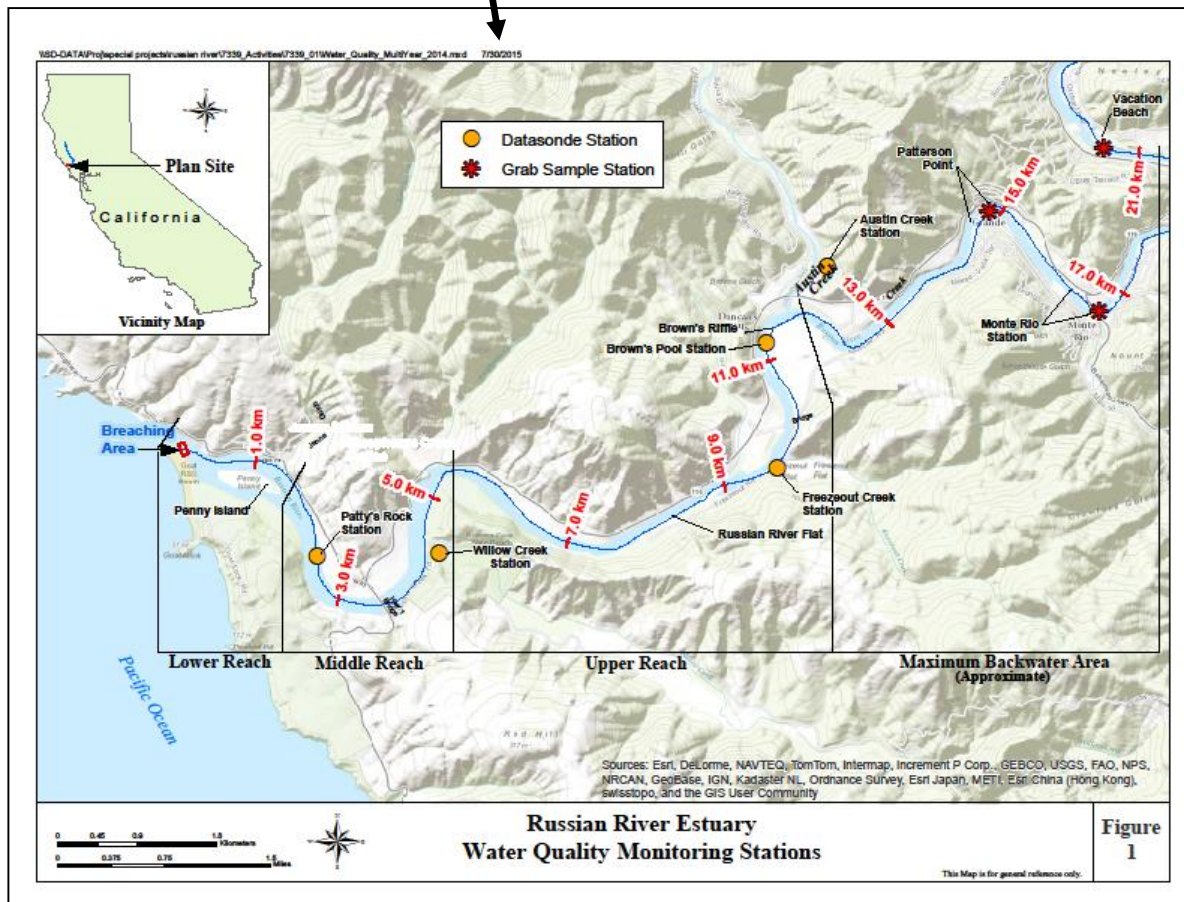




Sonoma Water

State Water Resources Control Board Temporary Urgency Change Order (6/14/2021) Russian River Water Quality Report October 22, 2021 - October 28, 2021

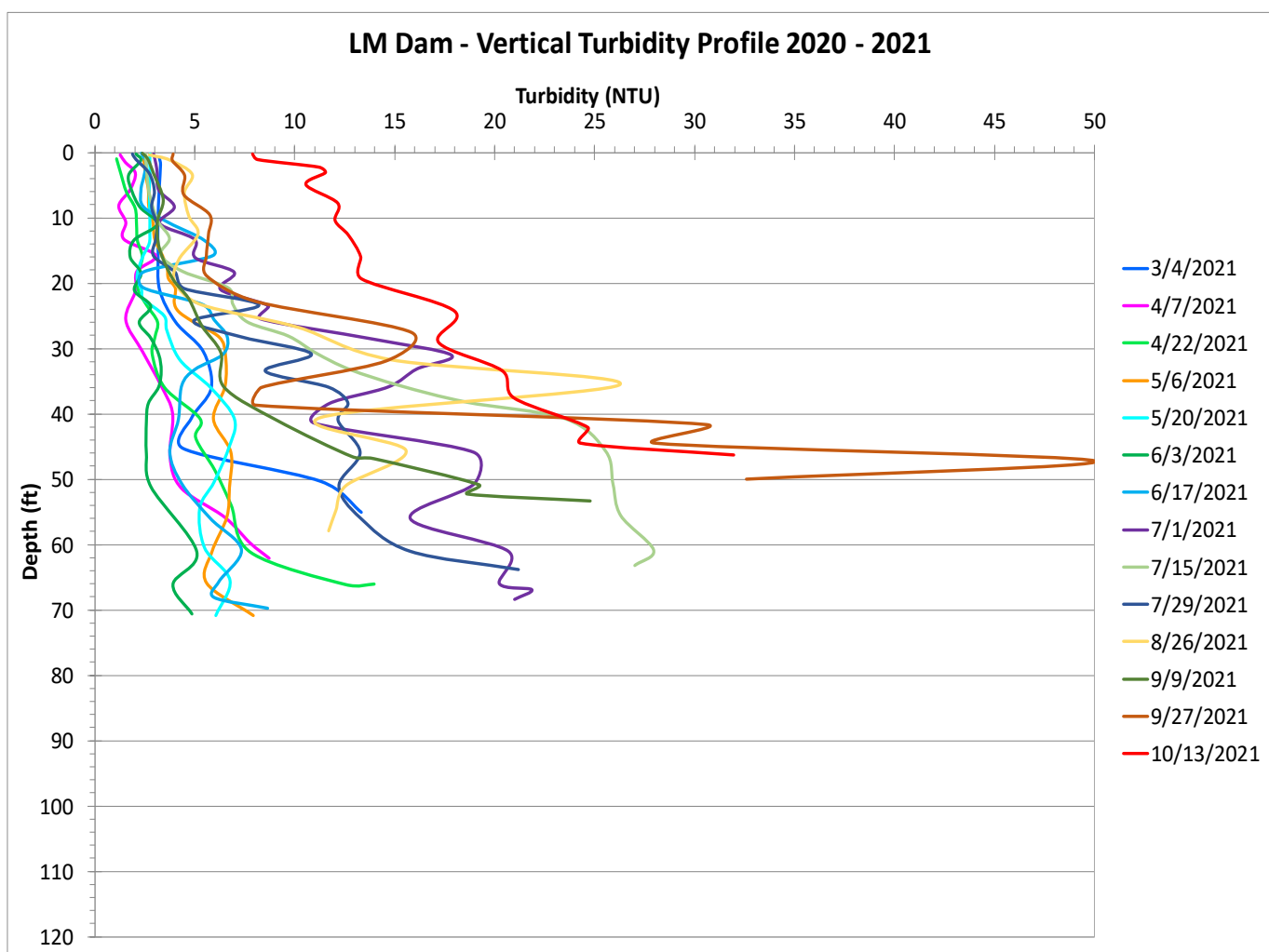
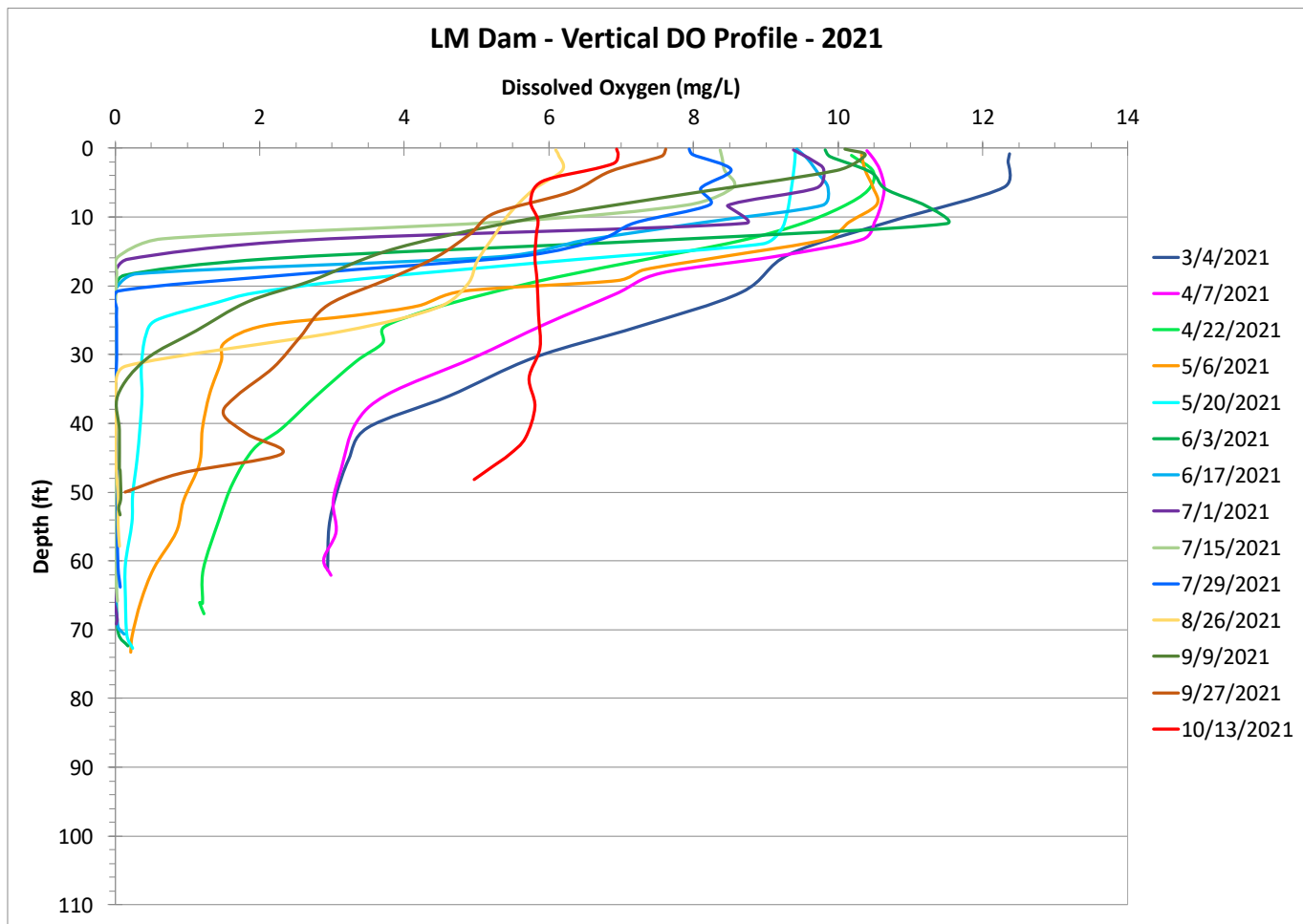
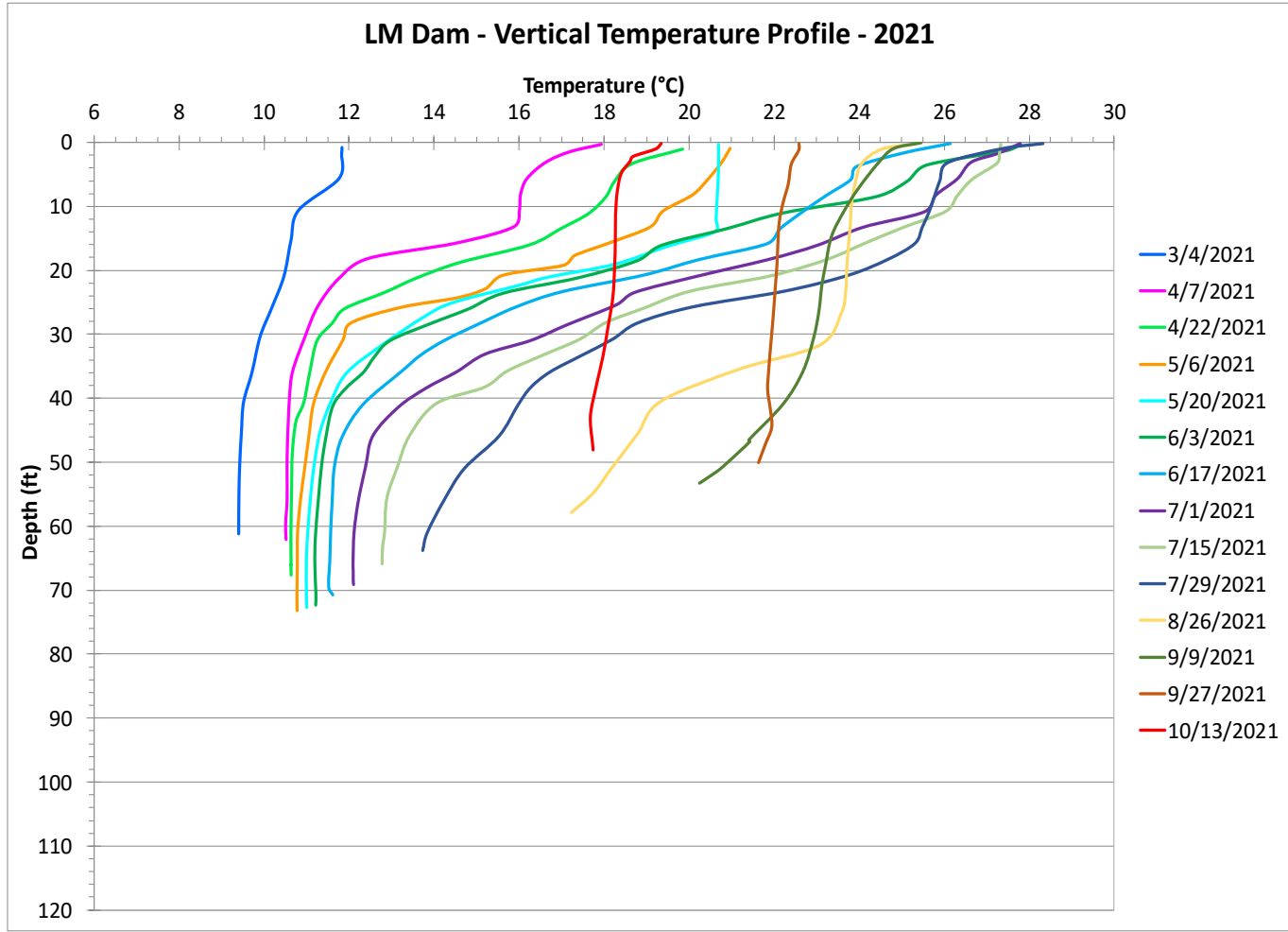
Prepared as a requirement of the Order approving Sonoma Water's Petition for Temporary Urgency Change in Permits 12947A, 12949, 12950, and 16596 (Applications 12919A, 15736, 15737, and 19351).



Russian River Estuary
Water Quality Monitoring Stations

Figure 1

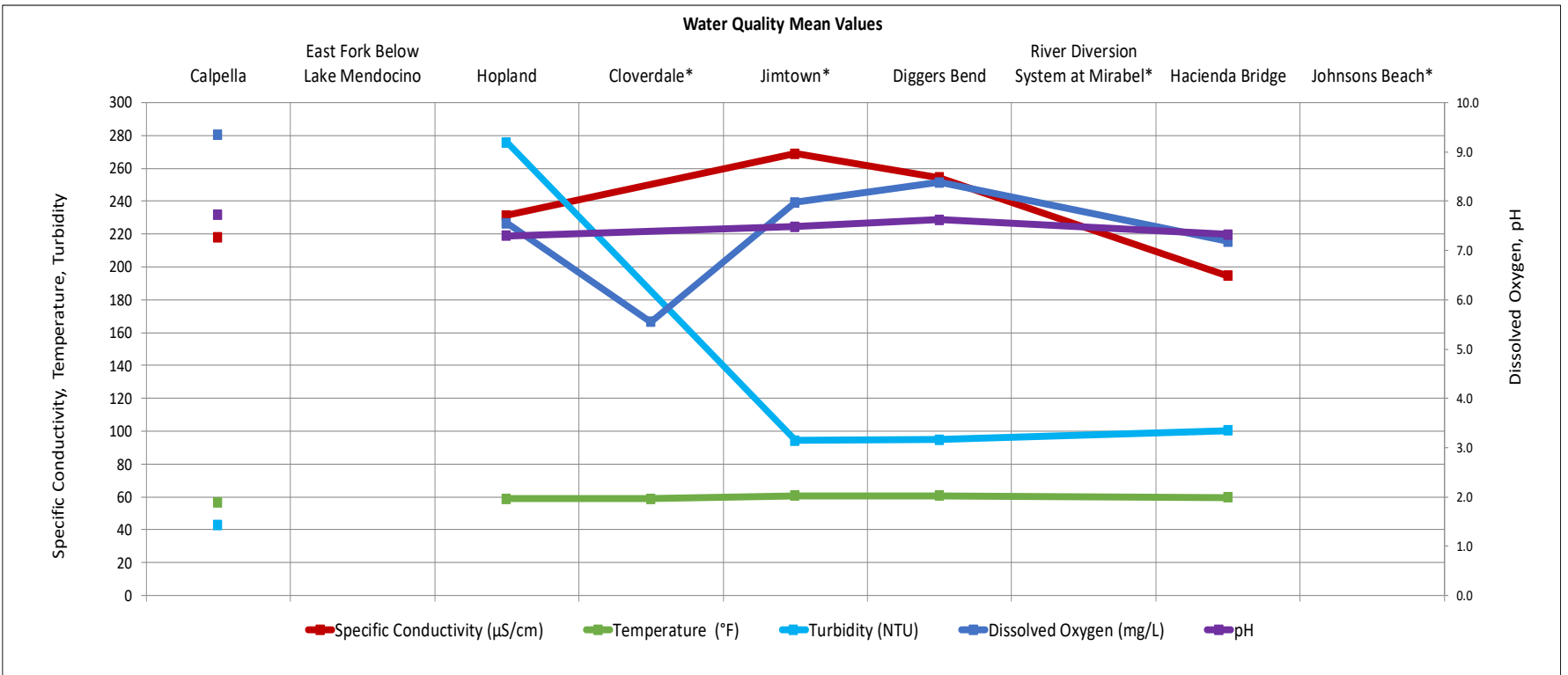
Lake Mendocino Water Quality Vertical Profiles (March 4 - October 28, 2021)
Provisional Data Subject to Revision



