

Tres Palacios Creek Watershed: *Watershed Data and Land Use Types*

T. Allen Berthold, PhD

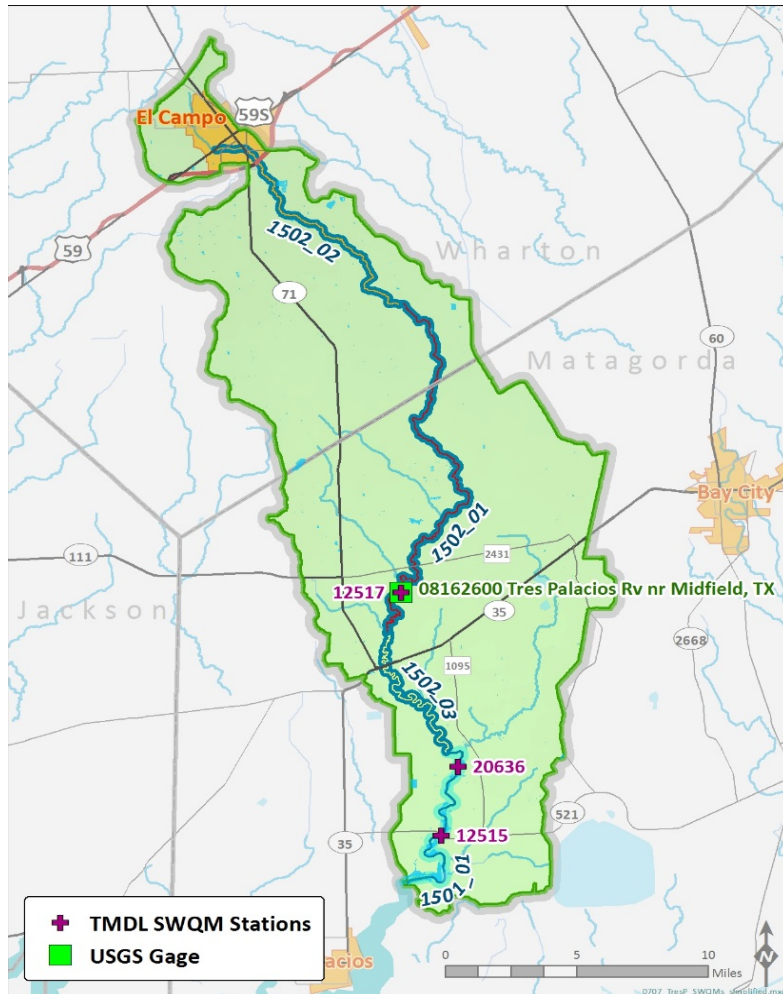
Clare Entwistle

Texas Water Resources Institute

May 5, 2016



Tres Palacios Watershed Description

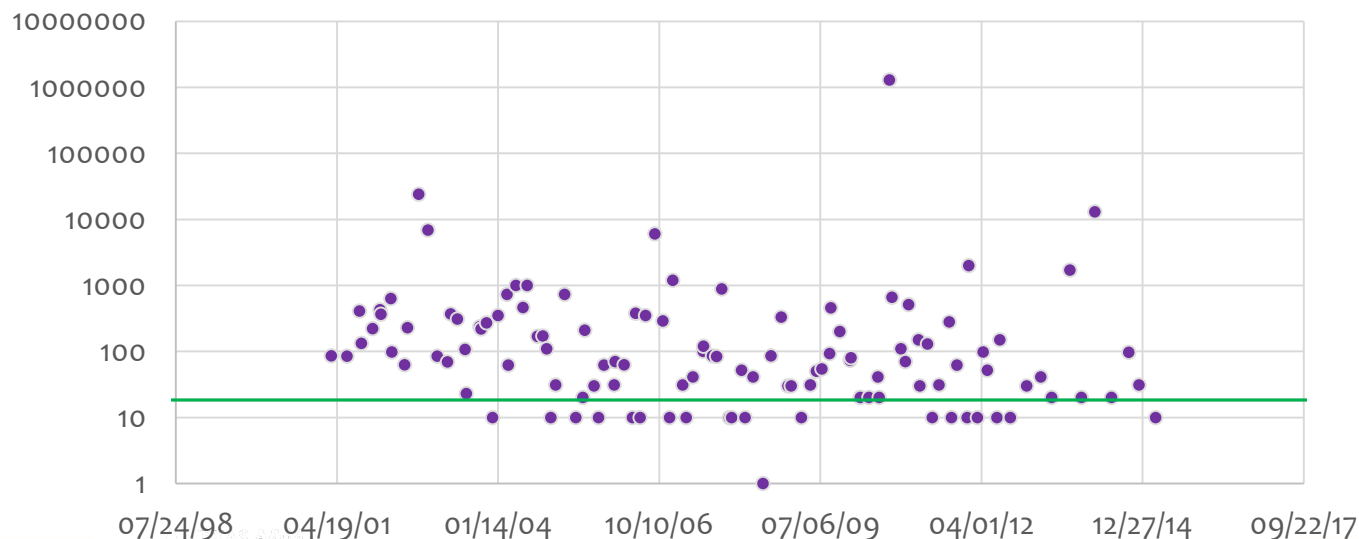


- 171,816 acres (268.5 square miles)
- Creek begins near El Campo in Wharton County
- Tidal segment begins ~0.5 miles upstream of confluence with Wilson Creek and flows ~9 miles into Tres Palacios Bay
