Upper Trinity River

Water Quality Data Analysis

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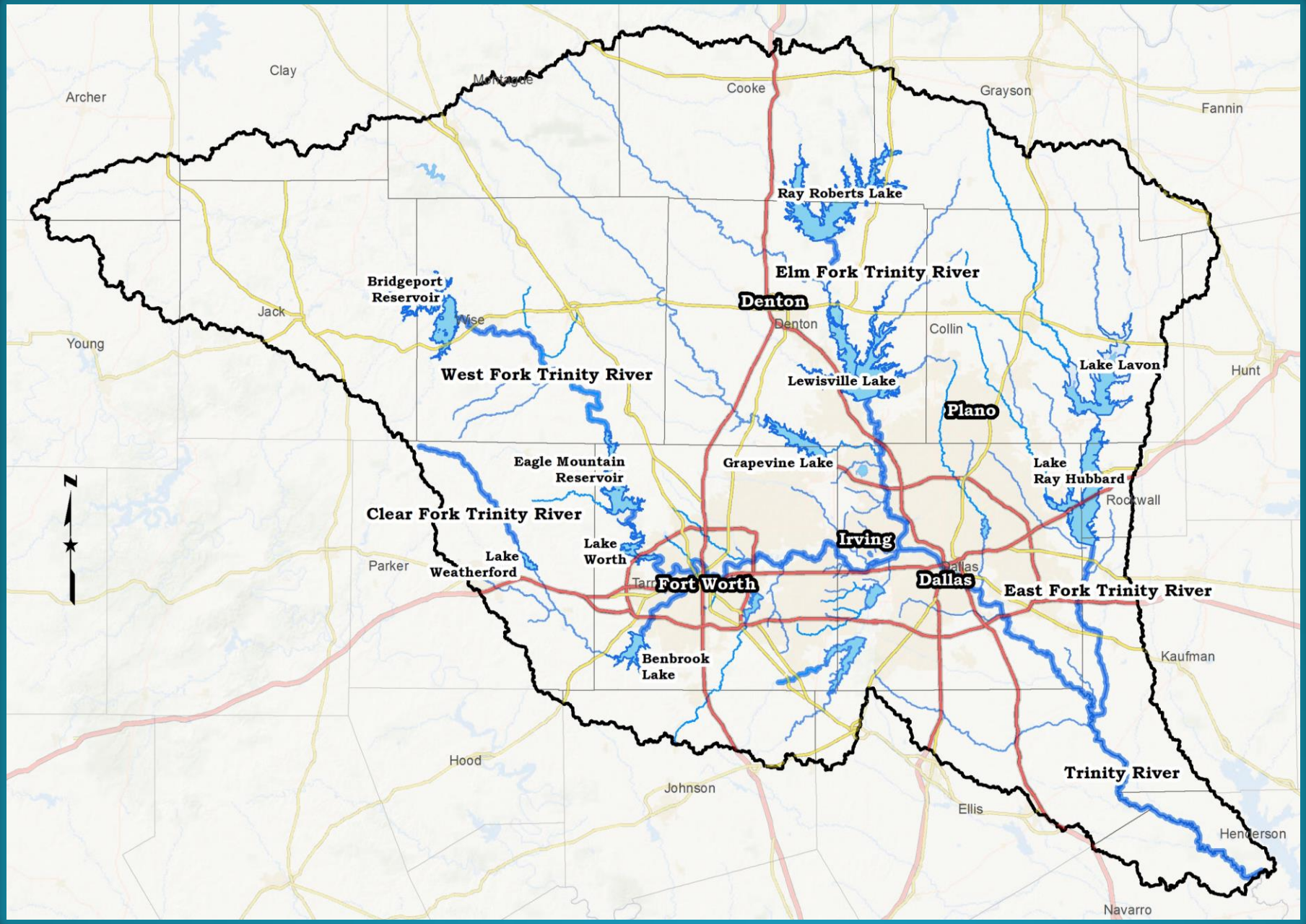
Texas Institute for Applied Environmental Research

