Texas Stream Team

Angelina Neches River Authority Clean Rivers Program Steering Committee Meeting
June 26, 2014

Prepared in cooperation with the Texas Commission on Environmental Quality and U.S. EPA.
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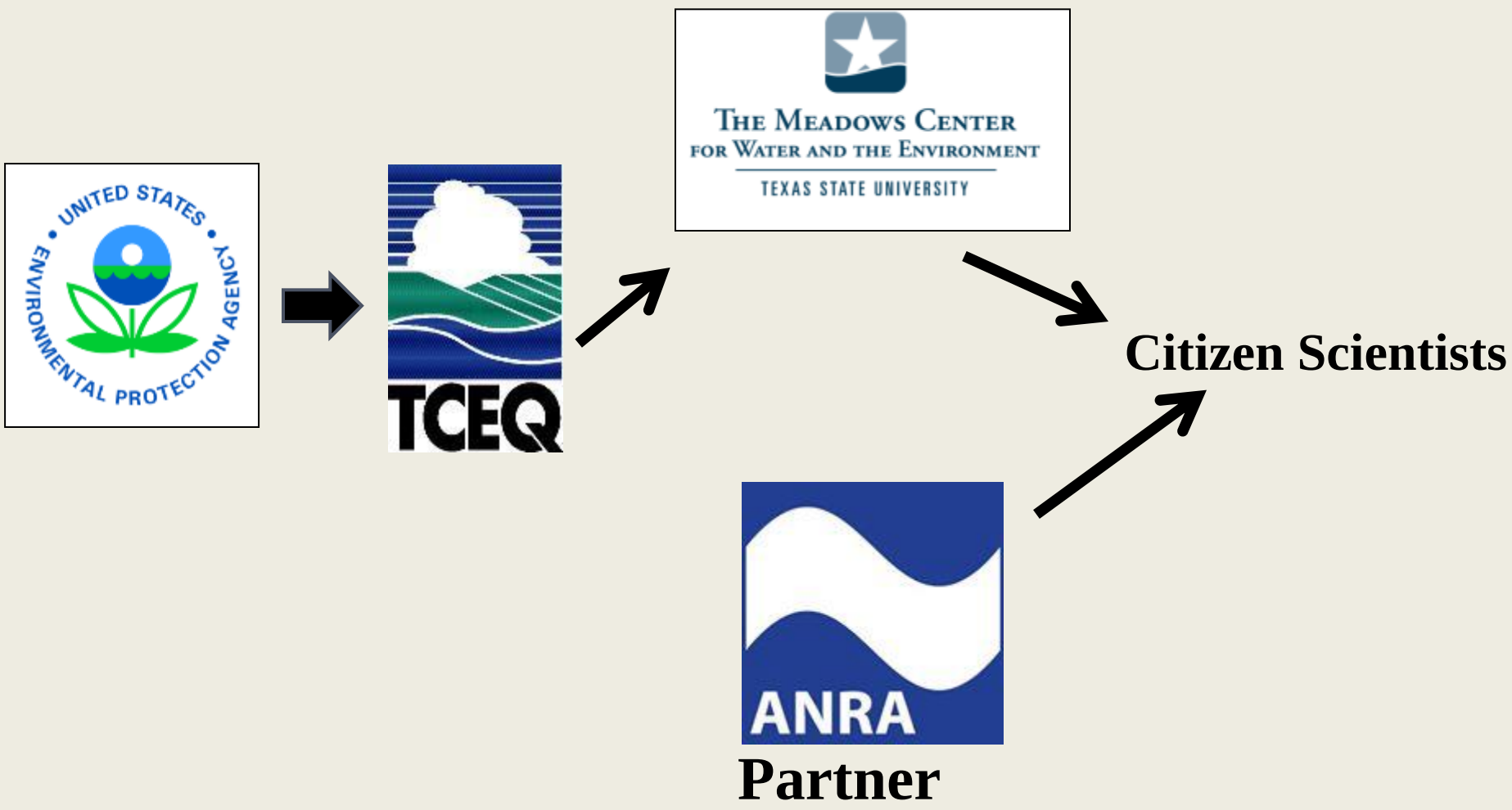
TEXAS STREAM TEAM STRUCTURE