- Meets Tres Palacios Bay near Palacios in Matagorda County
- 2 Monitoring Sites in Tidal Section
 - ▲ **20636** – downstream of confluence with Wilson Creek
 - ▲ **12515** – at FM 521

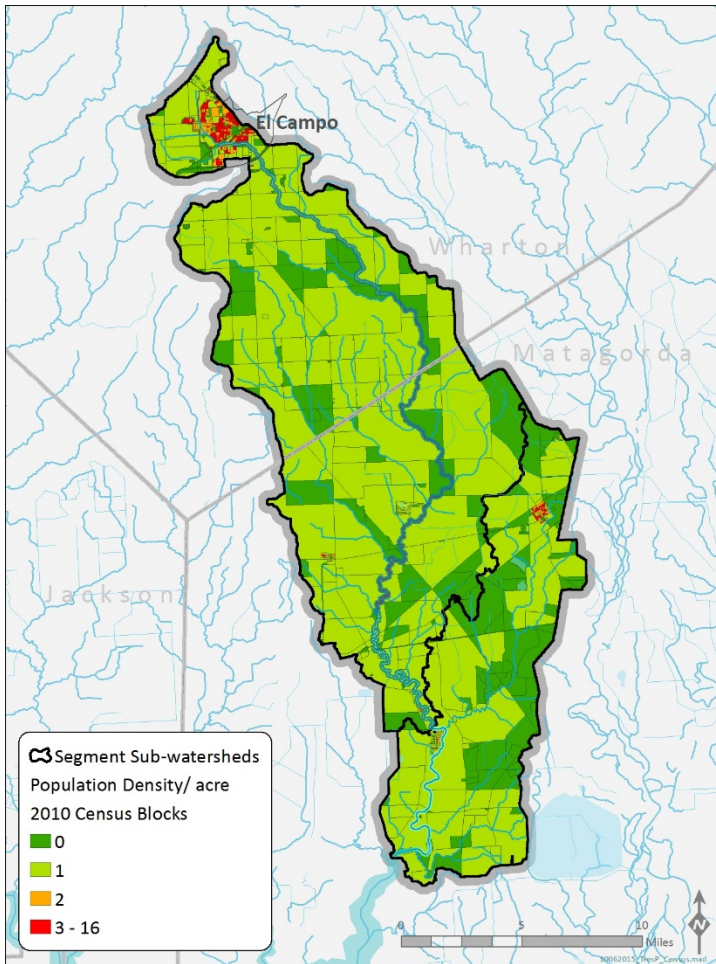
Bacteria

Data used for:	Parameter	ASMT Start Date	ASMT End Date	# of samples	Geometric Mean	Criteria	Designated Use
Assessment	Enterococcus	12/1/2005	11/30/2012	64	67.19	35.00	Recreation
All Data	Enterococcus	3/14/2001	3/17/2015	115	92.42	35.00	Recreation

