SAN ANTONIO RIVER AUTHORITY

Texas Basin Water Quality Comparison and the EAC Meeting

July 12, 2019

Advance Science and Engineering Expertise and Data

Advance the capability for consumers to easily access and use models, water quality data, and master plans through the use and development of tools.

Enable Policy, Projects, and Actions

Apply SARA's expertise and resources to influence, develop, and implement recognized and sustainable improvements to the health and safety of our creeks, rivers, estuaries and bays.

Draft 2016 Integrated Report

Dec 2007 – Nov 2014

Bacteria, dissolved oxygen, fish community, fish consumption, and chloride impairments

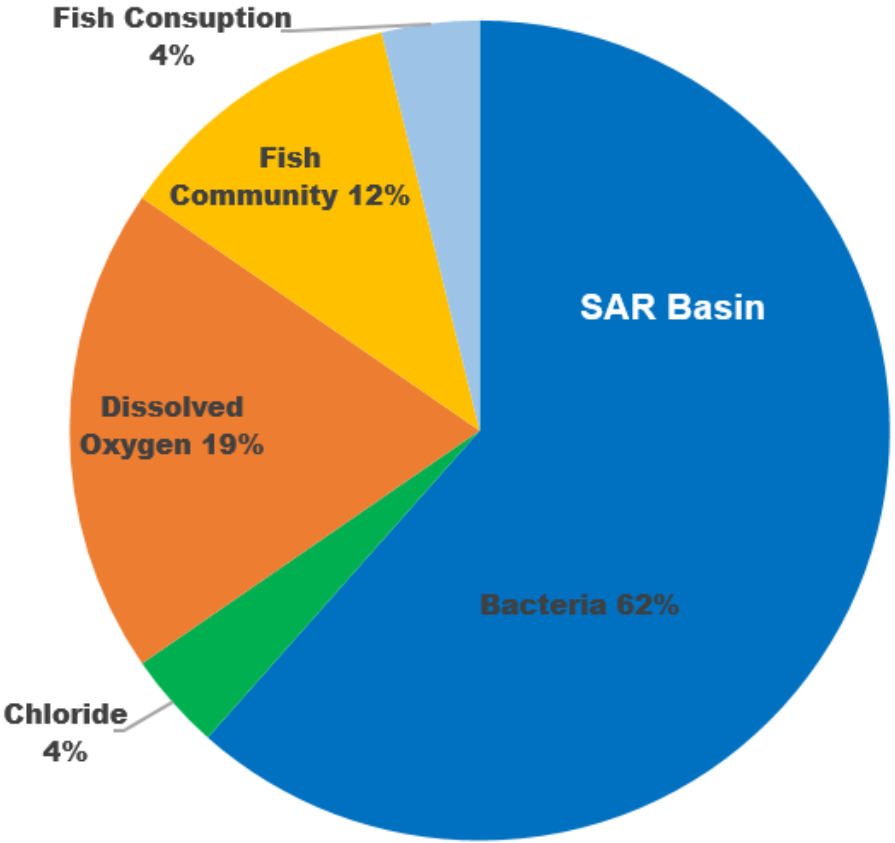
SAR Basin

- 41 Segments assessed with 26 impairments
- 63% of all segments in the SAR Basin are impaired

25 Texas Basins

- 1100 Segments assessed with 571 impairments
- 51.91% of all segments in Texas are impaired

SAR Basin Draft 2016 IR Impairments



41 Segments Assessed with 26 Impairments		
Impairments	Number of Impairments Segments	Impairment Percentages*
Bacteria	16	62%
Chloride	1	4%
Dissolved Oxygen	5	19%
Fish Community	3	12%
Fish Consumption	1	4%

*Percentages have been rounded and may not total to 100%

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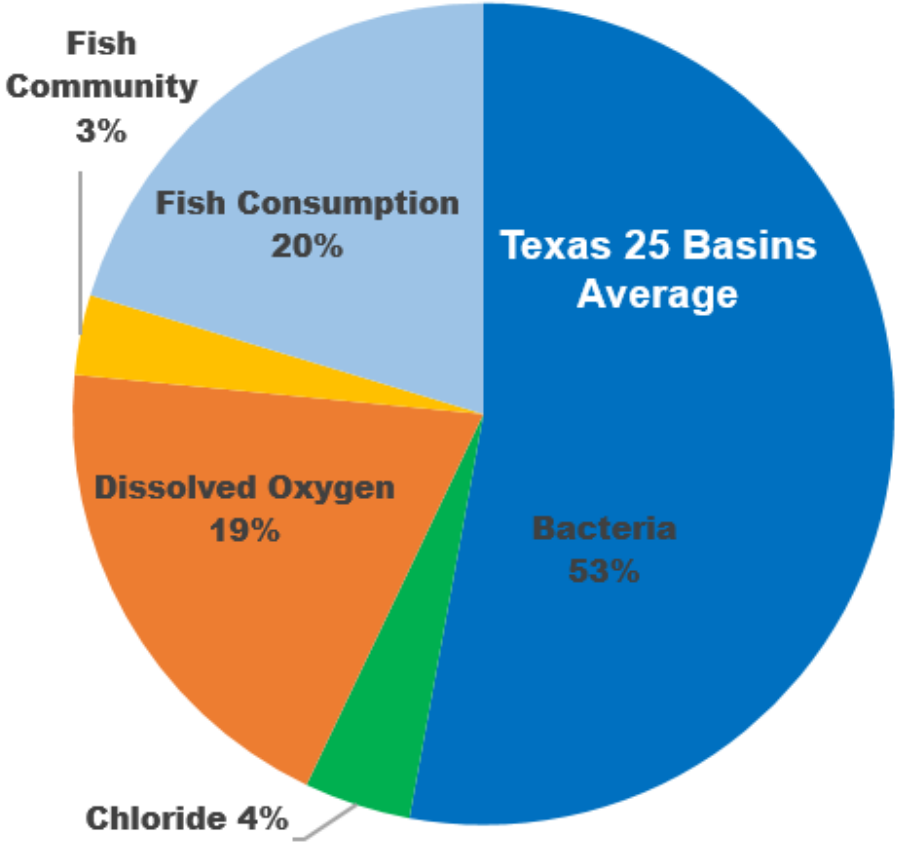
Texas Basin Draft 2016 IR Impairments



1100 Segments Assessed with 571 Impairments		
Impairments	Number of Impairments Segments	Impairment Percentages*
Bacteria	302	53%
Chloride	24	4%
Dissolved Oxygen	111	19%
Fish Community	18	3%
Fish Consumption	116	20%

*Percentages have been rounded and may not total to 100%

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Draft 2016 IR Impairment Summary

SAR Basin	Parameter	Texas 25 Basins Averages
41	Segments Assessed	1100
26	Total Number of Impairments	571
62%	Bacterial Impairments	53%
4%	Chloride Impairments	4%
19%	Dissolved Oxygen Impairments	19%
12%	Fish Community Impairments	3%
4%	Fish Consumption Impairments	20%