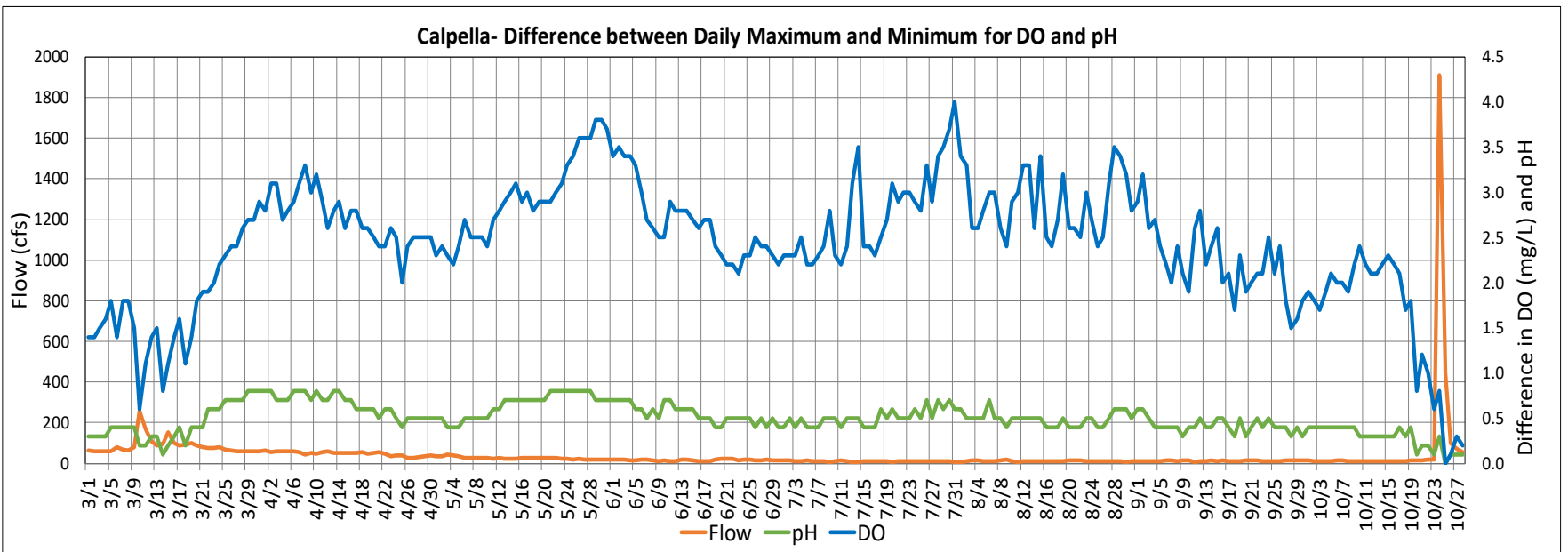
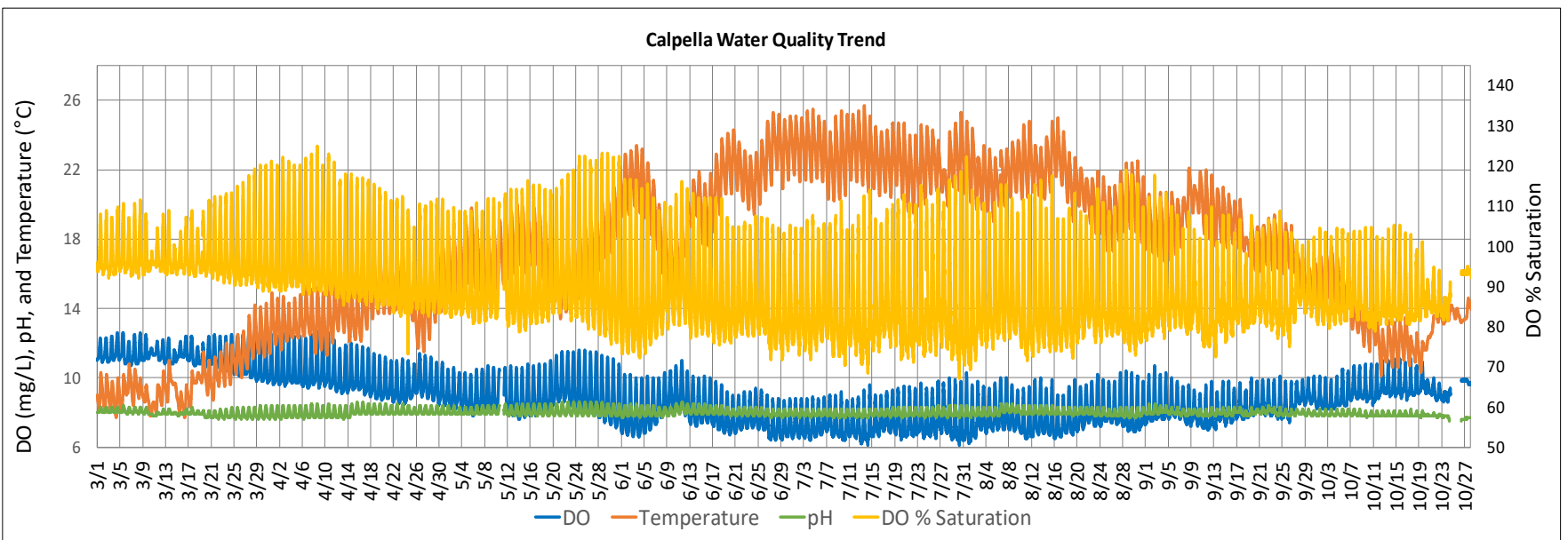
Russian River Water Quality Sondes (October 22 - October 28, 2021) Provisional Data Subject to Revision

Parameter		Calpella	East Fork Below Lake Mendocino	Hopland	Cloverdale*	Jimtown*	Diggers Bend	River Diversion System at Mirabel*	Hacienda Bridge	Johnsons Beach*
		USGS 11461500	SCWA	USGS 11462500	USGS 11463200	USGS 11463682	USGS 11463980	SCWA	USGS 11467000	SCWA
Temperature (°F)	Min	55.6		56.5	56.8	57.4	57.7		58.3	
	Max	59.0		61.9	61.5	65.5	65.1		62.2	
	Mean	56.7		58.8	58.9	60.7	60.7		59.7	
Specific Conductivity (µS/cm)	Min	106		106		113	111		111	
	Max	274		308		384	346		322	
	Mean	218		231		269	254		195	
Dissolved Oxygen (mg/L)	Min	8.6		5.4	0.3	5.9	7.5		5.7	
	Max	9.9		9.1	10.0	9.3	9.7		9.2	
	Mean	9.3		7.5	5.6	8.0	8.4		7.2	
Dissolved Oxygen (% Saturation)	Min	82		51	3	57	73		55	
	Max	98		92	101	98	102		93	
	Mean	89		73	54	79	83		71	
pH	Min	7.5		6.9		7.2	7.3		7.0	
	Max	7.9		7.9		7.6	8.1		7.8	
	Mean	7.7		7.3		7.5	7.6		7.3	
Turbidity (NTU)	Min	1.4		3.1		0.3	0.1		1.6	
	Max	572.0		1300.0		708.0	513.0		466.0	
	Mean	43.1		275.7		94.4	95.0		100.5	

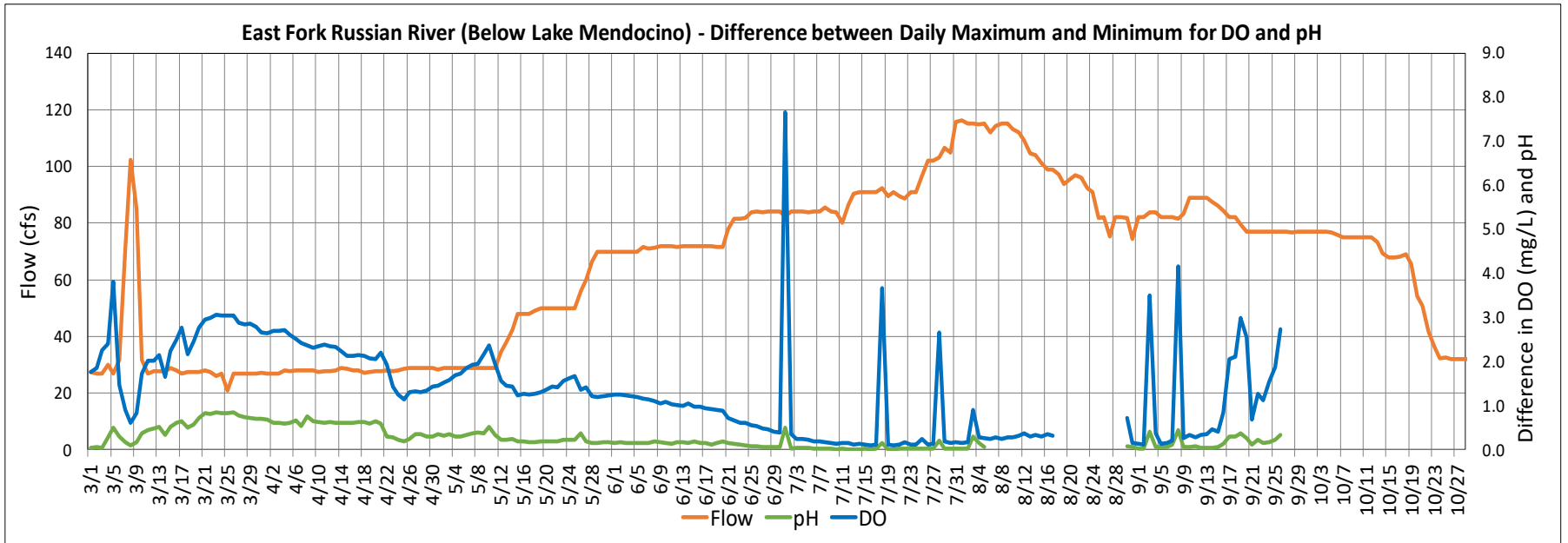
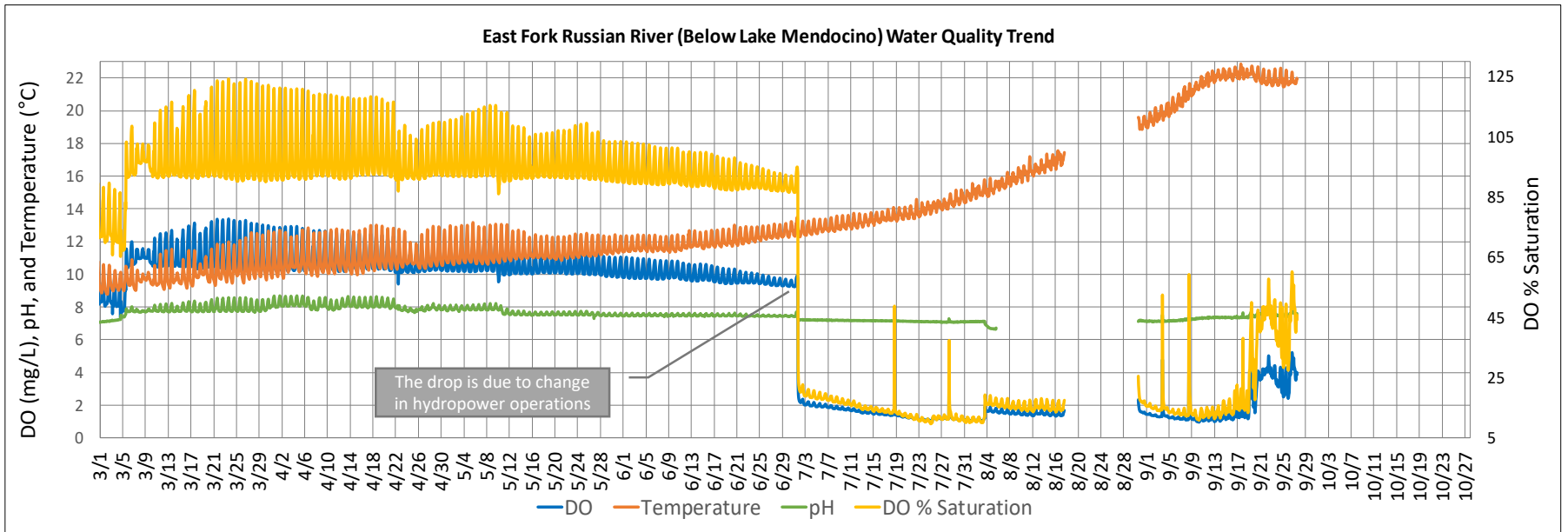
*Station operated seasonally



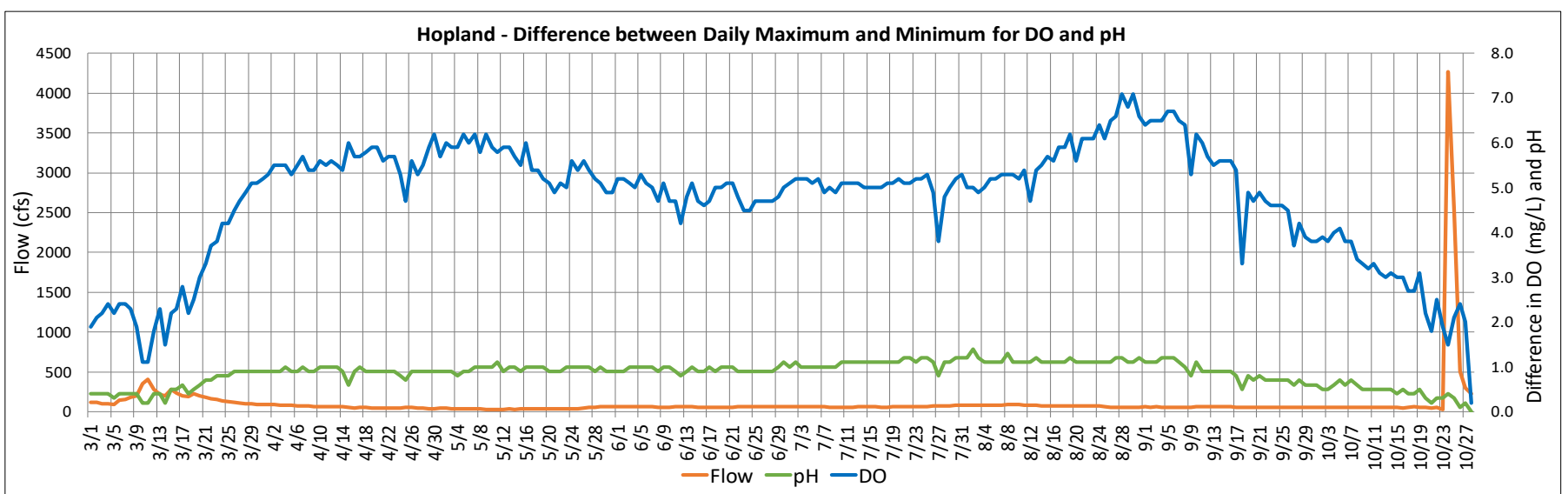
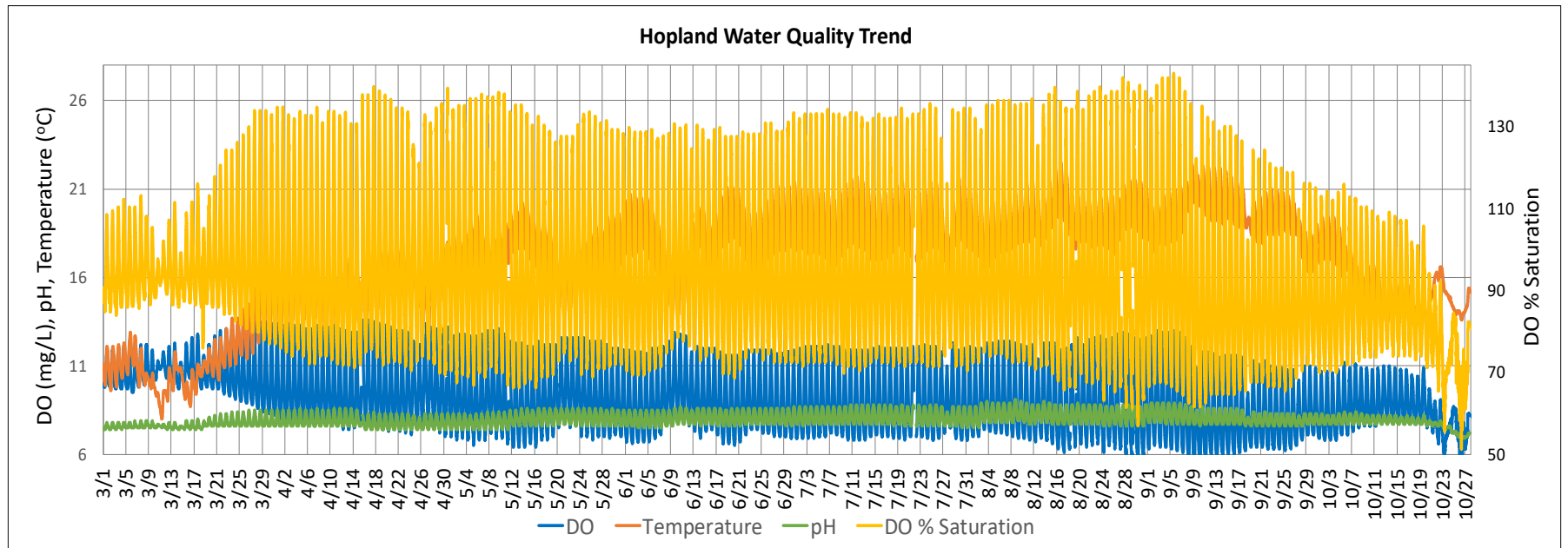
Russian River Water Quality Sonde Data (March 1 - October 28, 2021) Provisional Data Subject to Revision



