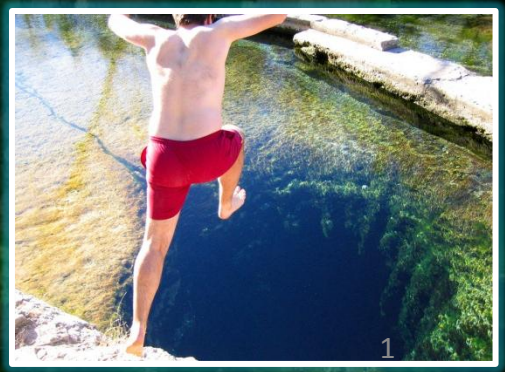
WIMBERLEY VALLEY
Cypress Creek & Blanco River



Basin Steering Committee meeting

March 20th, 2014

Mission

- Engage the community in land and water stewardship at the Jacob's Well Natural Area through education, research and personal experience to sustain the health of our watersheds and aquifers.
- Advocate for clean, clear flowing streams and the equitable allocation of water for current and future needs of the Wimberley Valley.

Program Areas

- Sustainable Living Program
- Education & Outreach
- The Retreat At Jacob's Well
- Land Conservation & Stewardship
- Volunteer Program
- Policy & Advocacy
- Research & Monitoring

WVWA

The **Wimberley Valley Watershed Association** (WVWA) contributes monitoring data collected under the Guadalupe Basin CRP quality assurance project plan from the **Blanco River** and **Cypress Creek**

WVWA has been collecting data **since 2003**

Goals

- Establish baseline water quality data
- Identify specific pollution problems
- Detect spatial and temporal trends
- Disseminate findings and make recommendations

Site locations and monitoring frequency

- Eight sites are sampled quarterly
- Wimberley Square is sampled quarterly by GBRA
- Collection, preservation, and transportation are in accordance with TCEQ's Surface Water Quality Monitoring (SWQM) Procedures Manual
- The Quality Assurance Program is implemented by the WVWA as a sub-tier participant of the GBRA's QAPP. WVWA contracts TSU Texas Stream Team to conduct monitoring

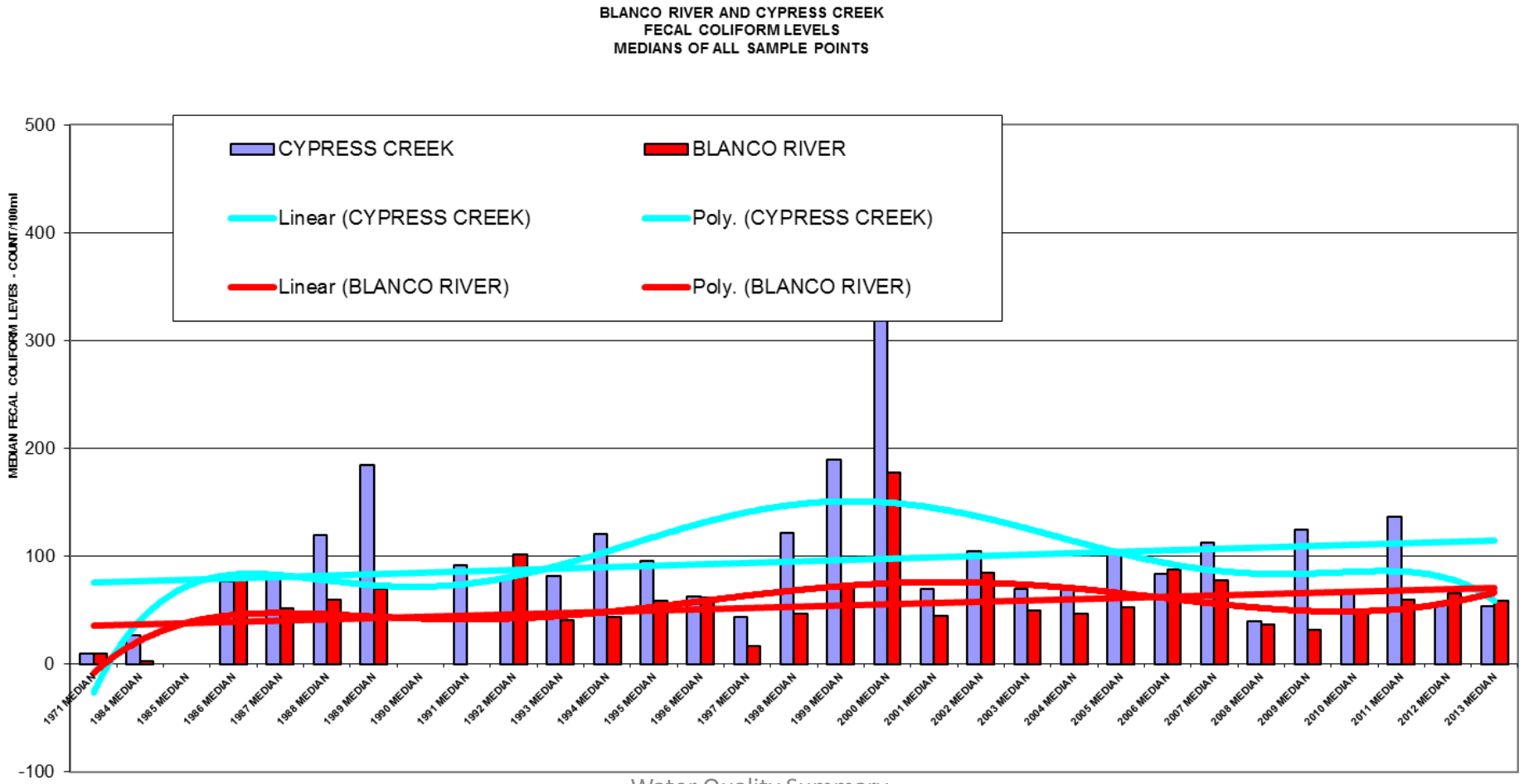
Field Measurements

- Flow (CFS)
- DO (mg/L)
- Conductivity (uS/cm)
- Temperature (C)
- pH
- Flow Severity
- Days Since Rain