TEXAS STREAM TEAM STRUCTURE

- Education and Outreach
- Water Quality Monitoring

http://houstonaudubonstreamteam.wordpress.com

September 2012 Monitoring Day...Artistry on the Creek

October 3, 2012 by Houston Audubon Stream Team

Water Quality Report

Rummel Creek Water Quality Stream Team Data Trends

	May	June	July	August	September	Grade
pH	7	7	7.5	7	7.25	**good**
DO (mg/L)	4.1	5.7	5.5	4.25	3.4	**poor**
Conductivity (S/m)	610	120	410	490	480	**low**
water temp (C)	27	30	28	28	24	**normal**
air temp (C)	32	24	27.5	31	26	**normal**
turbidity (m)	>.23	>1	>1	>.25	>.28	**low**

Last significant precipitation: Sept 14th **Flow rate**: low **Algae Cover**: none

BENEFITS OF A STREAM TEAM

Routine Monitoring

Field Observations
More Eyes on the Water

Rummell Creek Fish Kill Oct. 23rd

Stakeholder Participation

http://houstonaudubonstreamteam.wordpress.com

TEXAS STREAM TEAM

Core Water Quality Training

- Consists of 3 Phases
  - Phase I: Demonstration by the instructor
  - Phase II: Trainees take measurements with the guidance of an instructor
  - Phase III: Trainees take measurements with no guidance from instructor and compare results with those of the instructor
- After becoming certified, we ask our monitors to monitor their assigned site monthly

TEXAS STREAM TEAM

Core Water Quality Training:

- Types of water quality parameters measured:
  - Temperature
  - Conductivity
  - Dissolved Oxygen
  - pH
  - Water Clarity
- These are not measurements of pollution
  - Pollution can affect these parameters