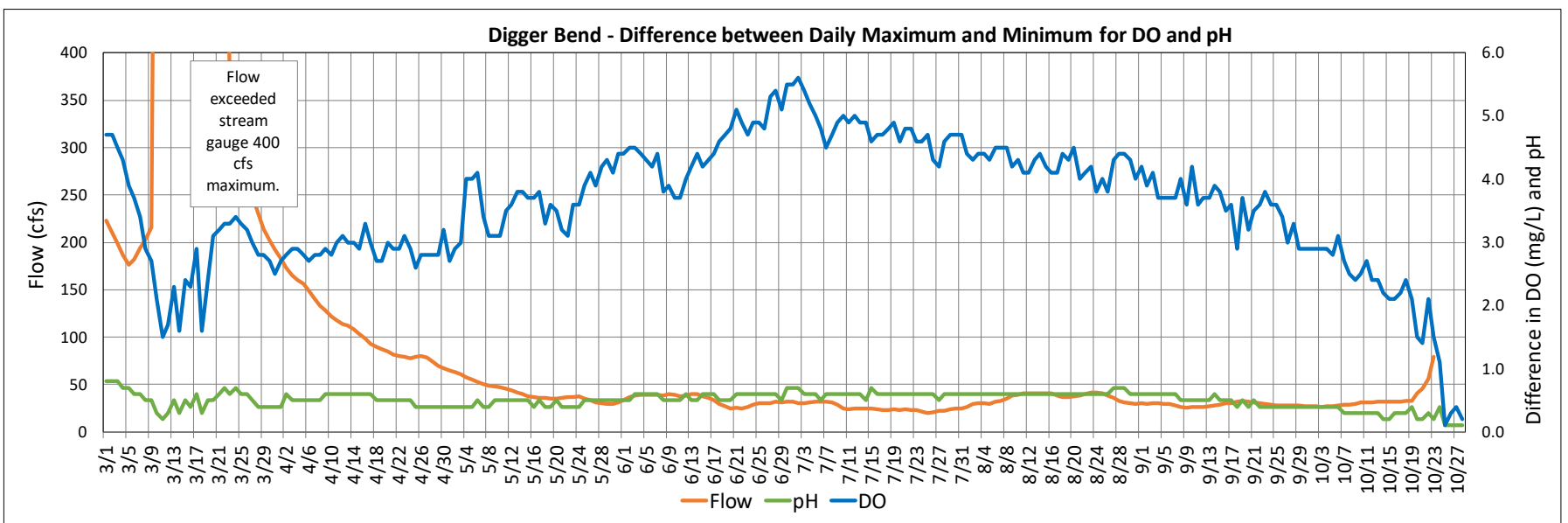
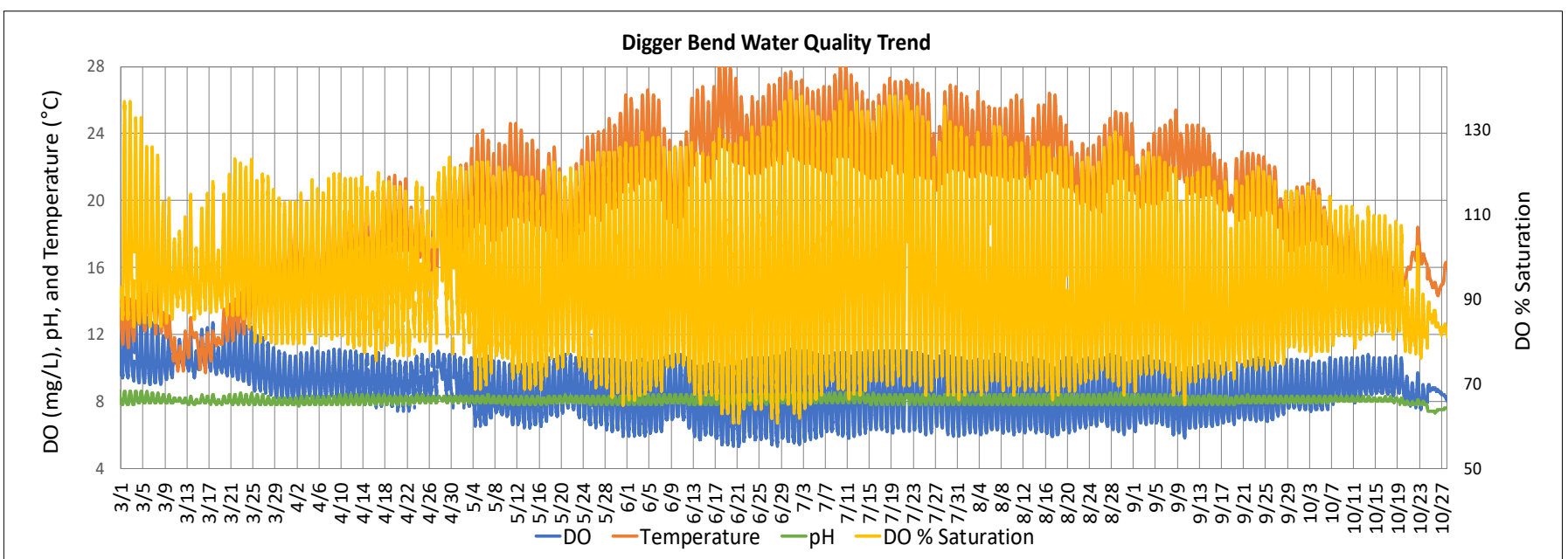
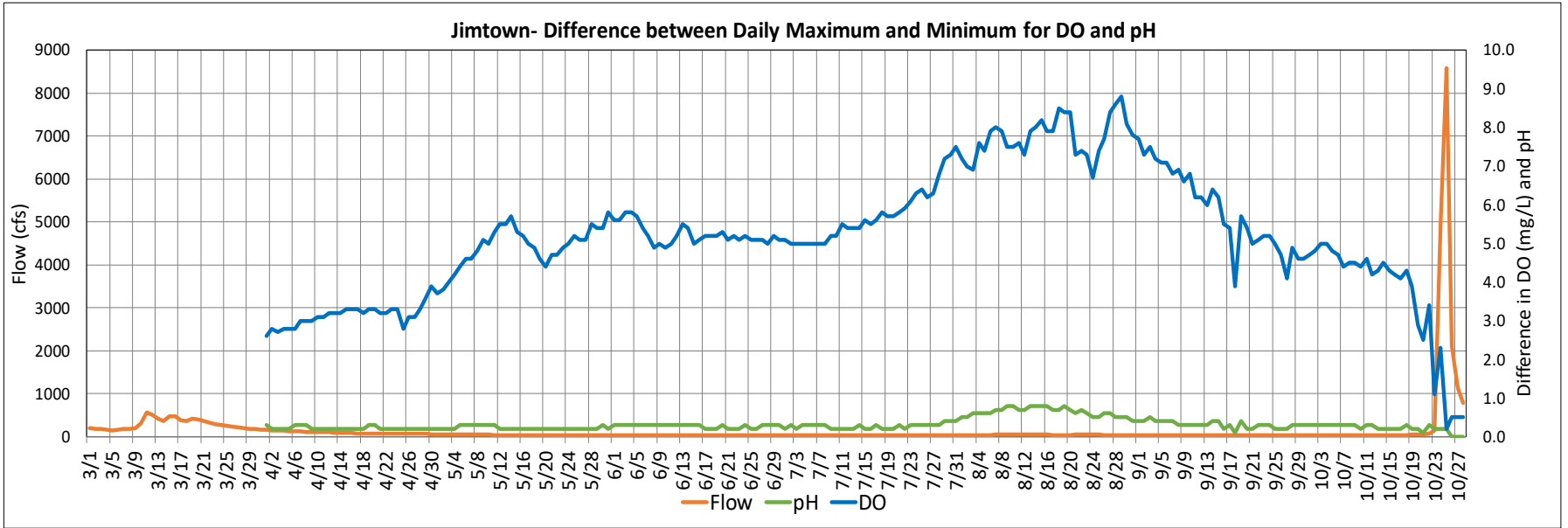
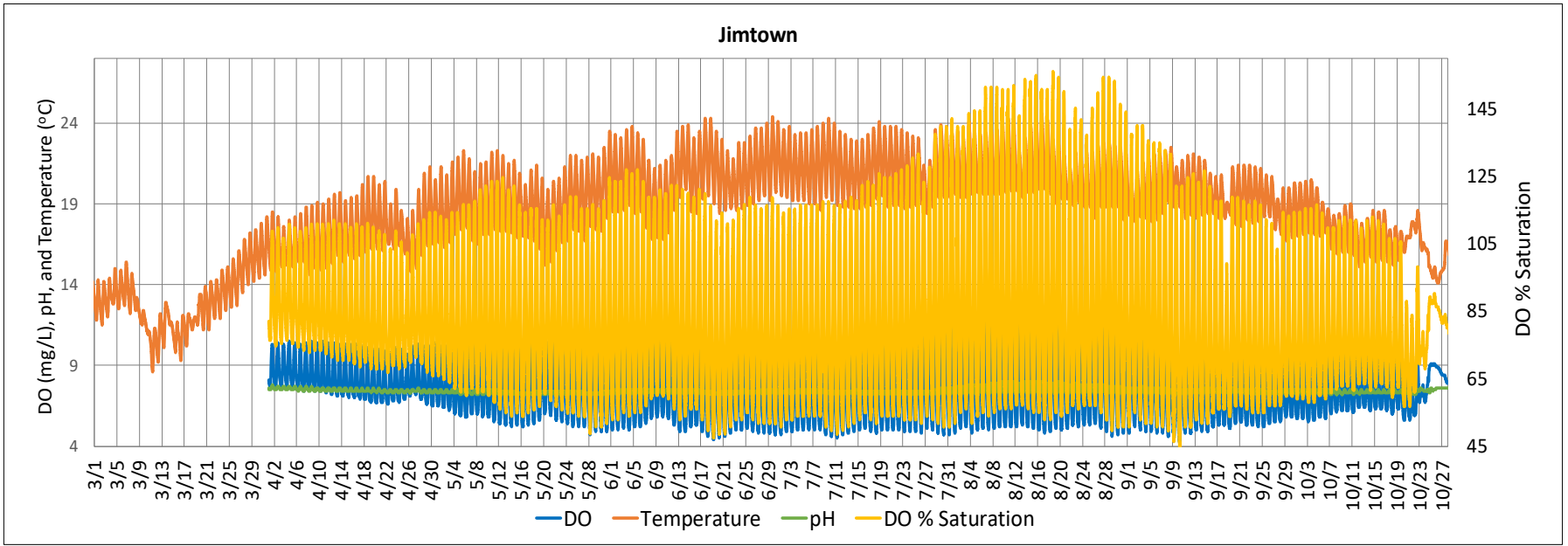
Russian River Water Quality Sonde Data (March 1 - October 28, 2021)
 Provisional Data Subject to Revision



Hopland



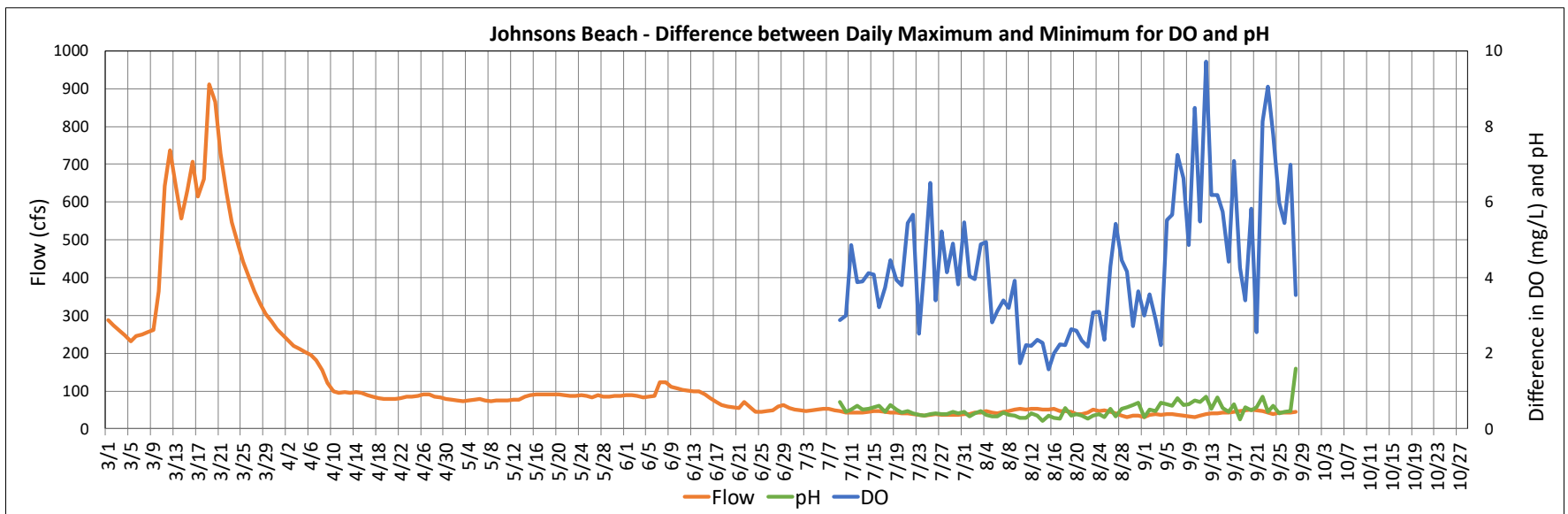
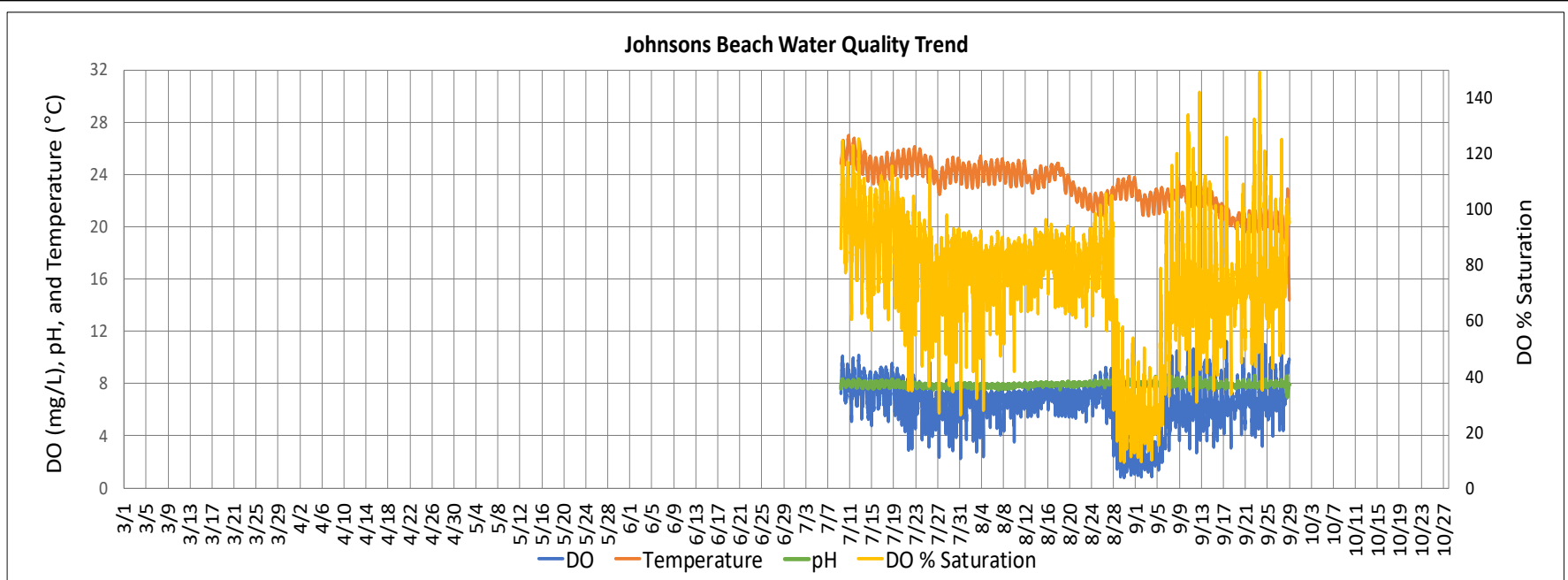
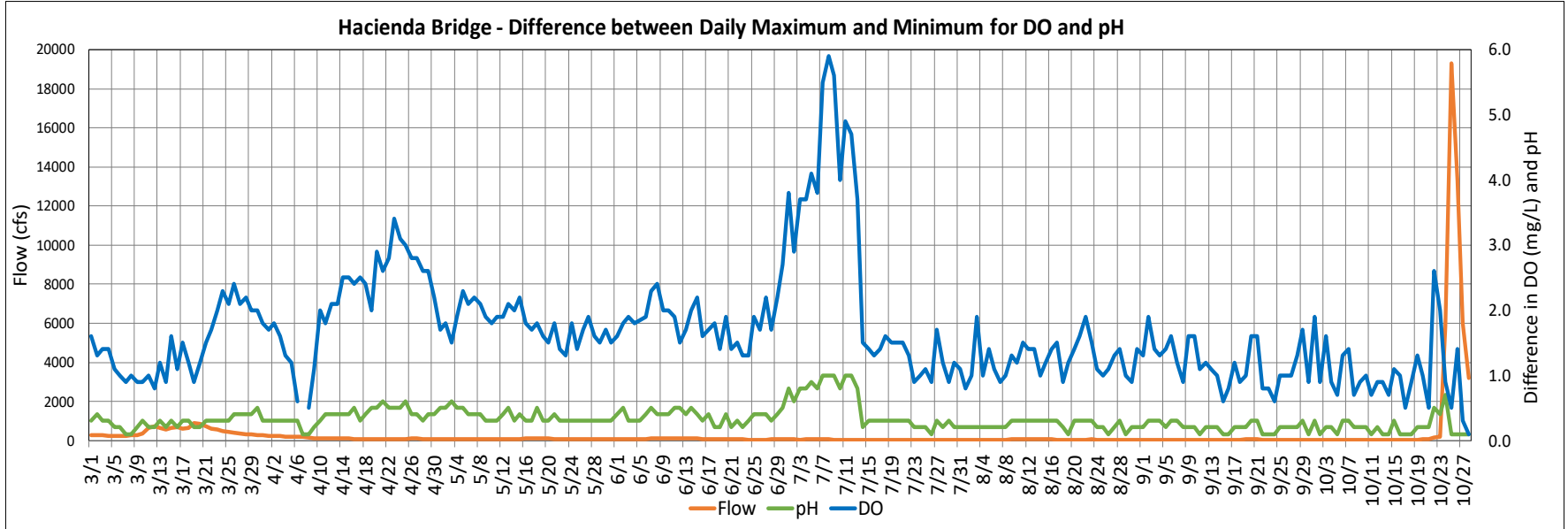
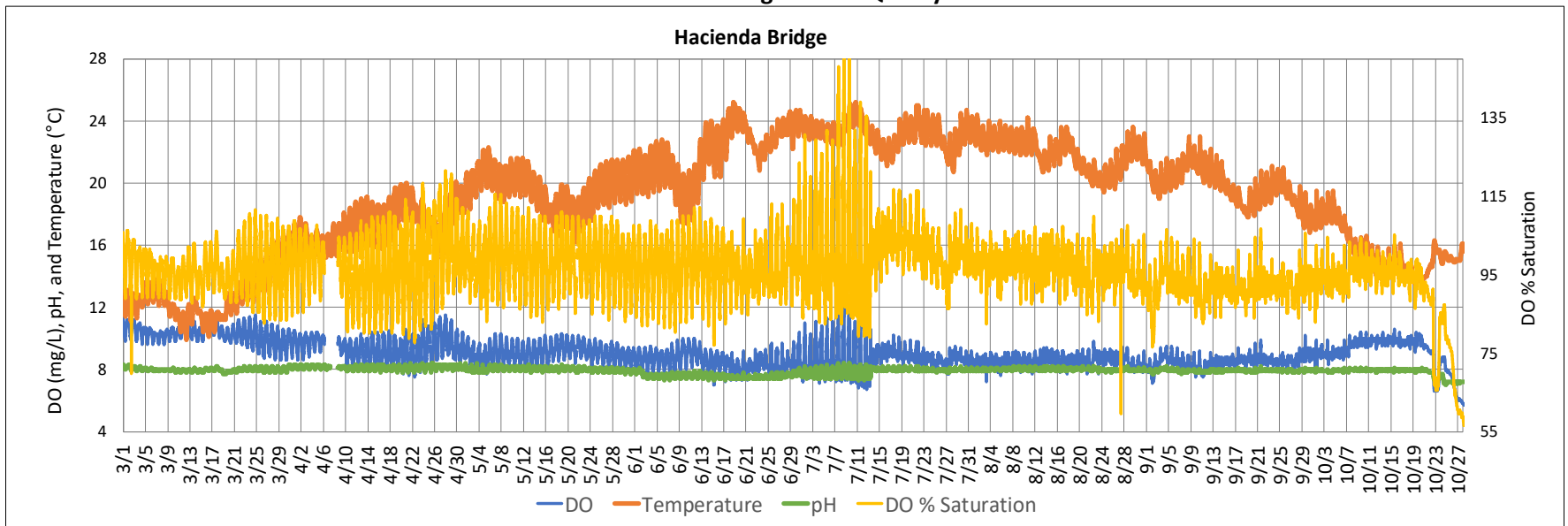
Russian River Water Quality Sonde Data (March 1 - October 28, 2021)
Provisional Data Subject to Revision



Russian River Water Quality Sonde Data (March 1 - October 28, 2021)

Provisional Data Subject to Revision

Hacienda Bridge Water Quality



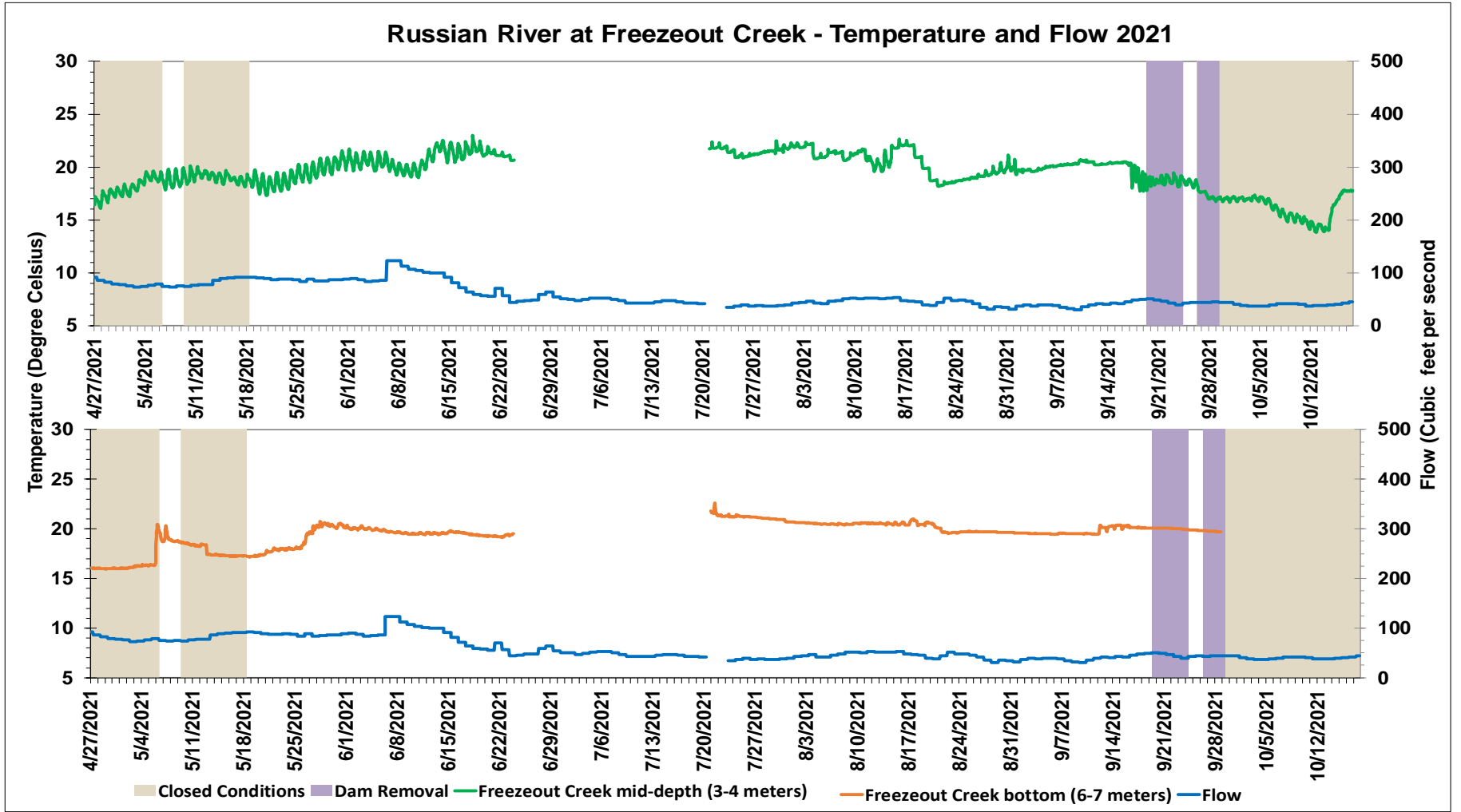
note: Flow at Johnsons Beach is plotted using data collected at Hacienda Bridge.

