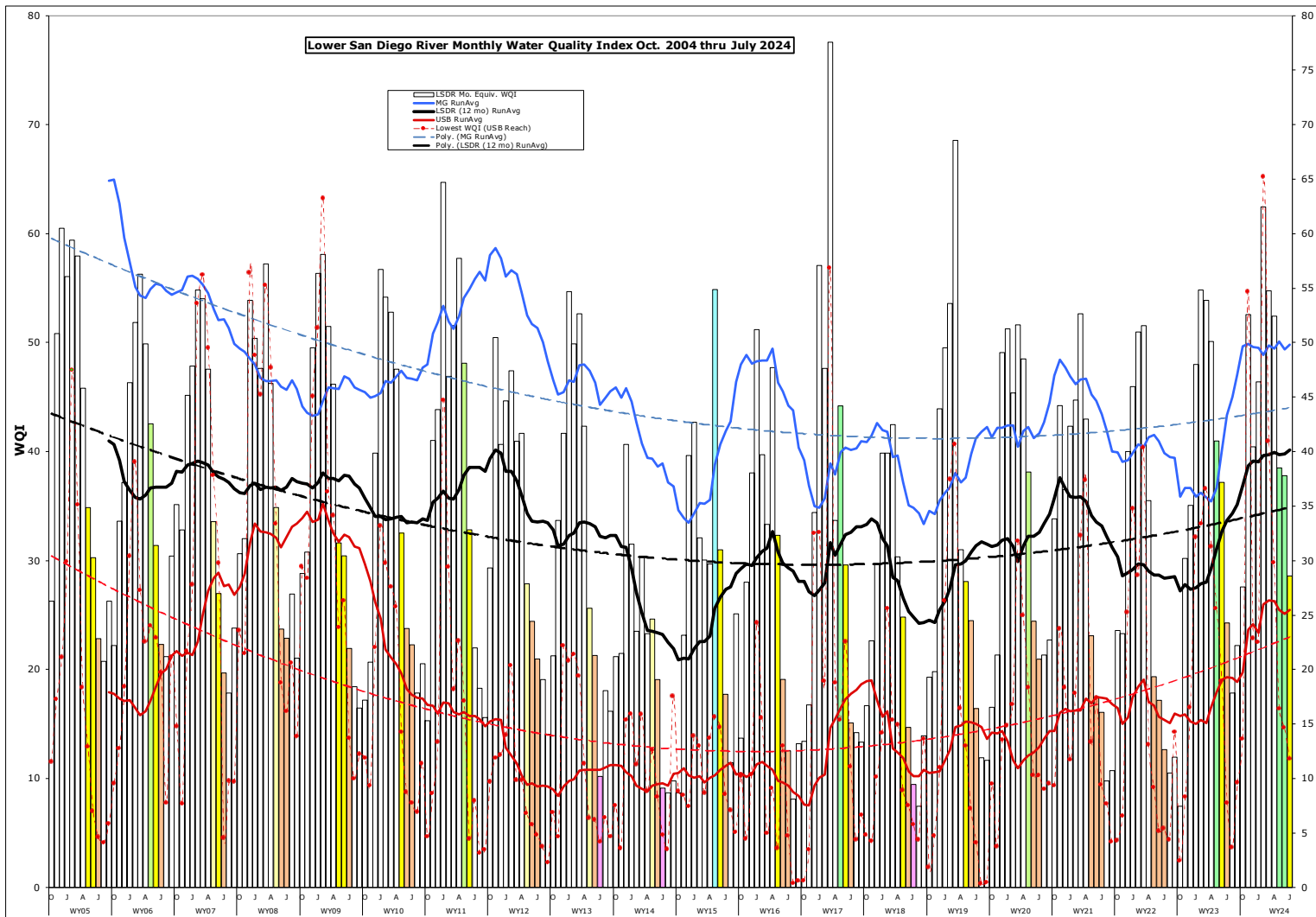


# Monthly WQM Report

## Lower San Diego River - July 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 29 is nine points below last month, remaining five points above a year ago and 11 points (55%) above the 20-yr July norm of 18 .