Percentages have been rounded and may not total to 100%

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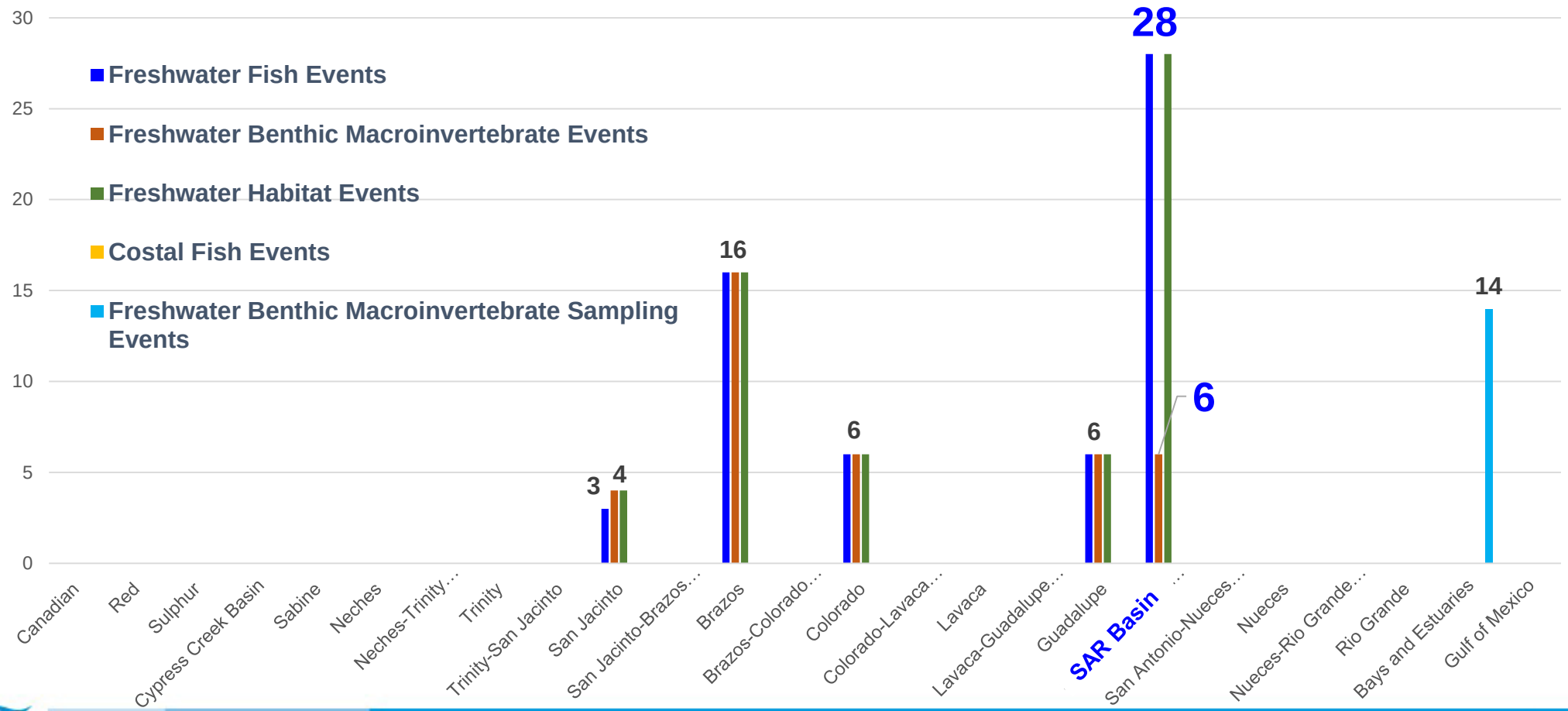
TCEQ 32nd SWQM TCEQ Workshop

2019 Biological Sampling Events



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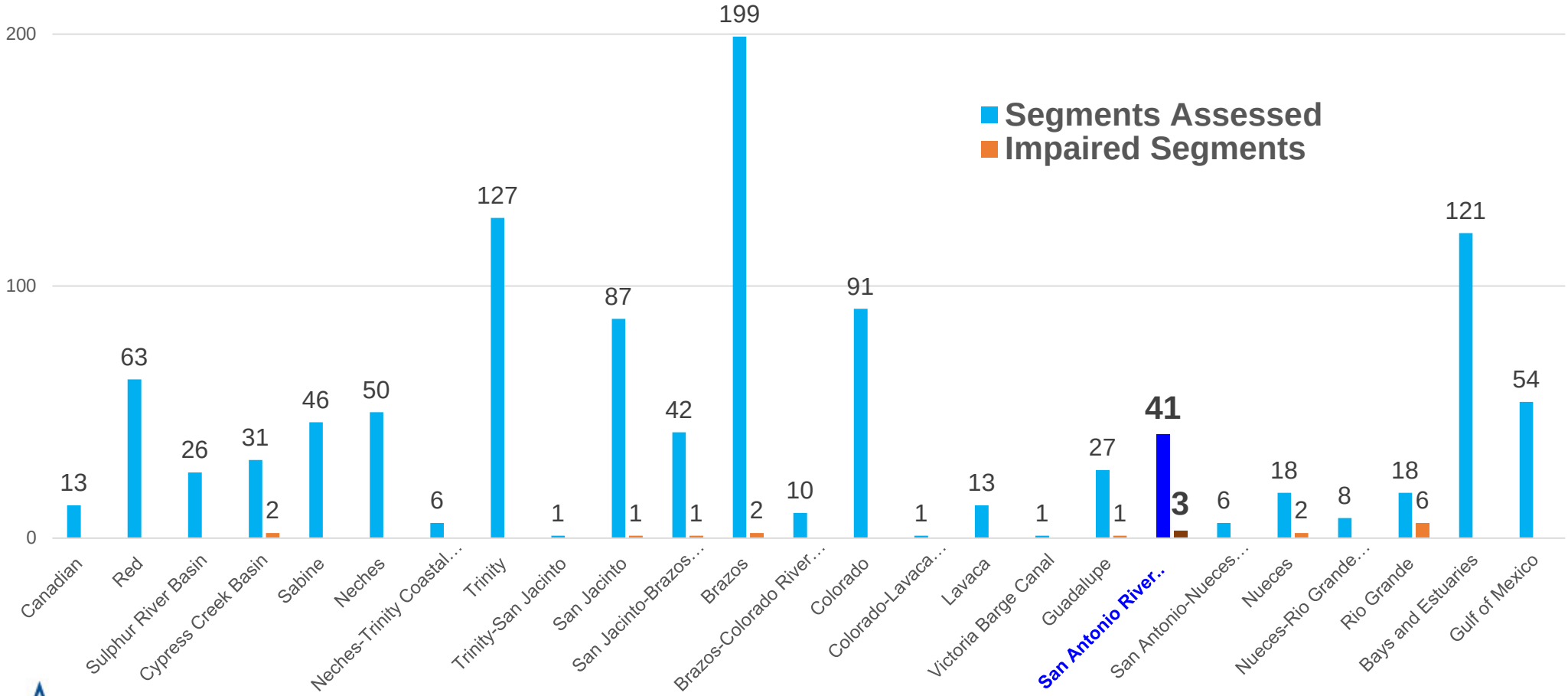
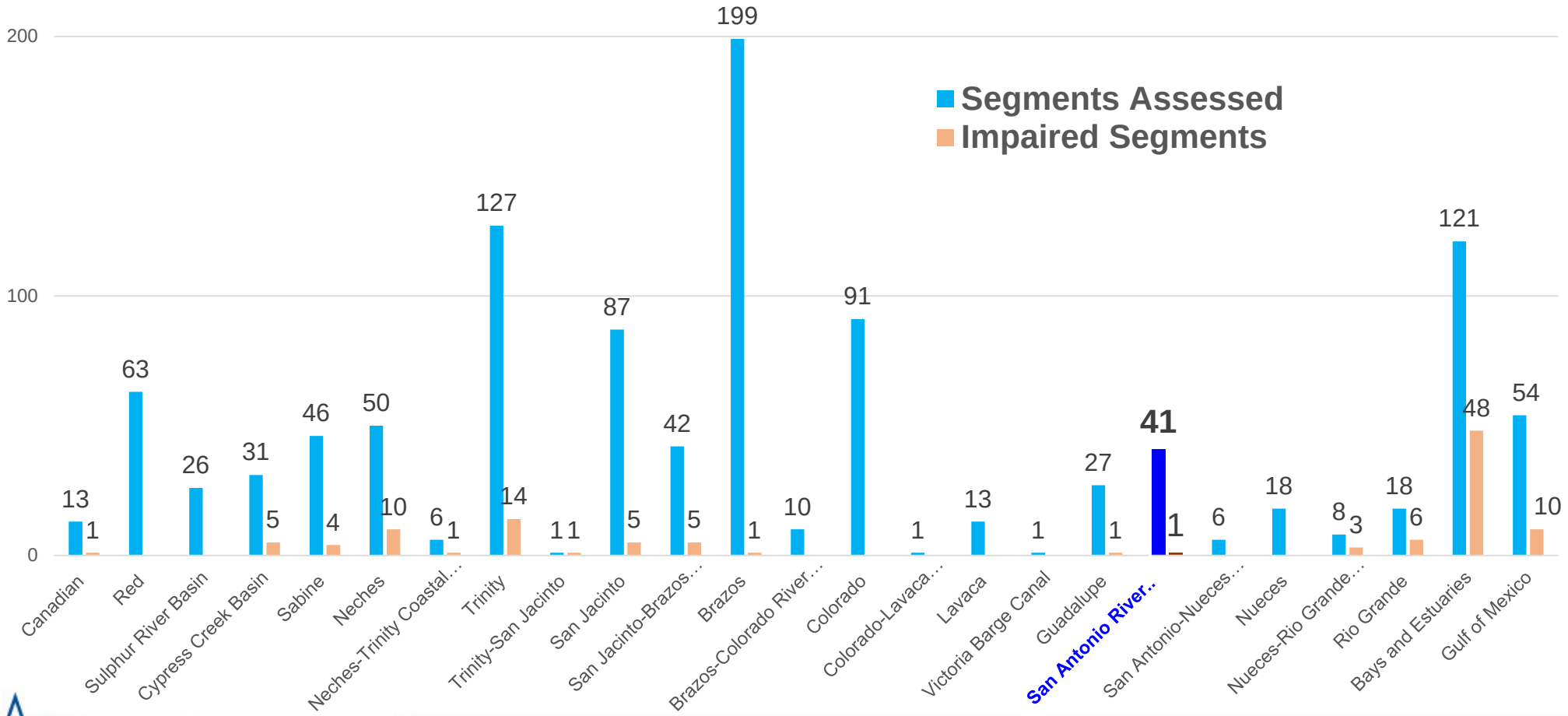
Fish Community Impairments