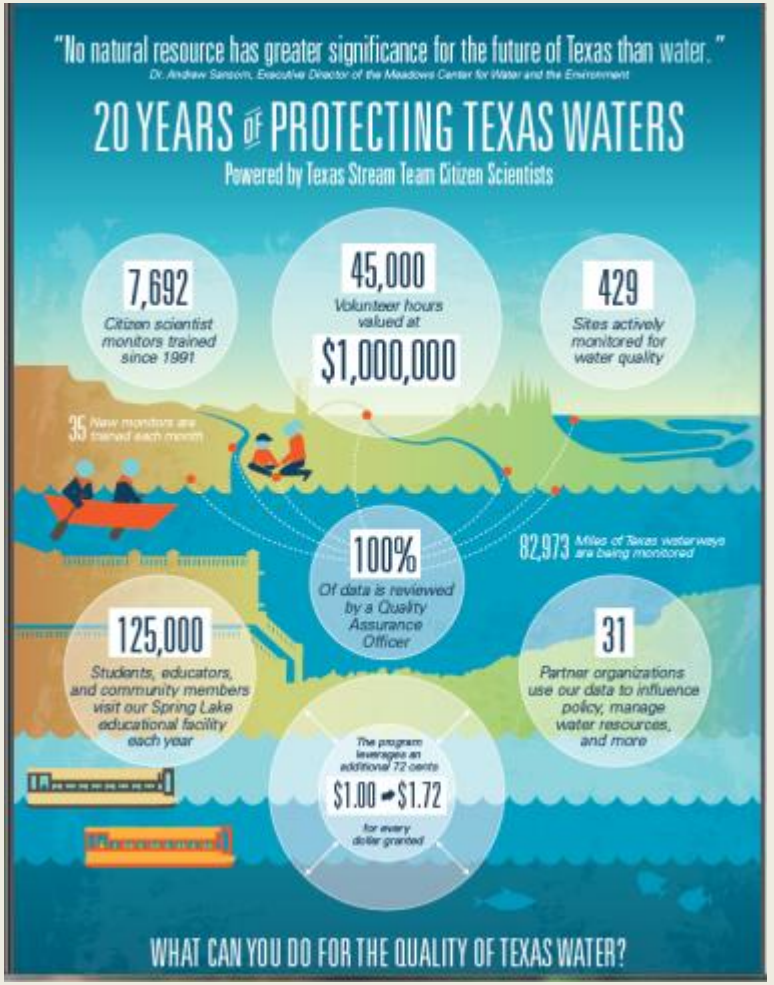
TEXAS STREAM TEAM

Advanced Training

- Certified Water Quality Monitors can then take our Advanced NPS Suite training
- Monitors learn to measure:
  - E. coli
  - Nitrogen
  - Phosphorus
  - Turbidity

PROGRAM DATA

- 7,692 trained citizen scientists since 1991
- 45,000 volunteer hours
- 429 actively monitored sites
- 82,973 miles of Texas waterways monitored
- 35,146 monitoring events

