

Saugus River Watershed Council
2015 Water Quality Monitoring Results

Site Code	Site Name / Description	Town	Water Quality Designation	BACTERIA, Enterococcus: cfu / 100 mL						Geometric Mean	% of Samples Meeting Swimming Standard	% of Samples Meet Boating Stand
				28-Apr-15 Light Rain (24Hr)	26-May-15 Dry Weather	23-Jun-15 Dry Weather	28-Jul-15 Dry Weather	22-Sep-15 Dry Weather	27-Oct-15 Dry Weather			
LQ1	Lake Quannapowitt	Wakefield	B	10	269	52	63	<10	146	66	50%	8
SR1	Saugus River upstream of LWSC Dam	Wakefield/Lynnfield	B	<10	52	134	30	63	61	60	67%	10
MR1	Mill River @ Farm Street	Wakefield	B	199	435	816	173	132	41	201	17%	5
SR2	Saugus River @ Breakheart	Saugus	B	20	63	1,330	382	31	10	76	50%	6
SR3	Saugus River @ Route 1	Saugus	B	10	97	933	909	187	<10	173	33%	5
SR4	Saugus River @ Bridge Street	Saugus	B	10	183	311	1,010	10	20	70	50%	5
SHB1	Shute Brook downstream of Central St.	Saugus	B	185	1,150	1,350	4,610	256	213	645	0%	
SR5	Saugus River @ Boston St. / Lincoln Ave.	Lynn/Saugus	SB/CSO, ORW, SH	20	<10	323	1,460	<10	63	156	50%	6
STB1	Strawberry Brook Outlet	Lynn	SB/CSO, ORW, SH	52	20	1,720	5,790	85	3,870	388	33%	5
PR1	Pines / Saugus River @ Gibson Park	Revere	SB, ORW, SH	20	20	<10	631	<10	<10	63	83%	8
PR2	Pines River @ Route 1A	Revere	SB, ORW, SH	<10	<10	10	85	<10	31	30	83%	10
TRB1	Trifone Brook	Revere	SA	84	1,720	1,380	616	97	359	403	0%	3
TLB1	Town Line Brook @ Cemeteries	Malden	SA	132	886	1,540	1,950	246	231	521	0%	1

Water Quality Standards for Enterococci

Swimming Freshwater:	Geometric mean of $\leq 33/100$ mL or $\leq 61/100$ mL for a single sample
Swimming Marine:	Geometric mean of < 35 , or $\leq 104/100$ mL for a single sample
Boating:	Geometric mean $\leq 175 / 100$ mL, and 10% of samples $\leq 350 / 100$ mL

Bacterial pollution exceeds recommended levels for swimming and boating

The following sites are coastal: PR1, PR2

The following sites are tidally influenced: SHSB, SR5, STB1

The following sites may be tidally influenced depending upon tide gate settings: TRB1, TLB1

Saugus River Watershed Council
2015 Water Quality Monitoring Results

Site Code	Site Name / Description	Town	Water Quality Designation	BACTERIA, E. coli: MPN / 100 mL						Geometric Mean	% of Samples Meeting Swimming Standard	% of Samples Meeting Boating Standard
				28-Apr-15 Light Rain (24Hr)	26-May-15 Dry Weather	23-Jun-15 Dry Weather	28-Jul-15 Dry Weather	22-Sep-15 Dry Weather	27-Oct-15 Dry Weather			
LQ1	Lake Quannapowitt	Wakefield	B	<10	771	496	98	41	520	240	50%	83%
SR1	Saugus River upstream of LWSC Dam	Wakefield/Lynnfield	B	10	10	240	20	41	<10	29	83%	100%
MR1	Mill River @ Farm Street	Wakefield	B	740	388	1,250	197	712	63	383	33%	50%
SR2	Saugus River @ Breakheart	Saugus	B	41	135	1,210	374	282	30	166	50%	83%
SR3	Saugus River @ Route 1	Saugus	B	31	134	1,080	983	121	20	148	67%	67%
SR4	Saugus River @ Bridge Street	Saugus	B	41	74	1,090	886	161	31	156	67%	67%
SHB1	Shute Brook downstream of Central St.	Saugus	B	448	789	1,140	9,800	987	1,260	1,304	0%	17%
SR5	Saugus River @ Boston St. / Lincoln Ave.	Lynn/Saugus	SB/CSO, ORW, SH	121	10	683	5,170	63	1,400	269	50%	50%
STB1	Strawberry Brook Outlet	Lynn	SB/CSO, ORW, SH	109	816	1,400	15,500	145	19,900	1,331	17%	50%
PR1	Pines / Saugus River @ Gibson Park	Revere	SB, ORW, SH	310	20	20	1,940	62	41	92	83%	83%
PR2	Pines River @ Route 1A	Revere	SB, ORW, SH	<10	<10	20	85	63	10	32	100%	100%
TRB1	Trifone Brook	Revere	SA	211	7,270	3,080	6,870	1,260	2,380	2,145	17%	17%
TLB1	Town Line Brook @ Cemeteries	Malden	SA	1,120	1,850	1,150	2,360	1,050	404	1,156	0%	17%