Russian River Water Quality Sonde Data - Estuary (April 27 - October 28, 2021)

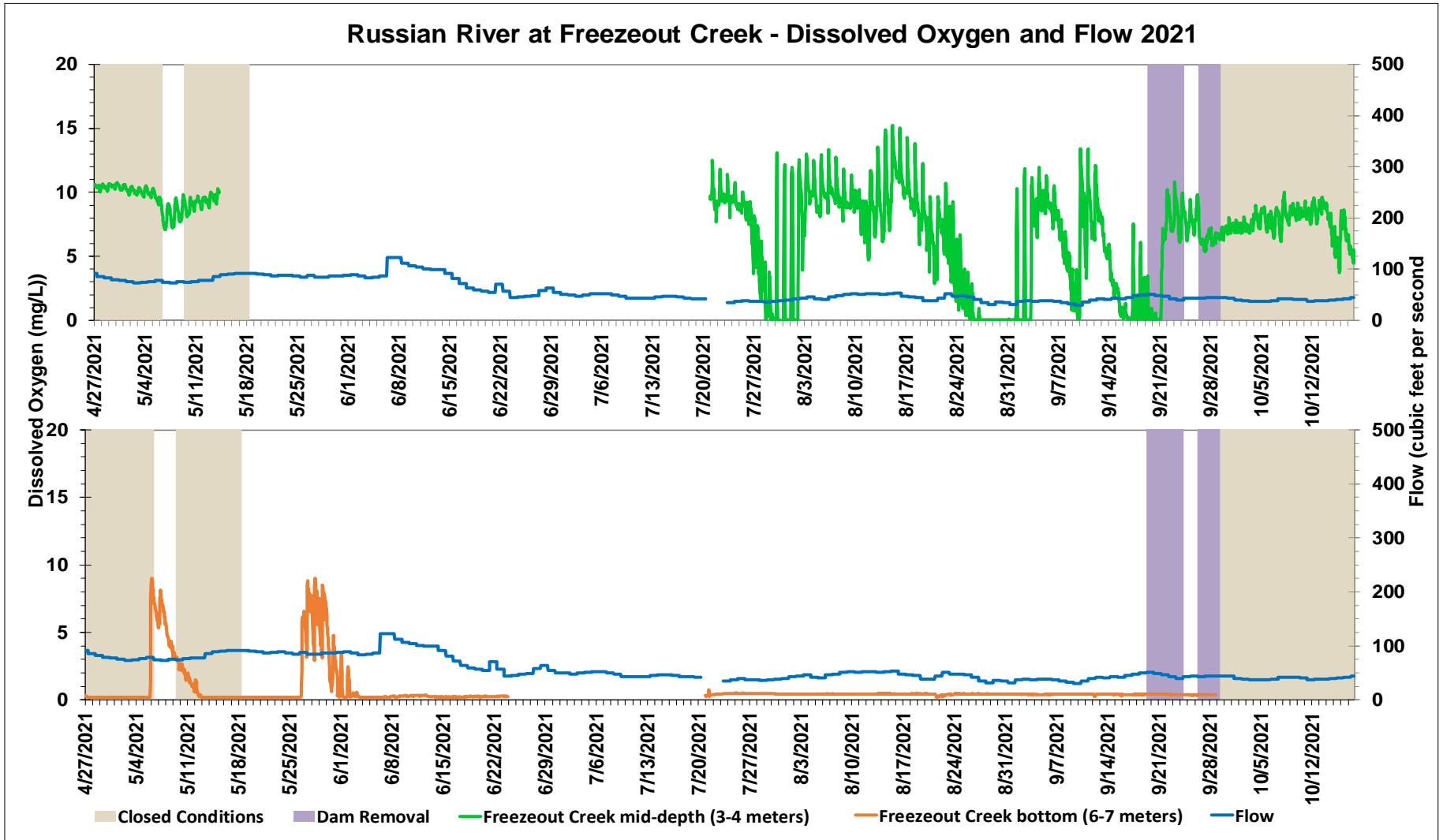
Provisional Data Subject to Revision

Russian River at Freezeout Creek Water Quality

Russian River at Freezeout Creek - Temperature and Flow 2021



Russian River at Freezeout Creek - Dissolved Oxygen and Flow 2021

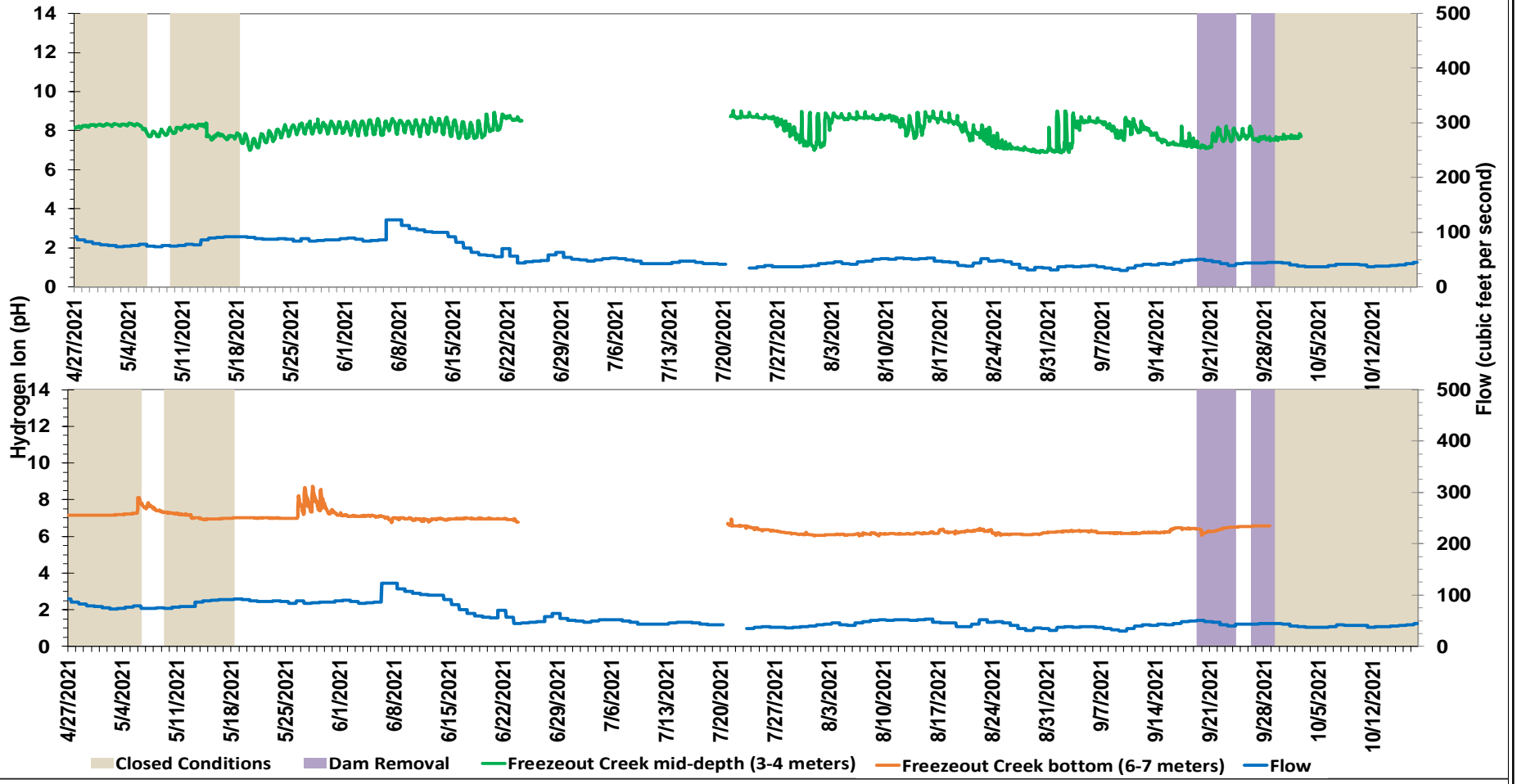


Russian River Water Quality Sonde Data - Estuary (April 27 - October 28, 2021)

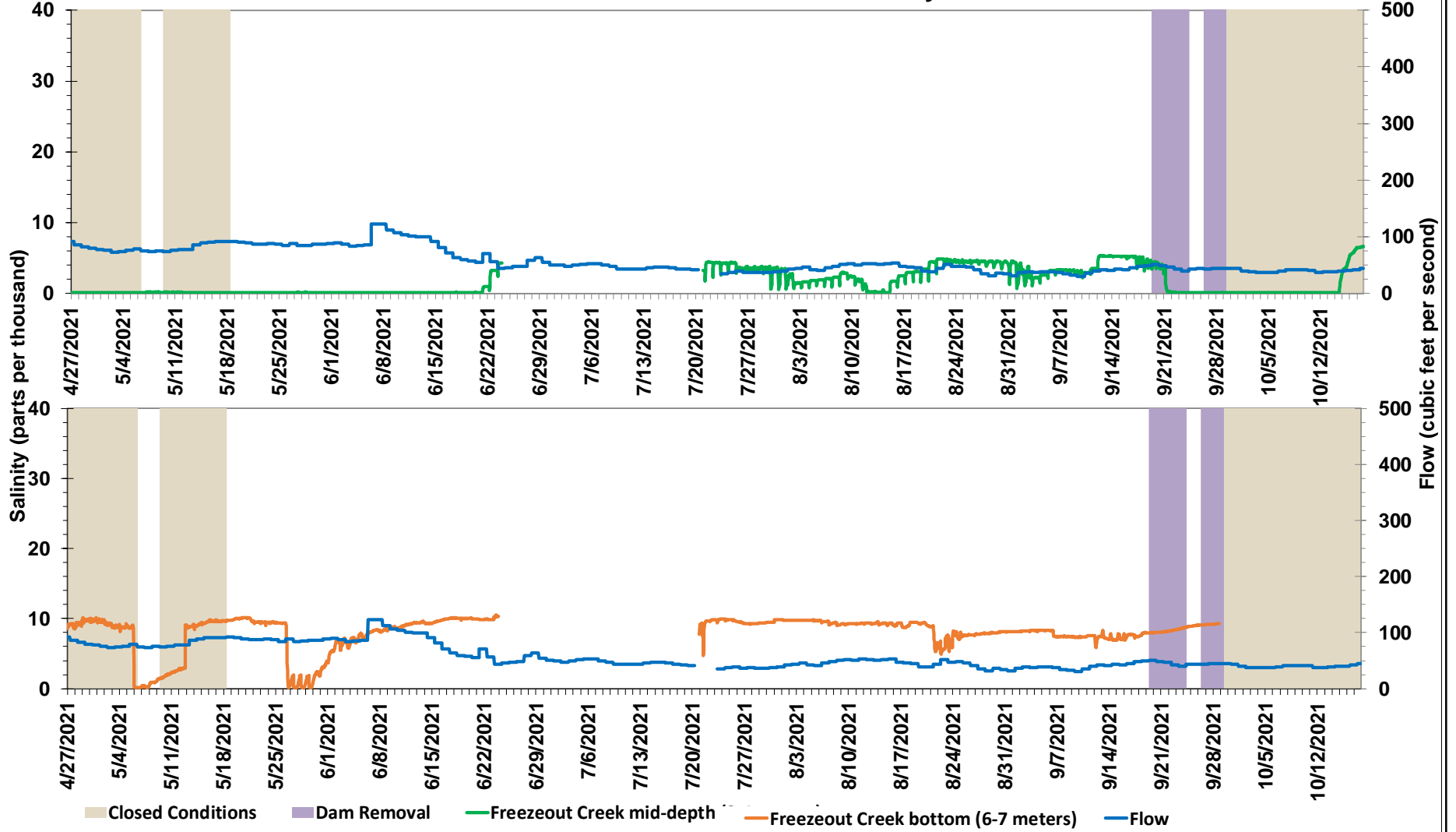
Provisional Data Subject to Revision

Russian River at Freezeout Creek Water Quality

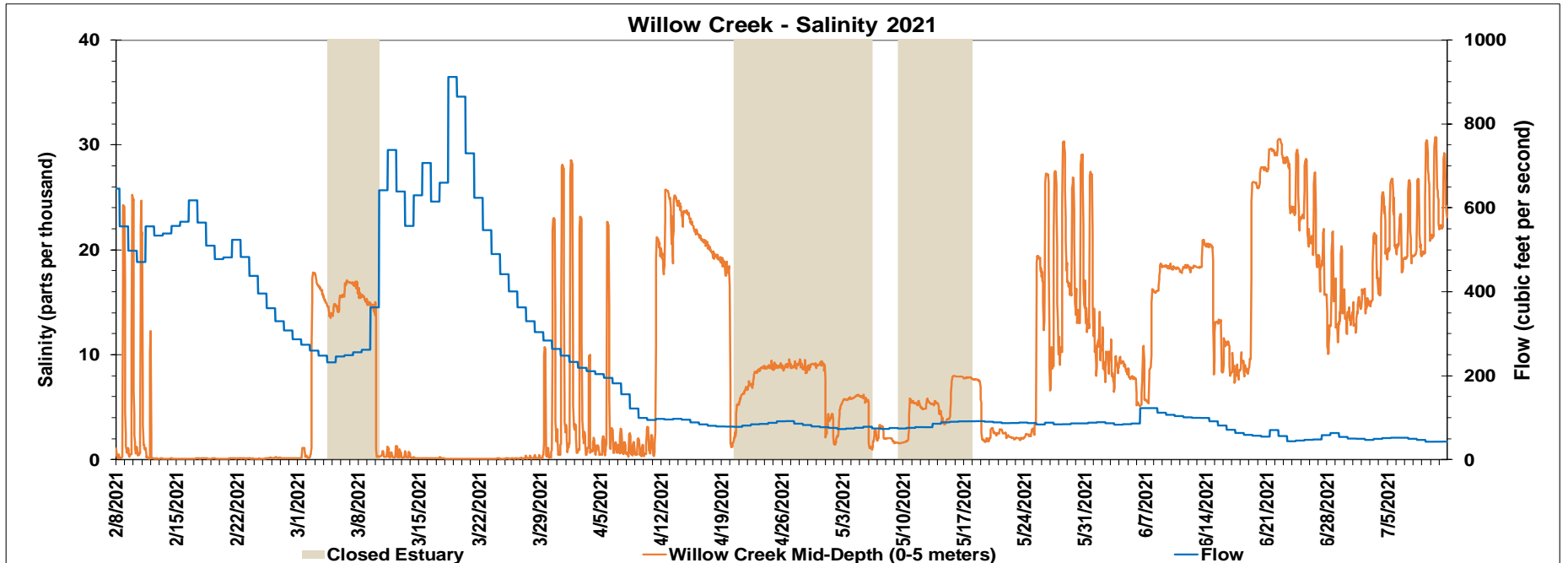
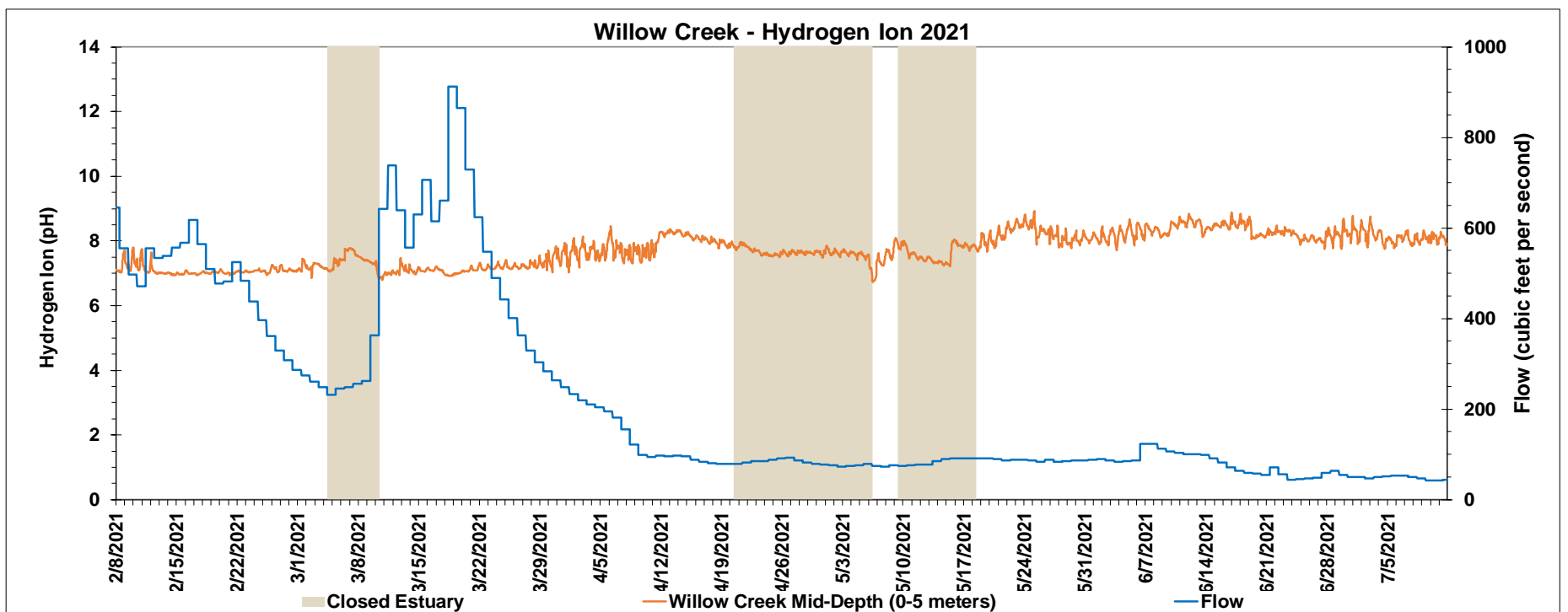
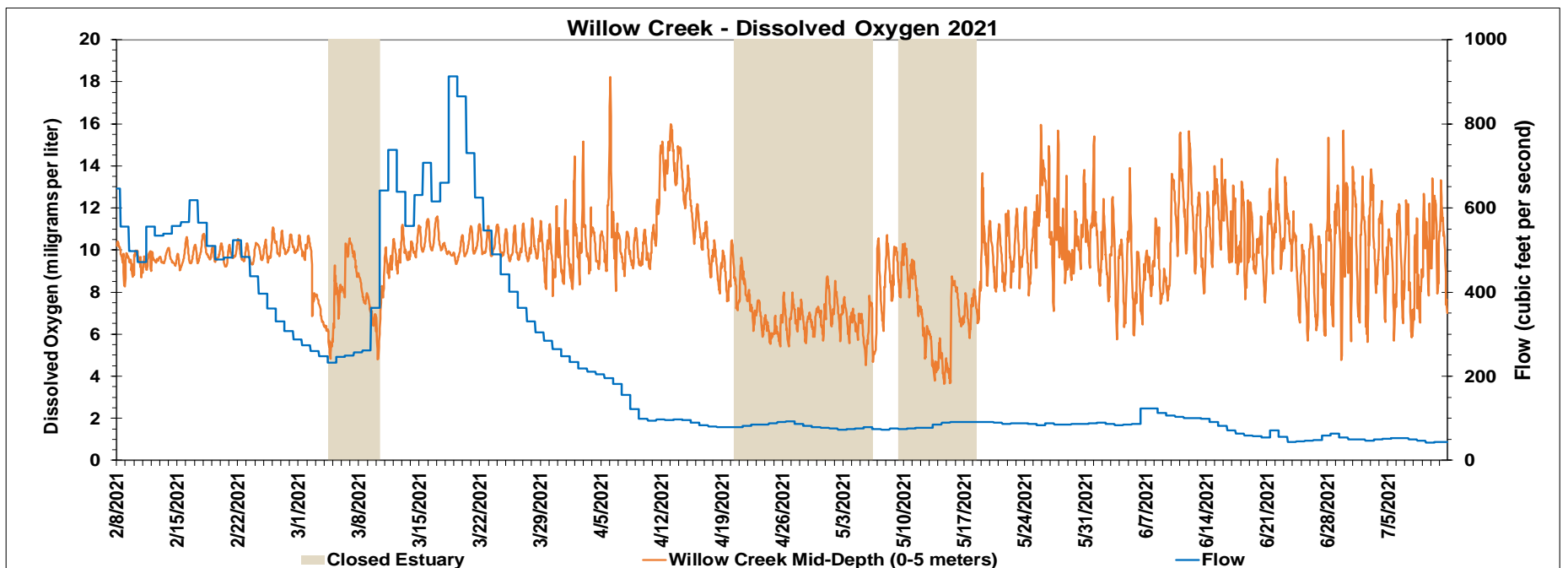
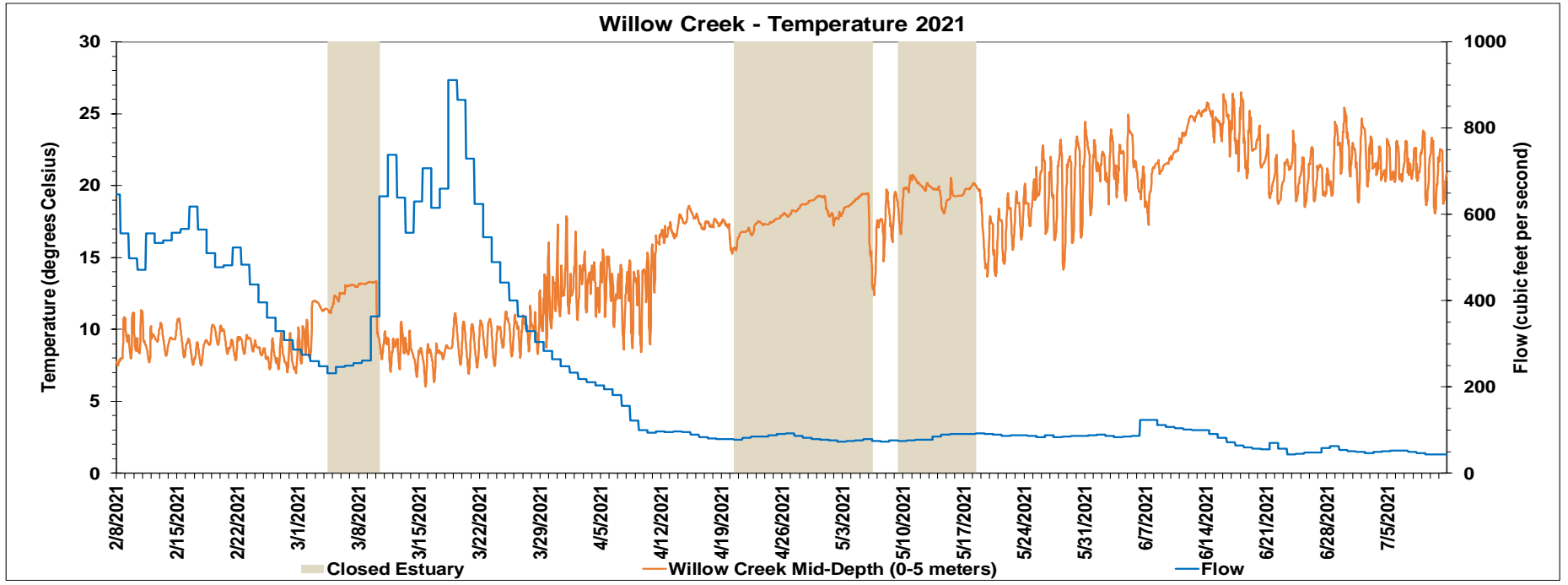
Russian River at Freezeout Creek - Hydrogen Ion and Flow 2021