Bacteria Levels

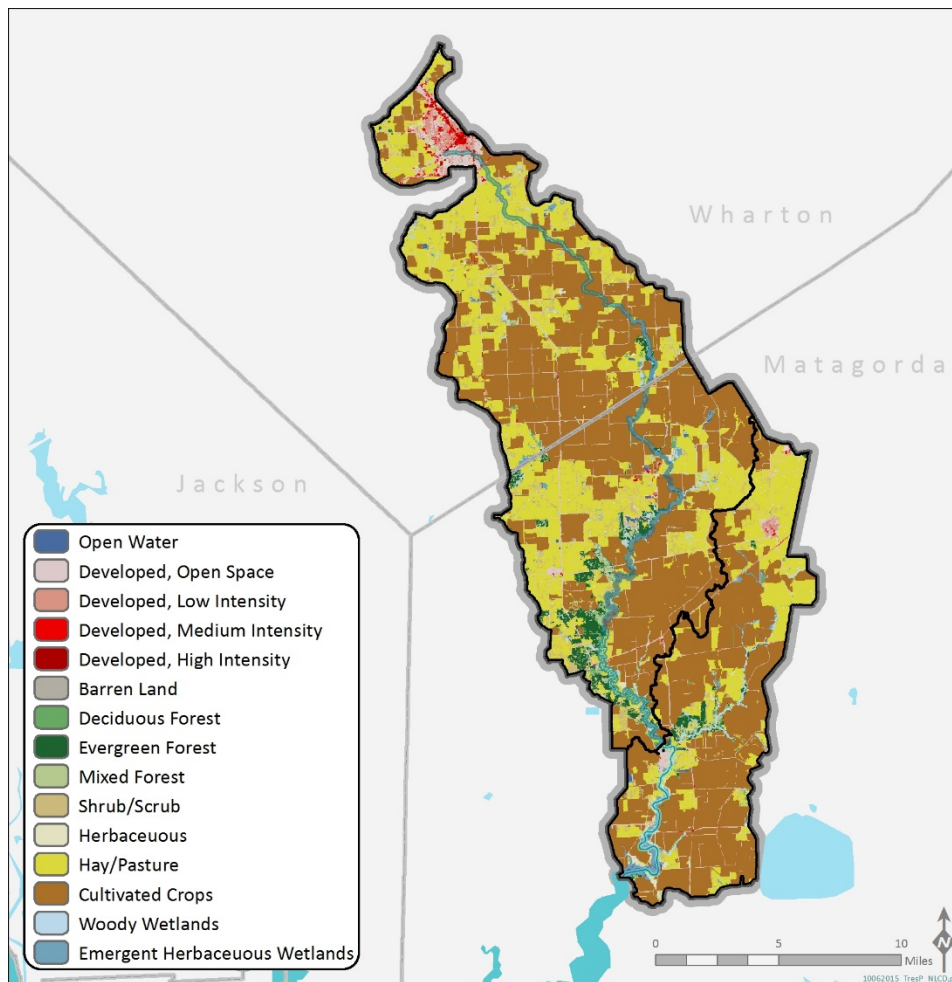


Total Population



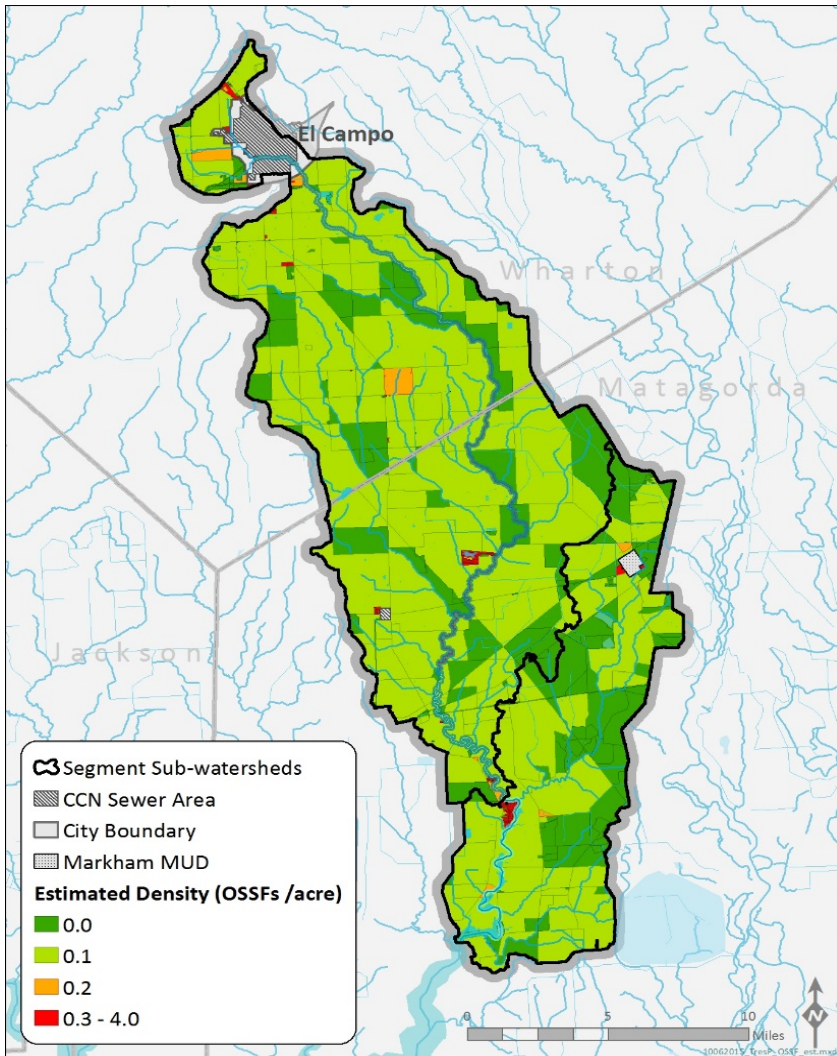
Watershed	Segment	2010 Census Population
Tres Palacios Creek	Tidal (1501)	1,788
	Above Tidal (1502)	12,875
	Total	14,663

