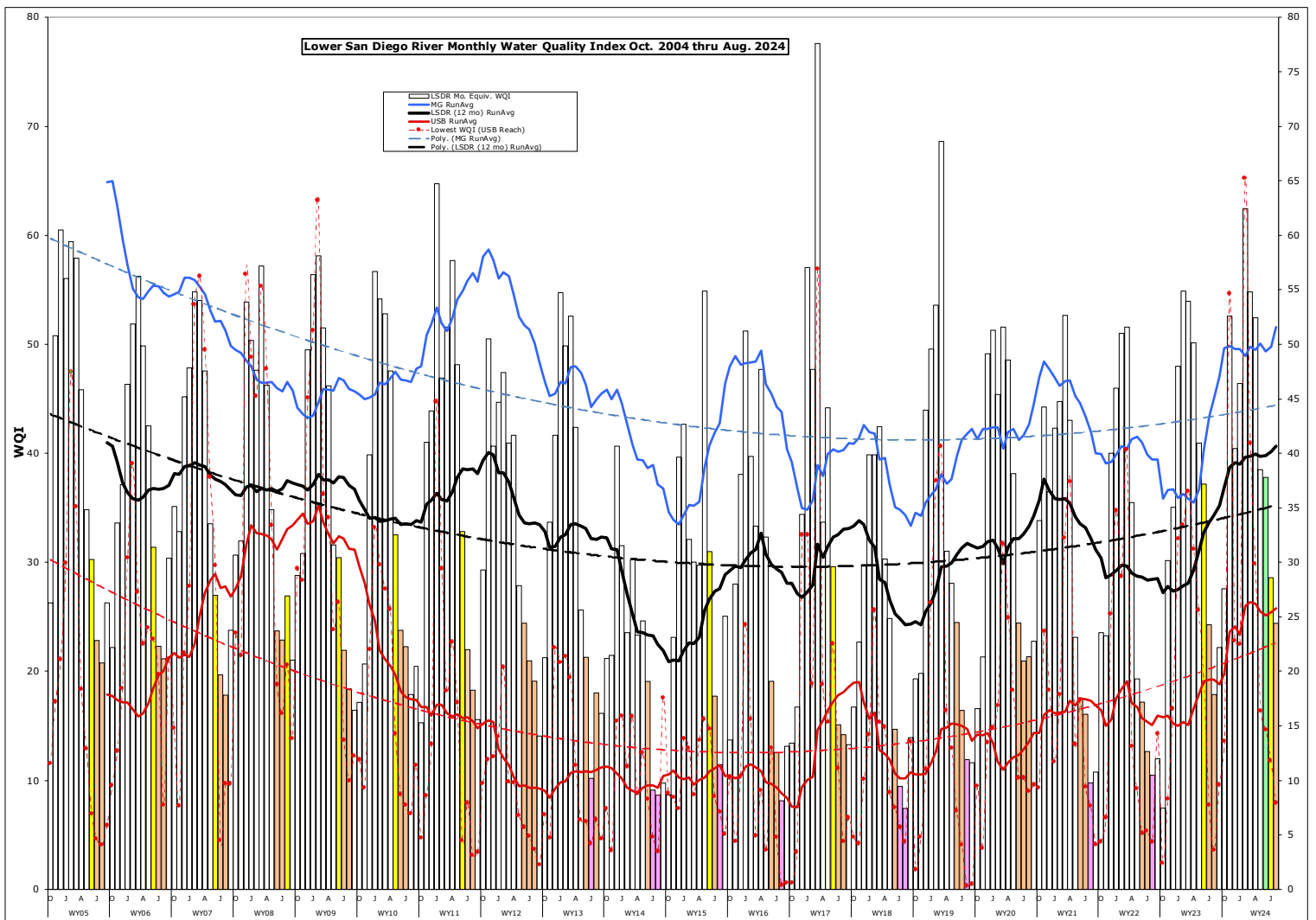


# Monthly WQM Report

## Lower San Diego River - August 2024



## Lower SDR Water Quality Monitoring Data Summary

**Table 1** presents a summary of water quality data monitored by the SDRPF RiverWatch Team within the Lower San Diego River (LSDR) watershed over the last two months. This month's overall index of 24 is five points less than last month; remaining six points (37%) above a year ago and eight points (51%) above the 20-yr August norm of 16 .