Fish Consumption Impairments



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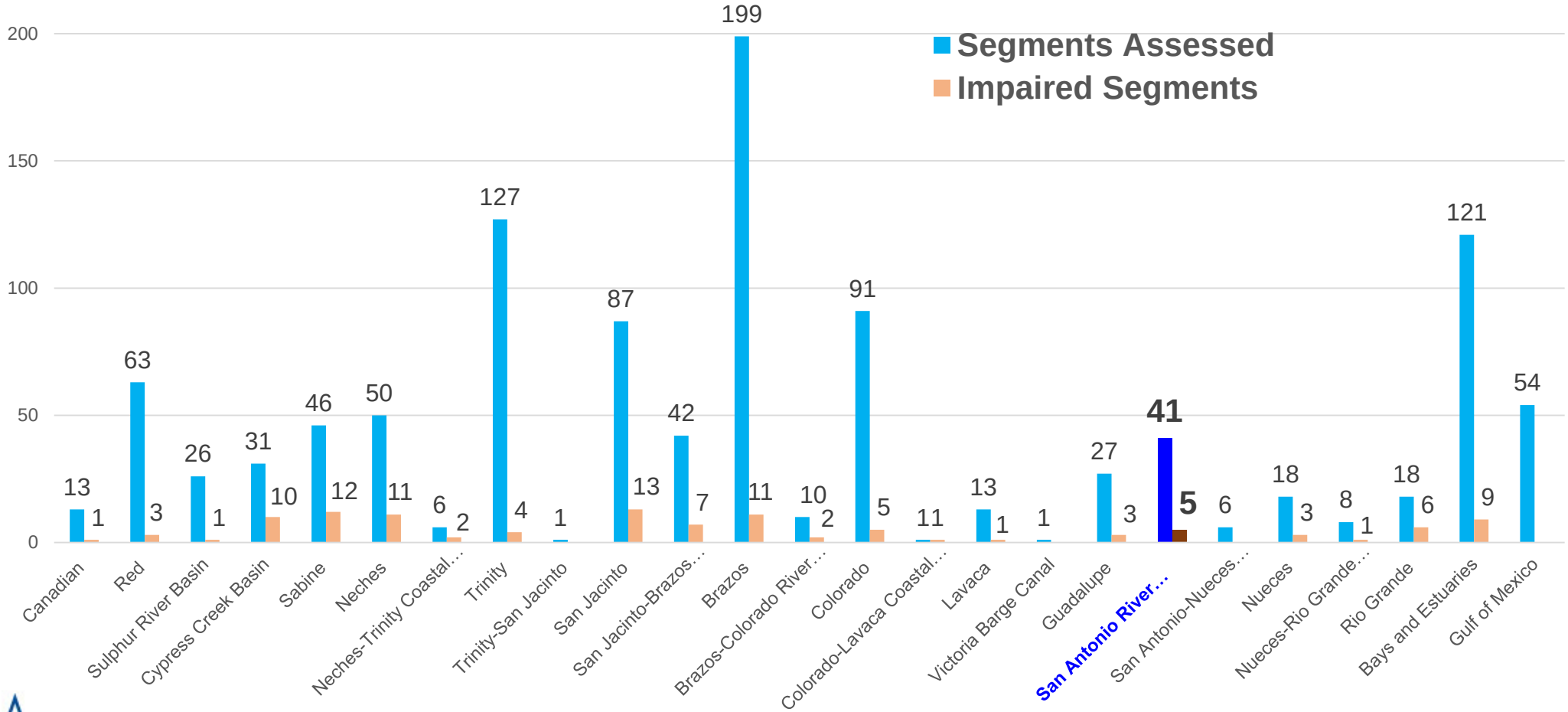
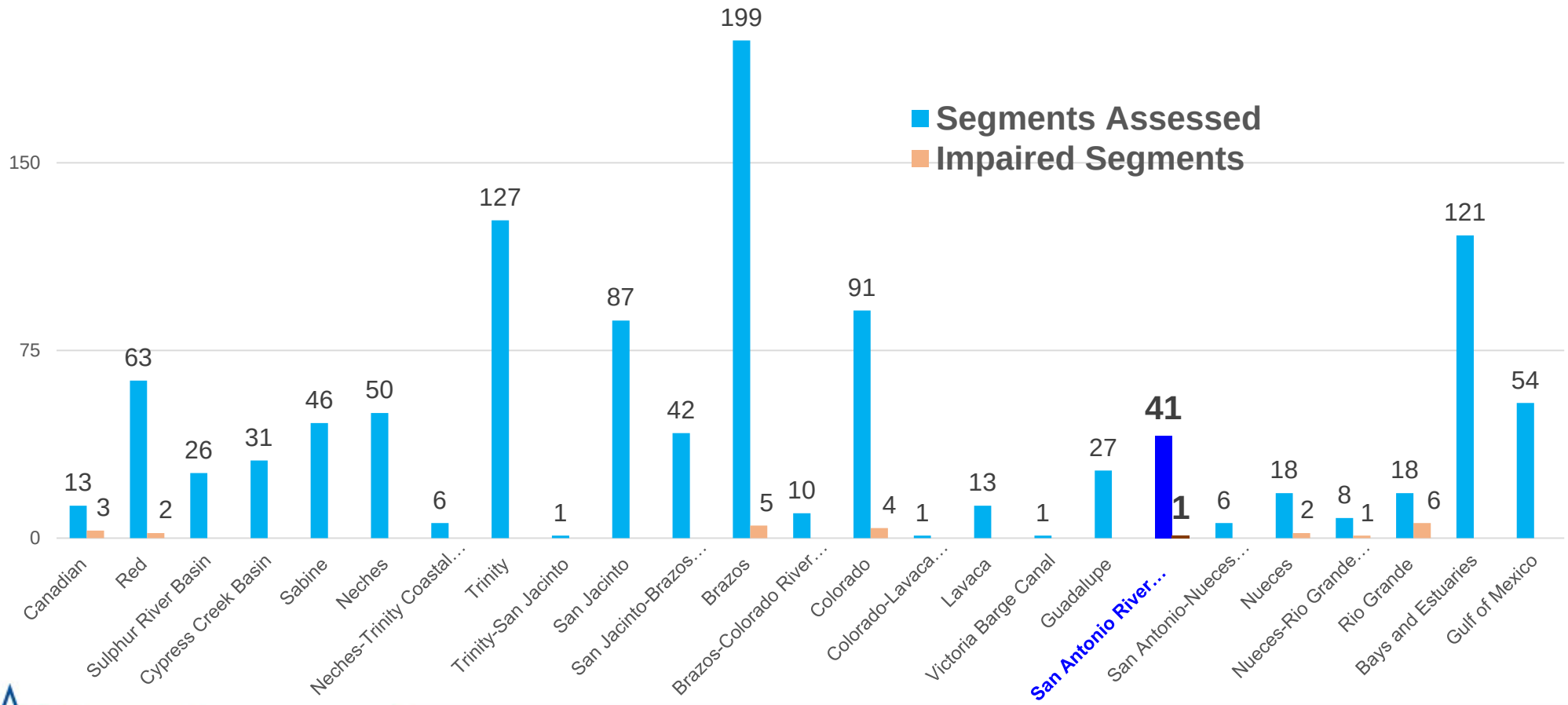
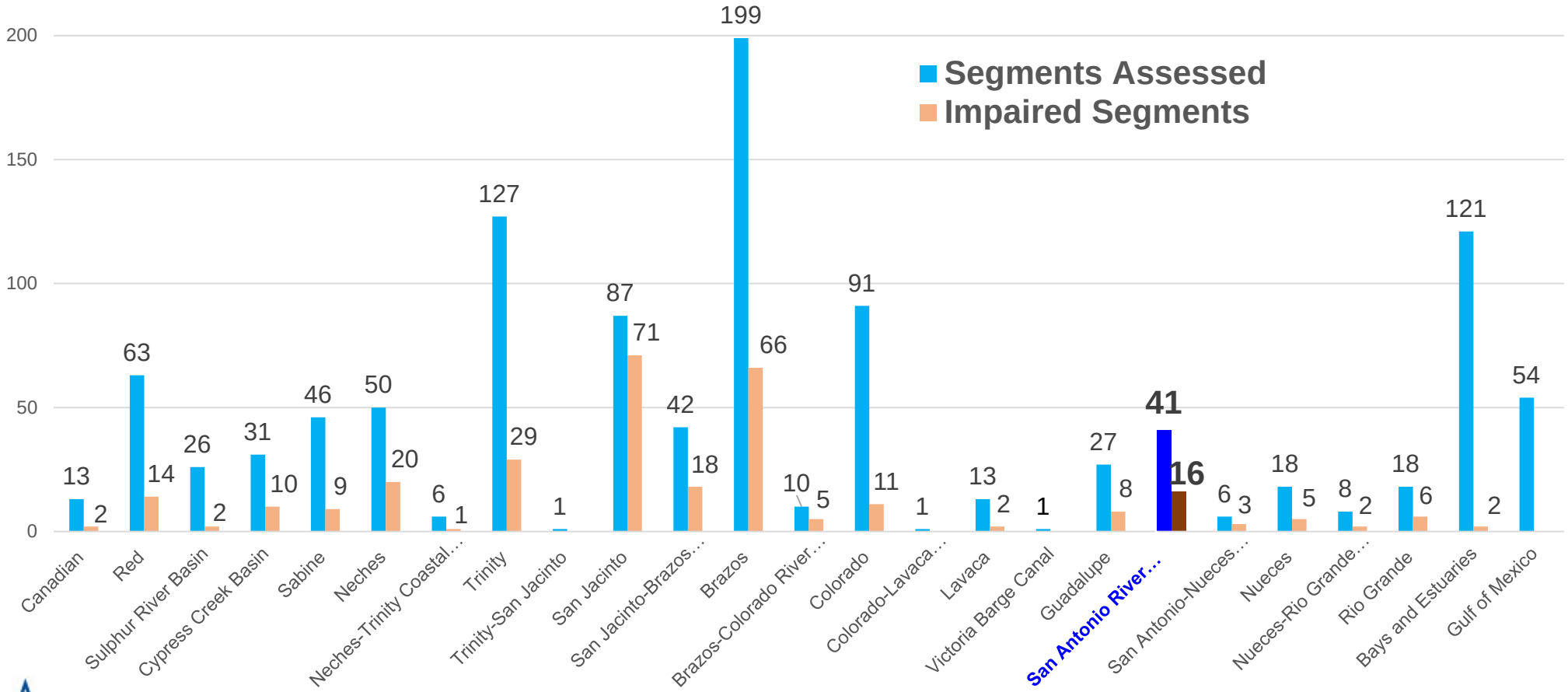
Dissolved Oxygen Impairments