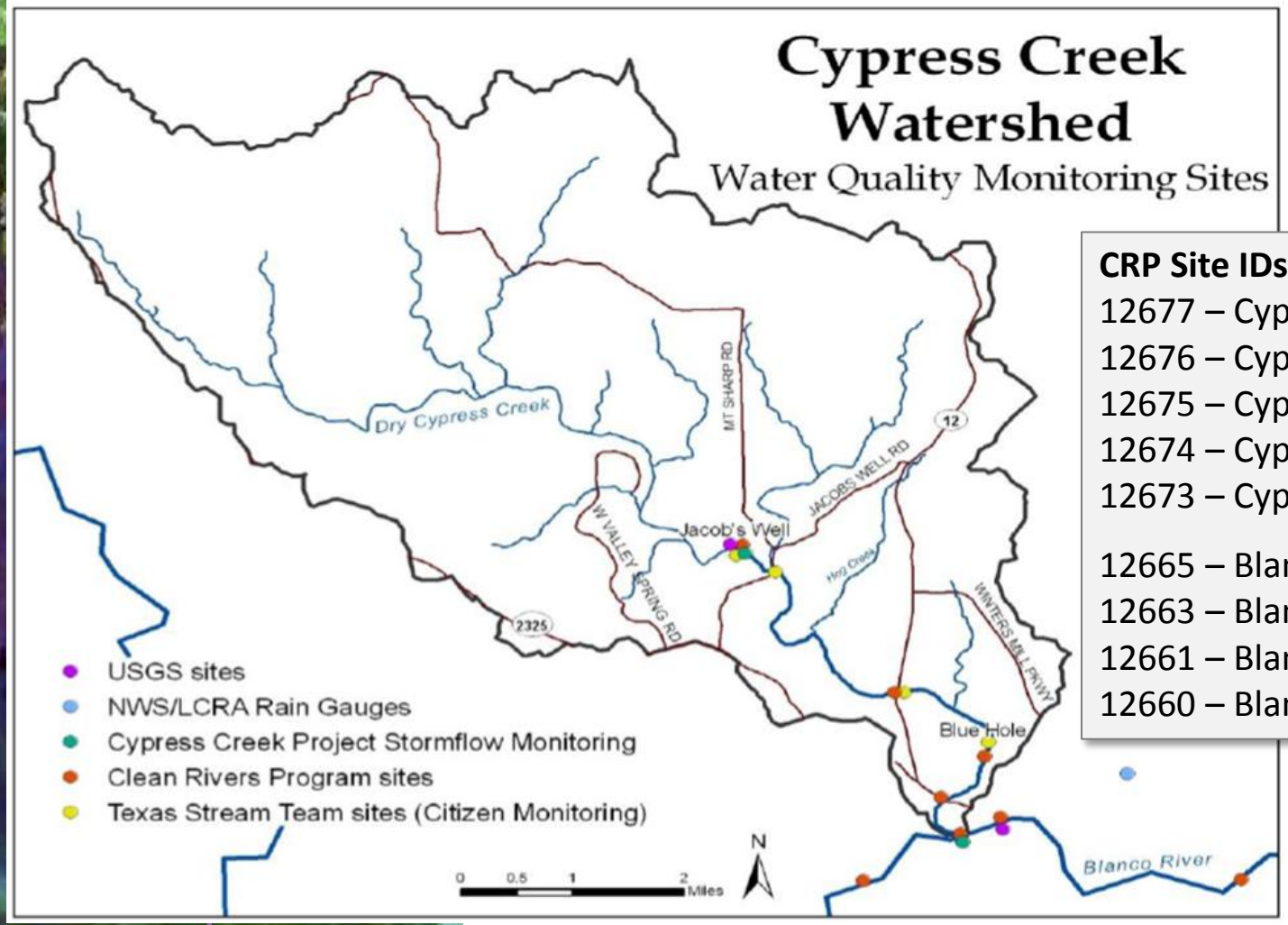
Water Chemistry (GBRA Lab)

- E. coli (MPN/100 mL)
- Ammonia (mg/L)
- Total P (mg/L)
- Total Suspended Solids (mg/L)
- Nitrate (mg/L)

Citizen collected bacteria data



Monitoring Cypress Creek



CRP Site IDs:

12677 – Cypress Creek - *Jacobs Well*
12676 – Cypress Creek - *RR12 North*
12675 – Cypress Creek - *Blue Hole*
12674 – Cypress Creek - *RR12 (GBRA)*
12673 – Cypress Creek - *confluence*

12665 – Blanco River – Fishcer Store
12663 – Blanco River - 7-A @ 1492
12661 – Blanco River – *RR 12*
12660 – Blanco River - Fulton CR173

Budget

- Lab Analysis (GBRA)
- Field Technician (Texas State Univ.)
- Equipment and Training

2003	2004	2005	2006	2007	2008	
$10,062	$ 9,968	$7,352	$8,296	$9,131	$ 6,419	
2009	**2010**	**2011**	**2012**	**2013**	**2000-2013**	
$ 9,107	$11,109	$8,633	$8,280	$7,849	$ 96,867	**TOTAL**