OUTLINE

- Geography
- Regional Groups
- *E. coli* Analyses
- Summary

GEOGRAPHY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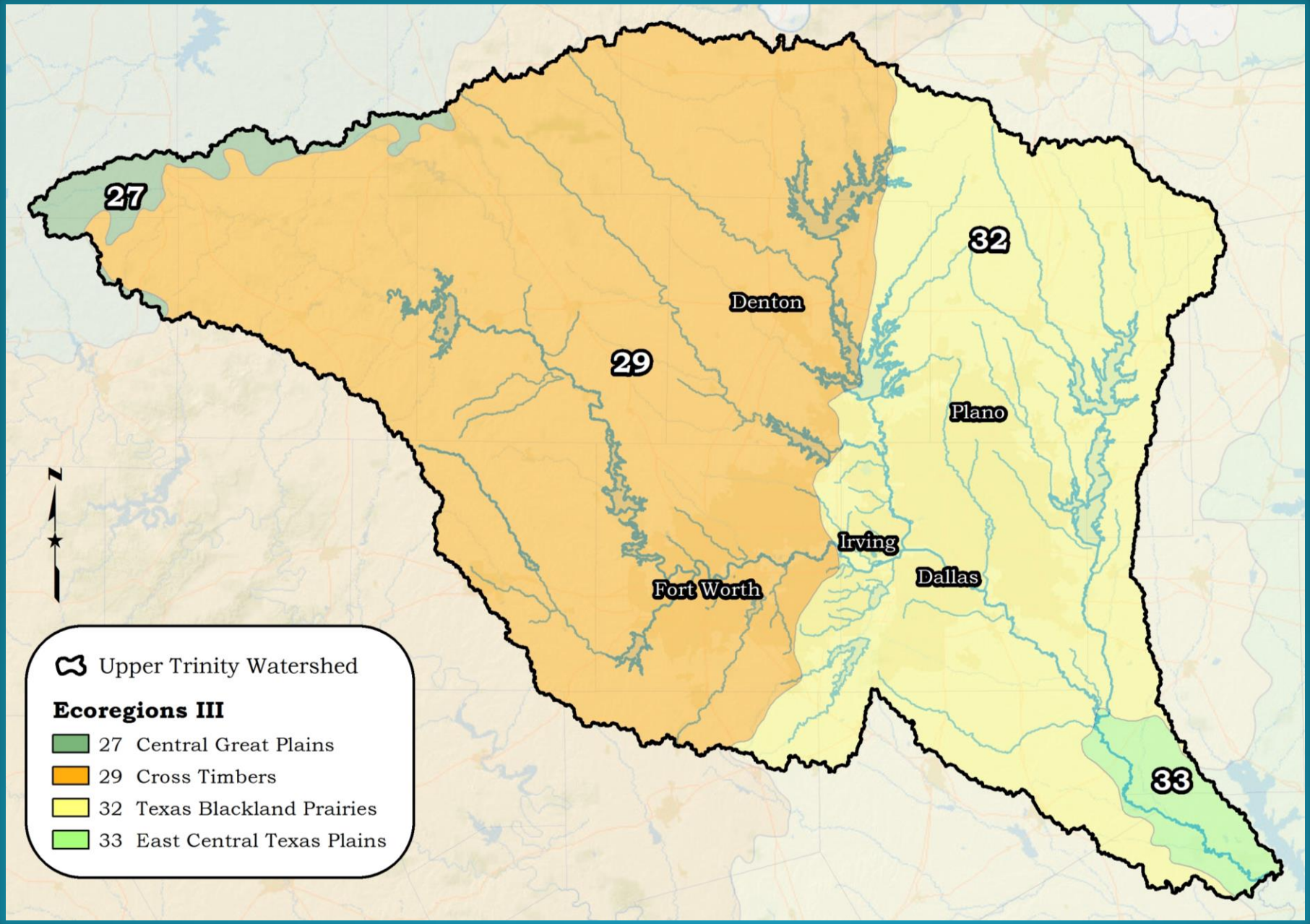
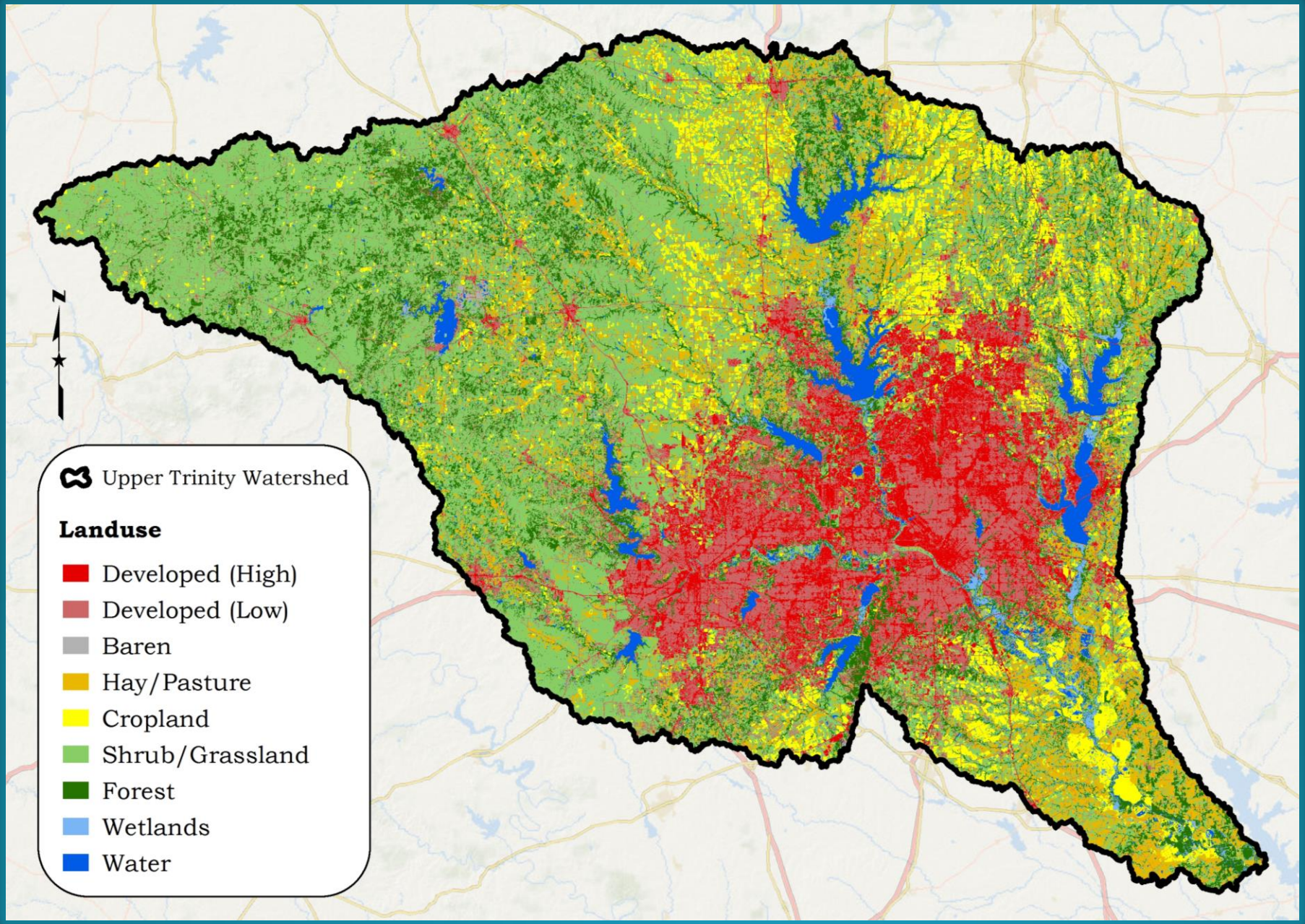
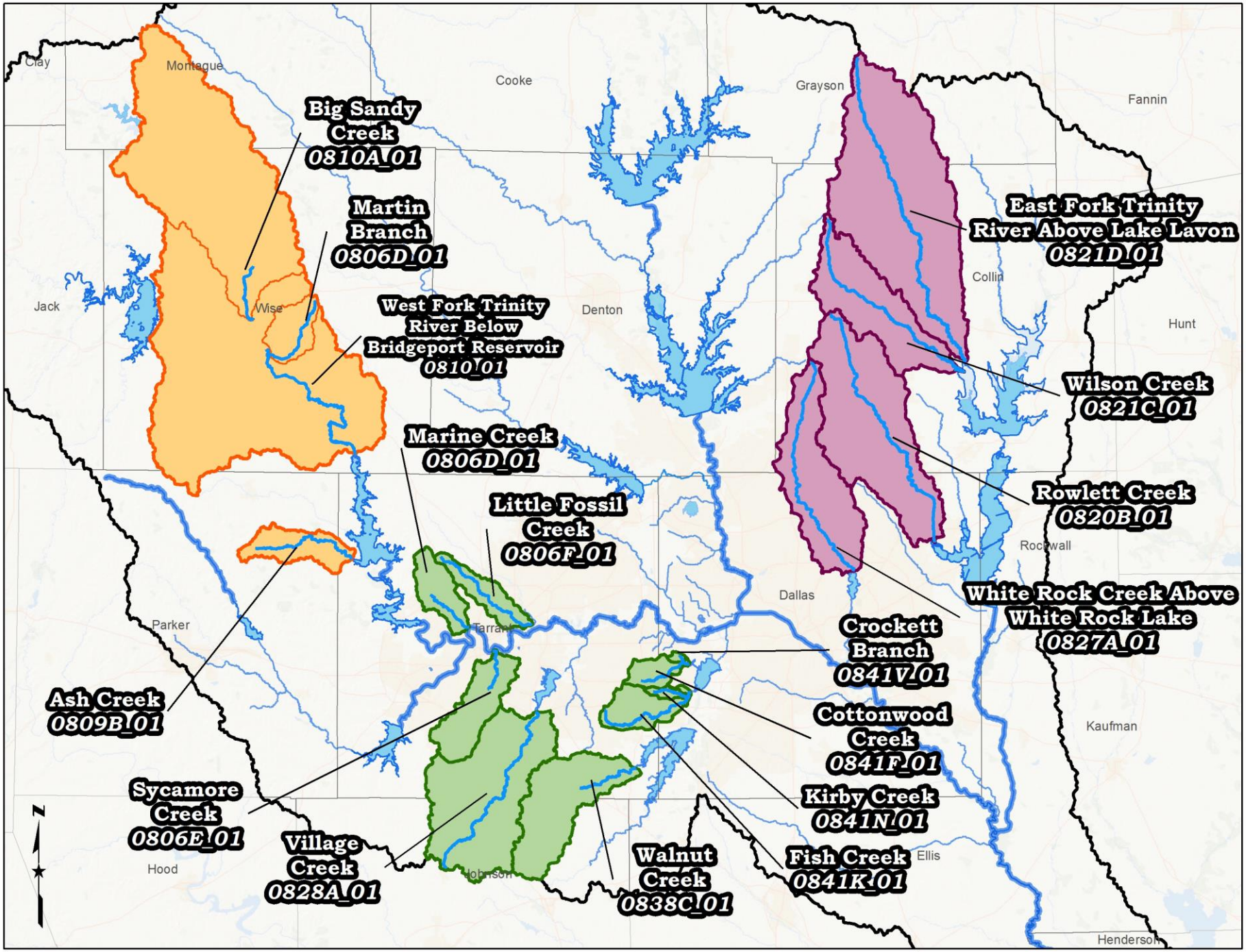
Archer
Montague
Cooke
Grayson
Fannin
Ray Roberts Lake
Elm Fork Trinity River
Bridgeport Reservoir
Jack
Wise
Denton
Denton
Collin
Young
West Fork Trinity River
Lewisville Lake
Lake Lavon
Hunt
Plano
Eagle Mountain Reservoir
Grapevine Lake
Lake Ray Hubbard
Rockwall
Clear Fork Trinity River
Irving
Lake Worth
Lake Weatherford
Parker
Fort Worth
Dallas
East Fork Trinity River
Kaufman
Benbrook Lake
Hood
Johnson
Ellis
Trinity River
Henderson
Navarro


27
29
32
33
Denton
Plano
Irving
Dallas
Fort Worth
N
Upper Trinity Watershed
Ecoregions III
27 Central Great Plains
29 Cross Timbers
32 Texas Blackland Prairies
33 East Central Texas Plains


N
Upper Trinity Watershed
Landuse
Developed (High)
Developed (Low)
Baren
Hay/Pasture
Cropland
Shrub/Grassland
Forest
Wetlands
Water