Chloride Impairments



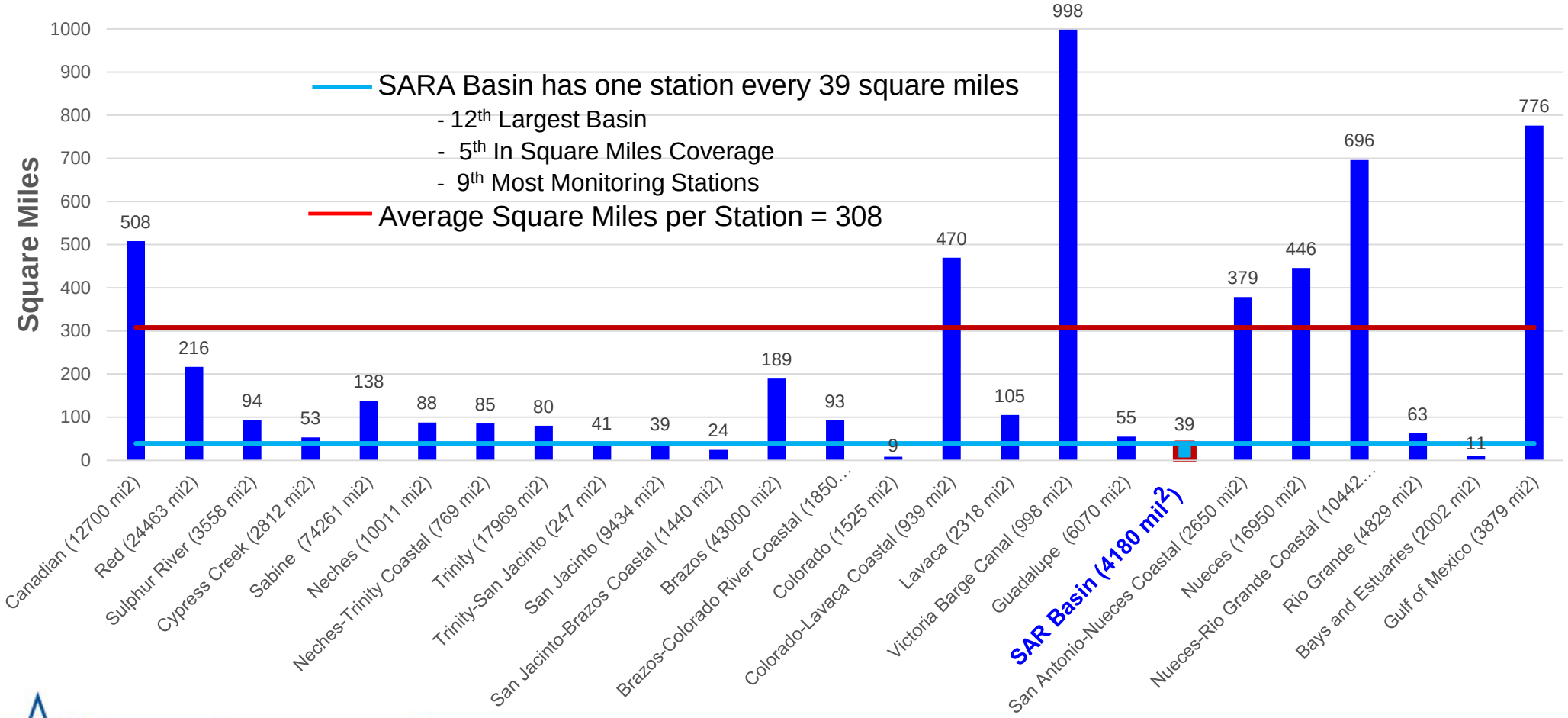
E.coli Impairments



SARA CRP Routine Monitoring Program

- “Scheduled in advance without intentionally trying to target any certain environmental condition; samples are collected regardless of the conditions encountered”
- RT samples frequency of collection – 6x/yr
- Stormwater influence and wet weather years

Station per Square Mile



Coordinated Monitoring

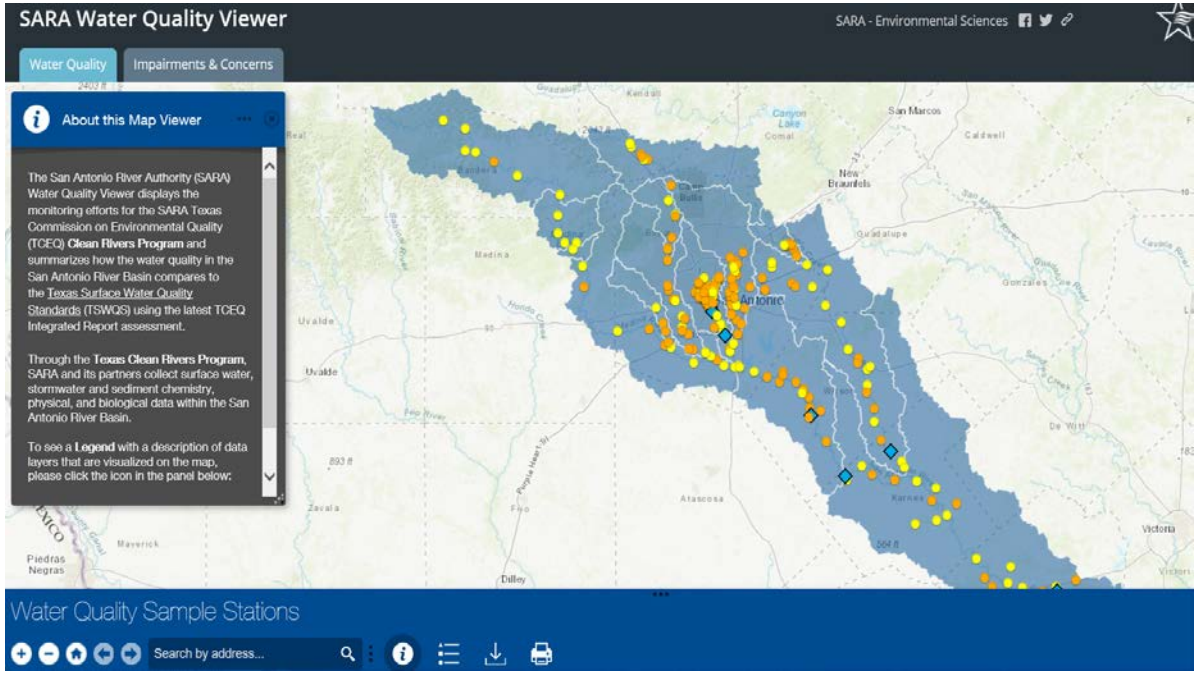
FY19				Watershed	FY20				
SARA CRP	Partners	Total Sites Monitored	Biological		SARA CRP	Partners	Total Sites Monitored	Biological	Metals in Water
11	1-GBRA	12	4	Segment 1901: Lower San Antonio River	12	1-GBRA	13	4	12
14	1-TCEQ	15	4	Segment 1902: Lower Cibolo Creek	14	1-TCEQ	15	4	12
8	0	8	2	Segment 1903: Lower Medina River	6	0	6	2	9
0	5-BCRAGD	5	0	Segment 1904: Medina Lake	0	5-BCRAGD	5	0	0
0	8-BCRAGD	8	2	Segment 1905: Upper Medina River	0	8-BCRAGD	8	2	4
2	2-TCEQ	4	2	Segment 1906: Lower Leon Creek	3	2-TCEQ	5	2	0
3	0	3	0	Segment 1907: Upper Leon Creek	3	0	3	0	0
2	1-TCEQ	3	2	Segment 1908: Upper Cibolo Creek	2	1-TCEQ	3	2	6
0	1-BCRAGD	1	0	Segment 1909: Medina Diversion Lake	0	1-BCRAGD	1	0	0
7	0	7	4	Segment 1910: Salado Creek	7	0	7	4	3
30	0	30	6	Segment 1911: Upper San Antonio River	22	0	22	6	21
2	0	2	2	Segment 1912: Medio Creek	2	0	2	2	3
3	0	3	0	Segment 1913: Mid Cibolo Creek	3	0	3	0	3
82	19	101	28	TOTAL	73	19	93	28	73

Budget Amendment #3 and the New FY2018/2021 CRP Agreement

Categories	Original FY18/19 CRP Agreement	Revision #1 ($51,841.00)	Revision #2 ($25,000.00)	**FY2018/2021 Agreement ($545,540.00)**
a. Personnel/Salary	*$ 240,900.00*	*$ 259,825.00*	*$ 276,716.89*	*$ 617,622.29*
b. Fringe Benefits (38% of *Labor*)	*$ 91,542.00*	*$ 98,733.50*	*$ 105,152.42*	*$ 234,696.48*
c. Travel	*$ 8,008.00*	*$ -*	*$ -*	*$ 9,000.00*
d. Supplies	*$ 28,000.00*	*$ 28,000.00*	*$ 28,000.00*	*$ 57,000.00*
e. Equipment	*$ -*	*$ 31,840.00*	*$ 31,840.00*	*$ 31,840.00*
f. Contractual	*$ -*	*$ -*	*$ -*	*$ -*
g. Other	*$ 3,000.00*	*$ 3,000.00*	*$ 3,000.00*	*$ 6,000.00*
h. Total Direct Costs (sum a-g)	*$ 371,450.00*	*$ 421,398.50*	*$ 444,709.31*	*$ 956,158.77*
i. Indirect costs (10% of Labor)	*$ 24,090.00*	*$ 25,982.50*	*$ 27,671.69*	*$ 61,762.23*
j. Total Reimbursable Costs (h+i)	*$ 395,540.00*	*$ 447,381.00*	*$ 472,381.00*	***$ 1,017,921.00***

Advance Science and Engineering Expertise and Data

Advance the capability for consumers to easily access and use models, data and master plans through development of tools.