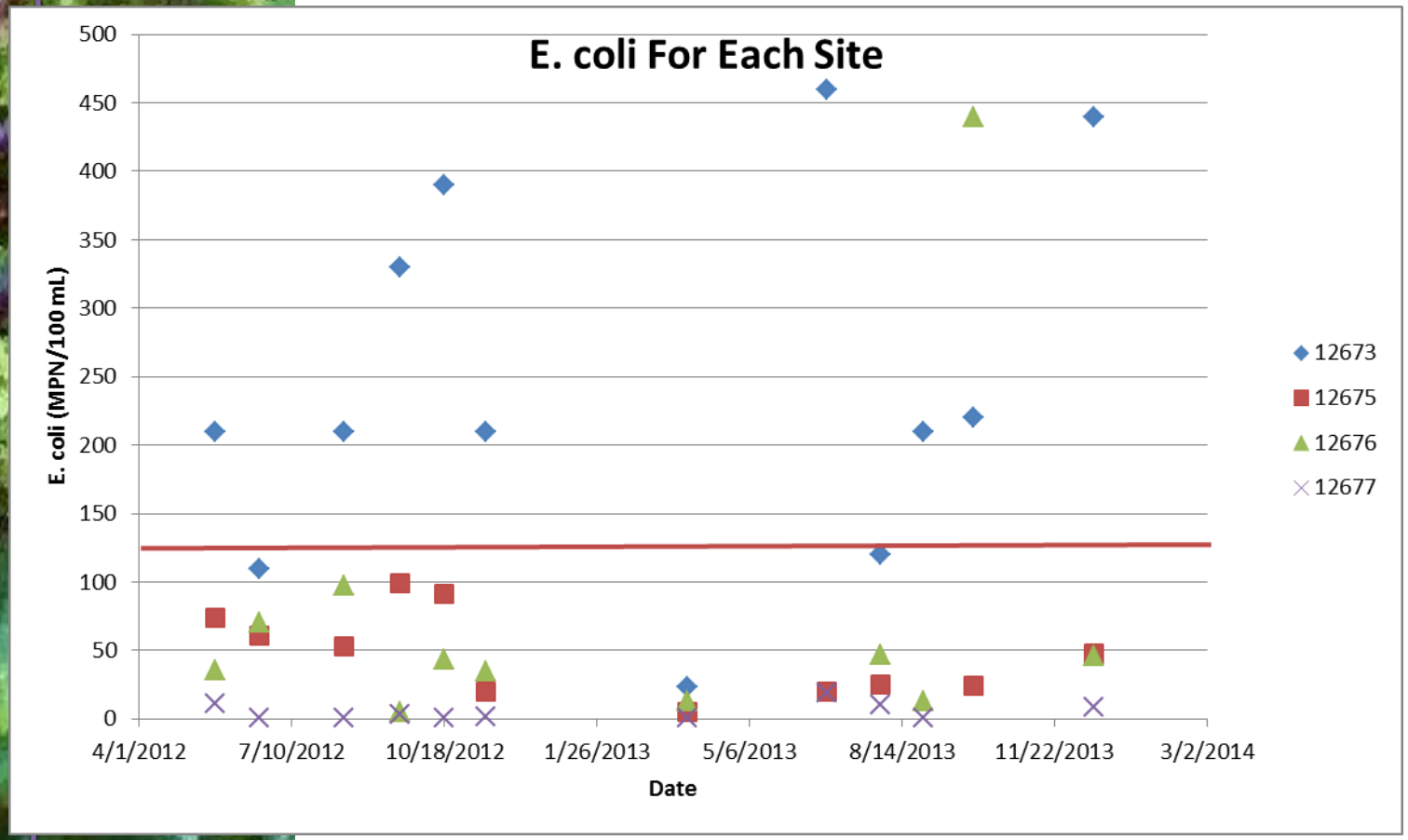
Data Collection

	Parameter	Parameter Code	8/2/10 1211	10/5/10 1215	1/4/11 1325	3/1/11 1059	6/1/11 1145	10/12/11 1248
	Flow (cfs)		4	21	4.7	5	0.3	dry
✓	E. coli(org/100mL)	31699	190	140	110	250	460	
	Suspended Solids(mg/L)	530	3.3	1.4	<1	1.3	0.9	
	Turbidity(NTU)	82079	3.1	0.9	0.5	0.7	0.5	
	pH	400	7.7	7.9	7.8	7.9	7.7	
✓	Temperature(C)	10	25.7	19.4	12.8	15.9	24.8	
✓	Dissolved Oxygen(mg/L)	300	7.4	8.5	9.2	9.2	6.1	
✓	Conductivity(umhos/cm)	94	576	576	540	567	382	
✓	Total Phosphorus(mg/L)	665	<0.05	<0.05	<0.05	<0.05	<0.05	
	Nitrate-N(mg/L)	620	0.12	0.23	0.12	0.08	0.2	
	Chloride(mg/L)	940	21.8	17.6	17.8	19.8	24	
	Sulfate(mg/L)	945	23.4	19.3	23.3	24	22.8	
	Total Hardness(mg/L)	900	280	280	261	286	307	
	Ammonia-N(mg/L)	610	<0.1	0.12	<0.1	<0.1	0.12	
	Chlorophyll a(mg/m^3)	32211	<1	<1	<1	1.1	1.8	
	Pheophytin(mg/m^3)	32218	<1	<1	<1	<1	<1	
	Total Kjeldahl Nitrogen (mg/L)	625	0.27	<0.2	<0.2	0.23	<0.2	