Land Cover in the Watershed



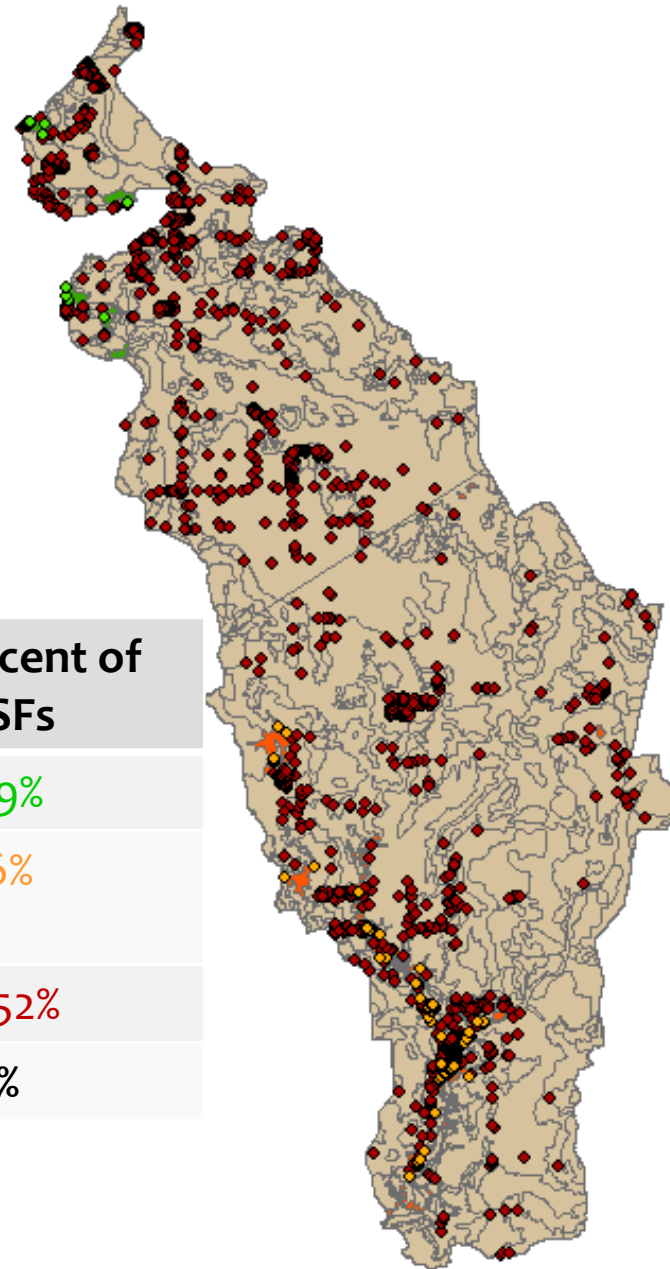
2011 NLCD Classification	Tres Palacios Creek Tidal (1501)		Tres Palacios Creek Above Tidal (1502)		Tres Palacios Creek Watershed Total	
	mi ²	% of Total	mi ²	% of Total	mi ²	% of Total
Open Water	1.0	1.2%	0.5	0.3%	1.5	0.6%
Developed, Open Space	2.7	3.5%	9.0	4.8%	11.8	4.4%
Developed, Low Intensity	0.8	1.0%	2.2	1.2%	3.0	1.1%
Developed, Medium Intensity	0.1	0.1%	1.0	0.5%	1.1	0.4%
Developed, High Intensity	0.0	0.0%	0.4	0.2%	0.4	0.1%
Barren Land	0.1	0.1%	0.1	0.1%	0.2	0.1%
Deciduous Forest	0.6	0.8%	2.2	1.2%	2.8	1.0%
Evergreen Forest	1.1	1.4%	4.8	2.5%	5.8	2.2%
Mixed Forest	0.5	0.7%	1.8	0.9%	2.3	0.8%
Shrub/Scrub	1.8	2.3%	8.3	4.4%	10.1	3.8%
Herbaceous	1.4	1.7%	1.7	0.9%	3.0	1.1%
Hay/Pasture	18.8	23.9%	59.8	31.5%	78.6	29.3%
Cultivated Crops	47.0	59.8%	93.8	49.4%	140.9	52.5%
Woody Wetlands	1.2	1.5%	3.4	1.8%	4.6	1.7%
Emergent Herbaceous Wetlands	1.5	1.9%	0.9	0.5%	2.4	0.9%
Total	78.6	100%	189.9	100%	268.5	100%