Russian River at Freezeout Creek - Salinity and Flow 2021



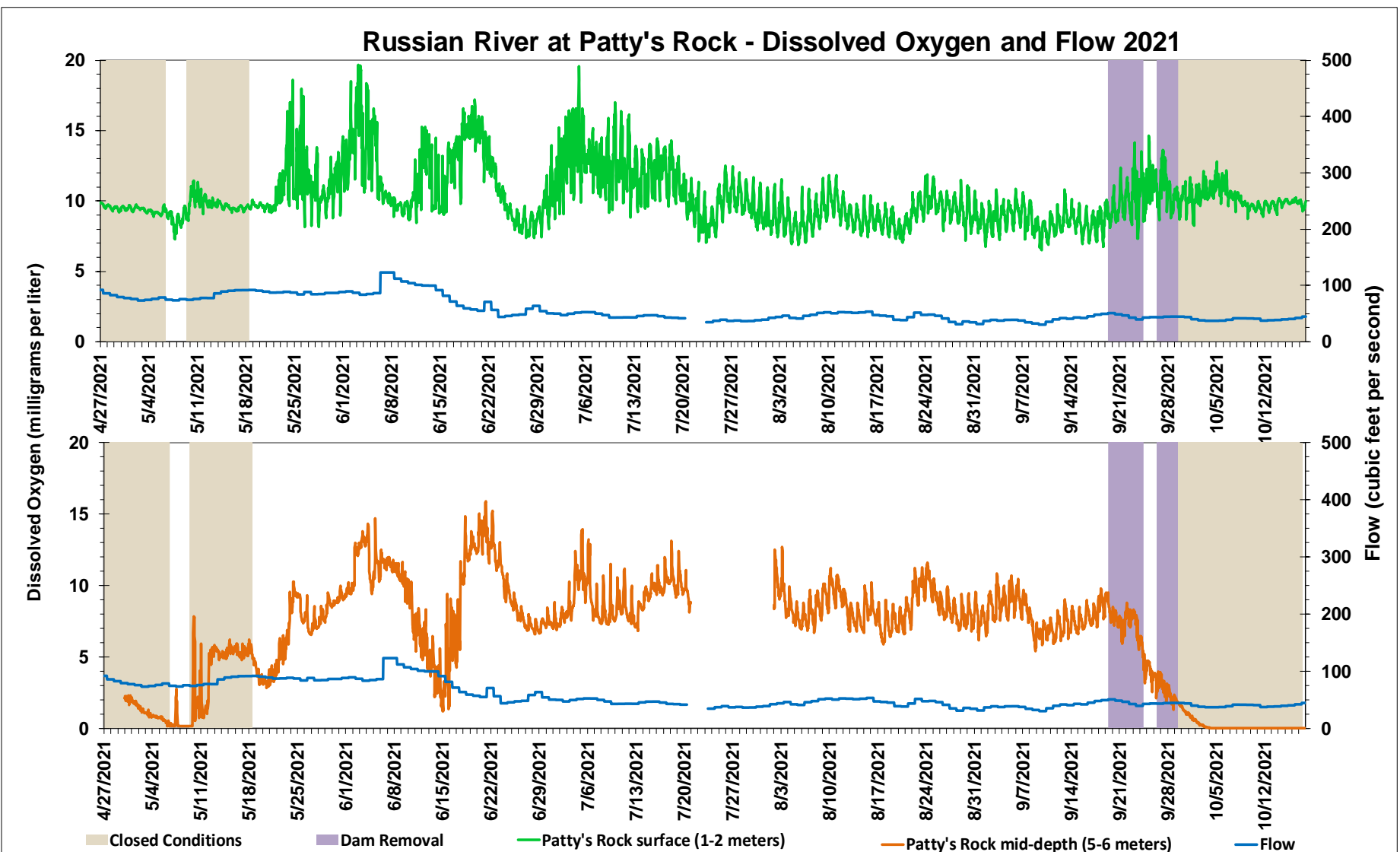
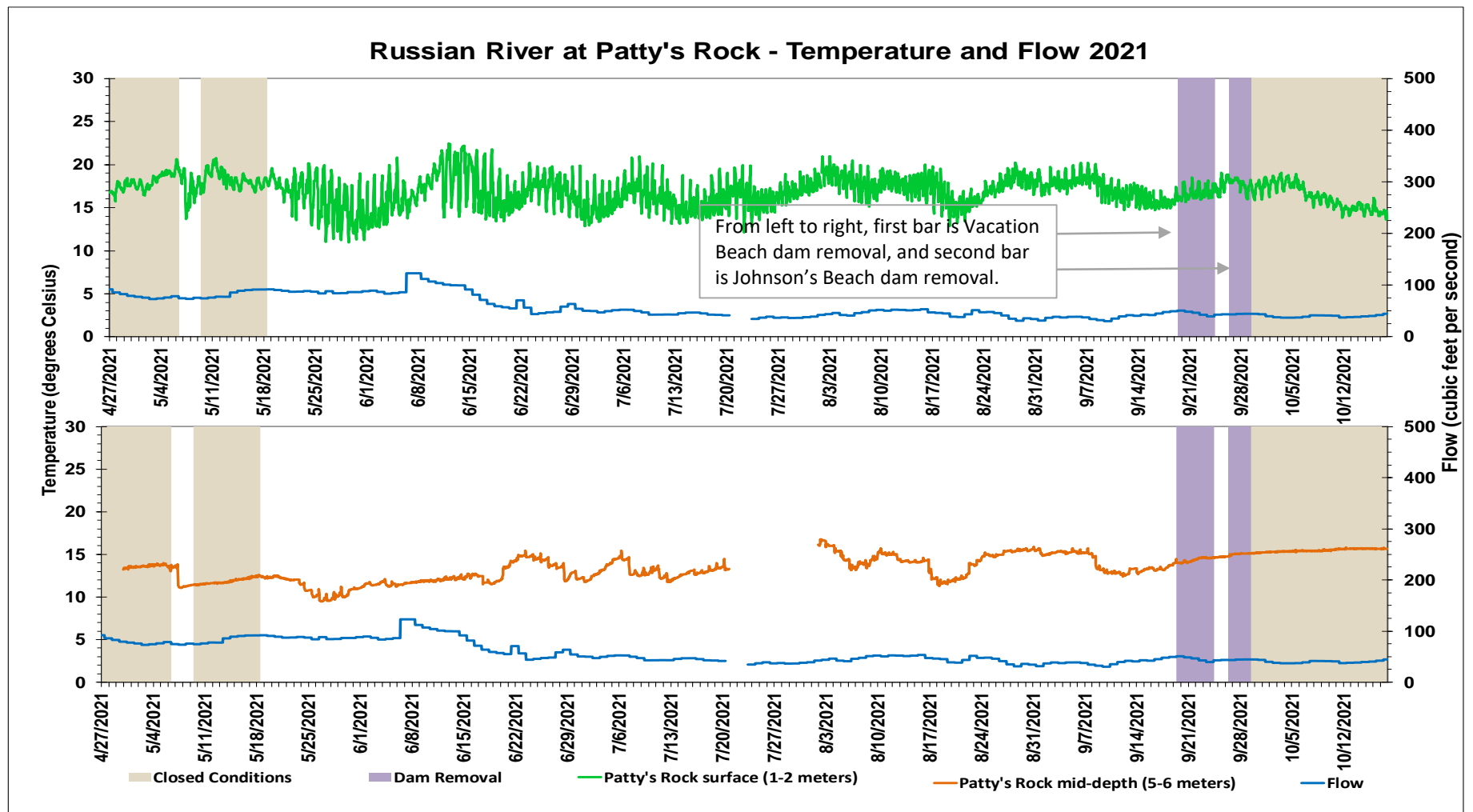
Russian River Water Quality Sonde Data - Estuary (February 28 - October 28, 2021)
Provisional Data Subject to Revision
Willow Creek Water Quality



Russian River Water Quality Sonde Data - Estuary (April 27 - October 28, 2021)

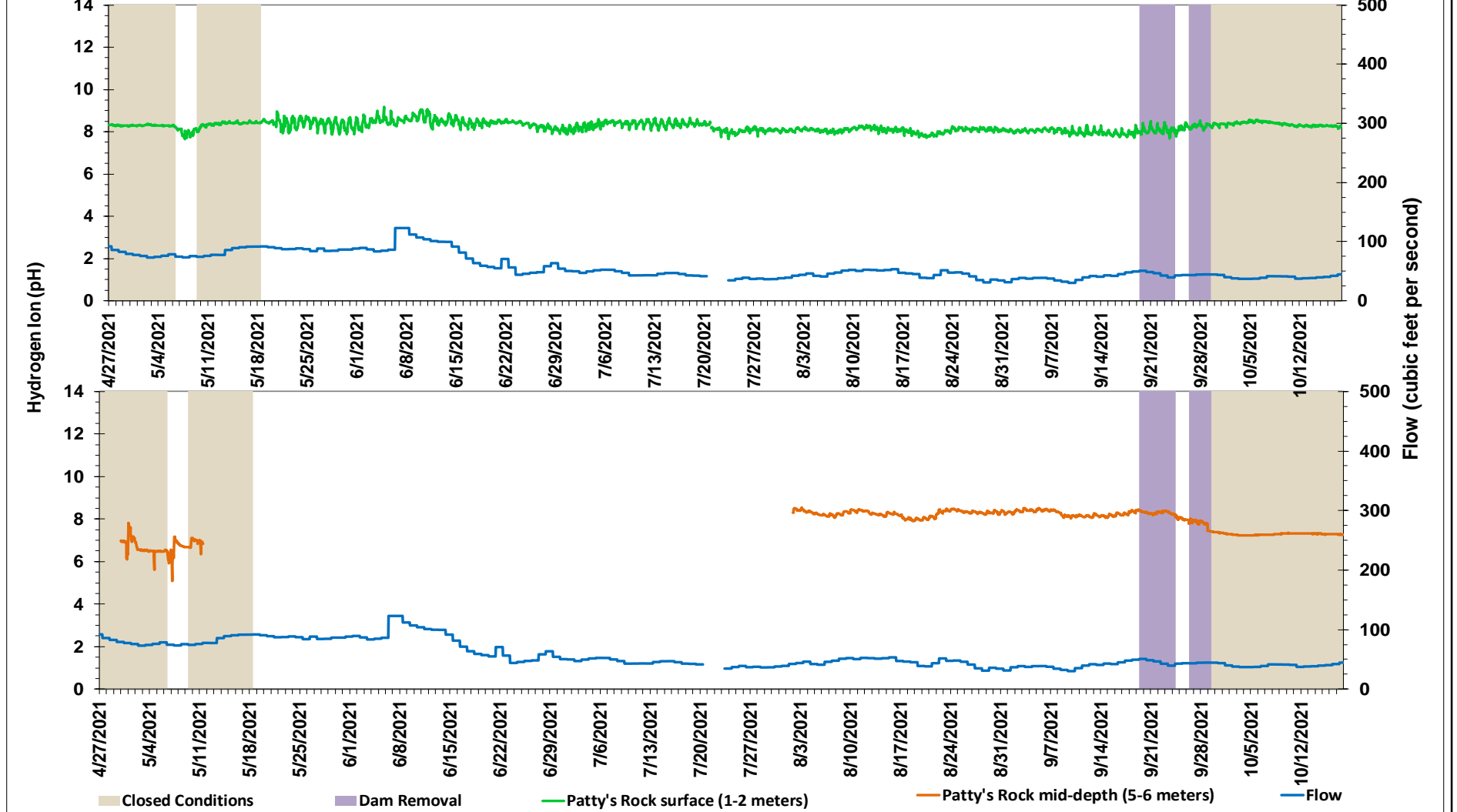
Provisional Data Subject to Revision

Russian River at Patty's Rock Water Quality

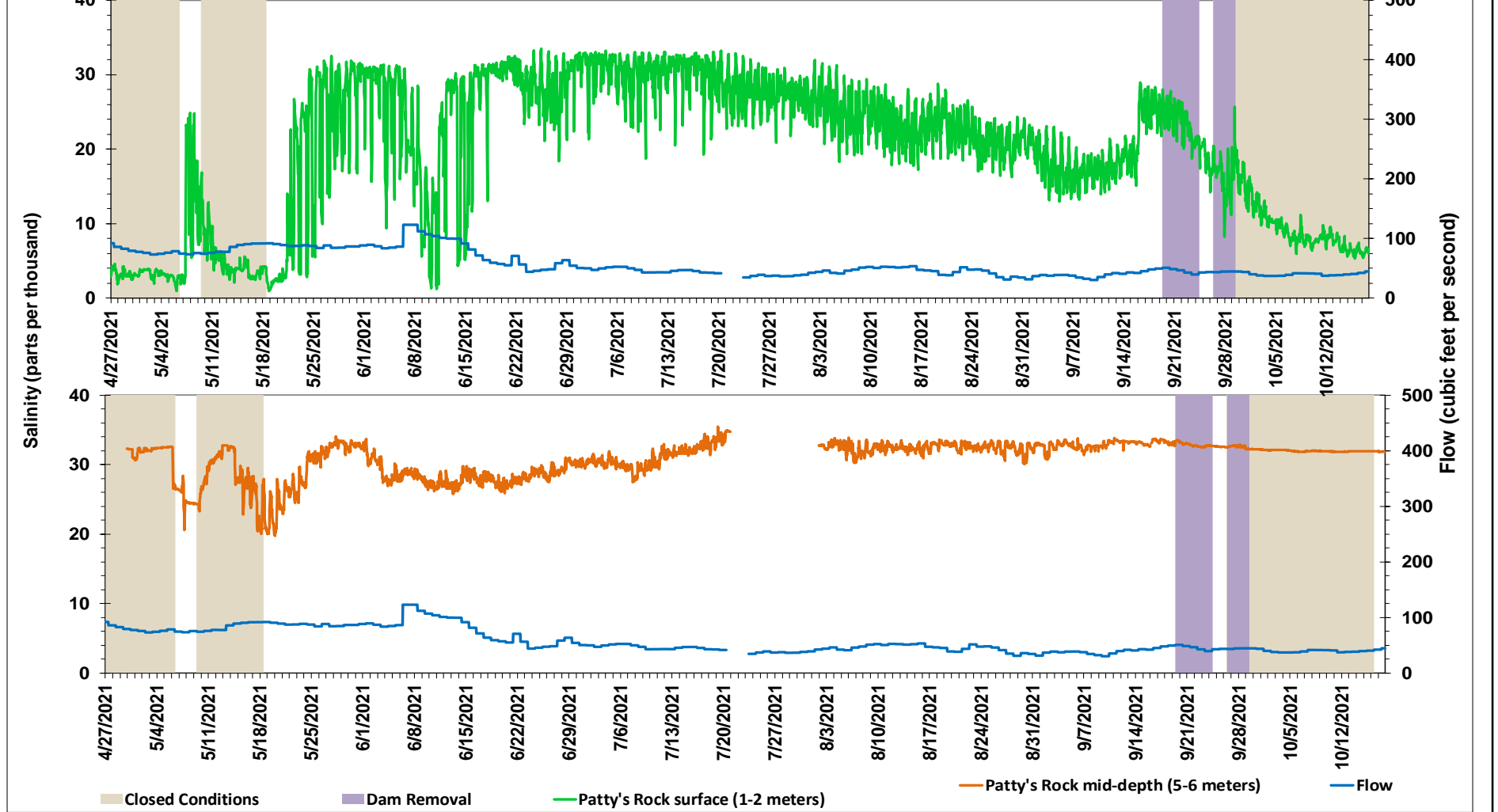


Russian River Water Quality Sonde Data - Estuary (April 27 - October 28, 2021)
 Provisional Data Subject to Revision
 Russian River at Patty's Rock Water Quality