Water Quality Standards for E. coli

Swimming: E. coli geometric mean of ≤126 / 100 ml, or ≤235/100 mL for a single sample

Boating: E. Coli geometric mean of ≤ 630 / 100 mL, and 10% of samples 1260 / 100 mL

Bacterial pollution exceeds recommended levels for swimming and boating

The following sites are coastal: PR1, PR2

The following sites are tidally influenced: SHSB, SR5, STB1

The following sites may be tidally influenced depending upon tide gate settings: TRB1, TLB1

Saugus River Watershed Council
2015 Water Quality Monitoring Results

Site Code	Site Name / Description	Town	Water Quality Designation	TSS: mg/L						Geometric Mean
				28-Apr-15 Light Rain (24Hr)	26-May-15 Dry Weather	23-Jun-15 Dry Weather	28-Jul-15 Dry Weather	22-Sep-15 Dry Weather	27-Oct-15 Dry Weather	
LQ1	Lake Quannapowitt	Wakefield	B	17.00	21.50	6.50	37.50	15.00	7.50	14.68
SR1	Saugus River upstream of LWSC Dam	Wakefield/Lynnfield	B	<5.00	15.00	5.00	<5.00	78.50	11.00	15.95
MR1	Mill River @ Farm Street	Wakefield	B	<5.00	6.50	<5.00	<5.00	7.50	<5.00	6.98
SR2	Saugus River @ Breakheart	Saugus	B	5.00	8.50	5.50	<5.00	<5.00	<5.00	6.16
SR3	Saugus River @ Route 1	Saugus	B	<5.00	7.50	5.50	7.50	15.50	<5.00	8.32
SR4	Saugus River @ Bridge Street	Saugus	B	<5.00	9.00	8.50	6.00	<5.00	<5.00	7.71
SHB1	Shute Brook downstream of Central St.	Saugus	B	<5.00	9.50	<5.00	<5.00	<5.00	<5.00	9.50
SR5	Saugus River @ Boston St. / Lincoln Ave.	Lynn/Saugus	SB/CSO, ORW, SH	13.00	49.50	17.50	16.50	9.50	24.50	18.74
STB1	Strawberry Brook Outlet	Lynn	SB/CSO, ORW, SH	12.50	11.50	<5.00	20.50	9.50	<5.00	12.94
PR1	Pines / Saugus River @ Gibson Park	Revere	SB, ORW, SH	17.50	83.50	27.00	30.50	18.00	23.00	28.16
PR2	Pines River @ Route 1A	Revere	SB, ORW, SH	14.00	56.50	17.50	22.50	12.00	84.50	26.10
TRB1	Trifone Brook	Revere	SA	<5.00	<5.00	<5.00	<5.00	<5.00	5.00	5.00
TLB1	Town Line Brook @ Cemeteries	Malden	SA	6.00	7.50	8.00	10.00	12.00	<5.00	8.45

Water Quality Standards

Massachusetts does not have numeric water quality standards for total suspended solids.

Elevated levels of TSS or turbidity degrade water quality and habitat for fish.