REGIONAL GROUPS


Big Sandy Creek 0810A_01
Martin Branch 0806D_01
West Fork Trinity River Below Bridgeport Reservoir 0810_01
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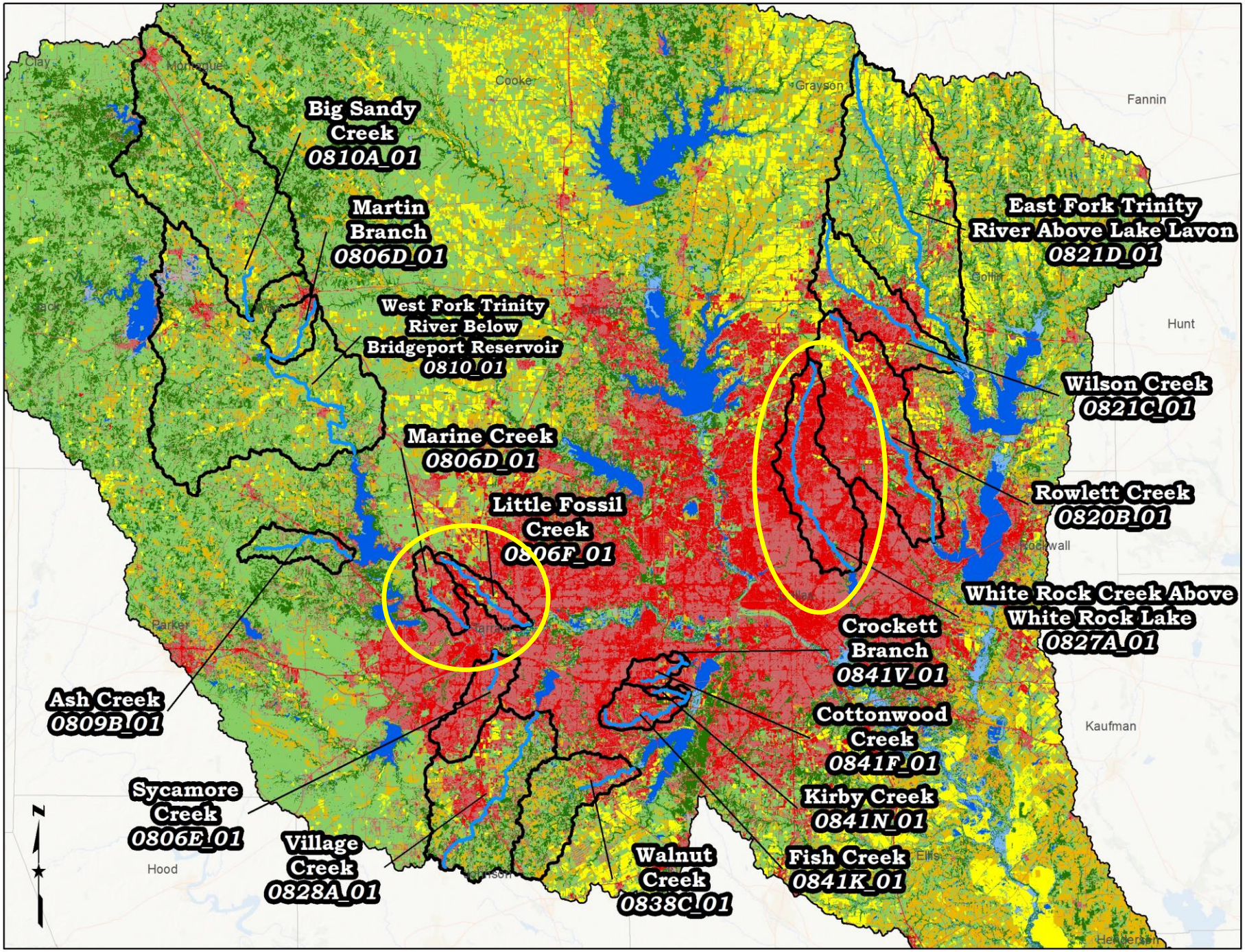
Collin
Hunt
Parker
Tarrant
Dallas
Rockwall
Kaufman
Hood
Johnson
Ellis
Henderson
N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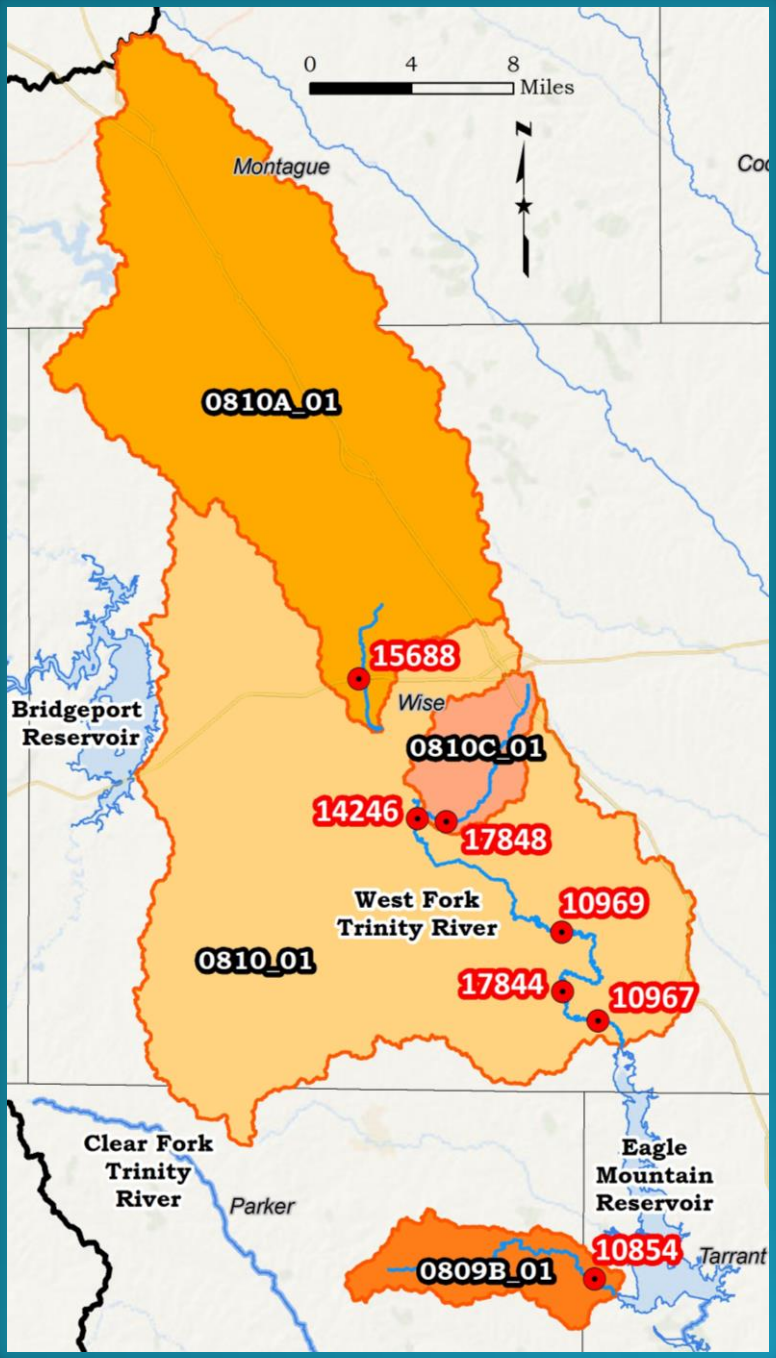
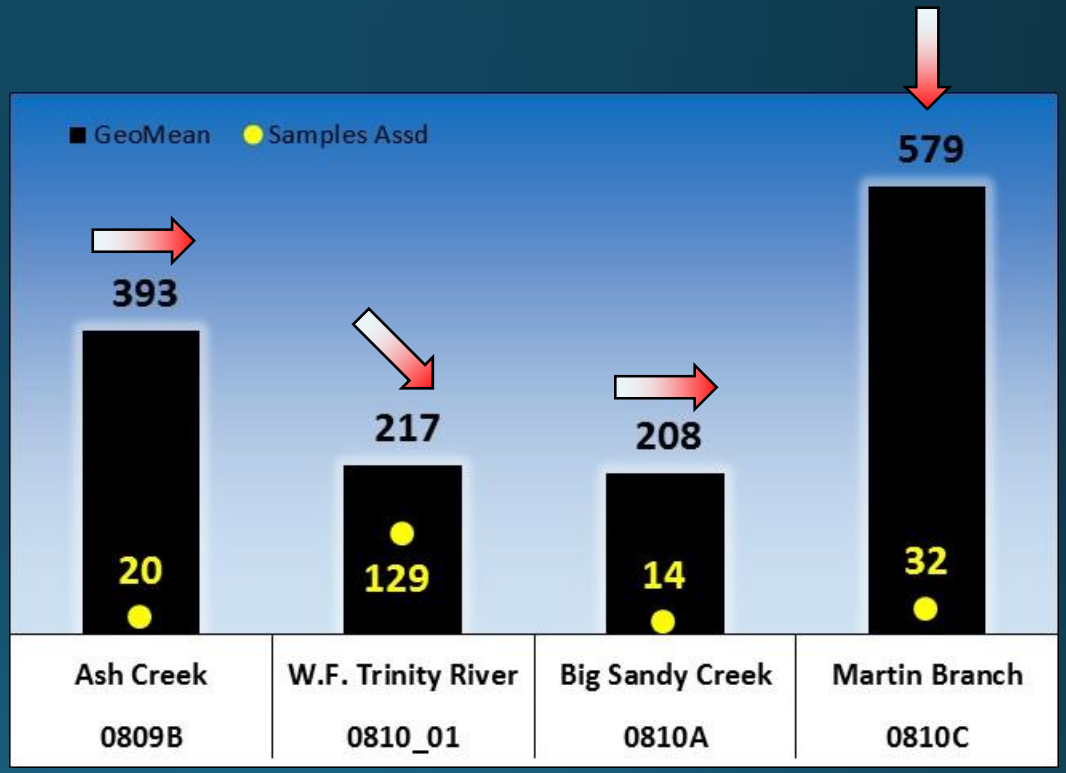
E. COLI Analyses