Russian River at Patty's Rock - Hydrogen Ion and Flow 2021

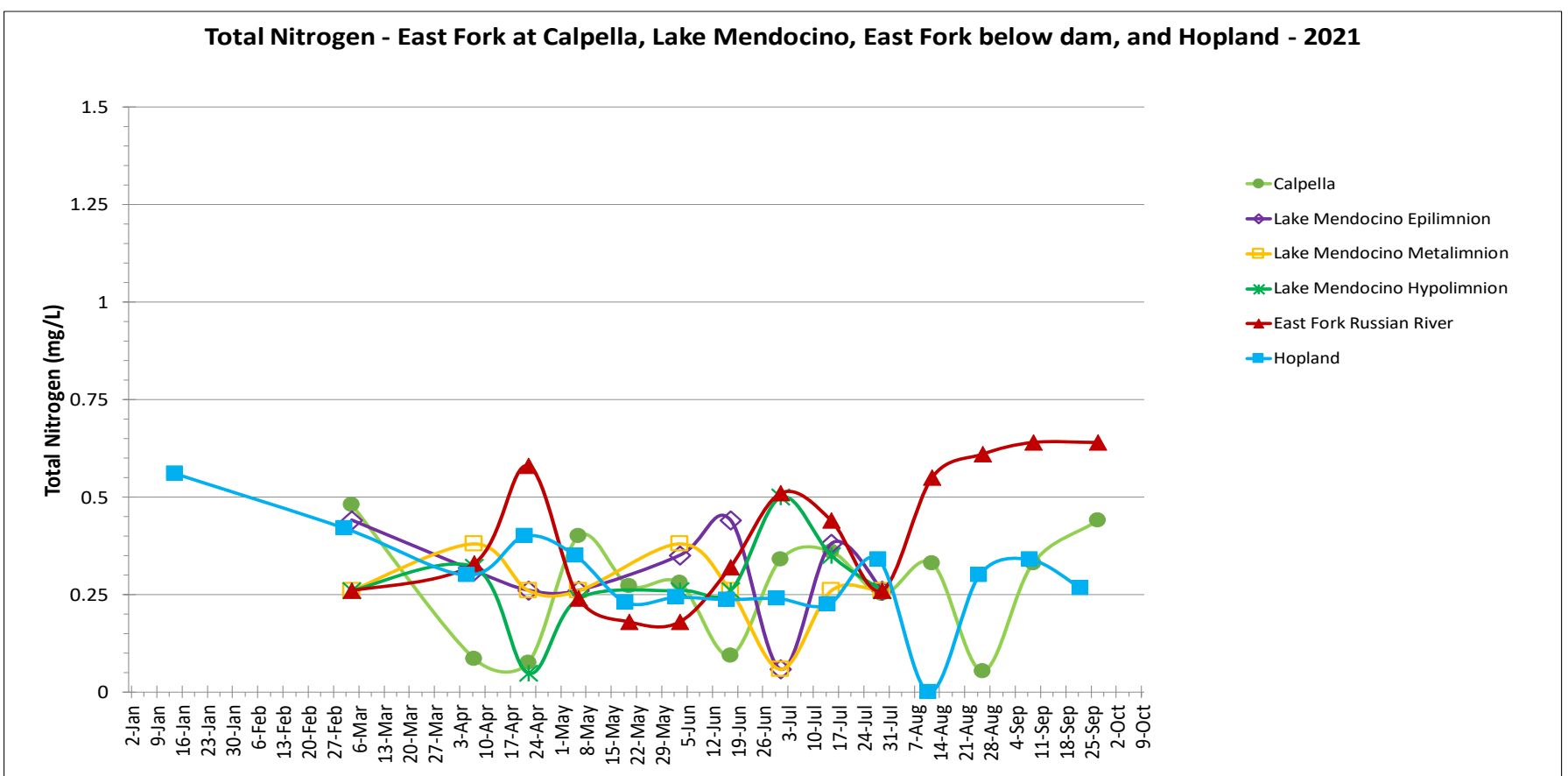
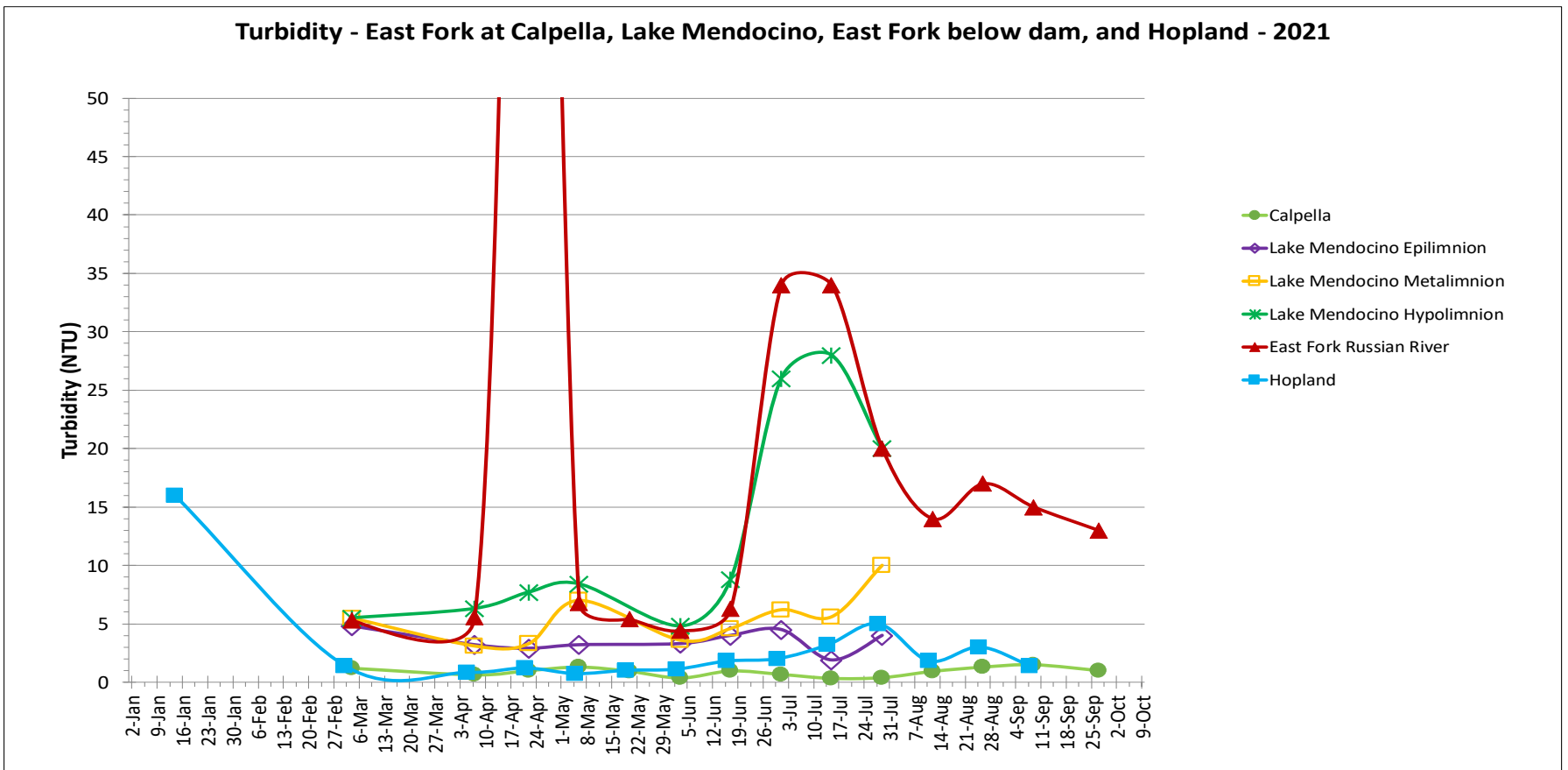
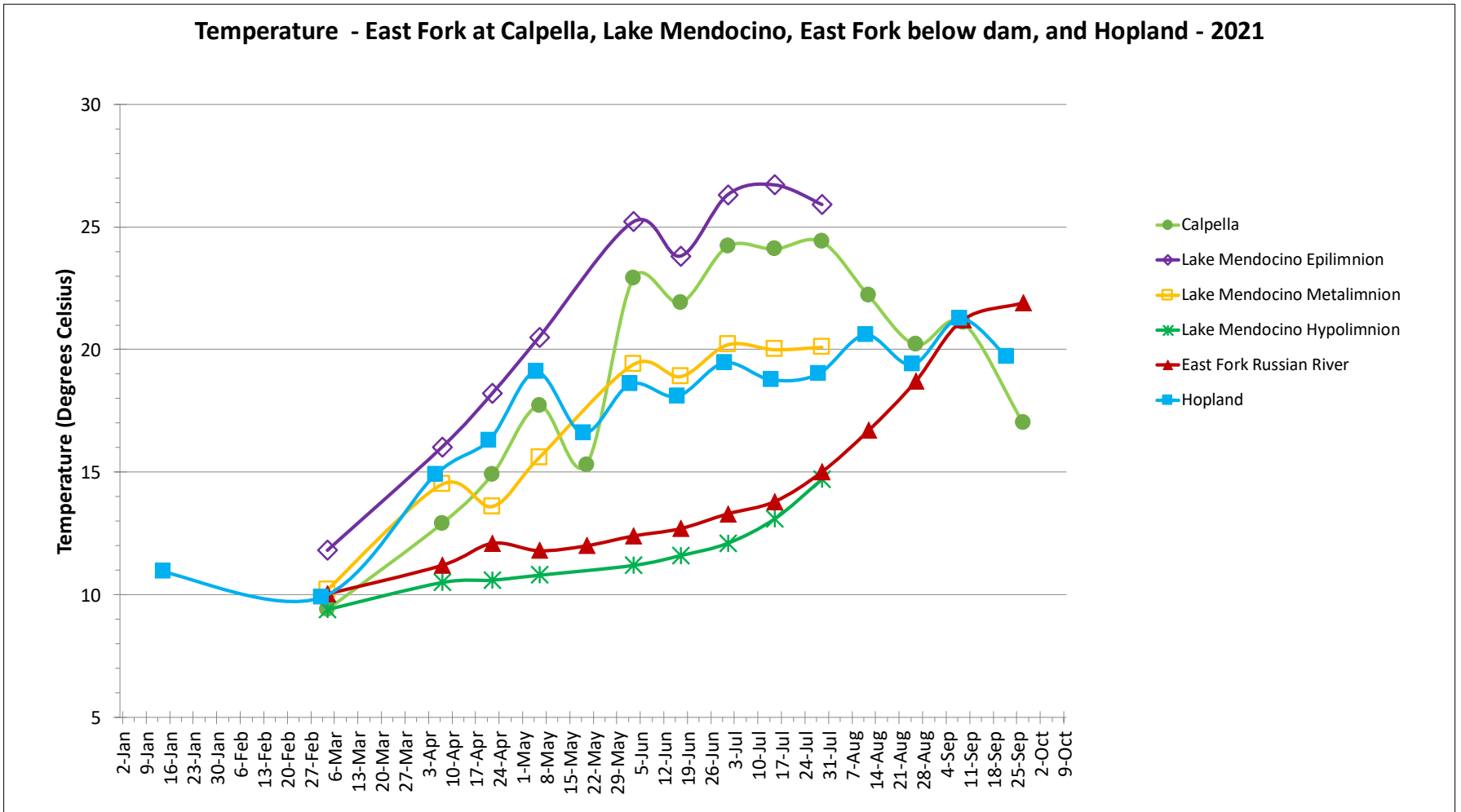


Russian River at Patty's Rock - Salinity and Flow 2021



Russian River Water Quality Grab Samples (January 14 - October 28, 2021)
Provisional Data Subject to Revision

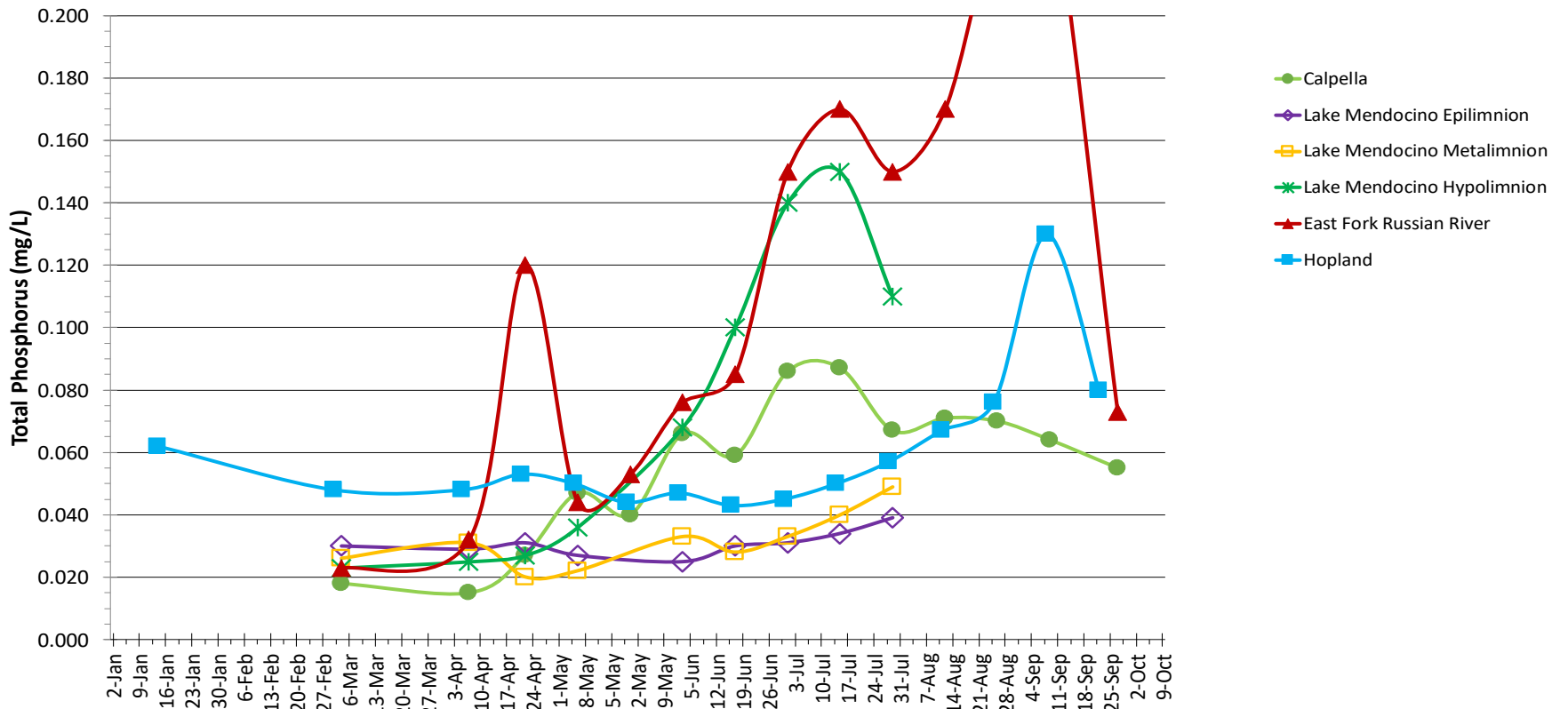
Lake Mendocino to Hopland Water Quality



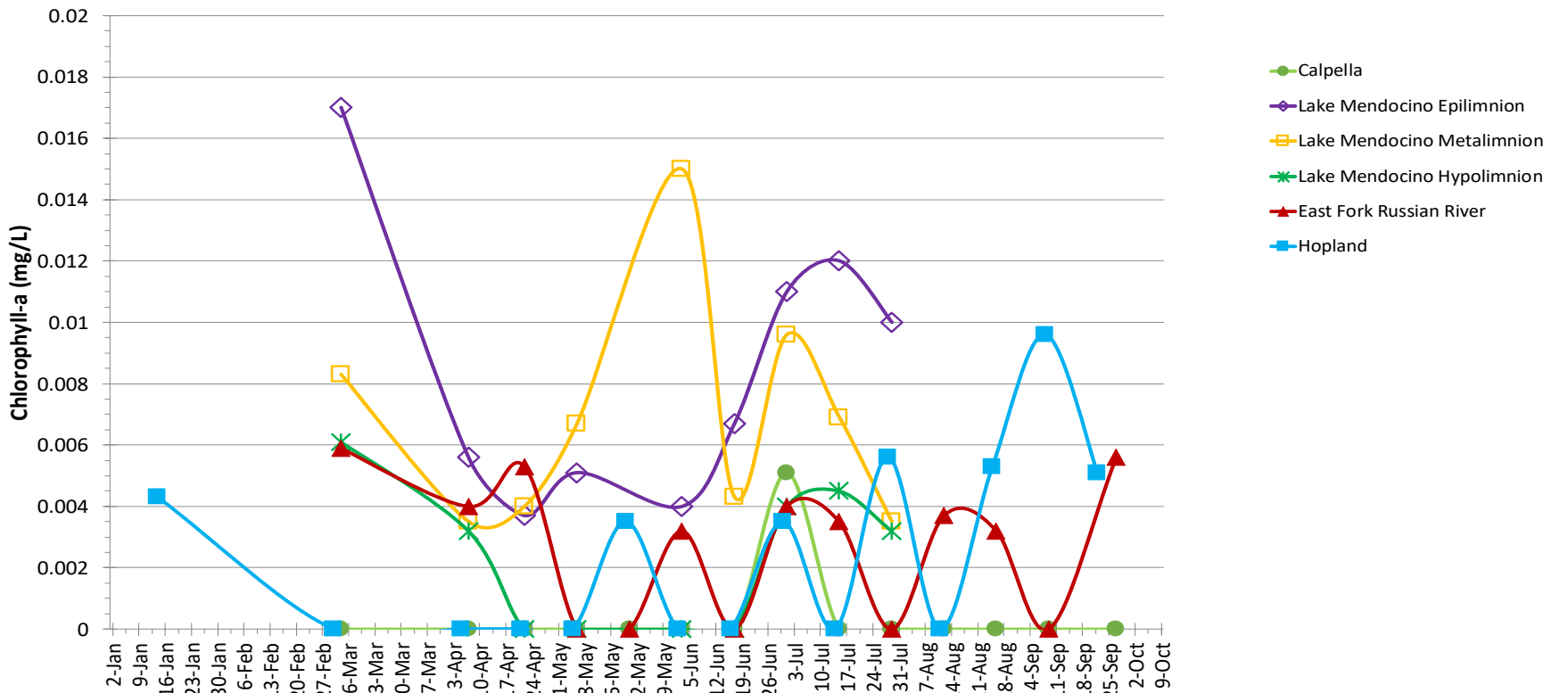
*Each marker in the plot represents a grab sample. The lines are used to help visualize the data, but do not represent a continuous data measurement.