Saugus River Watershed Council
2015 Water Quality Monitoring Results

Site Code	Site Name / Description	Town	Water Quality Designation	Total Nitrogen: mg/L						Geometric Mean
				28-Apr-15 Light Rain (24Hr)	26-May-15 Dry Weather	23-Jun-15 Dry Weather	28-Jul-15 Dry Weather	22-Sep-15 Dry Weather	27-Oct-15 Dry Weather	
LQ1	Lake Quannapowitt	Wakefield	B	0.926124	1.221396	1.210476	1.845992	0.840996	0.633552	1.050868
SR1	Saugus River upstream of LWSC Dam	Wakefield/Lynnfield	B	0.520296	0.912336	0.892716	0.701024	1.719816	1.115376	0.910526
MR1	Mill River @ Farm Street	Wakefield	B	1.192032	1.430196	0.731868	1.014332	1.017336	1.030368	1.048235
SR2	Saugus River @ Breakheart	Saugus	B	0.920508	1.192296	0.836916	0.845528	0.664668	0.459096	0.786662
SR3	Saugus River @ Route 1	Saugus	B	0.776484	0.951984	0.766884	0.804296	0.585636	0.503916	0.715839
SR4	Saugus River @ Bridge Street	Saugus	B	0.867012	1.076136	0.851652	0.988832	0.814620	0.671184	0.868652
SHB1	Shute Brook downstream of Central St.	Saugus	B	1.552932	1.967196	1.516776	1.613852	1.744536	1.526568	1.646381
SR5	Saugus River @ Boston St. / Lincoln Ave.	Lynn/Saugus	SB/CSO, ORW, SH	0.628284	0.502224	0.701364	0.847904	0.587652	0.552408	0.627269
STB1	Strawberry Brook Outlet	Lynn	SB/CSO, ORW, SH	0.951396	1.184556	0.740724	1.326692	1.181376	1.076988	1.058824
PR1	Pines / Saugus River @ Gibson Park	Revere	SB, ORW, SH	0.243420	0.180144	0.321132	0.549248	0.263340	0.486960	0.315796
PR2	Pines River @ Route 1A	Revere	SB, ORW, SH	0.293556	0.209820	0.289836	0.519992	0.347520	0.751128	0.366491
TRB1	Trifone Brook	Revere	SA	2.470812	3.441696	3.445596	3.506312	3.720756	1.217088	2.783642
TLB1	Town Line Brook @ Cemeteries	Malden	SA	1.500972	1.588356	1.561416	1.690652	1.151556	3.986328	1.751695

Water Quality Standards

Numerical water quality standards for phosphorus and nitrogen are currently under development in Massachusetts. Elevated nutrient levels (nitrogen and phosphorus) can lead to excessive algal growth.

Saugus River Watershed Council
2015 Water Quality Monitoring Results

Site Code	Site Name / Description	Town	Water Quality Designation	Total Phosphorus: mg/L						Geometric Mean
				28-Apr-15 Light Rain (24Hr)	26-May-15 Dry Weather	23-Jun-15 Dry Weather	28-Jul-15 Dry Weather	22-Sep-15 Dry Weather	27-Oct-15 Dry Weather	
LQ1	Lake Quannapowitt	Wakefield	B	0.064752	0.083524	0.053484	0.183212	0.060840	0.039952	0.071066
SR1	Saugus River upstream of LWSC Dam	Wakefield/Lynnfield	B	0.027672	0.103096	0.151980	0.070052	0.245256	0.113044	0.097176
MR1	Mill River @ Farm Street	Wakefield	B	0.064956	0.068980	0.076224	0.060728	0.071388	0.060352	0.066864
SR2	Saugus River @ Breakheart	Saugus	B	0.052680	0.080788	0.093240	0.079124	0.064068	0.050812	0.068378
SR3	Saugus River @ Route 1	Saugus	B	0.044616	0.062152	0.080460	0.081944	0.077340	0.044584	0.063087
SR4	Saugus River @ Bridge Street	Saugus	B	0.051708	0.061744	0.079572	0.073016	0.046848	0.033376	0.055430
SHB1	Shute Brook downstream of Central St.	Saugus	B	0.049128	0.063880	0.043728	0.054548	0.039696	0.040240	0.047820
SR5	Saugus River @ Boston St. / Lincoln Ave.	Lynn/Saugus	SB/CSO, ORW, SH	0.052260	0.064288	0.081348	0.142568	0.098928	0.106084	0.086153
STB1	Strawberry Brook Outlet	Lynn	SB/CSO, ORW, SH	0.053304	0.046876	0.031212	0.142880	0.108684	0.062260	0.064997
PR1	Pines / Saugus River @ Gibson Park	Revere	SB, ORW, SH	0.035184	0.032464	0.051216	0.122756	0.055452	0.076072	0.055833
PR2	Pines River @ Route 1A	Revere	SB, ORW, SH	0.037200	0.041620	0.047040	0.113372	0.064332	0.182308	0.067765
TRB1	Trifone Brook	Revere	SA	0.079860	0.057244	0.110184	0.049736	0.050784	0.083296	0.068791
TLB1	Town Line Brook @ Cemeteries	Malden	SA	0.081336	0.087520	0.066792	0.126344	0.082380	0.046144	0.078181