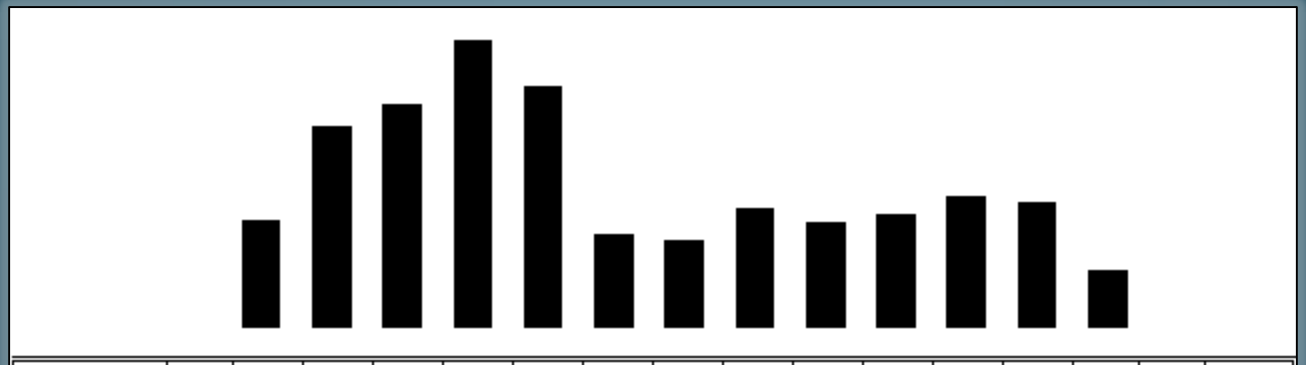
West Region
2014 Assessment



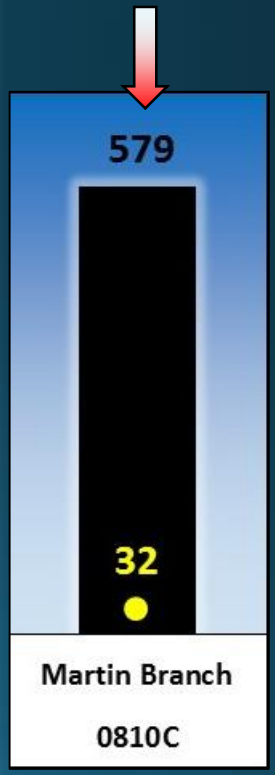


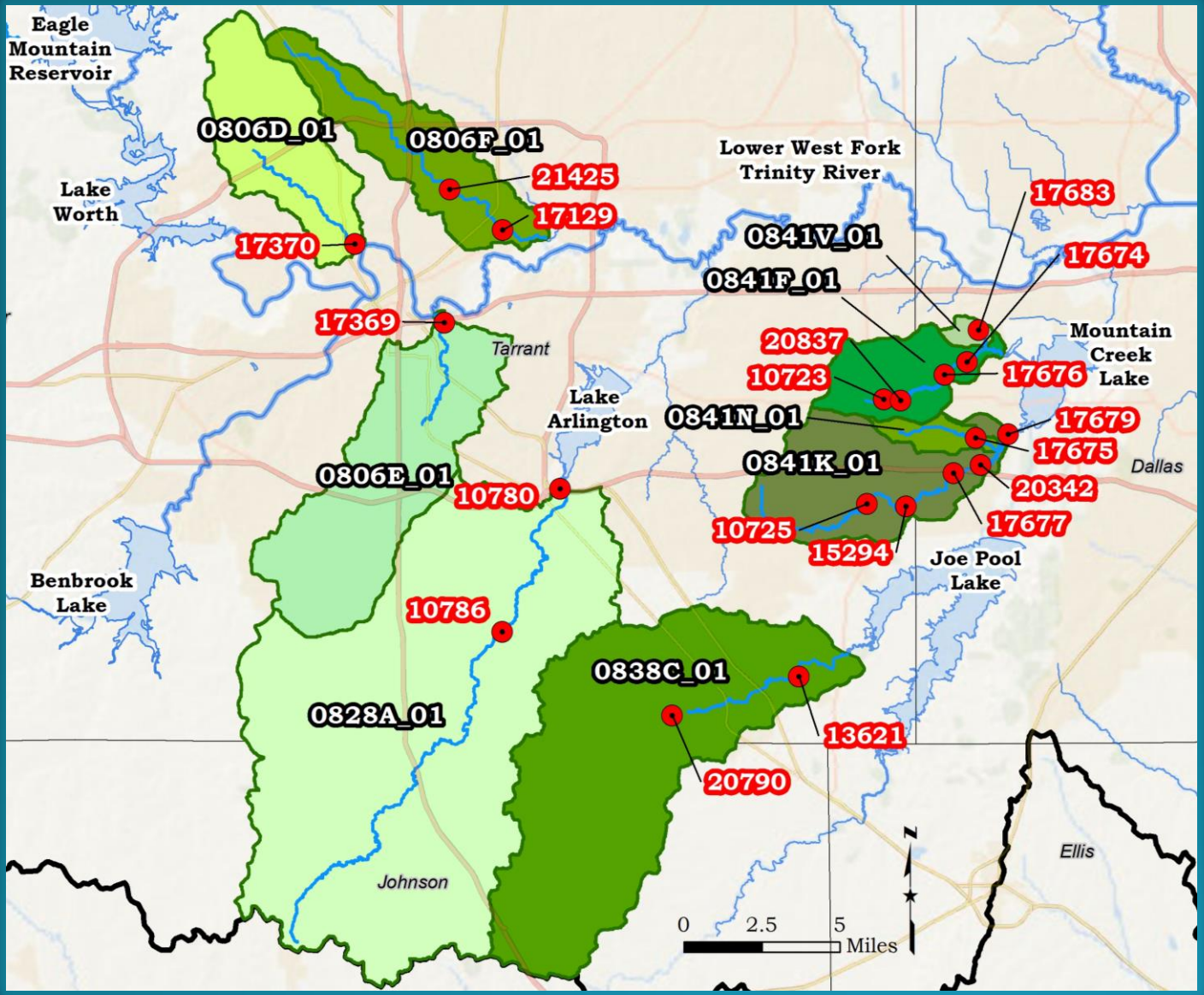
***E. coli* Criterion**
Geometric Mean = 126 MPN / 100 mL

~ West Region ~
E. coli Samples by Year



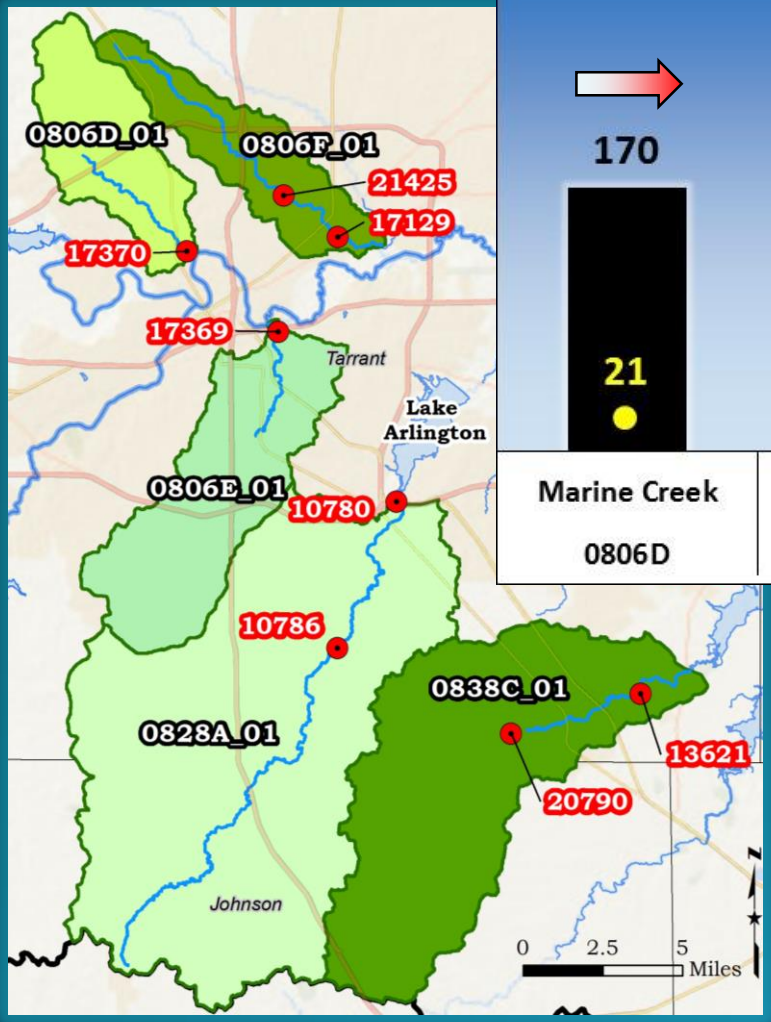
STATION	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	TOTAL
Ash Creek 0809B_01																
10854											1	8	12	6		27
W.F. Trinity River 0810_01																
10967		4	8	9	11	10	4	3	4	4	4	2	2	1		66
10969		8	12	13	16	14	8	7	6	5	8	13	15	7		132
14246		4	8	9	12	10	3	3	4	4	4	2	2	1		66
17844		4	8	9	12	10	4	3	4	4	5	6	2			71
TOTAL		*20*	*36*	*40*	*51*	*44*	*19*	*16*	*18*	*17*	*21*	*23*	*21*	*9*		*335*
Big Sandy Creek 0810A_01																
15688		3	8	9	12	8	1	3	3	4	3	2				56
Martin Branch 0810C_01																
17848		4	8	9	12	10	2	3	13	8	4	2	1	1		77