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SARA Water Quality Viewer

SARA - Environmental Sciences

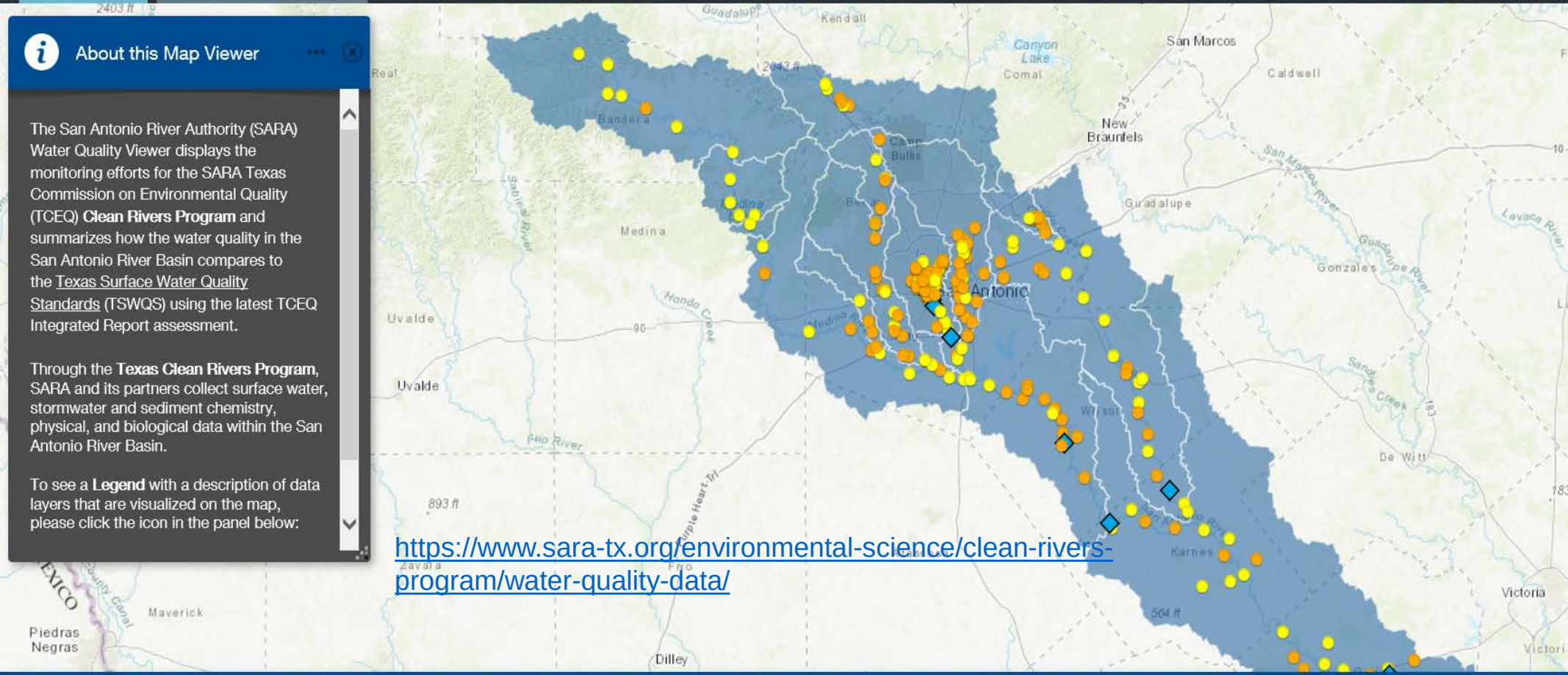
Water Quality | Impairments & Concerns

About this Map Viewer

The San Antonio River Authority (SARA) Water Quality Viewer displays the monitoring efforts for the SARA Texas Commission on Environmental Quality (TCEQ) **Clean Rivers Program** and summarizes how the water quality in the San Antonio River Basin compares to the Texas Surface Water Quality Standards (TSWQS) using the latest TCEQ Integrated Report assessment.

Through the **Texas Clean Rivers Program**, SARA and its partners collect surface water, stormwater and sediment chemistry, physical, and biological data within the San Antonio River Basin.

To see a **Legend** with a description of data layers that are visualized on the map, please click the icon in the panel below:

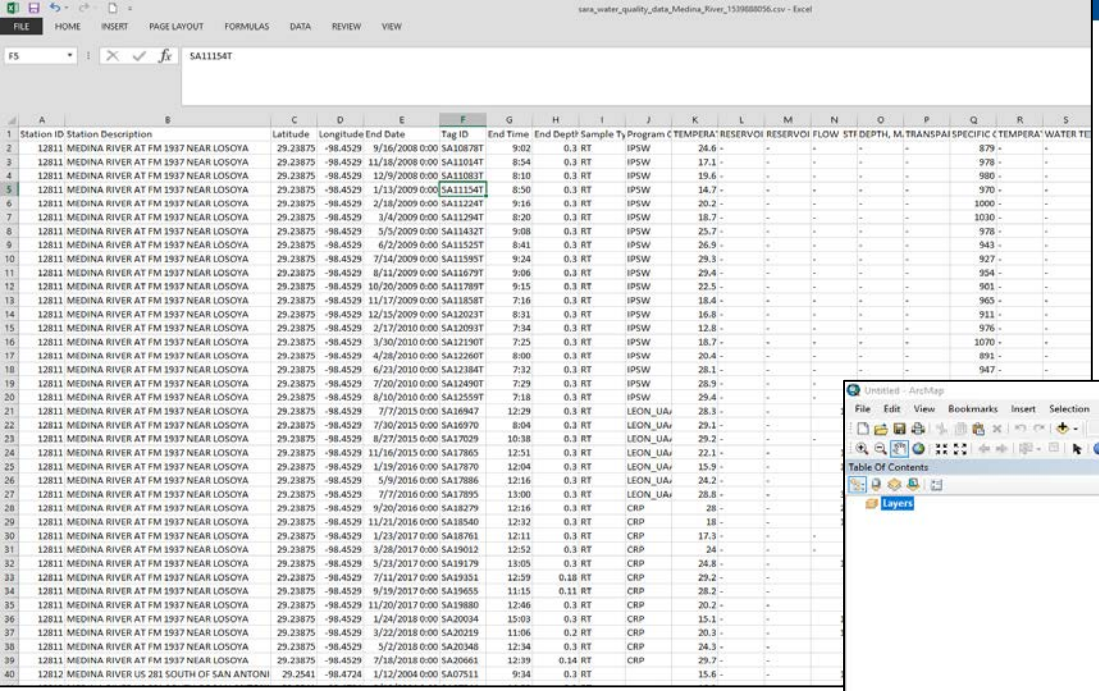


https://www.sara-tx.org/environmental-science/clean-rivers-program/water-quality-data/

Water Quality Sample Stations

Search by address...