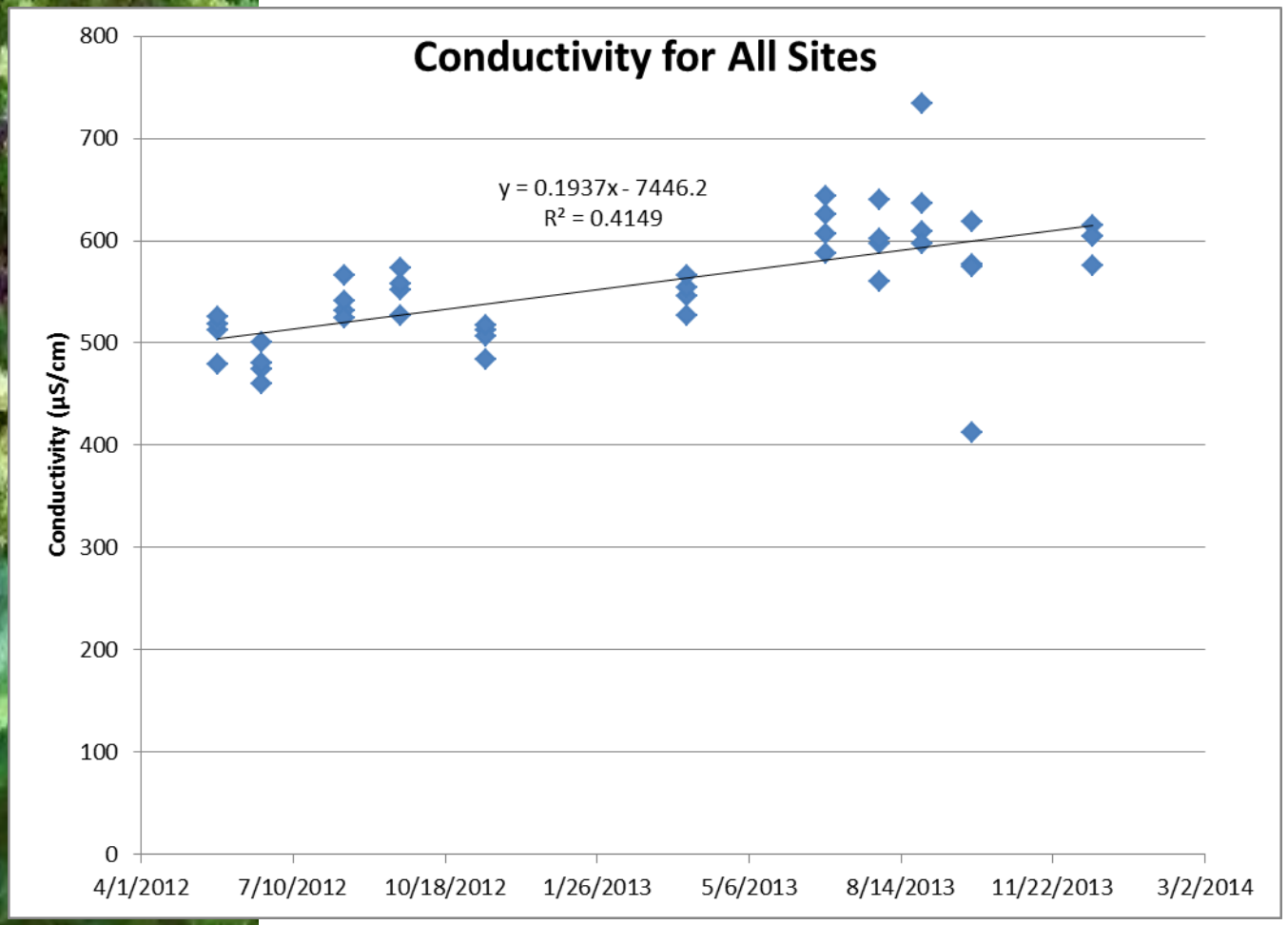
2008

2011

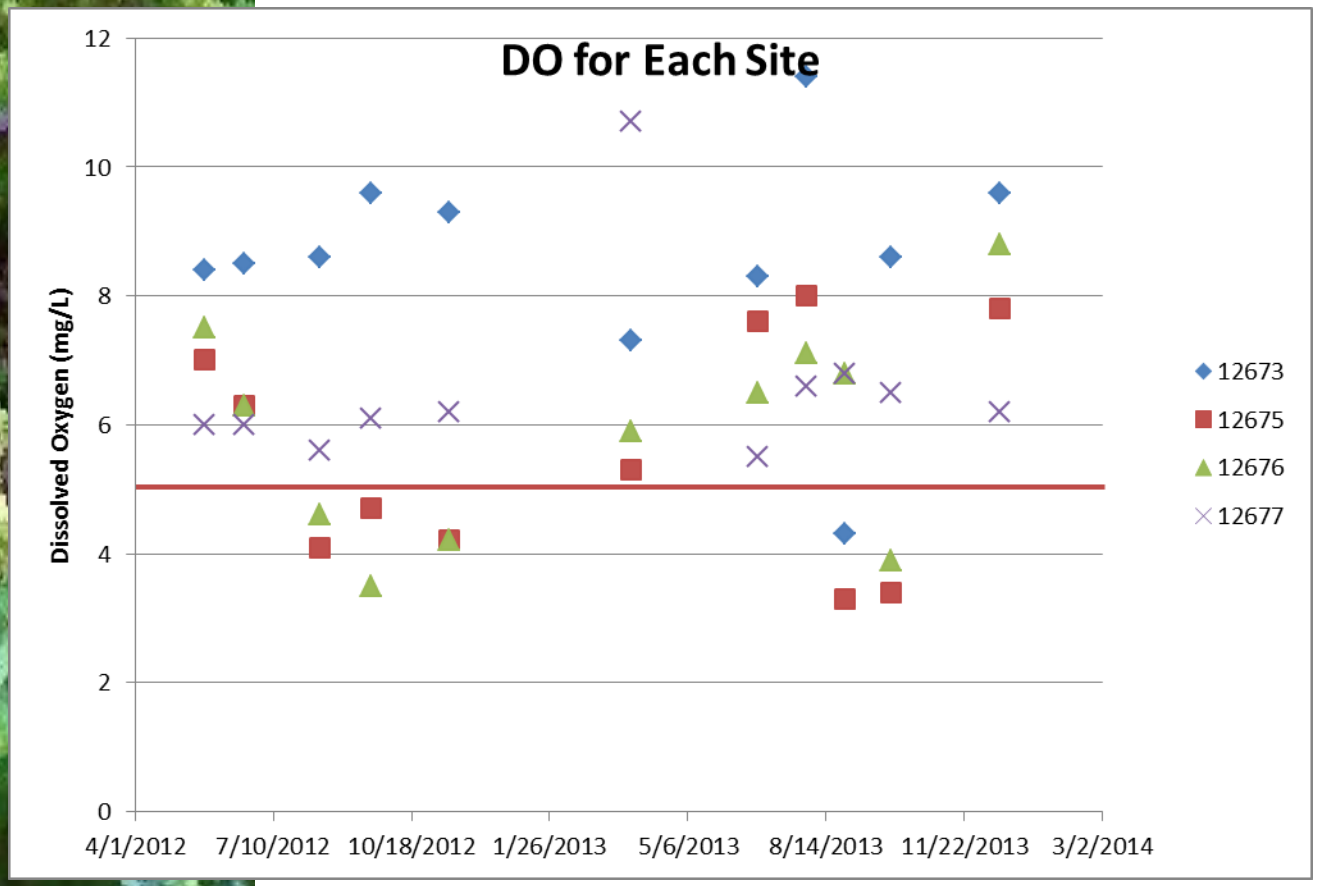
Confluence w/ Blanco River



Conductivity is increasing over time