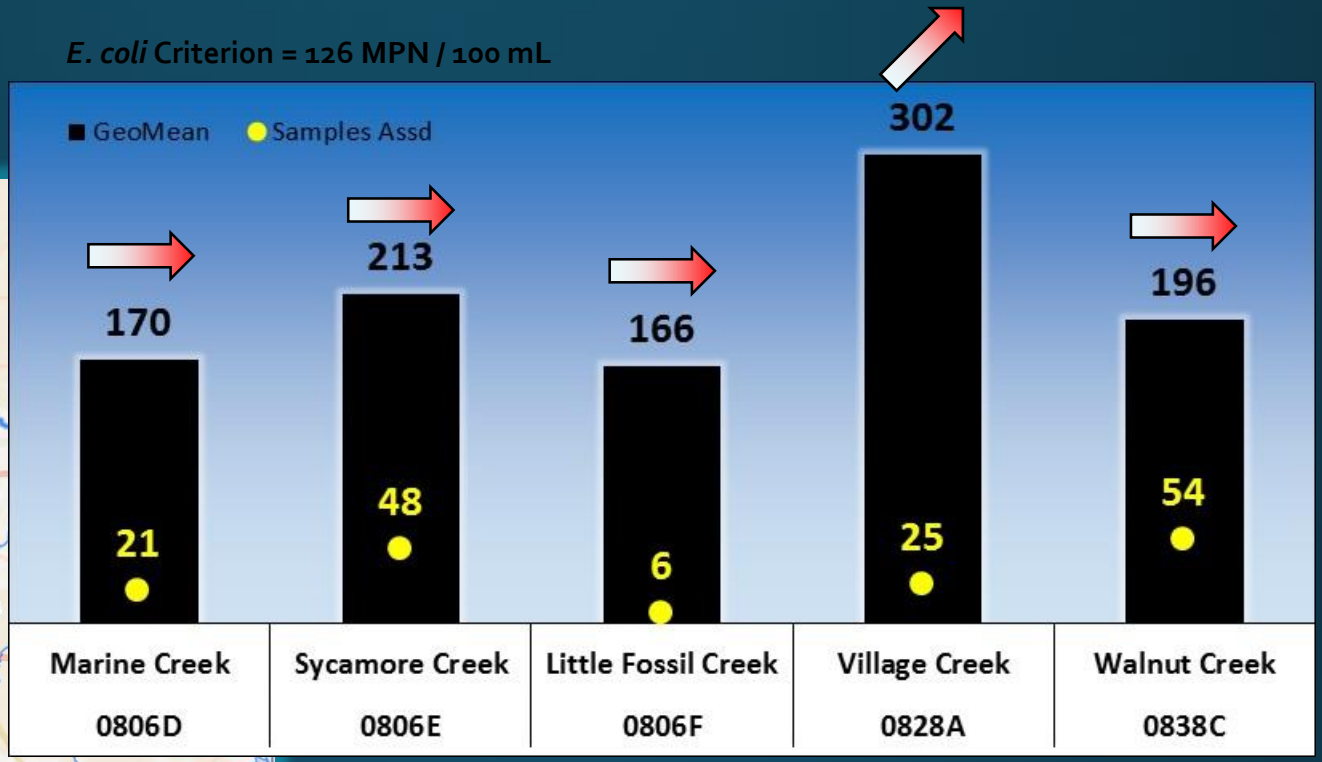


South-Central Region

2014 Assessment



E. coli Criterion = 126 MPN / 100 mL



South-Central Region

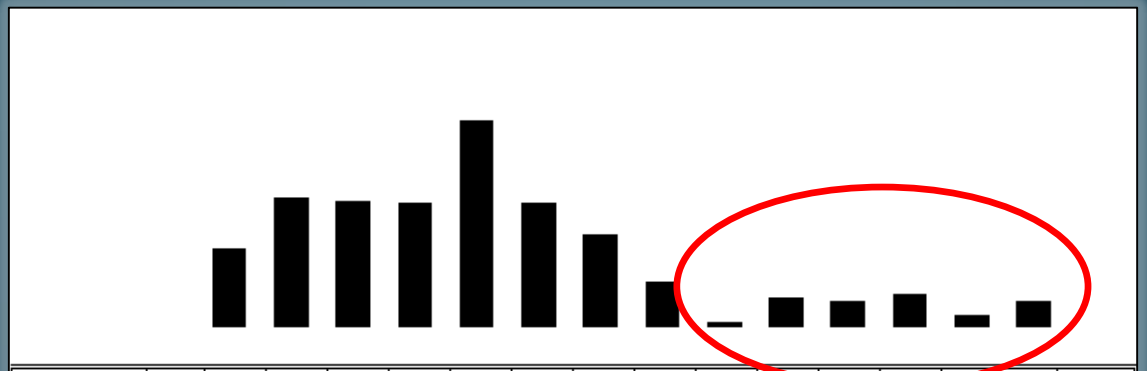
Ft. Worth / Arlington

2014 ASSESSMENT

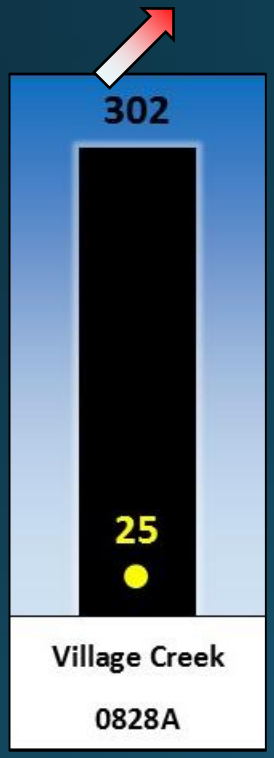
~~ **MARINE CREEK**~~
Not Assessed in 2014 IR Draft
Data from Dec 2005 – Aug 2007

~ South-Central Region *Ft. Worth / Arlington* ~

E. coli Samples by Year



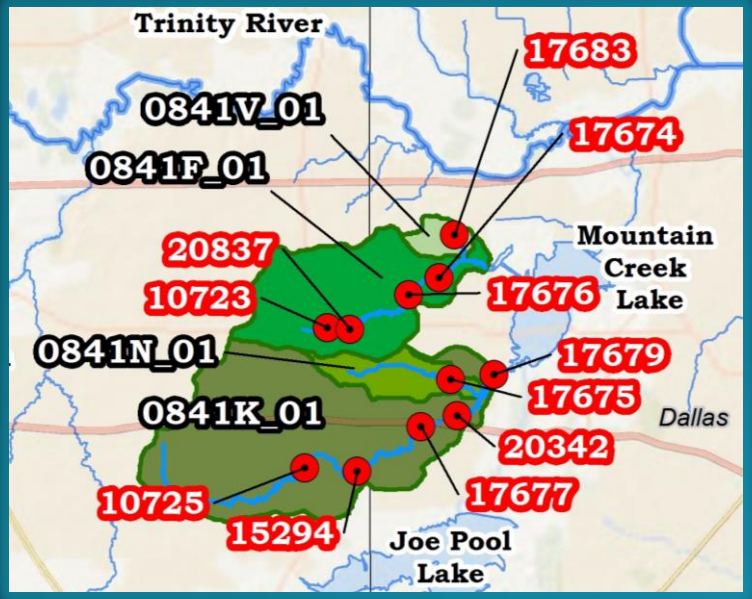
STATION	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	TOTAL
Marine Creek 0806D_01																
17370		13	14	13	13	21	12	8						1	3	98
Sycamore Creek 0806E_01																
17369		12	14	13	13	21	13	8						1	3	98
Little Fossil Creek 0806F_01																
17129						10										10
21425															3	3
TOTAL						*10*									*3*	*13*
Village Creek 0828A_01																
10780			4	4	4	4	4	4	3	2	4	2				35
10786												1	5	2		8
TOTAL			*4*	*4*	*4*	*4*	*4*	*4*	*3*	*2*	*4*	*3*	*5*	*2*		*43*
Walnut Creek 0838C_01																
13621		1	11	12	11	12	12	11	12		3	3	4			92
20790											3	3	2			8
TOTAL	*0*	*1*	*11*	*12*	*11*	*12*	*12*	*11*	*12*	*0*	*6*	*6*	*6*	*0*	*0*	*100*

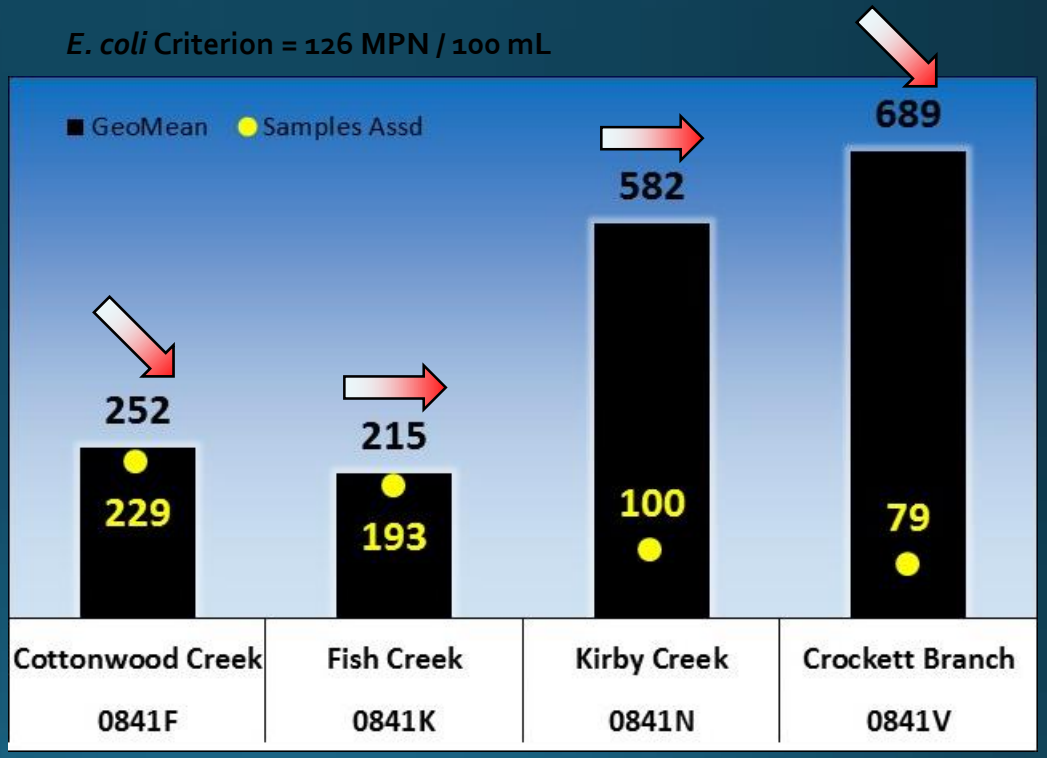


South-Central Region

Mountain Creek Lake Upstream Watershed

2014 ASSESSMENT





E. coli Samples by Year

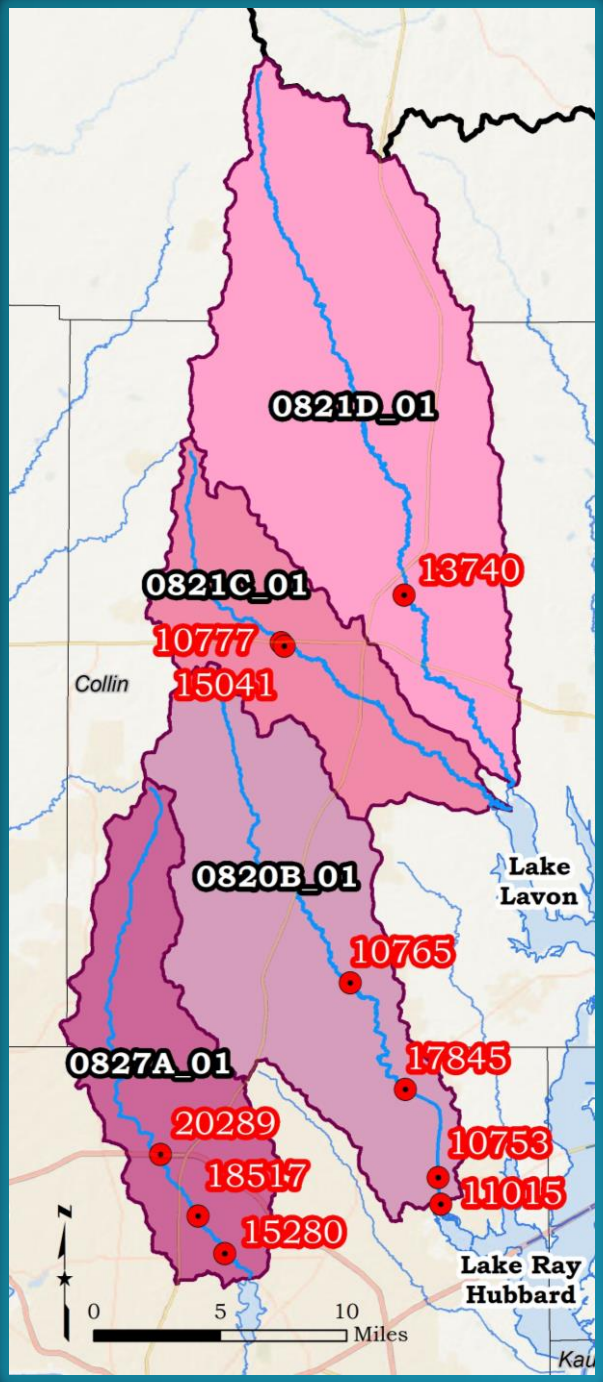
STATION	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	TOTAL
Cottonwood Creek 0841F_01																
10723			4	4	4	4	4	4	2	2	4	2		2		36
17674		1	11	12	11	12	11	11	20	16	12	12	11	12	4	156
17676		1	11	12	11	12	12	12	12	12	12	12	13	12	4	148
20837										8	10	9	10	12	4	53
TOTAL		*2*	*26*	*28*	*26*	*28*	*27*	*27*	*34*	*38*	*38*	*35*	*34*	*38*	*12*	*393*
Fish Creek 0841K_01																
10724			4	4	4	4	3	4	2	2	4	2		2		35
10725			4	4	4	4	2	4	3	2	4	2		2		35
15294										10	12	12	12	12	4	62
17677		1	12	12	11	12	11	12	12							83
17679		1	9	12	11	12	12	12	12	10	12	12	13	12	4	144
20342									8	7						15
TOTAL		*2*	*29*	*32*	*30*	*32*	*28*	*32*	*37*	*31*	*32*	*28*	*25*	*28*	*8*	*374*
Kirby Creek 0841N_01																
17675		1	12	12	11	12	11	11	17	23	15	12	12	12	4	165
Crockett Branch 0810C_01																
17683		1	11	12	11	12	12	11	12	11	11	12	12	12	4	144