Russian River Water Quality Grab Samples (January 14 - October 28, 2021)
 Provisional Data Subject to Revision
 Lake Mendocino to Hopland Water Quality

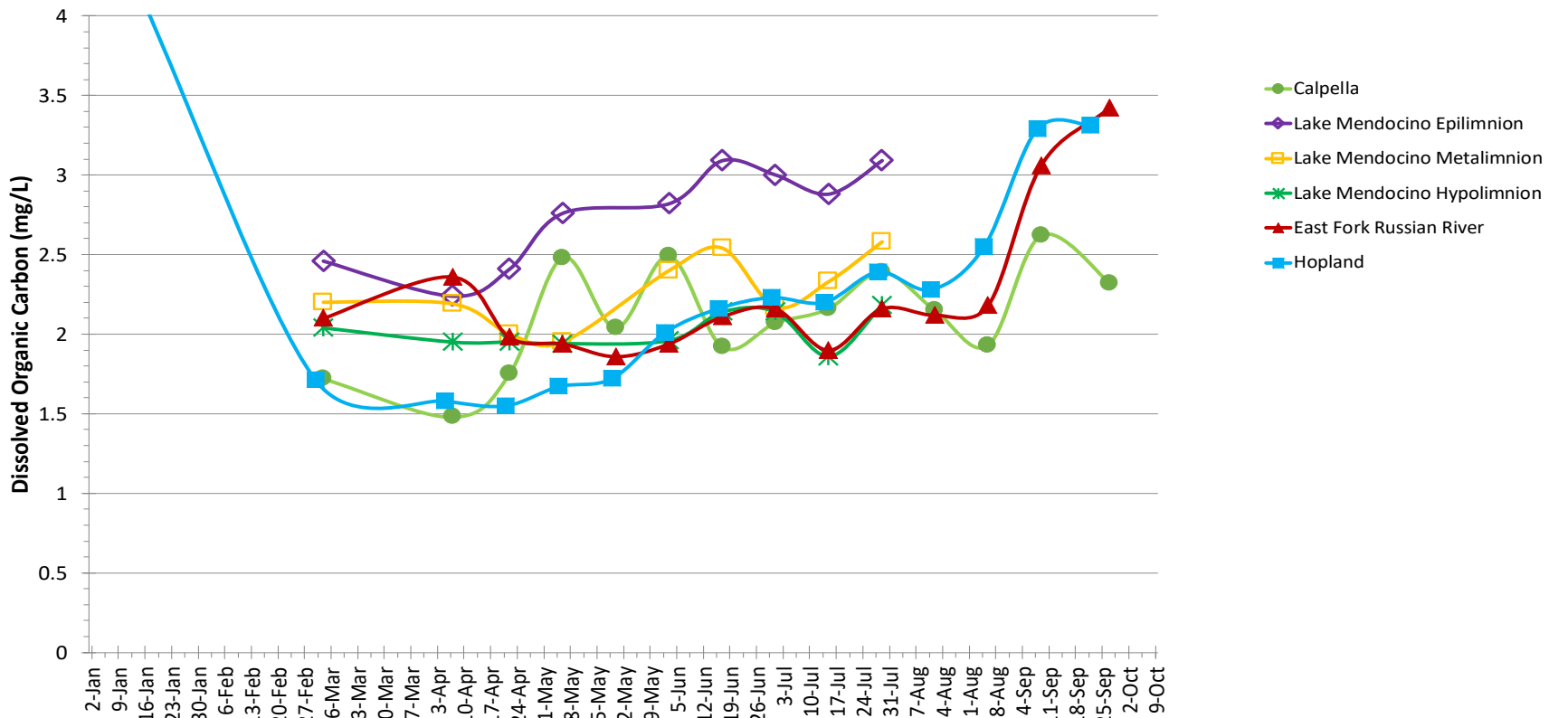
Total Phosphorus - East Fork at Calpella, Lake Mendocino, East Fork below dam, and Hopland - 2021



Chlorophyll a - East Fork at Calpella, Lake Mendocino, East Fork below dam, and Hopland - 2021



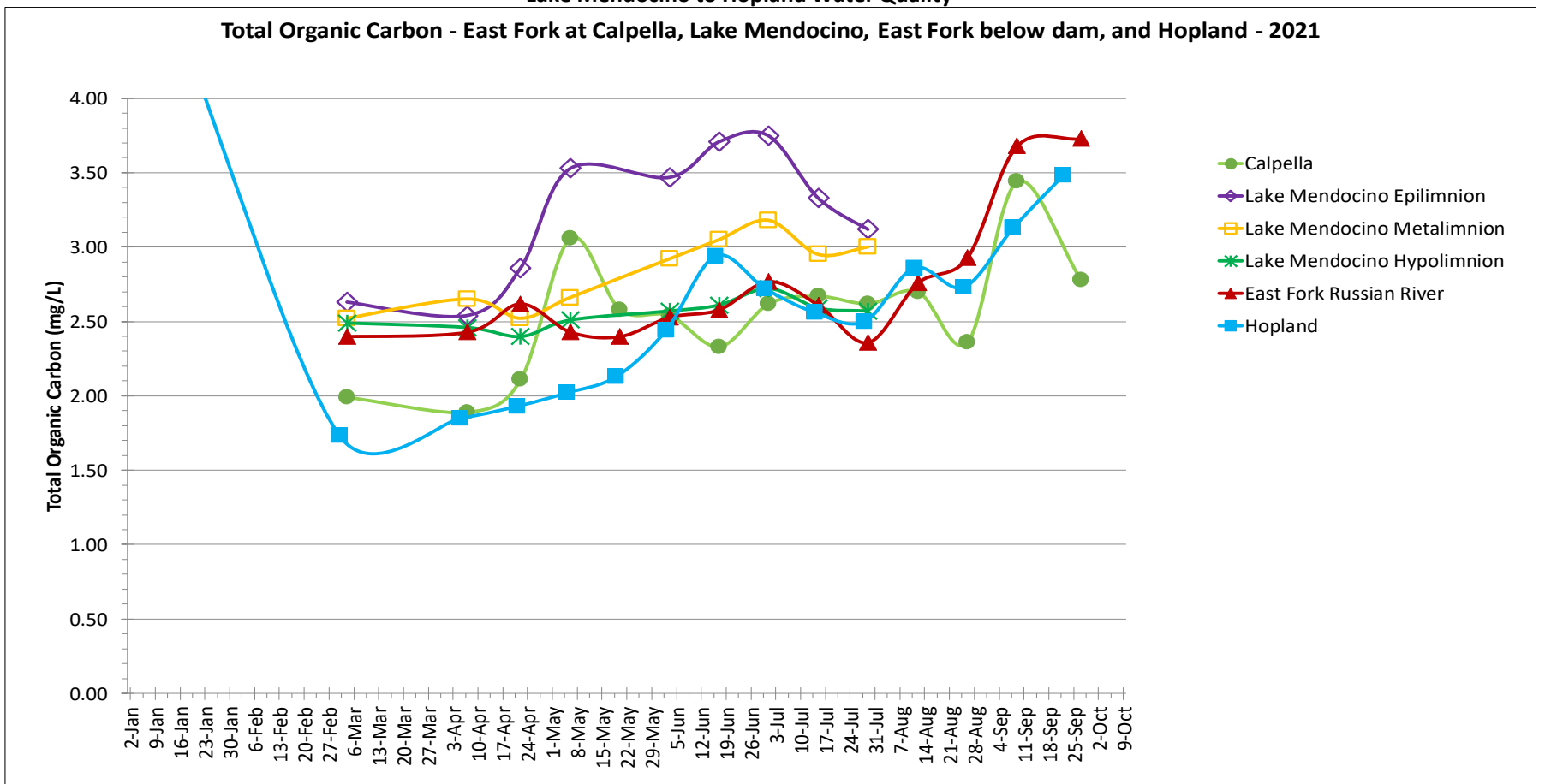
Dissolved Organic Carbon - East Fork at Calpella, Lake Mendocino, East Fork below dam, and Hopland - 2021



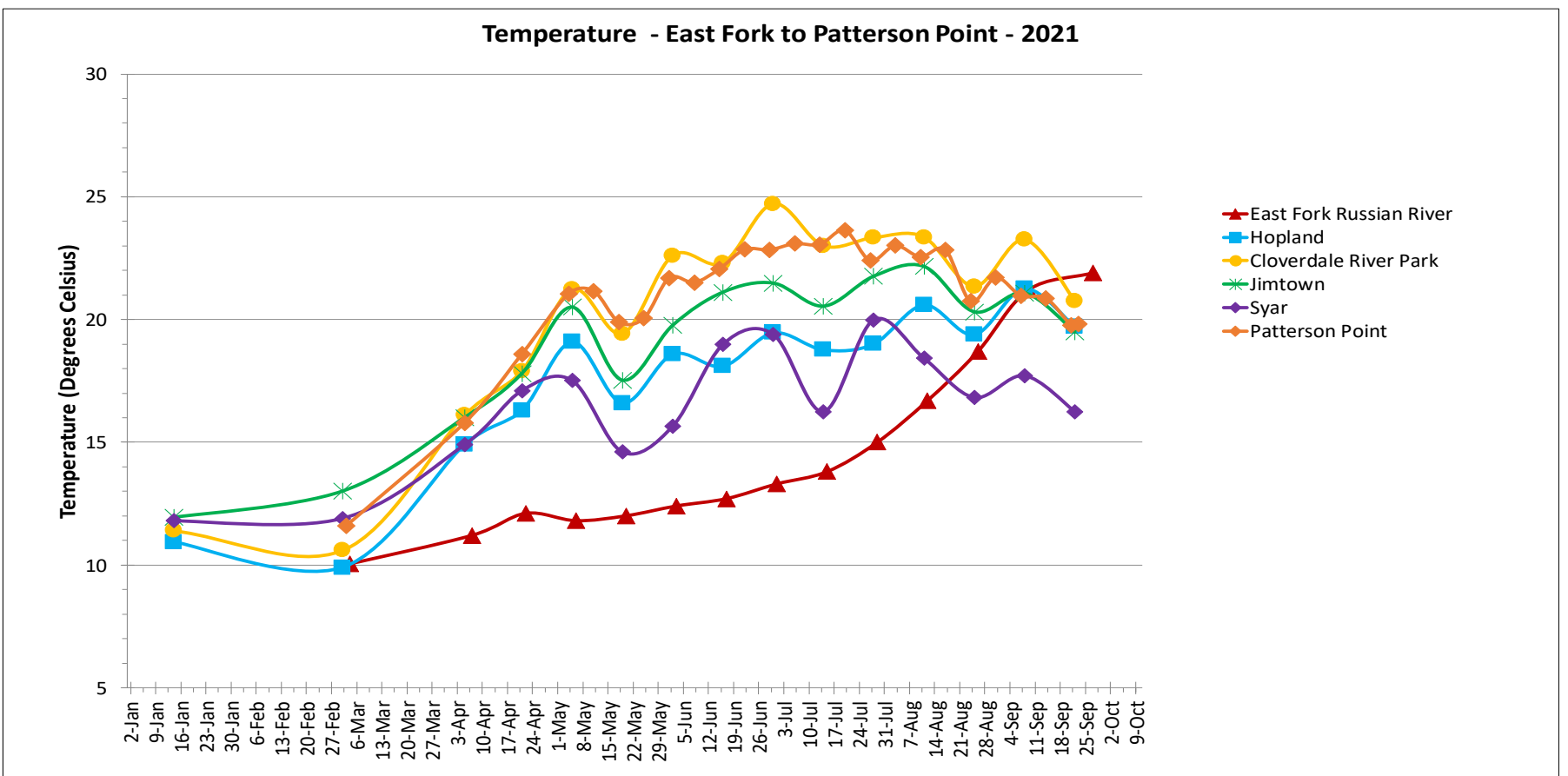
*Each marker in the plot represents a grab sample. The lines are used to help visualize the data, but do not represent a continuous data measurement.

Russian River Water Quality Grab Samples (January 14 - October 28, 2021)
Provisional Data Subject to Revision

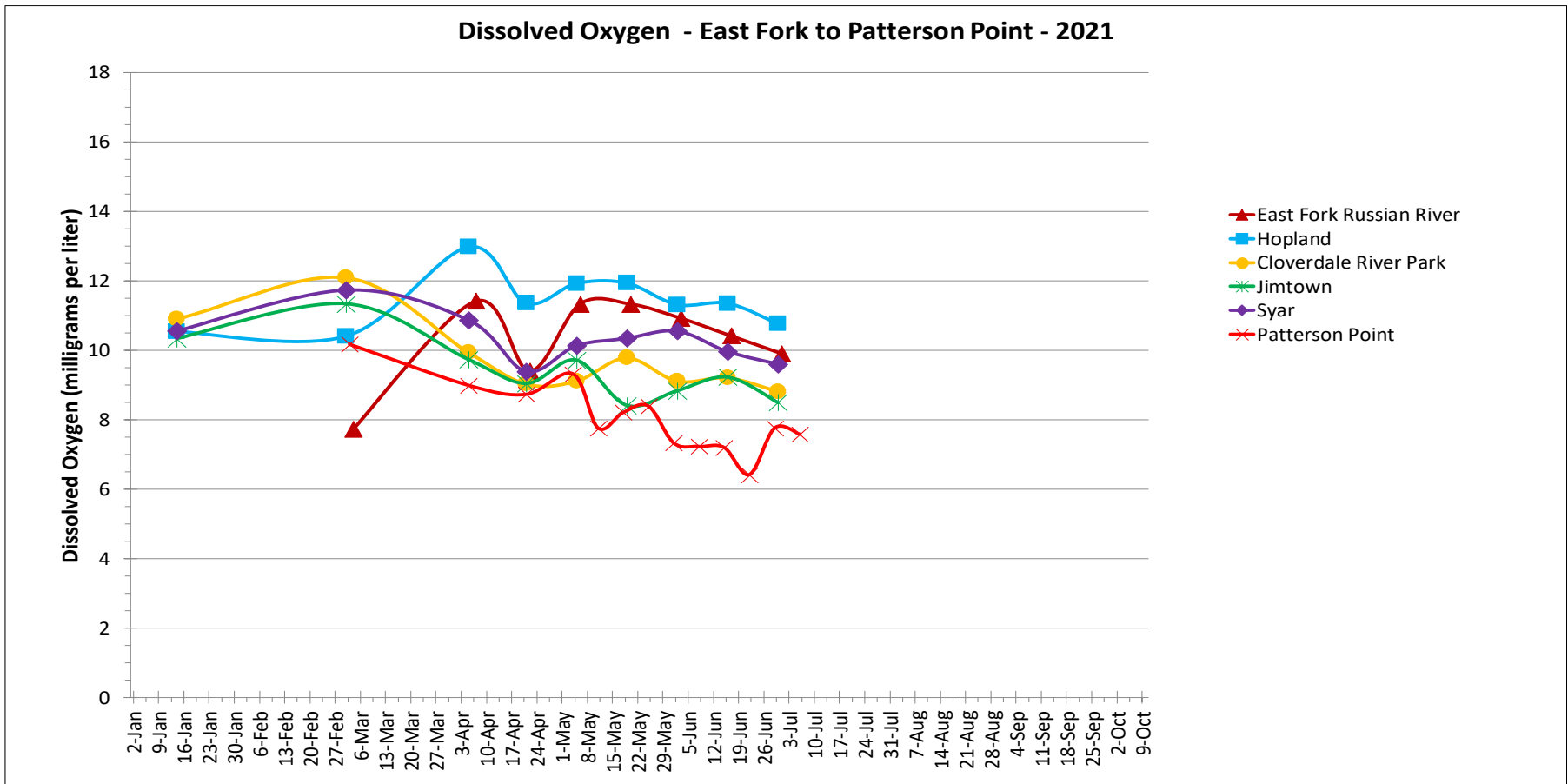
Lake Mendocino to Hopland Water Quality



East Fork (below Lake Mendocino) to Patterson Point Water Quality



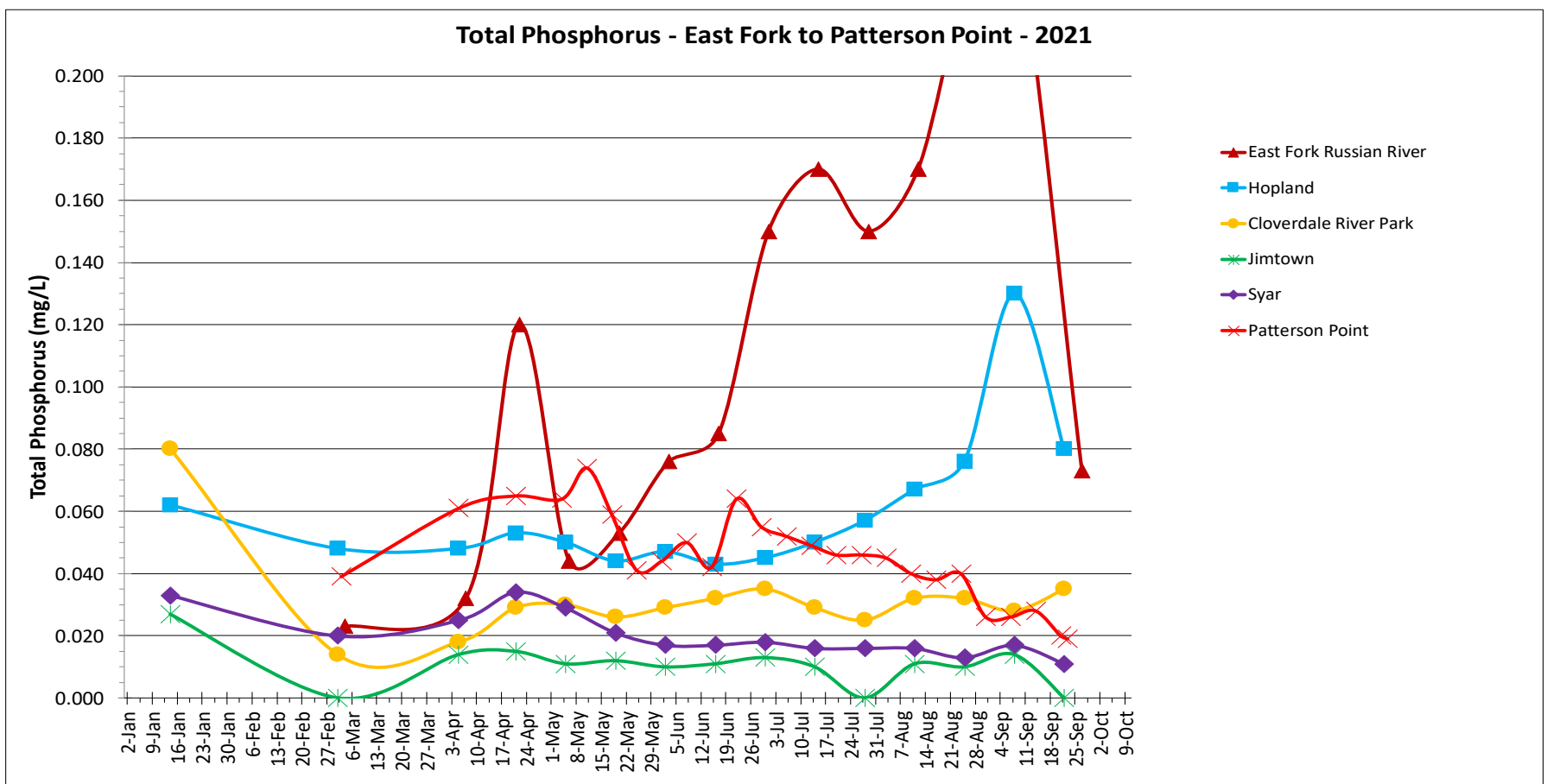
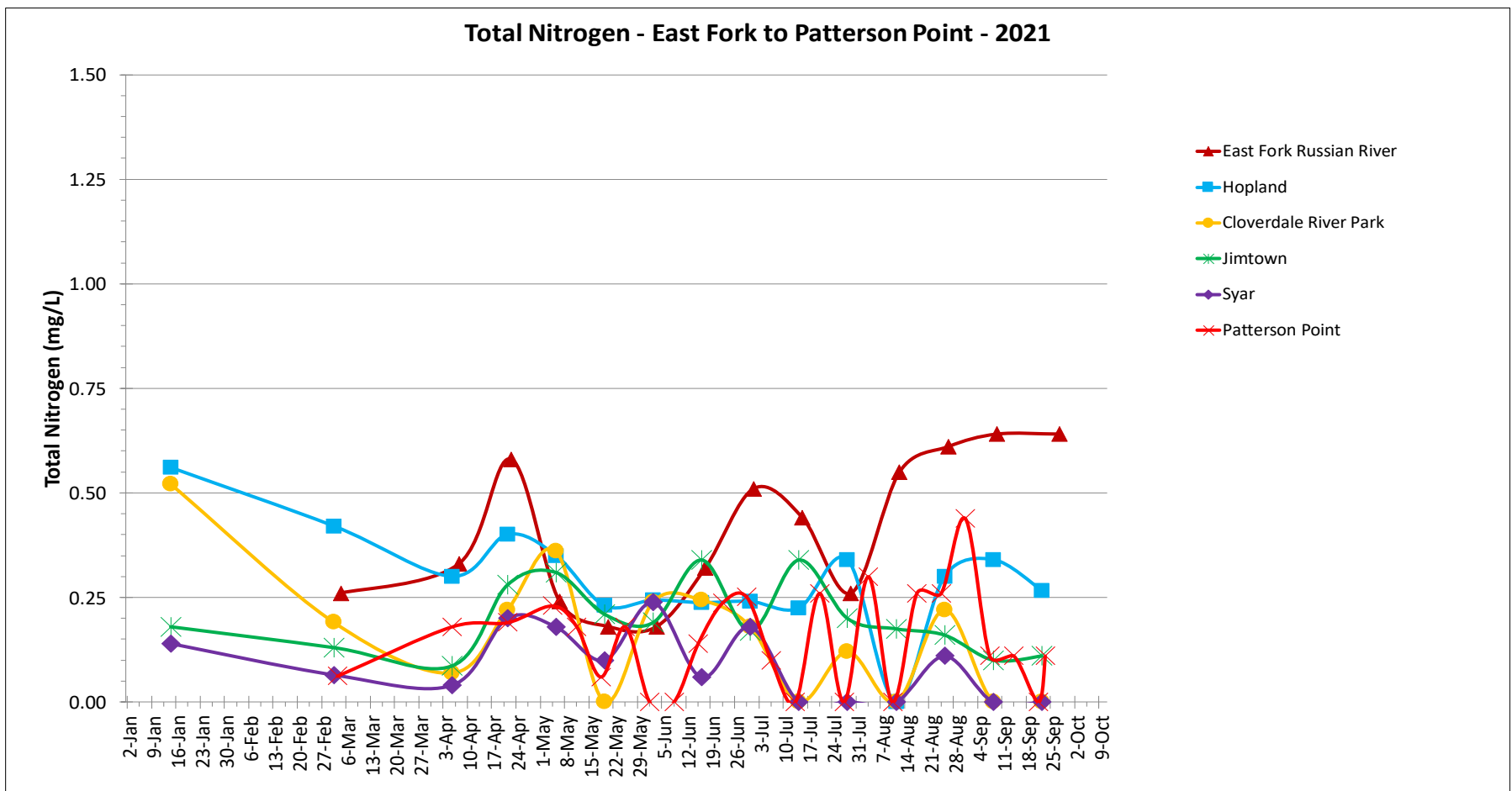
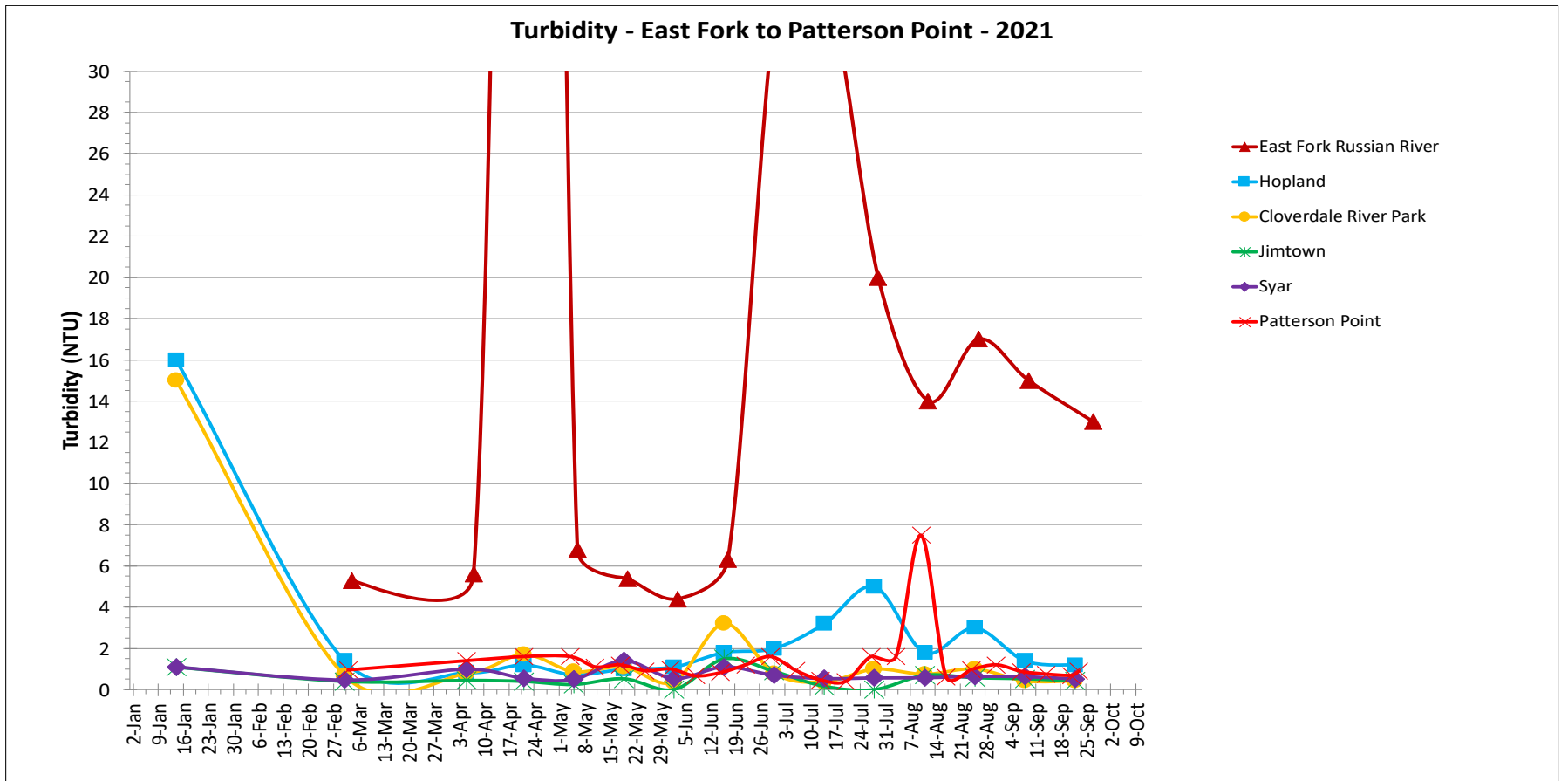
Dissolved Oxygen - East Fork to Patterson Point - 2021