Create a CSV Excel File



Station ID	Station Description	Latitude	Longitude	End Date	Tag ID	End Time	End Depth	Sample Ty	Program C	TEMPERA	RESERVOI	RESERVOI	FLOW STA	DEPTH, M	TRANSPAI	SPECIFIC C	TEMPERA	WATER TE
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	9/16/2008 0:00	SA10878T	9:02	0.3	RT	IPSW	24.6	-	-	-	-	-	879	-	-
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	11/18/2008 0:00	SA11014T	8:54	0.3	RT	IPSW	17.1	-	-	-	-	-	978	-	-
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	12/9/2008 0:00	SA11083T	8:10	0.3	RT	IPSW	19.6	-	-	-	-	-	980	-	-
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	1/13/2009 0:00	SA11154T	8:50	0.3	RT	IPSW	14.7	-	-	-	-	-	970	-	-
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	2/18/2009 0:00	SA11224T	9:16	0.3	RT	IPSW	20.2	-	-	-	-	-	1000	-	-
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	3/4/2009 0:00	SA11294T	8:20	0.3	RT	IPSW	18.7	-	-	-	-	-	1030	-	-
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	5/5/2009 0:00	SA11432T	9:08	0.3	RT	IPSW	25.7	-	-	-	-	-	978	-	-
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	6/2/2009 0:00	SA11525T	8:41	0.3	RT	IPSW	26.9	-	-	-	-	-	943	-	-
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	7/14/2009 0:00	SA11595T	9:24	0.3	RT	IPSW	29.3	-	-	-	-	-	927	-	-
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	8/11/2009 0:00	SA11679T	9:06	0.3	RT	IPSW	29.4	-	-	-	-	-	954	-	-
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	10/20/2009 0:00	SA11789T	9:15	0.3	RT	IPSW	22.5	-	-	-	-	-	901	-	-
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	11/17/2009 0:00	SA11858T	7:16	0.3	RT	IPSW	18.4	-	-	-	-	-	965	-	-
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12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	3/30/2010 0:00	SA12190T	7:25	0.3	RT	IPSW	18.7	-	-	-	-	-	1070	-	-
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	4/28/2010 0:00	SA12260T	8:00	0.3	RT	IPSW	20.4	-	-	-	-	-	891	-	-
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	6/23/2010 0:00	SA12384T	7:32	0.3	RT	IPSW	28.1	-	-	-	-	-	947	-	-
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12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	8/10/2010 0:00	SA12559T	7:18	0.3	RT	IPSW	29.4	-	-	-	-	-			