D.O. depressed at Blue Hole =



D.O. declines over past decade

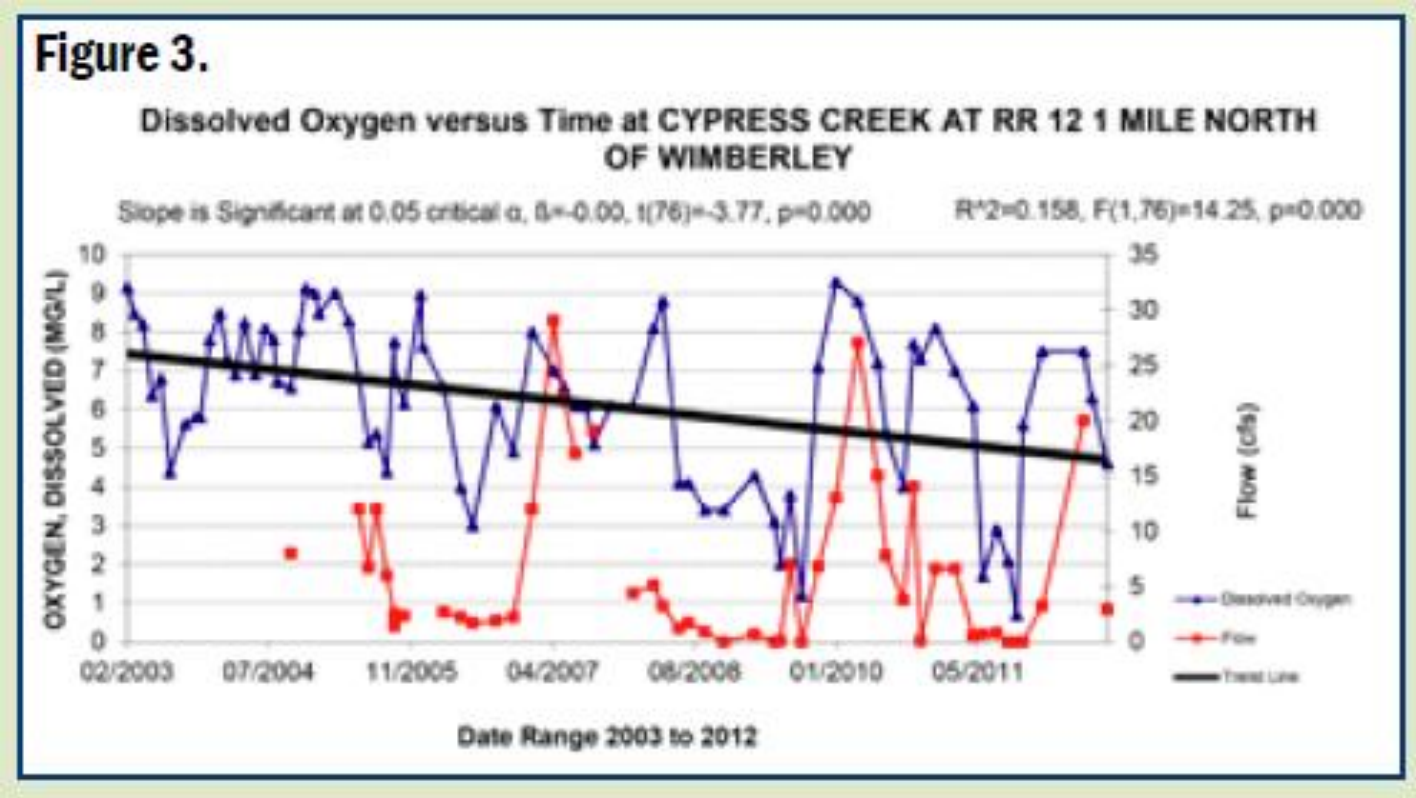
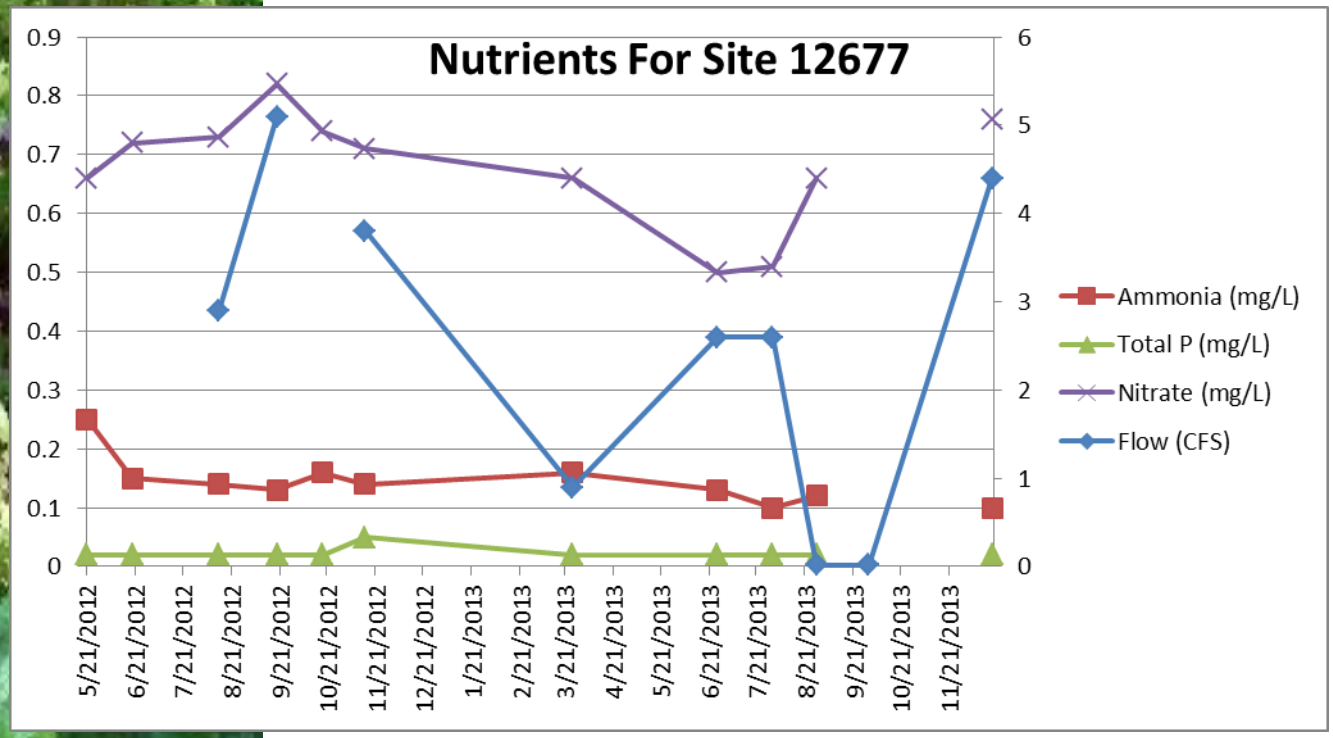