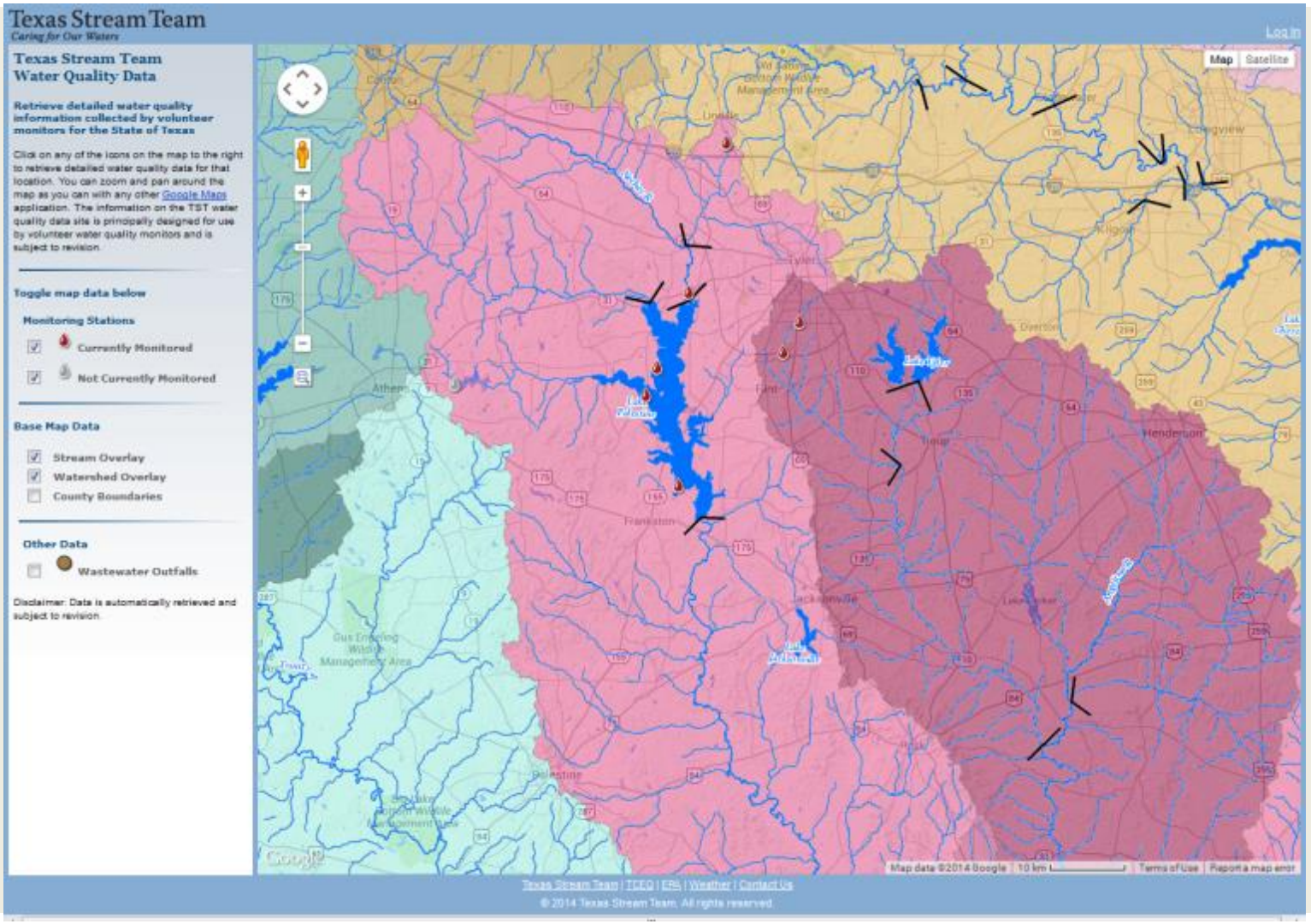


2014 UPDATE

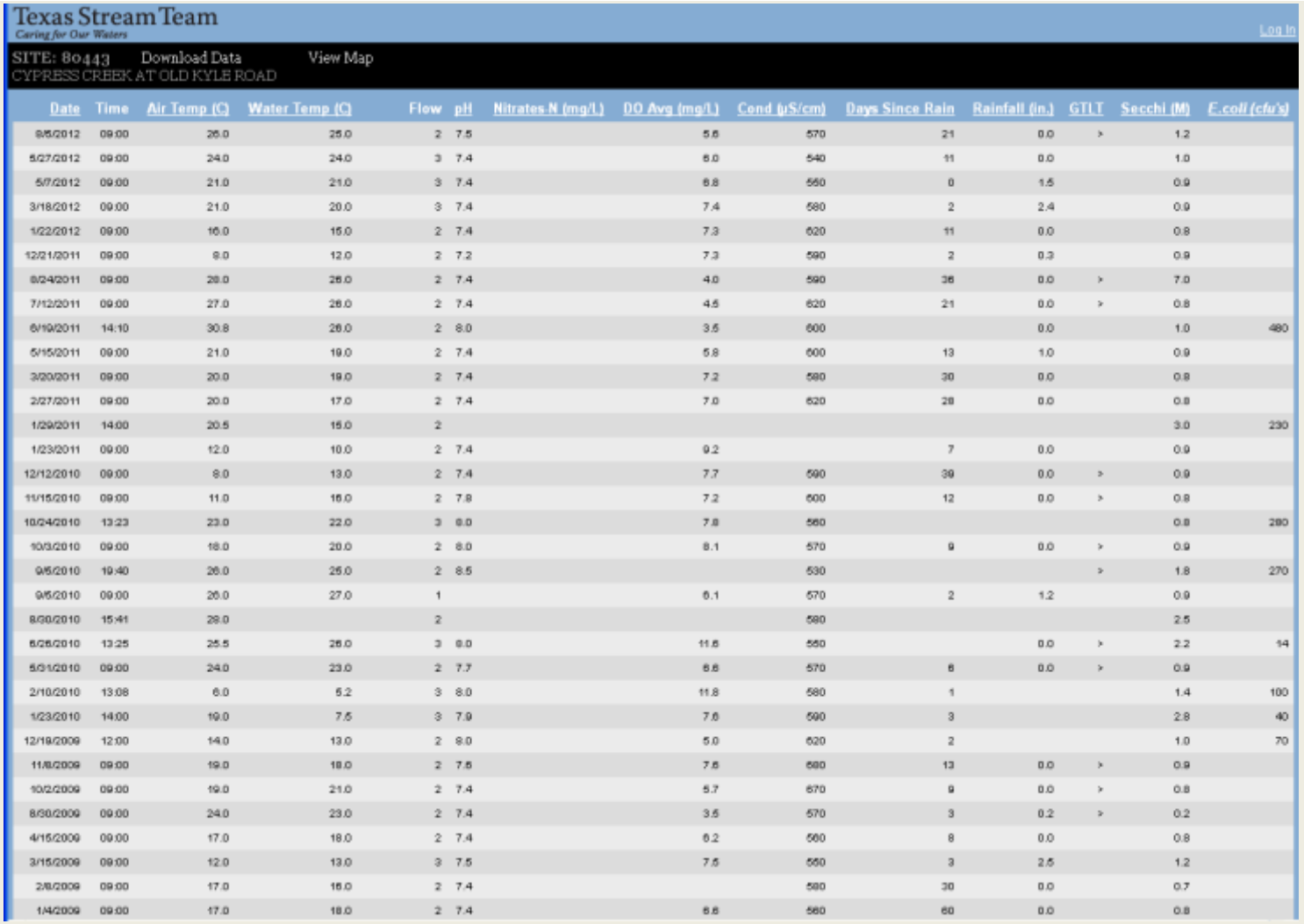
- Partnering with Texas Conservation Alliance to increase involvement in East Texas.
  - Trainings held in Beaumont, White Oak, and Lufkin
- Furthering our partnership with ANRA
  - Training ANRA staff in TST Protocol
  - Establishing trainers in Neches Watershed
- Expand our coverage and provide data in the watershed