<b>Table 1 - July/June '24 WQM Data Summary</b>							
	West - MV	Mid - MG	East - SB	LSDR			
[Site #s]	[1-7] July/June	[8-10] July/June	[11-15] July/June	[1-15] July/June	Last Mo. (6/'24)	Last Yr. (7/'23)	20-yr Avg. (July)
Temperature, oC	24.8/22.1	22.4/21.1	23.5/21.6	23.8/21.7	10%	3%	3%
Sp.Cond., mS/cm	2.78/2.37	1.71/1.56	1.95/1.61	2.16/1.89	14%	-8%	-21%
DO, mg/L	3.72/5.25	6.51/7.34	4.22/4.97	4.37/5.35	-16%	16%	27%
DO, % of Sat.	45/62	76/83	50/57	52/61			
pH	7.70/7.83	8.02/8.19	7.72/7.79	7.71/7.81	-1.2%	3.4%	0.8%
3-day ADF, cfs	4.5/9.0	4.3/5.9	4.2/5.4	4.3/7.0	-38%	-2%	37%
WQ Index	27/40	44/51	26/30	29/38	-24%	18%	55%
May/June	D/C	C/B-	D/D	D/C-			
May/June	Marginal/ Good	Fair/ Good	Marginal/ Fair	Marginal/ Good	<b>Index down 9 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** climbed 2.1oC (10%) from last month, 3% above last year to just and the 20-yr July norm of 23.1oC. The overall **specific conductance** of 2.16 mS/cm constitutes a 14% increase from last month, 8% lower than last year and 21% below the 20-yr norm of 2.72 mS/cm. The overall **dissolved oxygen** level of 4.37 mg/L (52%Sat.) is 16% less than last month, but 16% agreater than last July, and 27% more than the 20-yr norm of 3.49 mg/L (40%Sat). **Streamflow** over the antecedent 3-days of 4.3 cfs is 38% less than last month, 2% below a year ago and 37% greater than the July norm of 3.2 cfs. This month's overall LSDR **water quality index** (WQI) of 29(D) is nine points less than last month, but 5 points above a year ago and 17 points (55%) above the 20-yr July norm of 18(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 (June '22 - July '24)</b>							
	Mission Valley	Mission Gorge	Santee Basin	LSDR		ADF,cfs	TMR,F,in
June	19 (E)	16 (E)	15 (E)	17 (E)	DW	1.1	0.00
<b>July '22</b>	<b>17 (E)</b>	<b>2 (F-)</b>	<b>12 (F+)</b>	<b>13 (E-)</b>	<b>DW</b>	<b>0.6</b>	<b>0.00</b>
Aug.	15 (E)	2 (F-)	8 (F)	10 (F)	DW	0.4	0.00
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
<b>July '23</b>	<b>19 (E)</b>	<b>39 (C-)</b>	<b>23 (E)</b>	<b>24 (E+)</b>	<b>DW</b>	<b>4.9</b>	<b>0.00</b>
Aug	20 (E)	22 (E)	15 (E)	18 (E)	DW	3.1	0.10
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
<b>July '24</b>	<b>27 (D)</b>	<b>44 (C)</b>	<b>26 (D)</b>	<b>29 (D)</b>	<b>DW</b>	<b>4.9</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 29 is only the second time in the last 20 years the index has been at grade level D (Marginal) for July, remaining 48% above the monthly norm of 26.

WQI values extending from Sept.'04 thru July '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 40 is 22% above the 20-yr norm of 33. The running average low for July of 23 (29% below norm) occurred in 2014. The previous highest running average WQI for July of 38 (16% above norm) occurred in 2007. The greatest decline in water quality this month occurred in the Upper Santee Basin (Site 13E).

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, two of 16 sites (13%) are Very Poor(F), five (33%) Poor(E) five Marginal and four (25%) Marginal(D). Last month (May) 19% were Good, 28% Fair and another 38% Marginal. The highest index value of 54 (B) was at Mission Trails Crossing (Site 8), while the lowest value of five (F) was found at Walmart Pond (13E).

Next month's overall index is expected to further decline due to less streamflow and lower DO levels, in conjunction with increasing water temperatures and specific conductivities. August index values are typically found in the 20's(E) representing minimal-flow, late-summer conditions.

8/26/24 (JCK)