Fig 3 is an image from the GBRA 2013 CRP report (p.51)

Nutrients are elevated at Jacob's Well



NOT exceeding the screening criteria of 1.95 milligrams per liter

Contact recreation / lower TARGET in WPP

Fish Kill

September 2013

Approx. 25-30 fish died (sun fish and bass) in the City of Woodcreek. The cause seems to be low or no flow in Cypress Creek causing dissolved oxygen levels to drop. Additional stress could also be caused by recent rains stirring up sediment releasing sulfur dioxide into the water column. This combination of high concentrations of sulfur dioxide and low dissolved oxygen most likely caused the fish kill.

Cypress Creek Watershed Issues

- Groundwater decline and low spring flows causing depressed dissolved oxygen in Cypress Creek
- Urbanization and “failing” septic tanks possibly causing increased levels of bacteria, nutrients and suspended solids from Wimberley Square to confluence
- Public water supply impacted by bacteria found in groundwater samples

Additional Monitoring

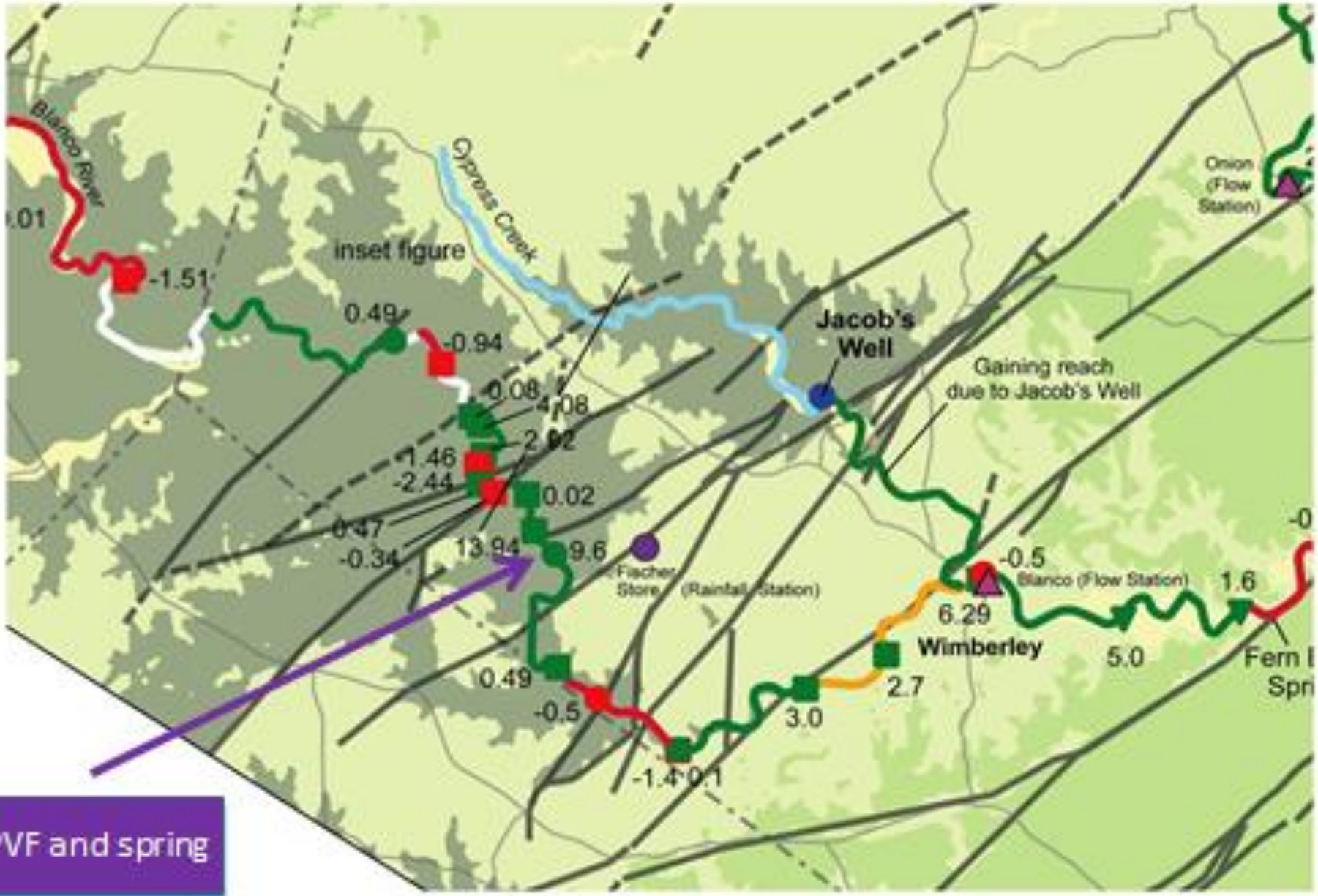
- Repeat Emerging Containments Sampling - USGS (400 parameters baseline 2005)
- Biological Study (Zara Environmental)
- Bacterial Intensive Monitoring Event
- Bacterial Source Tracking
- Stormwater Sampling
- Monitor BMP effectiveness
- Local Groundwater Model (EAA & SWRI)
- Groundwater Monitoring
- Insure USGS Station is maintained