<b>Table 1 - July/August '24 WQM Data Summary</b>							
	West - MV	Mid - MG	East - SB	LSDR			
[Site #s]	[1-7] July/Aug	[8-10] July/Aug	[11-15] July/Aug	[1-15] July/Aug	Last Mo. (7/'24)	Last Yr. (8/'23)	20-yr Avg. (Aug.)
Temperature, oC	24.8/25.0	22.4/23.1	23.5/24.1	23.8/24.2	2%	4%	4%
Sp.Cond., mS/cm	2.78/3.24	1.71/1.86	1.95/2.12	2.16/2.40	11%	-8%	-18%
DO, mg/L	3.72/3.16	6.51/7.07	4.22/3.88	4.37/4.15	-5%	45%	25%
DO, % of Sat.	45/38	76/83	50/47	52/50			
pH	7.70/7.78	8.02/7.99	7.72/7.70	7.71/7.73	0.2%	2.9%	0.5%
3-day ADF, cfs	4.5/2.5	4.3/2.2	4.2/2.2	4.3/2.3	-47%	-32%	103%
WQ Index	27/22	44/43	26/21	29/24	-15%	37%	51%
May/June	D/E	C/C	D-/E	D/E+			
May/June	Marginal/ Poor	Fair/ Fair	Marginal/ Poor	Marginal/ Poor	<b>Index down 5 points from last month</b>		

Negative variance (declines from norms) and DO depletion (DO < 5.0 mg/L or 50% of Sat) expressed in red.

LSDR **water temperatures** rose only 0.4oC (2%) from last month, to 4% above last year and the 20-yr Aug. norm of 23.3oC. The overall **specific conductance** of 2.40 mS/cm constitutes an 11% increase from last month, to 8% less than last year and 18% below the 20-yr norm of 2.92 mS/cm. The overall **dissolved oxygen** level of 4.15 mg/L (50%Sat.) is 5% less than last month, remaining 45% more than last Aug., and 25% more than the 20-yr norm of 3.39 mg/L (39%Sat). **Streamflow** over the antecedent 3-days of 2.3 cfs is 47% less than last month and 32% below a year ago, but remaining 103% more than the 20-yr August norm of 1.1 cfs. This month's overall LSDR **water quality index** (WQI) of 24(E+) is five points under last month, but remains six points above a year ago and eight points more the 20-yr August norm of 16(E).

Monthly WQI values occurring over the past 25 months of RiverWatch record for the three main sections of the lower river system, the overall LSDR average, plus 30-day antecedent average daily streamflow (ADF) and total monthly rainfall (MRF) values, are expressed in **Table 2** on the next page.

<b>Table 2 - WQI Values, Average Daily Flow and Monthly Rainfall (July '22 - Aug. '24)</b>							
	Mission Valley	Mission Gorge	Santee Basin	LSDR		ADF,cfs	TMR,F,in
July '22	17 (E)	2 (F-)	12 (F+)	13 (E-)	DW	0.6	0.00
<b>Aug.</b>	<b>15 (E)</b>	<b>2 (F-)</b>	<b>8 (F)</b>	<b>10 (F)</b>	<b>DW</b>	<b>0.4</b>	<b>0.00</b>
Sept.	8 (F)	11 (F+)	16 (E)	12 (F+)	DW	2.0	0.64
Oct.	9 (F)	3 (F-)	7 (F)	7 (F)	T	0.9	0.03
Nov.	25 (D-)	59 (B)	24 (E+)	32 (D)	WW	17	1.16
Dec. '22	32 (D)	53 (B-)	30 (D)	35 (D)	WW	18	0.93
Jan. '23	49 (C+)	58 (B)	42 (C)	48 (C+)	WW	190	3.48
Feb.	56 (B)	71 (B)	47 (C)	55 (B)	WW	36	2.76
March	58 (B)	57 (B)	52 (B-)	55 (B)	WW	132	4.86
April	52 (B-)	65 (B)	43 (C)	50 (B-)	WW	77	0.54
May	40 (C)	47 (C+)	39 (C)	41 (C)	T	19	0.12
June	33 (D)	59 (B)	33 (D)	37 (D+)	T	18	0.03
July '23	19 (E)	39 (C-)	23 (E)	24 (E+)	DW	4.9	0.00
<b>Aug</b>	<b>20 (E)</b>	<b>22 (E)</b>	<b>15 (E)</b>	<b>18 (E)</b>	<b>DW</b>	<b>3.1</b>	<b>0.10</b>
Sept	17 (E)	35 (D)	22 (E)	22 (E)	T	26	1.75
Oct.	31(D)	34 (D)	21 (E)	28 (D)	DW	4.2	0.01
Nov.	49 (C+)	59 (B)	51 (B-)	53 (B-)	T	28	0.15
Dec. '23	45 (C)	50 (B-)	31 (D)	40 (C)	T	15	0.46
Jan.'24	50(B-)	58 (B)	36 (D)	46 (C)	WW	13	2.07
Feb.	58(B)	64(B)	65(B)	63(B)	WW	202	6.12
March	55(B)	67(B)	48(C+)	55(B)	WW	46	1.62
April	60(B)	61(B)	40(C)	52(B)	WW	62	1.92
May	40 (C)	54 (B-)	32 (D)	39 (C-)	T	16	0.03
June	40 (C)	51 (B-)	30 (D)	38 (C-)	DW	8	0.01
July '24	27 (D)	44 (C)	26 (D)	29 (D)	DW	4.9	0.00
<b>Aug '24</b>	<b>22 (E)</b>	<b>43 (C)</b>	<b>21 (E)</b>	<b>24 (E+)</b>	<b>DW</b>	<b>3.1</b>	<b>0.00</b>