How Are The Data Used?

THE DATAVIEWER



THE DATAVIEWER



Texas Stream Team
Caring for Our Waters

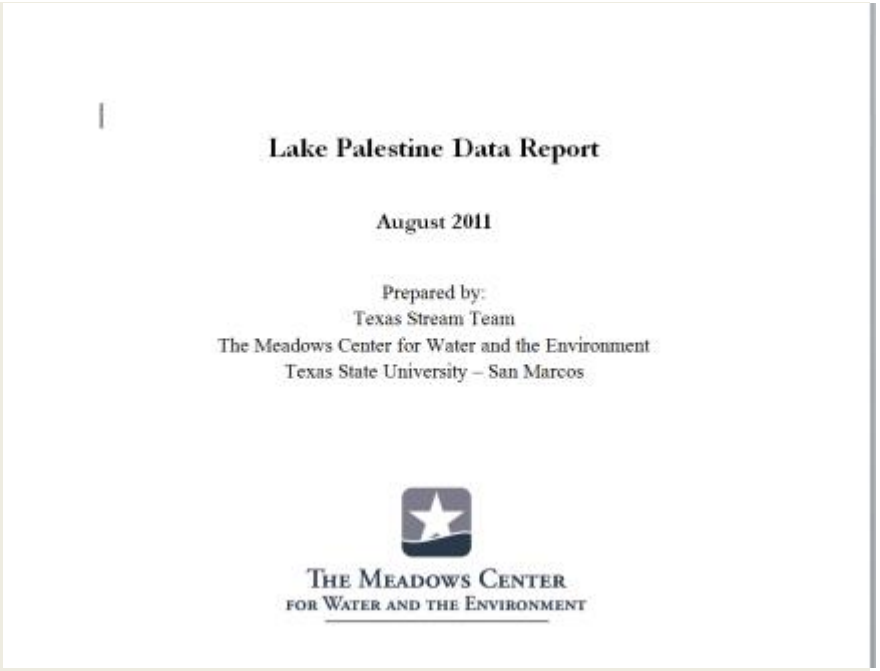
Log In

SITE: 80443 Download Data View Map
CYPRESS CREEK AT OLD KYLE ROAD

Date	Time	Air Temp (C)	Water Temp (C)	Flow	pH	Nitrates-N (mg/L)	DO Avg (mg/L)	Cond (µS/cm)	Days Since Rain	Rainfall (in.)	GTLT	Secchi (M)	*E.coli (cfu's)*
9/5/2012	09:00	26.0	25.0	2	7.5		5.6	570	21	0.0	>	1.2	
5/27/2012	09:00	24.0	24.0	3	7.4		6.0	540	11	0.0		1.0	
5/7/2012	09:00	21.0	21.0	3	7.4		6.8	560	0	1.5		0.9	
3/18/2012	09:00	21.0	20.0	3	7.4		7.4	580	2	2.4		0.9	
1/22/2012	09:00	16.0	15.0	2	7.4		7.3	620	11	0.0		0.8	
12/21/2011	09:00	9.0	12.0	2	7.2		7.3	590	2	0.3		0.9	
8/24/2011	09:00	28.0	26.0	2	7.4		4.0	590	36	0.0	>	7.0	
7/12/2011	09:00	27.0	26.0	2	7.4		4.5	620	21	0.0	>	0.8	
6/19/2011	14:10	30.8	26.0	2	8.0		3.5	600		0.0		1.0	480
5/15/2011	09:00	21.0	19.0	2	7.4		5.8	600	13	1.0		0.9	
3/20/2011	09:00	20.0	19.0	2	7.4		7.2	580	30	0.0		0.8	
2/27/2011	09:00	20.0	17.0	2	7.4		7.0	620	28	0.0		0.8	
1/29/2011	14:00	20.5	15.0	2								3.0	230
1/23/2011	09:00	12.0	10.0	2	7.4		9.2		7	0.0		0.9	
12/12/2010	09:00	9.0	13.0	2	7.4		7.7	590	39	0.0	>	0.9	
11/15/2010	09:00	11.0	16.0	2	7.8		7.2	600	12	0.0	>	0.8	
10/24/2010	13:23	23.0	22.0	3	8.0		7.8	560				0.8	280
10/3/2010	09:00	18.0	20.0	2	8.0		8.1	570	9	0.0	>	0.9	
9/5/2010	19:40	26.0	25.0	2	8.5			530			>	1.8	270
9/5/2010	09:00	26.0	27.0	1			6.1	570	2	1.2		0.9	
8/30/2010	15:41	28.0		2				580				2.5	
6/26/2010	13:25	25.5	26.0	3	8.0		11.6	550		0.0	>	2.2	14
5/31/2010	09:00	24.0	23.0	2	7.7		6.6	570	6	0.0	>	0.9	
2/10/2010	13:08	6.0	5.2	3	8.0		11.8	580	1			1.4	100
1/23/2010	14:00	19.0	7.5	3	7.9		7.6	590	3			2.8	40
12/19/2009	12:00	14.0	13.0	2	8.0		5.0	620	2			1.0	70
11/8/2009	09:00	19.0	18.0	2	7.6		7.6	580	13	0.0	>	0.9	
10/2/2009	09:00	19.0	21.0	2	7.4		5.7	570	9	0.0	>	0.8	
8/30/2009	09:00	24.0	23.0	2	7.4		3.5	570	3	0.2	>	0.2	
4/15/2009	09:00	17.0	18.0	2	7.4		6.2	560	8	0.0		0.8	
3/15/2009	09:00	12.0	13.0	3	7.5		7.5	550	3	2.5		1.2	
2/8/2009	09:00	17.0	16.0	2	7.4			580	30	0.0		0.7	
1/4/2009	09:00	17.0	18.0	2	7.4		6.6	560	60	0.0		0.8	

DATA REPORTS

- Lake Palestine Data Report: Submitted to TCEQ.
  - 393 samples taken between 2011 and 2013.
  - Taken from 4 sites
- Citizen Scientists with the Greater Lake Palestine Council.