Water Quality Standards

Numerical water quality standards for phosphorus and nitrogen are currently under development in Massachusetts. Elevated nutrient levels (nitrogen and phosphorus) can lead to excessive algal growth.

Saugus River Watershed Council
2015 Water Quality Monitoring Results

Site Code	Site Name / Description	Town	Water Quality Designation	Dissolved Oxygen: mg/L						Geometri Mea
				28-Apr-15 Light Rain (24Hr)	26-May-15 Dry Weather	23-Jun-15 Dry Weather	28-Jul-15 Dry Weather	22-Sep-15 Dry Weather	27-Oct-15 Dry Weather	
LQ1	Lake Quannapowitt	Wakefield	B	10.60	6.50	6.80	6.65	5.90	9.70	7.50
SR1	Saugus River upstream of LWSC Dam	Wakefield/Lynnfield	B	8.70	6.60	6.60	3.60	3.60	7.90	5.82
MR1	Mill River @ Farm Street	Wakefield	B	7.10	2.60	2.60	1.43	6.30	4.90	3.58
SR2	Saugus River @ Breakheart	Saugus	B	9.20	5.40	5.60	6.20	7.55	9.90	7.11
SR3	Saugus River @ Route 1	Saugus	B	9.20	5.30	5.80	5.50	5.70	7.80	6.41
SR4	Saugus River @ Bridge Street	Saugus	B	10.30	8.30	7.90	7.80	9.10	11.10	9.00
SHB1	Shute Brook downstream of Central St.	Saugus	B	9.83	7.39	8.39	6.44	6.66	5.93	7.33
SR5	Saugus River @ Boston St. / Lincoln Ave.	Lynn/Saugus	SB/CSO, ORW, SH	8.36	5.78	4.26	3.83	3.86	4.51	4.89
STB1	Strawberry Brook Outlet	Lynn	SB/CSO, ORW, SH	9.10	6.36	5.70	2.00	3.33	4.55	4.64
PR1	Pines / Saugus River @ Gibson Park	Revere	SB, ORW, SH	9.56	7.68	7.58	2.44	4.52	4.53	5.50
PR2	Pines River @ Route 1A	Revere	SB, ORW, SH	9.45	7.39	6.96	2.35	4.39	4.30	5.28
TRB1	Trifone Brook	Revere	SA	9.26	7.74	7.43	3.89	5.75	4.98	6.24
TLB1	Town Line Brook @ Cemeteries	Malden	SA	6.88	3.56	3.35	1.75	3.28	6.43	3.80