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	7/7/2015 0:00	SA16947	12:29	0.3	RT	LEON_UA	28.3	-	-	-	-	-			
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	7/30/2015 0:00	SA16970	8:04	0.3	RT	LEON_UA	29.1	-	-	-	-	-			
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12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	11/16/2015 0:00	SA17865	12:51	0.3	RT	LEON_UA	22.1	-	-	-	-	-			
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	1/19/2016 0:00	SA17870	12:04	0.3	RT	LEON_UA	15.9	-	-	-	-	-			
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	5/9/2016 0:00	SA17886	12:16	0.3	RT	LEON_UA	24.2	-	-	-	-	-			
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	7/7/2016 0:00	SA17895	13:00	0.3	RT	LEON_UA	28.8	-	-	-	-	-			
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	9/20/2016 0:00	SA18279	12:16	0.3	RT	CRP	28	-	-	-	-	-			
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	11/21/2016 0:00	SA18540	12:32	0.3	RT	CRP	18	-	-	-	-	-			
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	1/23/2017 0:00	SA18761	12:11	0.3	RT	CRP	17.3	-	-	-	-	-			
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	3/28/2017 0:00	SA19012	12:52	0.3	RT	CRP	24	-	-	-	-	-			
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	5/23/2017 0:00	SA19179	13:05	0.3	RT	CRP	24.8	-	-	-	-	-			
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12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	9/19/2017 0:00	SA19655	11:15	0.11	RT	CRP	28.2	-	-	-	-	-			
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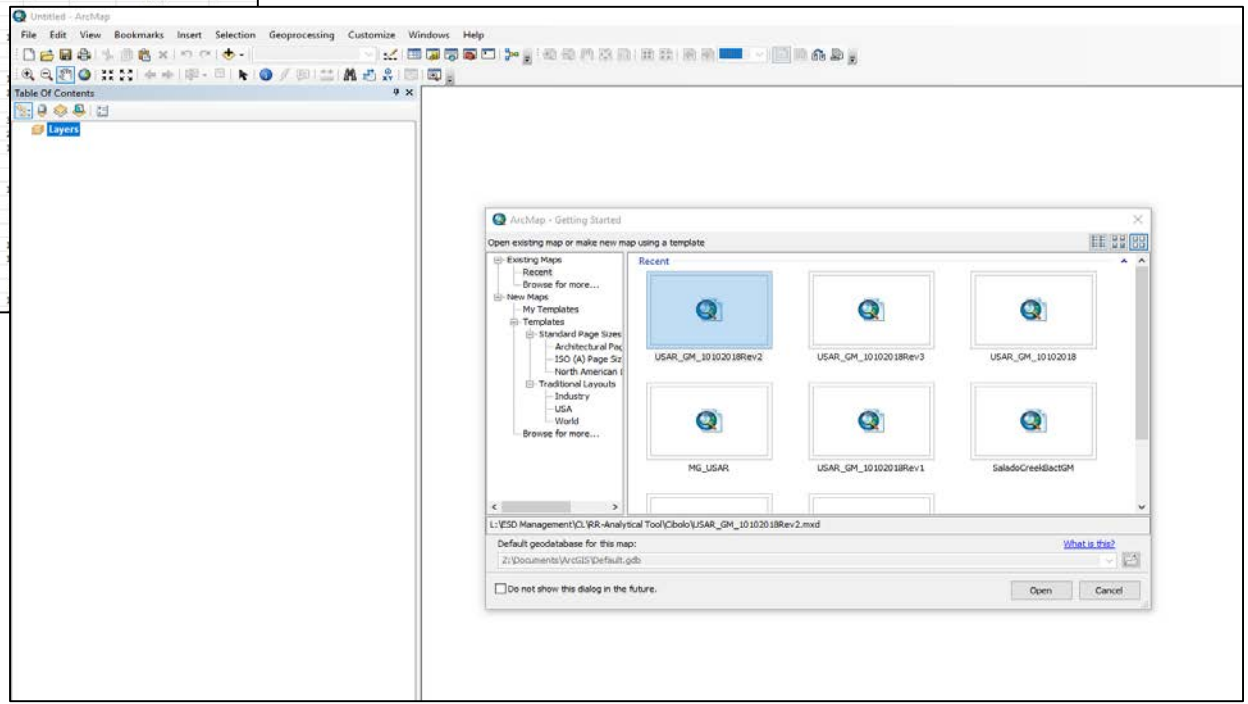
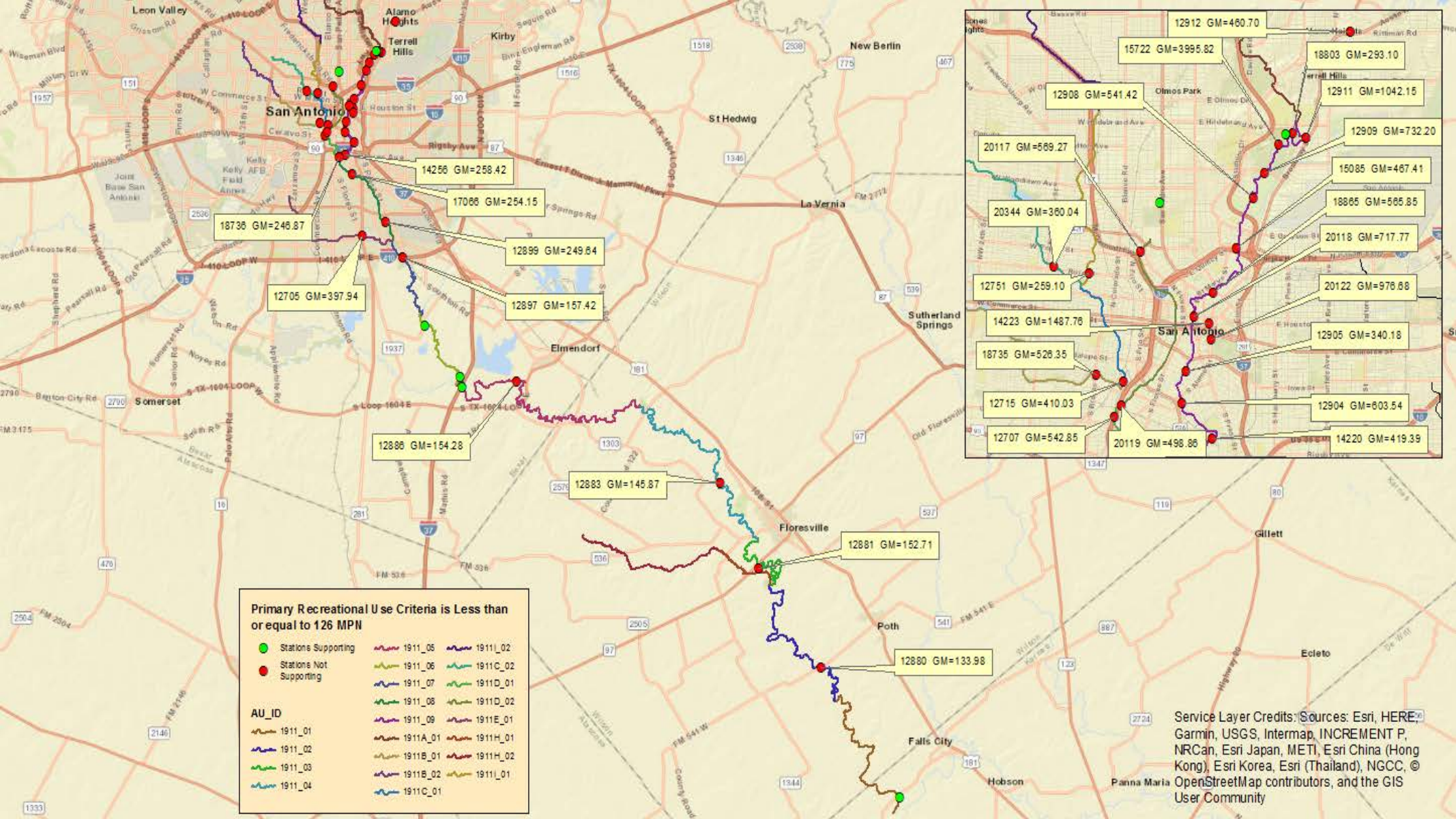
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	1/24/2018 0:00	SA20034	15:03	0.3	RT	CRP	15.1	-	-	-	-	-			
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	3/22/2018 0:00	SA20219	11:06	0.2	RT	CRP	20.3	-	-	-	-	-			
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	5/2/2018 0:00	SA20348	12:34	0.3	RT	CRP	24.3	-	-	-	-	-			
12811	MEDINA RIVER AT FM 1937 NEAR LOSOYA	29.23875	-98.4529	7/18/2018 0:00	SA20661	12:39	0.14	RT	CRP	29.7	-	-	-	-	-			
12812	MEDINA RIVER US 281 SOUTH OF SAN ANTONI	29.2541	-98.4724	1/12/2004 0:00	SA07511	9:34	0.3	RT		15.6	-	-	-	-	-			