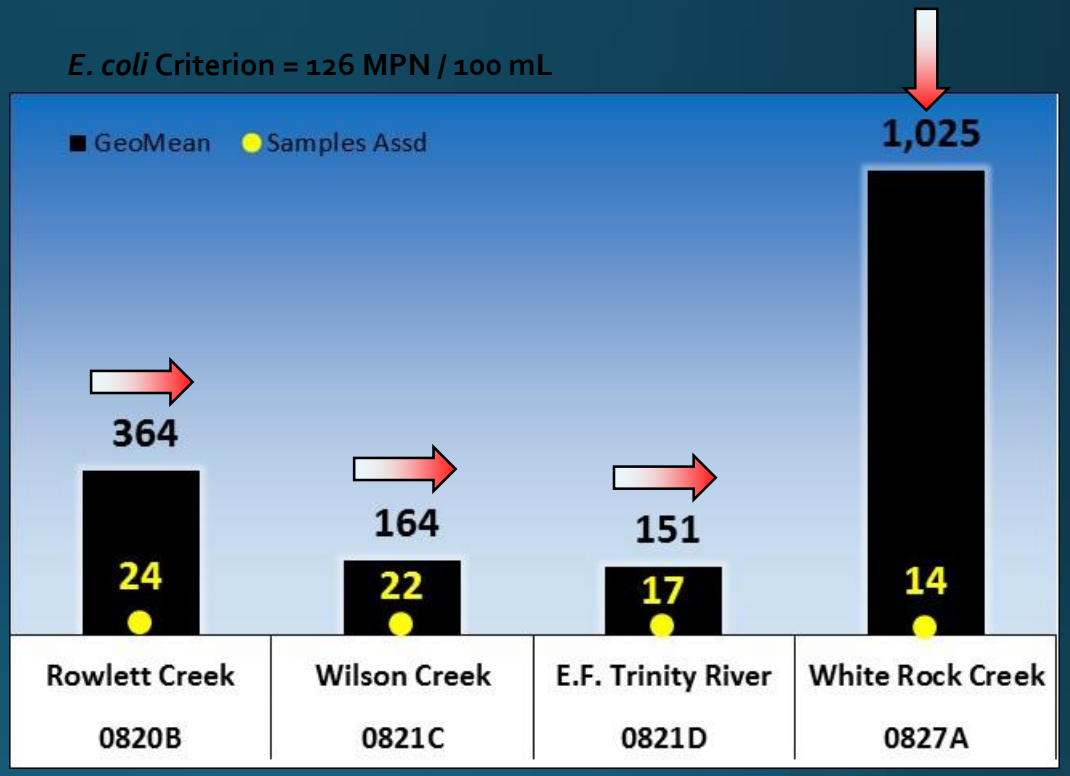
~ South-Central Region ~

Mountain Creek Lake

Upstream Watershed

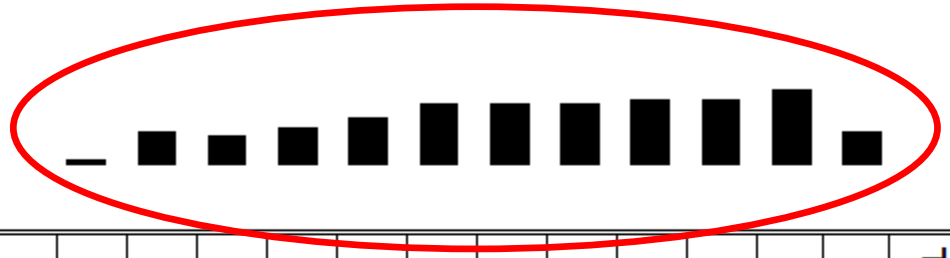
East Region
2014 Assessment





~ East Region ~

E. coli Samples by Year

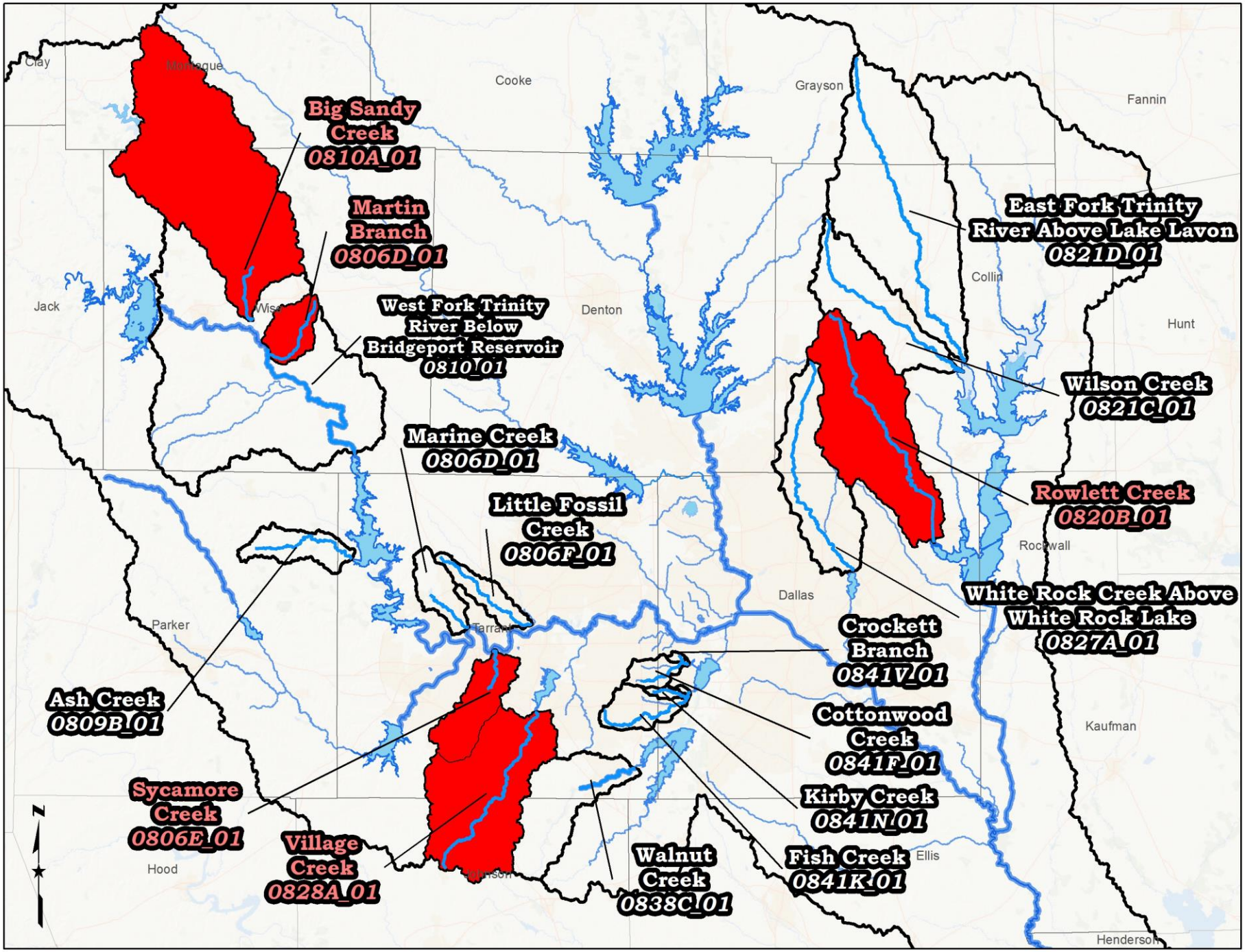


STATION	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	TOTAL
Rowlett Creek 0820B_01																
10753							2	2	4	4	4	4	4	4	2	30
Wilson Creek 0821C_01																
10777				1	4	4	3	3	3	3	3	3	4	4	1	36
E.F. Trinity River above Lake Lavon 0821D_01																
13740					3	2	2	4	2	2	2	3	2	4	2	28
White Rock Creek above White Rock Lake 0827A_01																
18517							1									1
20289								1	4	4	4	4	4	4	2	27
TOTAL							*1*	*1*	*4*	*4*	*4*	*4*	*4*	*4*	*2*	*28*