Water Quality Standards

(warm water fishery), > or = 5.0 mg/L unless background conditions are lower

Dissolved oxygen levels do not meet water quality standards

Dissolved oxygen levels may pose risk for fish and wildlife habitat

Saugus River Watershed Council
2015 Water Quality Monitoring Results

Site Code	Site Name / Description	Town	Water Quality Designation	Temperature: Degrees Celcius						Geomet Me
				28-Apr-15 Light Rain (24Hr)	26-May-15 Dry Weather	23-Jun-15 Dry Weather	28-Jul-15 Dry Weather	22-Sep-15 Dry Weather	27-Oct-15 Dry Weather	
LQ1	Lake Quannapowitt	Wakefield	B	10.9	18.5	23.1	24.1	19.5	7.8	16.0
SR1	Saugus River upstream of LWSC Dam	Wakefield/Lynnfield	B	9.6	20.6	23.4	23.9	18.7	9.1	16.3
MR1	Mill River @ Farm Street	Wakefield	B	8.9	16.9	19.2	21.1	16.0	7.1	13.8
SR2	Saugus River @ Breakheart	Saugus	B	9.3	17.9	19.5	21.3	15.7	6.1	13.7
SR3	Saugus River @ Route 1	Saugus	B	9.4	18.5	20.2	22.1	16.5	8.1	14.7
SR4	Saugus River @ Bridge Street	Saugus	B	9.4	17.9	19.8	21.5	15.5	7.4	14.2
SHB1	Shute Brook downstream of Central St.	Saugus	B	8.6	15.6	16.7	19.8	14.7	7.5	13.0
SR5	Saugus River @ Boston St. / Lincoln Ave.	Lynn/Saugus	SB/CSO, ORW, SH	8.2	18.3	21.4	24.4	20.7	10.3	15.9
STB1	Strawberry Brook Outlet	Lynn	SB/CSO, ORW, SH	8.6	17.0	21.7	24.3	20.6	9.9	15.8
PR1	Pines / Saugus River @ Gibson Park	Revere	SB, ORW, SH	7.8	14.1	18.0	23.1	17.4	7.6	13.5
PR2	Pines River @ Route 1A	Revere	SB, ORW, SH	8.2	15.0	18.7	23.3	18.3	8.2	14.1
TRB1	Trifone Brook	Revere	SA	9.3	15.3	16.7	18.8	16.1	9.3	13.7
TLB1	Town Line Brook @ Cemeteries	Malden	SA	8.6	14.3	18.2	19.7	16.2	7.0	13.0

Water Quality Standards

Class A/B: < 28.3°C for warm water fisheries

Class SA/SB: < 29.4°C

All samples meet water quality standards for temperature (warm water fisheries)

Saugus River Watershed Council
2015 Water Quality Monitoring Results

Site Code	Site Name / Description	Town	Water Quality Designation	Specific Conductance: uS/cm						Geometric Mean
				28-Apr-15 Light Rain (24Hr)	26-May-15 Dry Weather	23-Jun-15 Dry Weather	28-Jul-15 Dry Weather	22-Sep-15 Dry Weather	27-Oct-15 Dry Weather	
LQ1	Lake Quannapowitt	Wakefield	B	539	587	598	615	650	617	600
SR1	Saugus River upstream of LWSC Dam	Wakefield/Lynnfield	B	698	847	676	837	920	802	792
MR1	Mill River @ Farm Street	Wakefield	B	1,057	1,360	593	1,142	1,083	1,243	1,046
SR2	Saugus River @ Breakheart	Saugus	B	840	1,104	542	1,001	1,085	1,158	926
SR3	Saugus River @ Route 1	Saugus	B	815	1,038	548	894	973	902	845
SR4	Saugus River @ Bridge Street	Saugus	B	852	1,069	588	961	1,044	987	900
SHB1	Shute Brook downstream of Central St.	Saugus	B	984	1,473	1,398	1,233	1,388	1,487	1,314
SR5	Saugus River @ Boston St. / Lincoln Ave.	Lynn/Saugus	SB/CSO, ORW, SH	5,345	41,310	24,810	35,580	43,400	42,930	26,710
STB1	Strawberry Brook Outlet	Lynn	SB/CSO, ORW, SH	1,865	19,710	6,150	38,660	42,420	38,050	15,544
PR1	Pines / Saugus River @ Gibson Park	Revere	SB, ORW, SH	43,660	46,620	44,040	44,300	45,510	45,350	44,902
PR2	Pines River @ Route 1A	Revere	SB, ORW, SH	43,820	46,390	43,270	44,420	45,380	45,600	44,800
TRB1	Trifone Brook	Revere	SA	1,193	1,146	1,100	1,427	946	1,128	1,148
TLB1	Town Line Brook @ Cemeteries	Malden	SA	476	907	7,950	3,266	18,530	5,560	3,239

Water Quality Standards

There are currently no formal water quality standards for specific conductance

Elevated conductivity at freshwater sites may indicate potential long term impact from use of road salt

The following sites are coastal: PR1, PR2

The following sites are tidally influenced: SHSB, SR5, STB1

The following sites may be tidally influenced depending upon tide gate settings: TRB1, TLB1