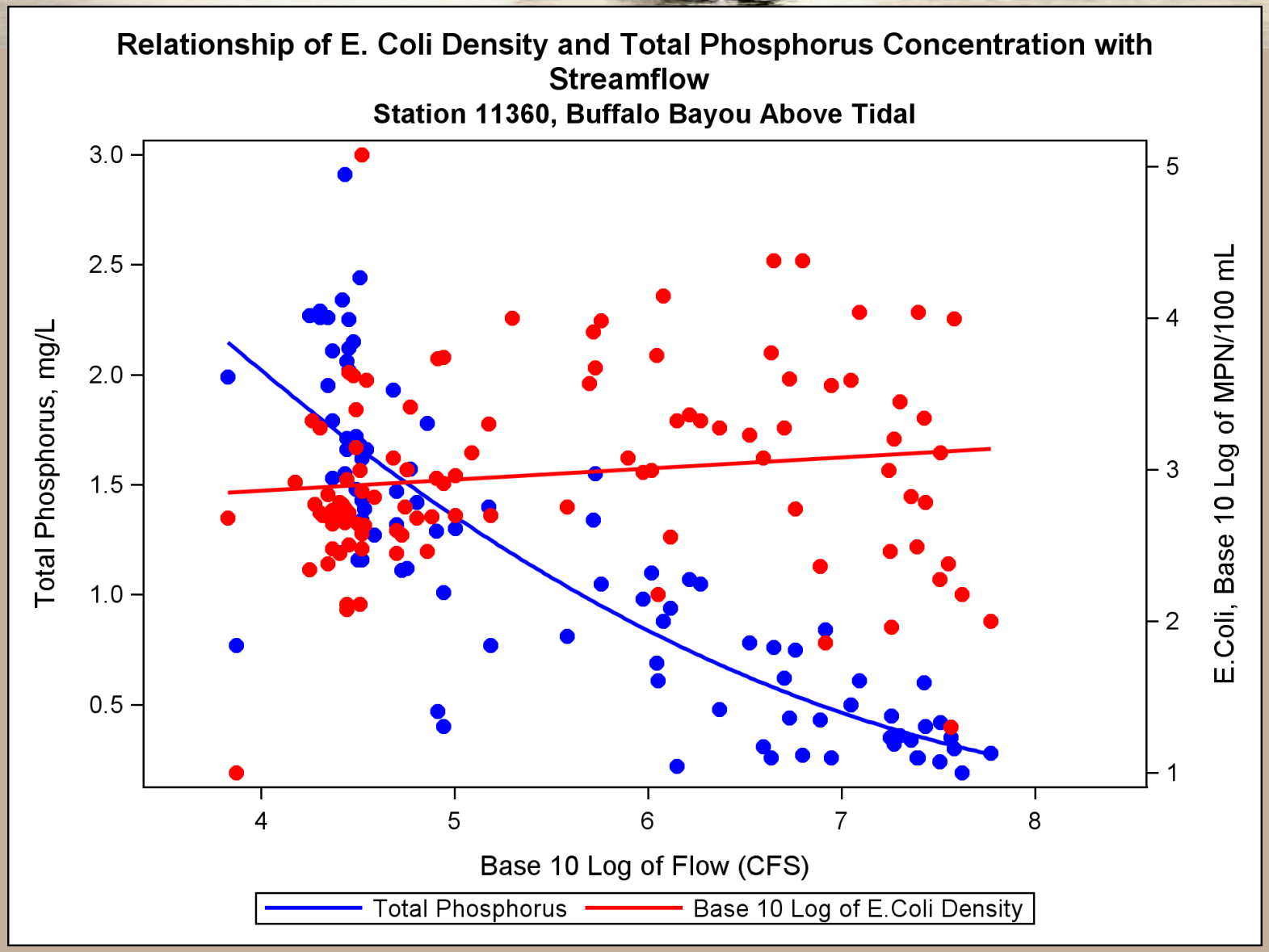
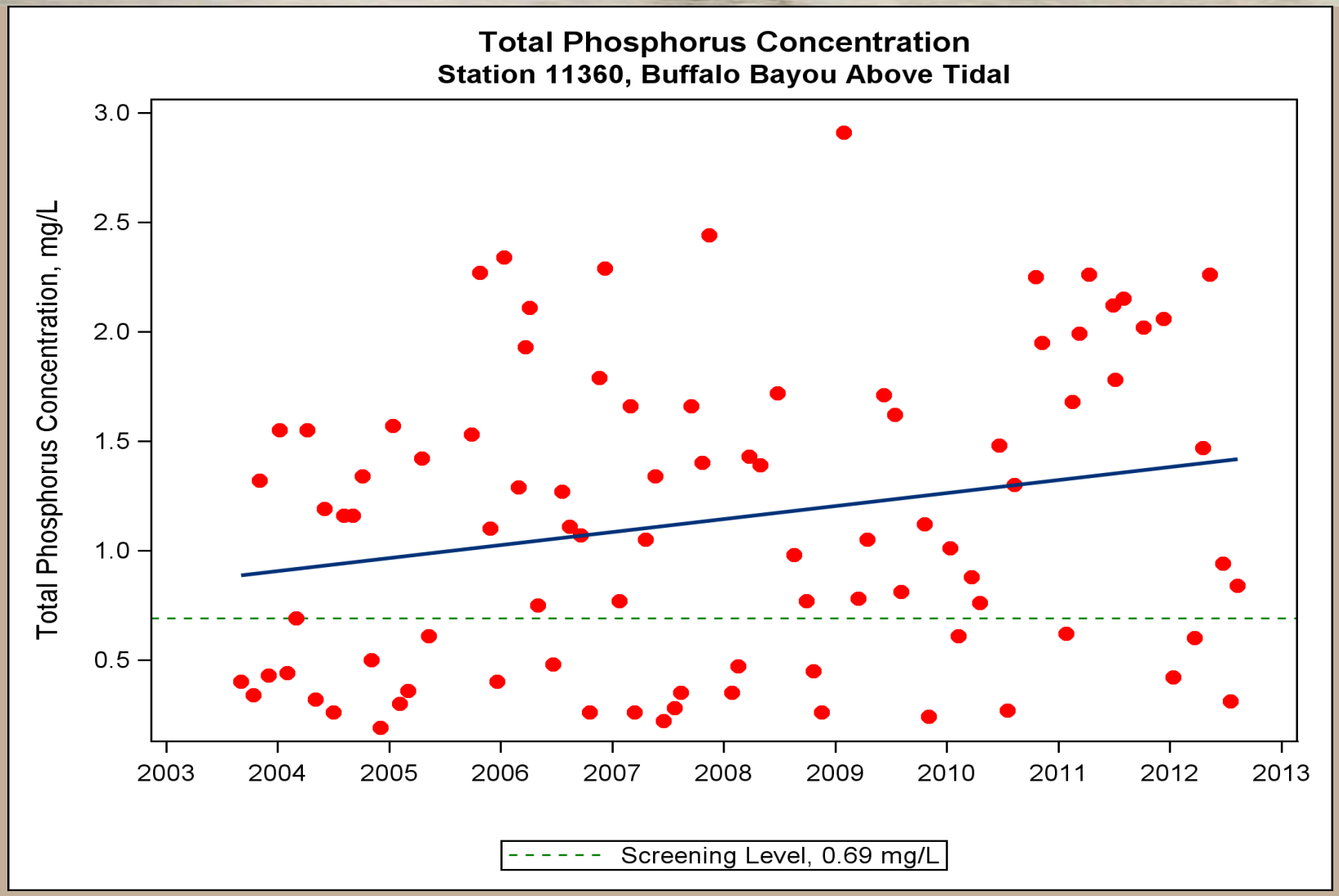
2013 Basin Summary Report



2013 Basin Summary Report



2013 Basin Summary Report



2013 Basin Summary Report