SUMMARY

AU	Stream Name	Data	GeoMean *2014 Asmnt*	Trend	SCORE
WEST REGION					
0809B_01	Ash Creek	3	1	2	6
0810_01	W.F. Trinity River Below Bridgeport Reservoir	3	2	1	6
0810A_01	Big Sandy Creek	1	2	2	5
0810C_01	Martin Branch	1	1	3	5
SOUTH CENTRAL					
0806D_01	*Marine Creek*	1	3	2	6
0806E_01	Sycamore Creek	1	2	2	5
0806F_01	*Little Fossil Creek*	1	3	2	6
0828A_01	Village Creek	2	2	1	5
0838C_01	Walnut Creek	2	3	2	7
0841F_01	Cottonwood Creek	3	2	3	8
0841K_01	Fish Creek	3	2	2	7
0841N_01	Kirby Creek	3	1	2	6
0841V_01	Crockett Branch	3	1	3	7
EAST					
0820B_01	Rowlett Creek	2	1	2	5
0821C_01	Wilson Creek	2	3	2	7
0821D_01	E.F. Trinity River above Lake Lavon	2	3	2	7
0827A_01	*White Rock Creek above White Rock Lake*	2	1	3	6

Data		GeoMean		Trend	
1	Weak	1	> 3x criterion	1	Up
2	Mod	2	> 2x criterion	2	NS
3	Strong	3	< 200 MPN/100 mL	3	Dn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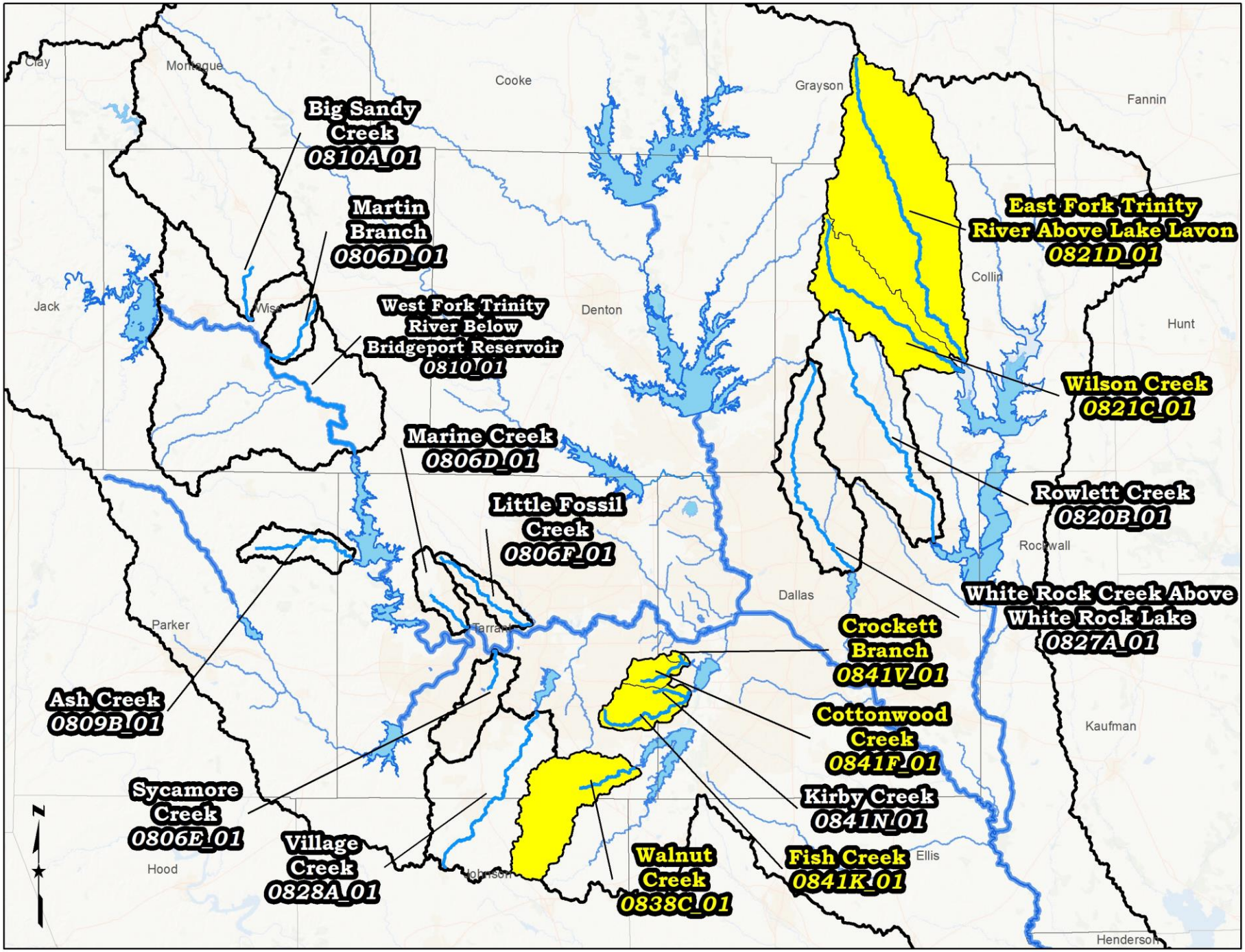
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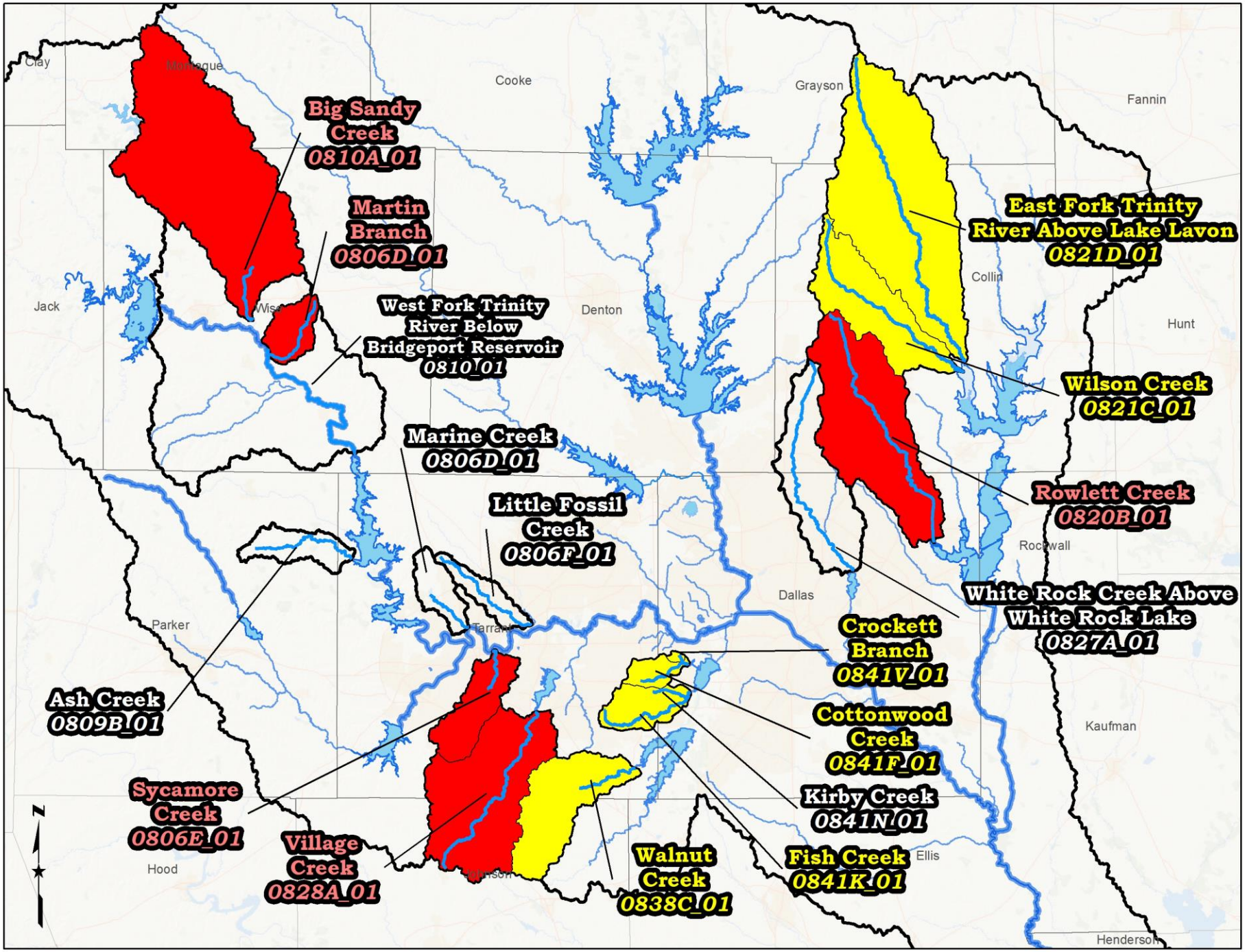
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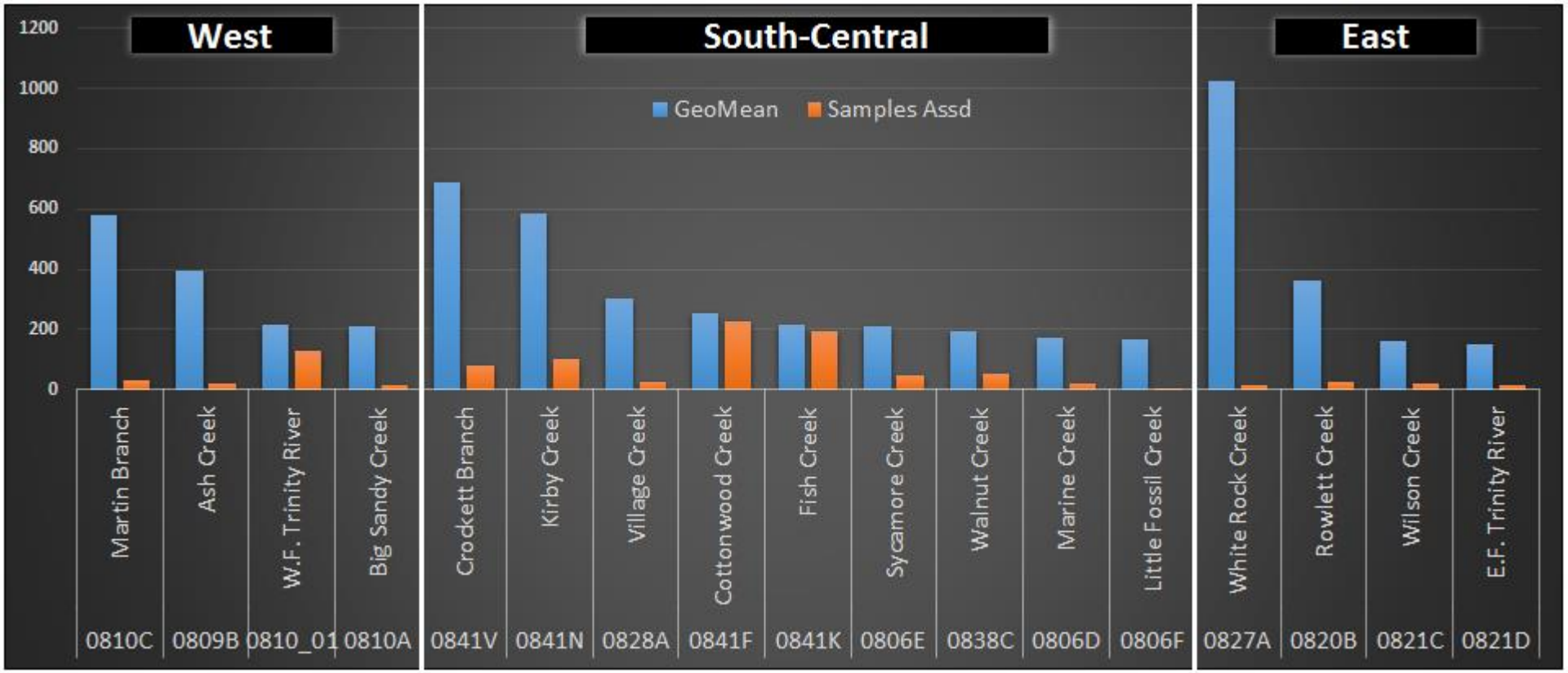