The **cover page** of this report presents monthly WQI values and range (high/low) for the Lower San Diego River watershed over the past 20 years. Each year's values are expressed as color-shaded bars; **blue (50 or >) A-B/Good**, **green (38-49) C/Fair**, yellow (25-37) D/Marginal, **brown (13-24) E/Poor**, and **pink (12 or <) F/Very Poor**. Running average index values for the LSDR (distance weighted averages of all sites) are shown as a heavy black line. Running averages for the consistently highest (best) quality section of the river (Mission Gorge) are shown as a 'blue' line while the consistently lowest (poorest) reach (Upper Santee Basin) is shown in 'red'. The dashed lines represent overall (20-yr) trends. This month's value of 24 is time over the last 20 years the index has been at grade level E (Poor) for Aug., remaining 50% above the monthly norm of 26.

WQI values extending from Sept.'04 thru Aug '24 are presented in **Chart 1** (next page) together with 12-mo. running averages for each of the five reaches and overall (i.e., LSDR) for the entire lower river system. The current running average WQI of 41 is 23% above the 20-yr norm of 33. The running average low for Aug of 22 (32% below norm) occurred in 2014. The previous highest running average WQI for Aug of 40 (21% above norm) occurred in 2011. The greatest decline in water quality this month occurred in the Upper Mission Valley (Site 6) reach.

Monthly and 12-mo. running average WQI values for the 'poorest' (Upper Santee Basin) and "best" (Mission Gorge) reaches of the lower watershed are presented in **Chart 2**. Although water quality has measurably improved during much of this past year, resurgent growth of aquatic plants and subsequent decomposition associated with accrual of organics, especially in deeper ponded portions of the river, are considered the basic natural cause of deteriorating water quality. The greatest downward trend (**red-dashed line**) over time is associated with the poorest quality reach (Upper Santee Basin) encompassing Mast Park East (#13E) and Magnolia Ave. (#14) sites. The Mission Gorge (**blue line**) section from Old Mission Dam through Mission Trails continues to demonstrate the least decline in index values over the 20-yr monitoring period. The lowest quality Mission Valley site is located at the outlet from Kaiser Ponds (Site 6) at San Diego Mission Rd. crossing.

Spatial WQI values determined over the last three months, expressed in order of location upstream, are shown in **Charts 3, 4 and 5** on page 6. This month's results (color bars w/values in black shown on Chart 5) are all below last month. This month, three of 15 sites (20%) are Very Poor(F), five (33%) Poor(E), four (27%) Marginal(D) and three (20%) Fair(C). Last month (July) 13% were Very Poor, 27% Poor, another 33% Marginal and the remaining 27% Fair. The highest index value this month of 46 (C) was at Mission Trails Crossing (Site 8), while the lowest value of two (F) was at the outlet to Kaiser Ponds (Site 6).

Next month's overall index is expected to show further decline due to less streamflow and lower DO levels monitored in conjunction with higher specific conductivities. Both August and September index values are commonly in the lower 20's Poor (E) representative of minimal, dry-weather flow conditions.