Lake Palestine Data Report

August 2011

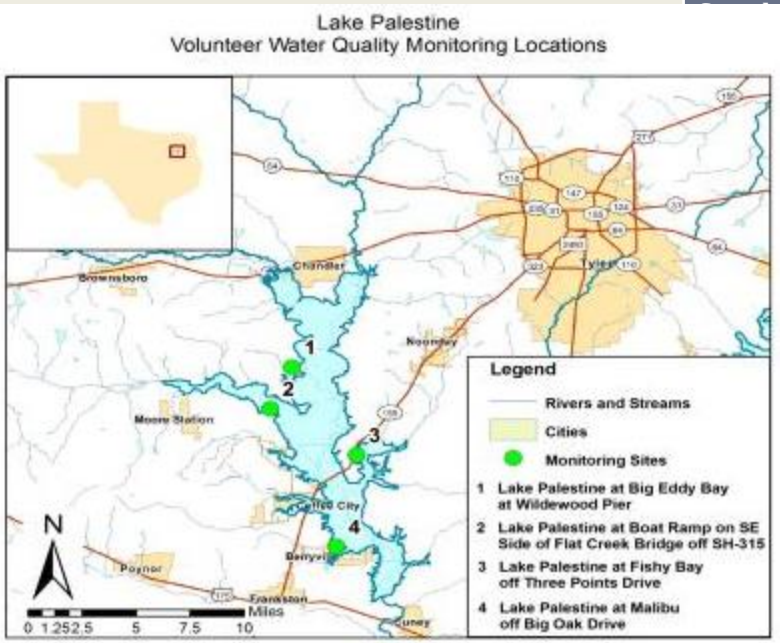
Prepared by:
Texas Stream Team
The Meadows Center for Water and the Environment
Texas State University – San Marcos

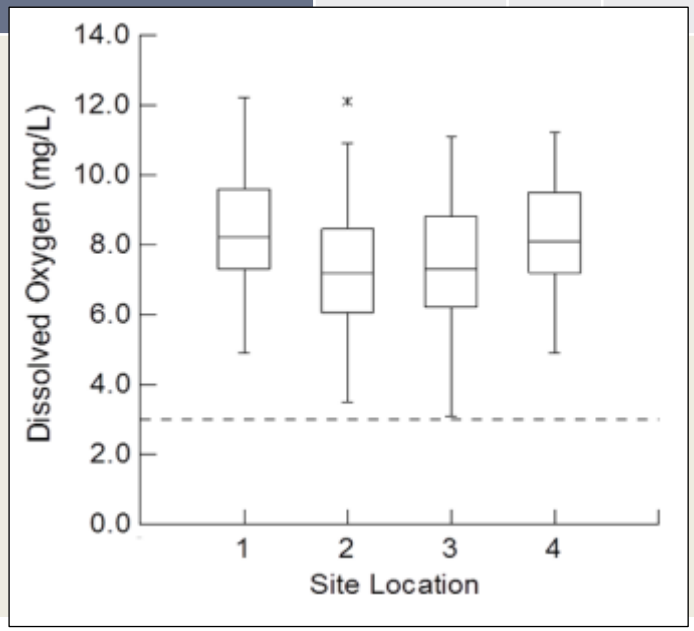
THE MEADOWS CENTER
FOR WATER AND THE ENVIRONMENT

DATA REPORTS

- Comprehensive Watershed Analysis
- GIS Mapping
- Site by Site Analysis

Lake Palestine April 2000 – March 2011						
Parameter	#	% Complete	Min	Avg.	Max	Std. Dev.
Water Temperature (ºF)	388	99	38.3	70.5	100.4	13.9
Dissolved Oxygen (mg/L)	385	98	3.10	7.82	12.20	1.77
Total Dissolved Solids (mg/L)	388	99	34	139	254.6	44.5
pH	391	99	5.50	7.64	9.50	0.52
Secchi disk Depth (m)	368	94	0.10	0.70	1.80	0.20
Total Depth (m)	378	96	0.10	1.47	3.60	0.63
Time			6:30	12:13 PM	6:50 PM	2:34





WHAT ARE THE DATA USED FOR?

- Informed Citizen Scientists about local water quality.
- Informed general public about local water quality.
- Data presented on Dataviewer.
- Data made available to TST Partners.
- Data available to WPP and TMDL Watershed Coordinators.
- Data compiled into Data Summary Reports.
- Data can be used by environmental groups for presentations.
- Data can be displayed in interpretive displays, and at education and outreach events (e.g. Nature Centers).
- Monitoring sites can be an educational event for the public.
- Teachers and students can use data for research projects.

TST PADDLERS

- Implementing a new program.
- Encourage paddlers to get involved in citizen science.
- Paddlers are on the water consistently, and can access locations that monitors from land can’t.
- Current TST Paddlers Groups:
  - San Marcos River
  - Arroyo Colorado
  - Austin Area

Thank you