Pull CSV into ArcGIS




Leon Valley
Alamo Heights
Terrell Hills
Kirby
New Berlin
San Antonio
St Hedwig
La Vernia
Sutherland Springs
Elmendorf
Somerset
Floresville
Poth
Falls City
Hobson
Panna Maria
Ecleto
Gillett
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12904 GM=603.54
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20119 GM=498.86
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Primary Recreational Use Criteria is Less than or equal to 126 MPN
Stations Supporting
Stations Not Supporting
AU_ID
1911_01
1911_02
1911_03
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1911_05
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1911D_01
1911D_02
1911E_01
1911H_01
1911H_02
1911I_01
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Questions?

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Watershed Monitoring Supervisor
SARA CRP Project Manager
clorea@sara-tx.org

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Segment	Name	Impairments	Concerns
1901	Lower San Antonio River	Bacteria, Fish Community	Nitrate, T- Phosphorus, Habitat, Fish Community, Chlorophyll-a
1901A	Escondido Creek	Bacteria	Nitrate, T- Phosphorus
1901B	Cabeza Creek	Bacteria	--
1901C	Hord Creek	--	--
1901D	Lost Creek	--	--
1901E	Manahuilla Creek	--	Bacteria
1901F	Ecleto Creek	Dissolved Oxygen	Dissolved Oxygen, Chlorophyll-*a*
1902	Lower Cibolo Creek	Bacteria	Fish Community, Nitrate, T- Phosphorus
1902A	Martinez Creek	Bacteria	Bacteria, Nitrate, T- Phosphorus
1902B	Salitrillo Creek	--	Nitrate, Ammonia, T- Phosphorus
1902C	Clifton Branch	Dissolved Oxygen	Dissolved Oxygen, T- Phosphorus
1902D	Alum Creek	--	--
1903	Medina River Below Medina Diversion Lake	Bacteria	Ammonia, Nitrate, T- Phosphorus
1904	Medina Lake	--	--
1905	Medina River Above Medina Lk	Fish Community	Fish Community, Habitat
1905A	N. Prong Medina River	--	--
1906	Lower Leon Creek	Fish Consumption	Silver in Sediment, Nitrate, Chlorophyll-a
1907	Upper Leon Creek	Nitrate	--
1908	Upper Cibolo Creek	Chloride, Bacteria	T- Phosphorus, Dissolved Oxygen
1909	Medina Diversion Lake	--	--

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Draft 2016 Texas Integrated Report

Segment	Name	Impairments	Concerns
1910	Salado Creek	Bateria, Dissolved Oxygen	Nitrate, Fish & Macrobenthic Communities, Dissolved Oxygen, Chlorophyll-*a*
1910A	Walzem Creek	Bacteria	--
1910B	Rosillo Creek	--	--
1910C	Salado Creek Tributary	--	Bacteria
1910D	Menger Creek	Bacteria	Dissolved Oxygen
1910E	Beitel Creek	--	Dissolved Oxygen
1910F	Upper Salado Creek	--	Chlorophyll-*a*
1911	Upper San Antonio River	Bacteria, Fish Community	Nitrate, T- Phosphorus, Ammonia, Fish Community, Habitat
1911B	Apache Creek	Bacteria	Dissolved Oxygen, Nitrate
1911C	Alazan Creek	Bacteria	Ammonia, Chlorophyll-*a*
1911D	San Pedro Creek	Bacteria	Nitrate
1911E	Six Mile Creek	Bacteria	--
1911H	Picosa Creek	Bacteria	Dissolved Oxygen
1911I	Martinez Creek	Bacteria	Dissolved Oxygen
1911J	Pajarito Creek	--	Bacteria
1911K	Seguin Branch	--	Bacteria
1911L	Unnamed Trib of the USAR	--	Dissolved Oxygen
1911M	Calaveras Creek	--	--
1912	Medio Creek	--	Nitrate, T- Phosphorus
1912A	Upper Medio Creek	--	Nitrate, T- Phosphorus
1913	Mid Cibolo Creek	Dissolved Oxygen	Nitrate, T- Phosphorus

COMMITTED TO SAFE, CLEAN, ENJOYABLE CREEKS AND RIVERS