OSSF Estimates



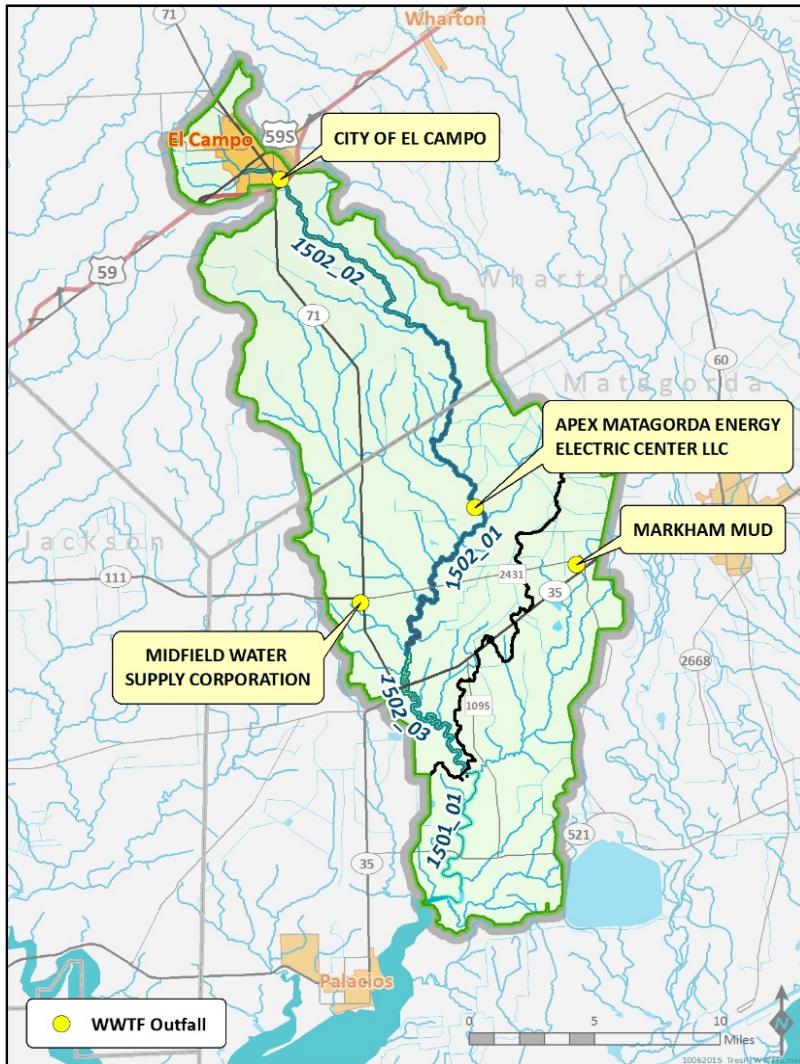
Watershed	Segment	Estimated OSSFs
Tres Palacios Creek	Tidal (1501)	510
	Above Tidal (1502)	1,288
	Total	1,798

Estimated OSSFs and Soils Map



Soil Type	Failure Rate	Number of OSSFs	Percent of OSSFs
not limited	5%	11	0.69%
somewhat limited	10%	66	4.16%
very limited	15%	1,511	95.52%
Total	N/A	1,588	100%

WWTFs within Tres Palacios Watershed



TPDES Permit No.	Facility	Held By	AU	Receiving Waters	Discharge Type	Permitted Discharge ^a (MGD)	Recent Discharge (MGD)
WQ0005009000	Apex Matagorda Energy Center	Apex Matagorda Energy Center, LLC	1502_01	Tres Palacios Creek Above Tidal	wastes from a compressed air energy storage facility	0.223 (daily avg)	0.079 ^b
WQ0010844001	City of El Campo Wastewater Treatment Facility	City of El Campo	1502_02	Tres Palacios Creek Above Tidal	treated domestic wastewater	2.628 (annual avg)	1.015 ^b
WQ0013091001	Midfield Wastewater Treatment Facility	Midfield Water Supply Corporation	1502_03	an unnamed tributary; thence to Wallace Creek; thence to Tres Palacios Creek Above Tidal	treated domestic wastewater	0.03 (daily avg)	0.016 ^b
WQ0015075001	Markham MUD Wastewater Treatment Facility	Markham Municipal Utility District	1501_01	an unnamed ditch; thence to Wilson Creek; thence to Tres Palacios Creek Tidal	treated domestic wastewater	0.3 (daily avg)	0.045 ^c

Estimated Livestock and Wildlife in Tres Palacios Watershed

Estimated Numbers of livestock and wildlife in the Tres Palacios Watershed					
	Matagorda	Wharton	Total	AU Conversion	AUs
Horses	696	657	1,353	1.25	1,691
Goats	524	282	806	0.17	137
Sheep	185	154	339	0.2	67
Poultry	29	27	56	0.01	0.56
Feral Hogs	5,516	3,526	9,043	0.125	1130
Deer	5,516	3,526	9,043	0.112	1012

Cattle Estimates

Land Type	Method	Acres	Stocking Rate (cattle/acre)	Cattle Estimates	AU Conversion	AU
Unimproved	Stocking rate	15,378	1/7	2,197	1	2,197
Improved	Stocking rate	50,279	1/3	16,760	1	16,760
Total	Stocking rate	65,657	N/A	18,957	1	18,957
Overall	NASS	65,657	N/A	54,798	1	54,798

Discussion/Thoughts