***E. coli* Criterion = 126 MPN / 100 mL**

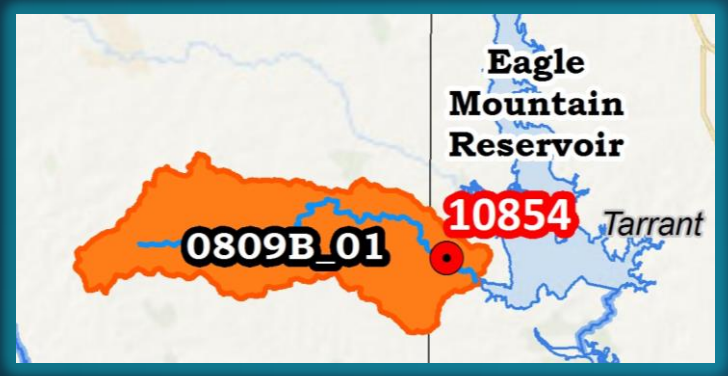
0841's:
Strong *E. coli* datasets
Tribs (N,V) show high geomeans

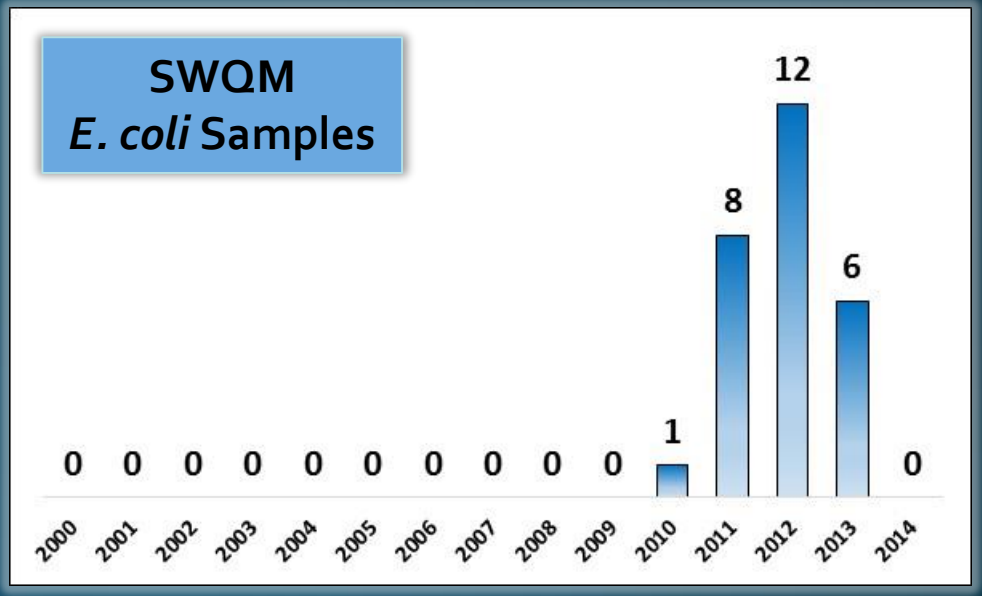
West:
Weak *E. coli* datasets in tribs that also exhibit high *E. coli* values

East:
Weak *E. coli* datasets
0827A: high geomeans (n = 14)

Optional approach to presentation of individual AUs

Ash Creek
0809B



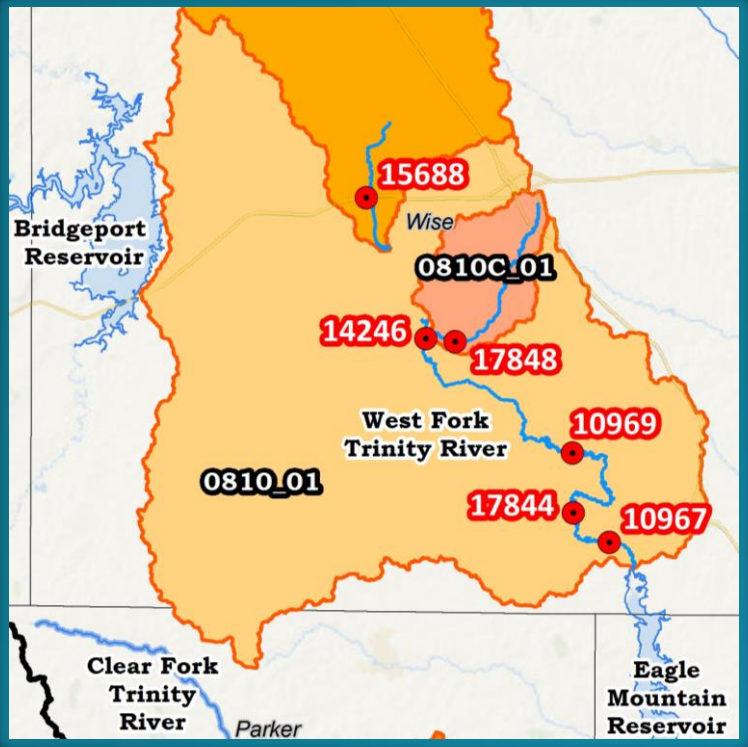


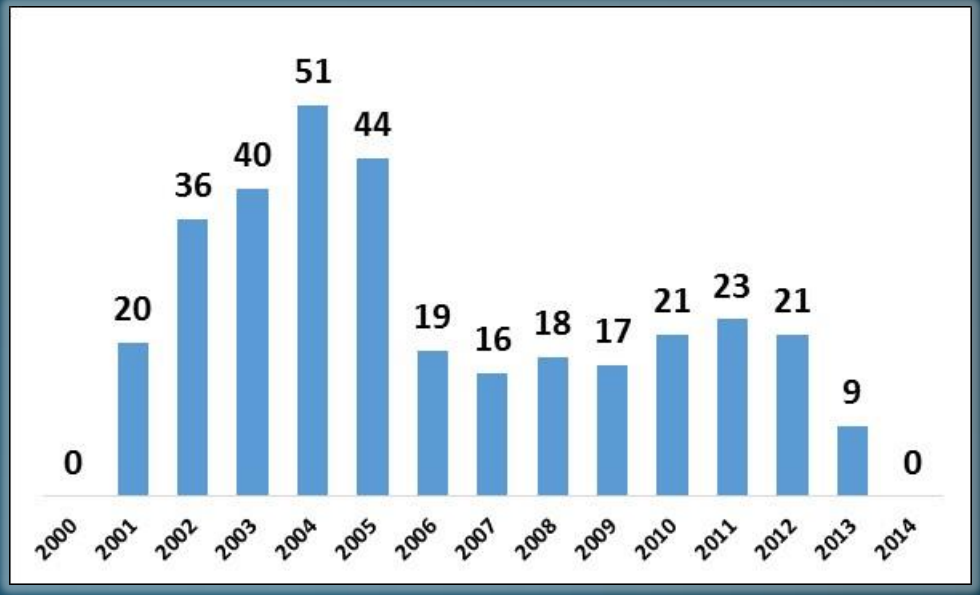
~ 2014 ASSESSMENT ~

Geomean = **393**

Samples Assd = **20**

W.F. Trinity River
Below Bridgeport Reservoir
0810_01





~ 2014 ASSESSMENT ~

Geomean = **217**

Samples Assd = **129**