8/26/24 (JCK)

Chart 1 - LSDR Monthly WQI, Running Averages and Trendlines by River Reach (Sept. 2005 thru Aug 2024)

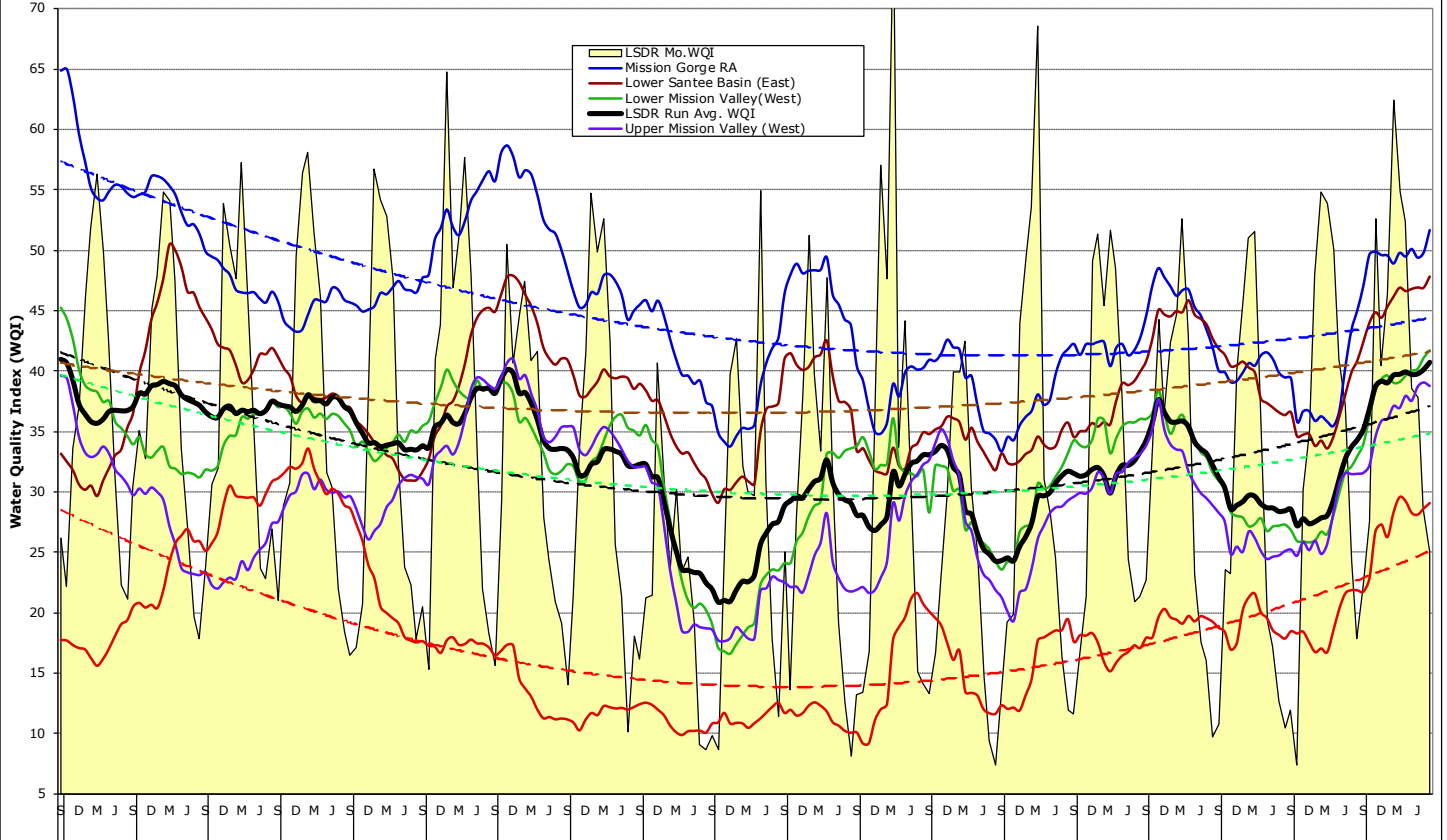


Chart 2 - Mast Park East (Site 13E) and Mission Gorge (Sites 8&10) Monthly WQI, 12-mo Running Averages and 20-yr Trendlines