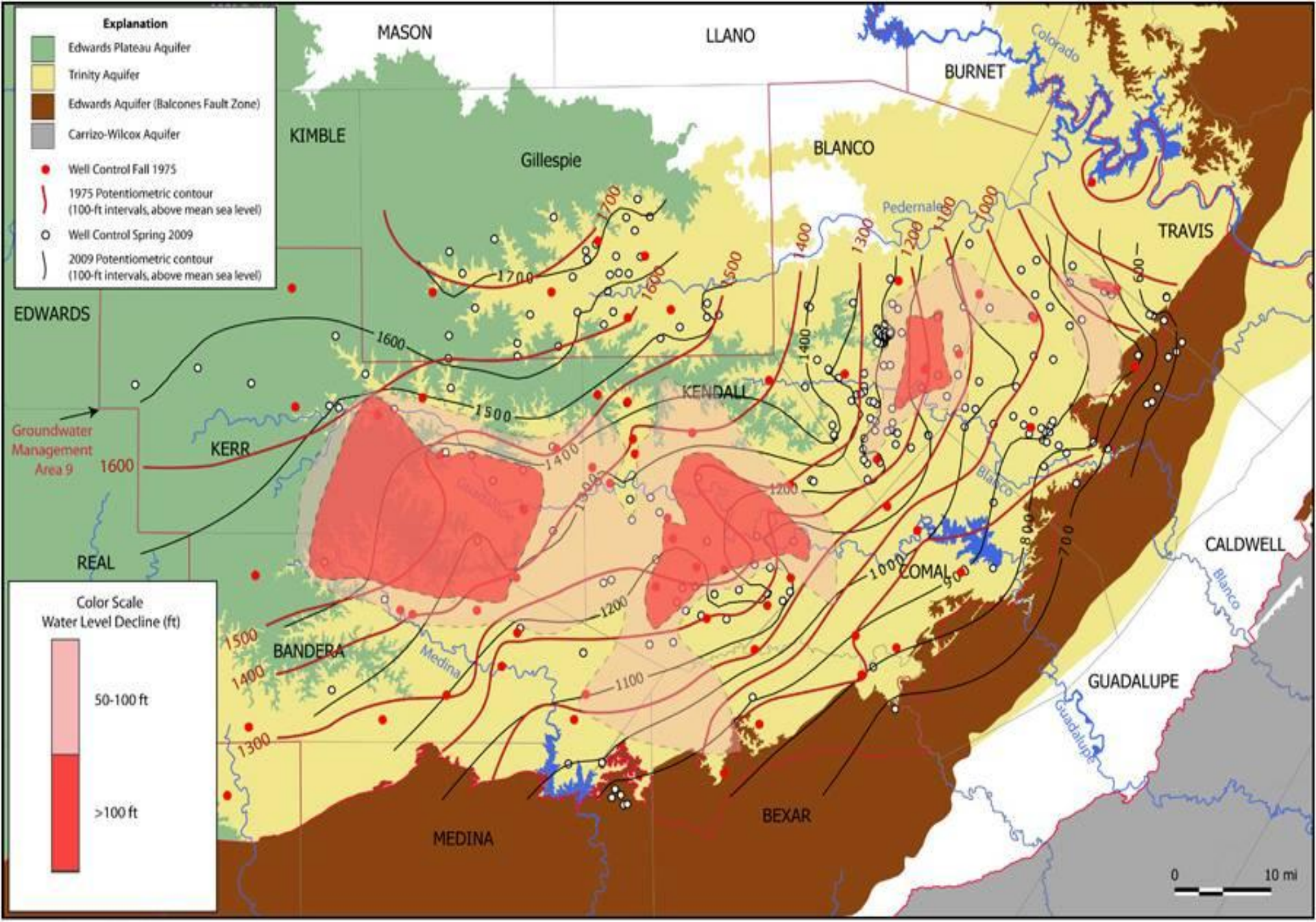
Actions over the next year

- City of Wimberley is taking necessary steps to build wastewater plant for downtown
- Continue research on newly discovered Pleasant Valley springs on the Blanco
- Continue Science Dive Program at JW
- Develop SGWMA Protection Strategy
- Secure commitments from key stakeholders to support WPP match
- Write Grants for WPP Implementation

Jacob's Well Update

Interaction of the Trinity Aquifer and Local Springs





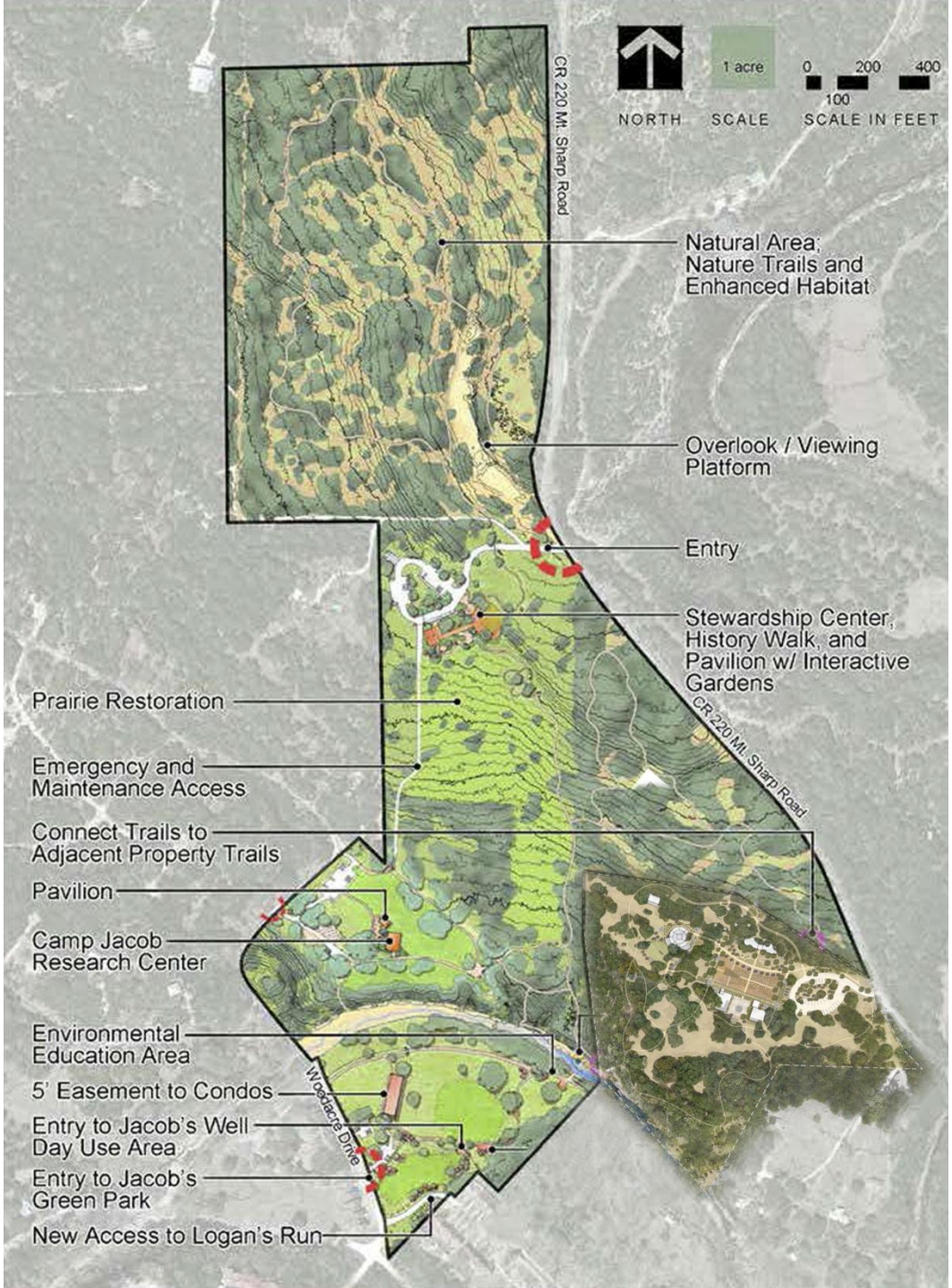
Basemap data provided by the Texas Water Development Board: Major Aquifers of Texas, Major Rivers, and Groundwater Management Areas.

Combined Fall 1975 and Spring 2009 Middle Trinity Potentiometric Maps and net water-level decline map

VISION

Center for Sustainable Living Program

To demonstrate the principles, ways and means of sustainable living, so as to promote, protect and perpetuate the health of our community and the longterm stewardship of Jacobs Well and Cypress Creek.


NORTH
1 acre
SCALE
0
100
200
400
SCALE IN FEET
CR 220 Mt. Sharp Road
Natural Area; Nature Trails and Enhanced Habitat
Overlook / Viewing Platform
Entry
Stewardship Center, History Walk, and Pavilion w/ Interactive Gardens
Prairie Restoration
Emergency and Maintenance Access
Connect Trails to Adjacent Property Trails
Pavilion
Camp Jacob Research Center
Environmental Education Area
5' Easement to Condos
Entry to Jacob's Well Day Use Area
Entry to Jacob's Green Park
New Access to Logan's Run
Woodacre Drive
CR 220 Mt. Sharp Road

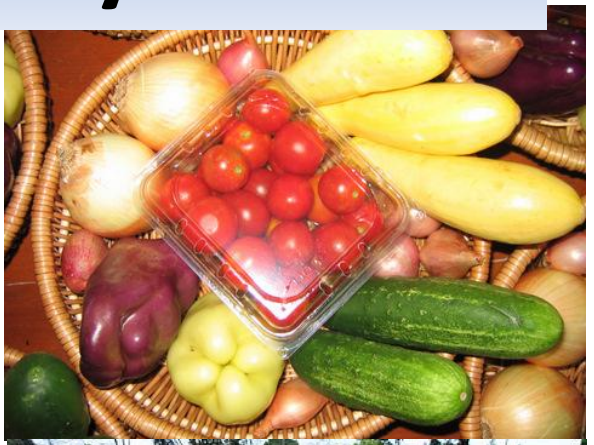
WIMBERLEY VALLEY WATERSHED ASSOCIATION

JACOB'S WELL CENTER FOR SUSTAINABLE LIVING

September 25, 2012

PHARIS DESIGN
PLANNING | LANDSCAPE ARCHITECTURE

Jacob's Well Community Garden



The Retreat at Jacob's Well

Volunteer Program – Hays County Master Naturalist Restoration Rangers

HABITAT RESTORATION

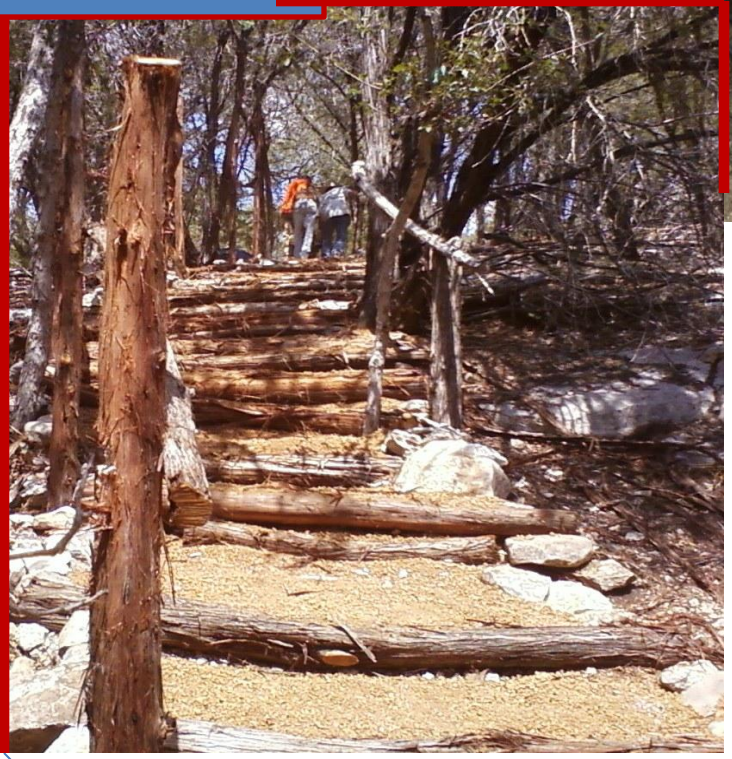
Grassland restoration

Cedar Management

Invasive Species

Riparian Area

Trails & Maintenance



Friends of Jacob's Well


CARES
CARES
CARES
CARES

Environmental Education


Restoration


KK EQUIPMENT
320


KYE EQUIPMENT

Everyone is invited to join Hays County, Saturday May 10th for the Grand Opening of Jacob's Well Natural Area

Contact Info

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