*Each marker in the plot represents a grab sample. The lines are used to help visualize the data, but do not represent a continuous data measurement.

Russian River Water Quality Grab Samples (January 14 - October 28, 2021)
 Provisional Data Subject to Revision

East Fork (below Lake Mendocino) to Patterson Point Water Quality

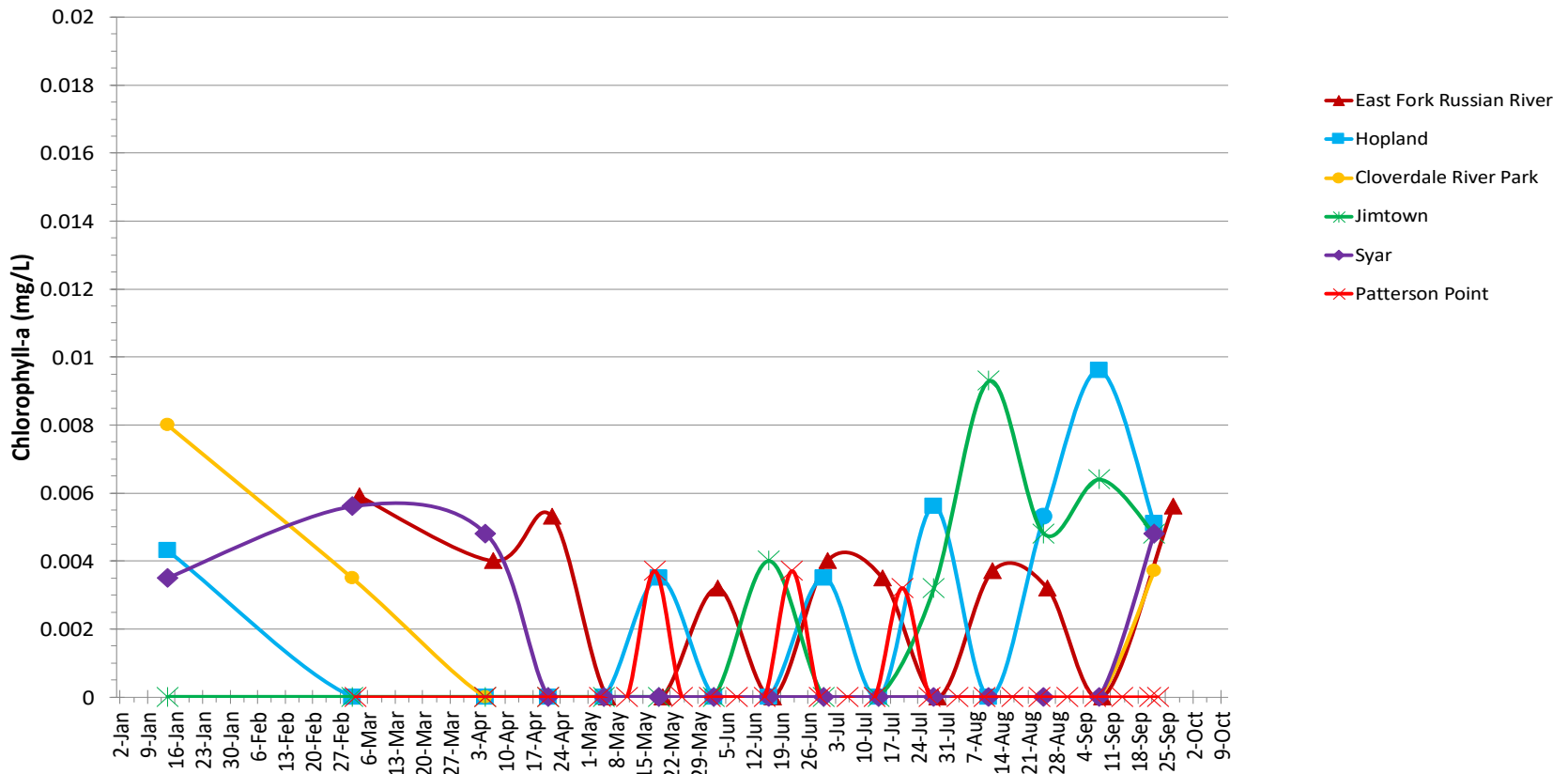


*Each marker in the plot represents a grab sample. The lines are used to help visualize the data, but do not represent a continuous data measurement.

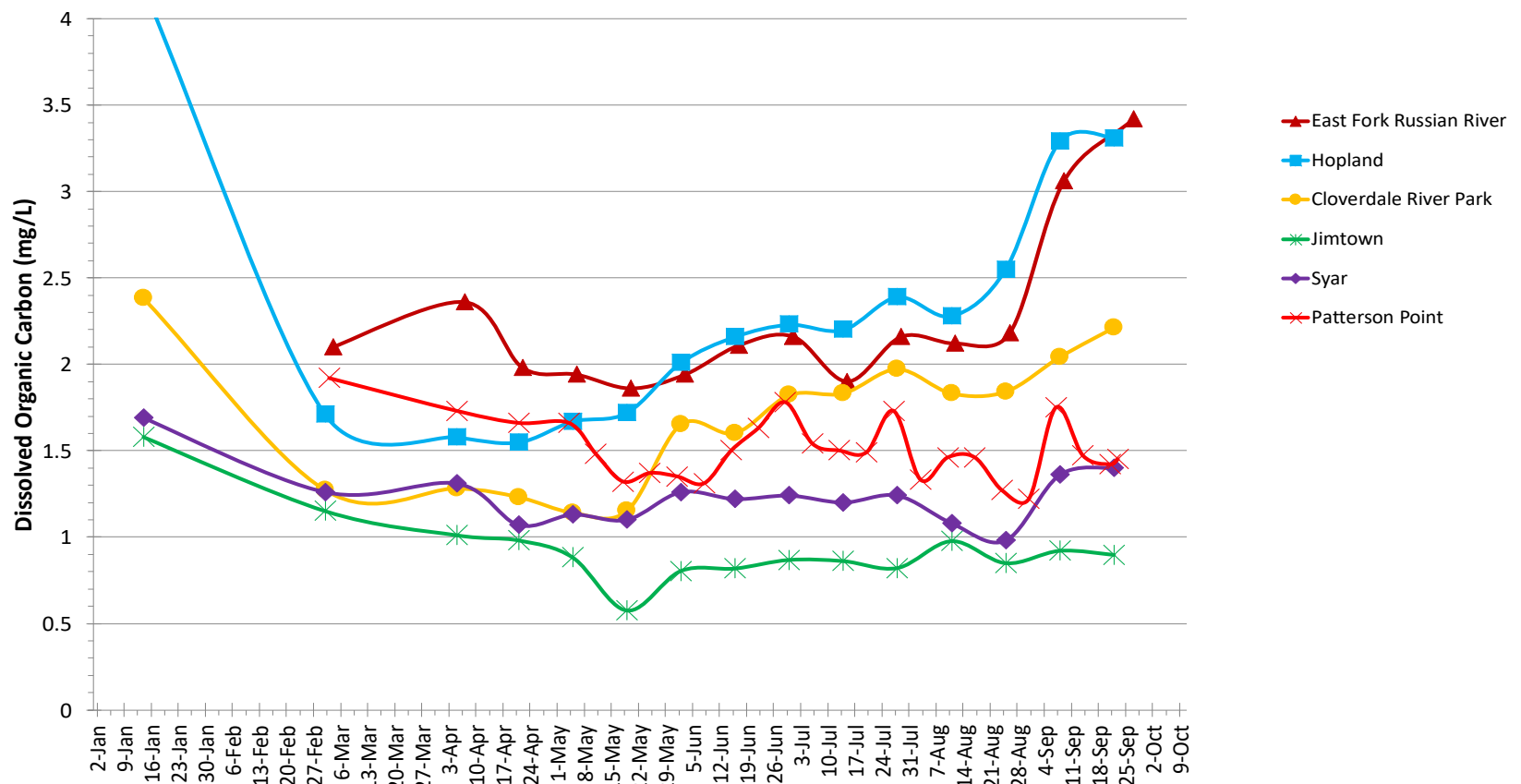
Russian River Water Quality Grab Samples (January 14 - October 28, 2021)
Provisional Data Subject to Revision

East Fork (below Lake Mendocino) to Patterson Point Water Quality

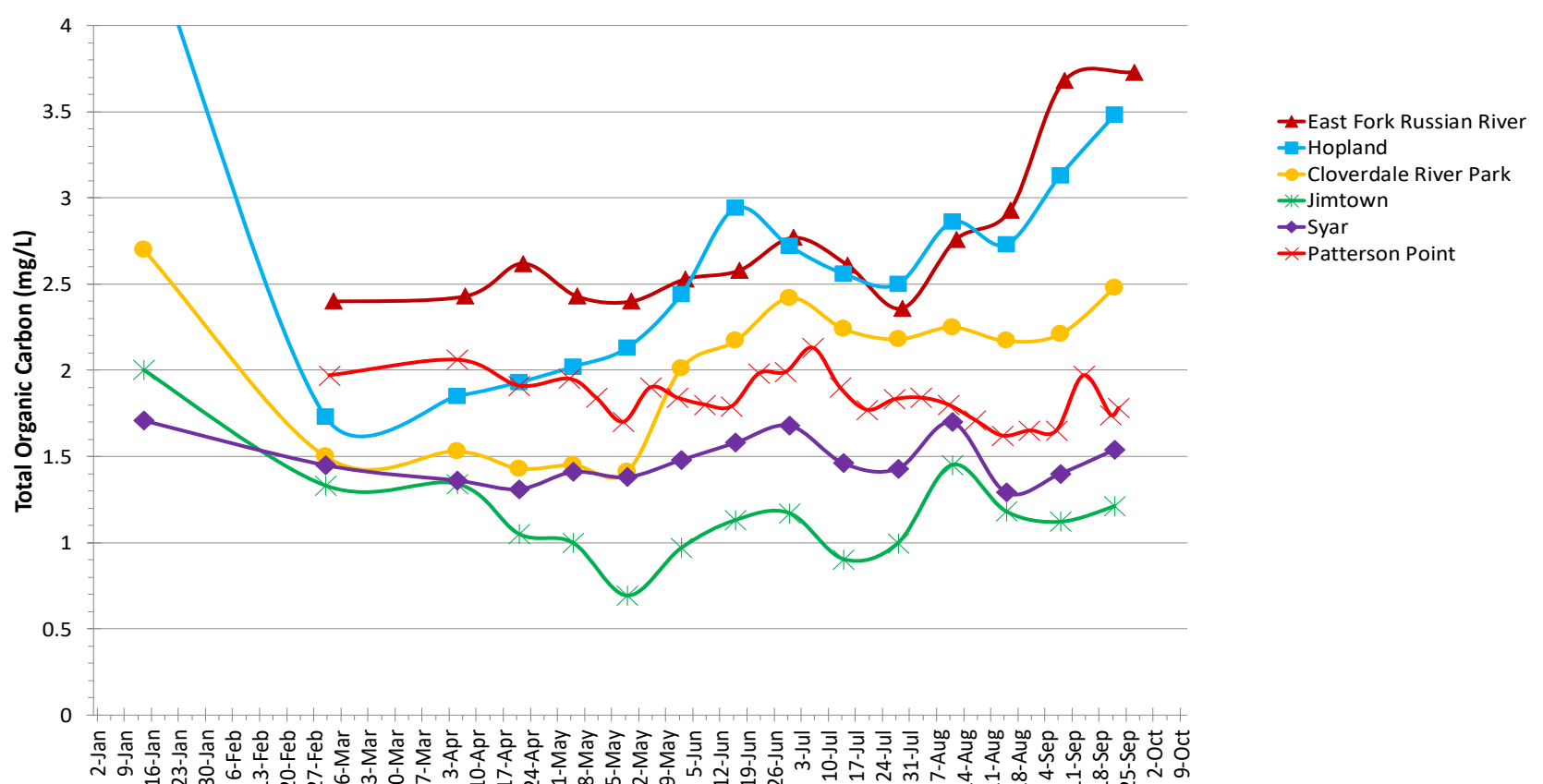
Chlorophyll-a - East Fork to Patterson Point - 2021



Dissolved Organic Carbon - East Fork to Patterson Point - 2021



Total Organic Carbon - East Fork to Patterson Point - 2021



*Each marker in the plot represents a grab sample. The lines are used to help visualize the data, but do not represent a continuous data measurement.

Russian River Water Quality Grab Samples (September 21 - October 19, 2021)
Provisional Data Subject to Revision
Russian River Estuary Standard Bacterial Indicators

Parameter***	CDPH Guidance*	Date	Patterson Point	Monte Rio	Vacation Beach
Total Coliforms MPN/100 mL	10,000	9/23/2021	2481**	1664**	1119**
		9/28/2021	1203.3	1986.3	1732.9
		9/30/2021	1203.3	1986.3	1986.3
		10/5/2021	727.0	1119.9	1413.6
		10/7/2021	1299.7	1299.7	1413.6
		10/12/2021	920.8	980.4	629.4
		10/14/2021	613.1	686.7	727.0
		10/19/2021	547.5	547.5	461.1
E. Coli MPN/100 mL	235	9/23/2021	41.0	75.9	40.8
		9/28/2021	4.1	25.3	6.3
		9/30/2021	17.3	67.6	24.1
		10/5/2021	18.5	18.5	8.5
		10/7/2021	35.5	50.4	31.5
		10/12/2021	33.6	54.6	34.1
		10/14/2021	38.8	42.0	24.9
		10/19/2021	22.6	33.6	30.9
Enterococcus MPN/100 mL****	61	9/23/2021	73.3	59.1	28.5
		9/28/2021	16.8	36.4	9.8
		9/30/2021	17.3	53.8	7.2
		10/5/2021	22.6	23.3	7.5
		10/7/2021	23.5	20.3	8.6
		10/12/2021	38.8	76.2	19.5
		10/14/2021	33.6	21.8	22.6
		10/19/2021	47.1	39.9	22.6

**Sample diluted 1:10

***Method Detection Limit for all parameters = 2 MPN/100 mL or 20 MPN/100 mL if sample diluted

****We continue to collect enterococcus data, however it is not a reliable fecal indicator bacteria in freshwater environments and is not being relied upon for posting at freshwater beaches, per SoCo DHS and NCRWQCB

Russian River Water Quality Grab Samples (July 27 - September 23, 2021)
Provisional Data Subject to Revision

Parameter		MDL*	Units	Date	Patterson Point	Monte Rio	Vacation Beach
Temperature	-		°C	7/27/2021	22.1	21.9	22.4
				8/3/2021	22.5	22.5	23.0
				8/10/2021	22.6	22.7	23.3
				8/17/2021	22.8	22.9	23.5
				8/24/2021	20.7	20.8	21.0
				8/31/2021	21.7	21.7	22.0
				9/7/2021	21.0	21.1	21.4
				9/14/2021	20.9	21.0	21.2
				9/21/2021	19.8	19.7	19.9
				9/23/2021	19.8	20.0	20.3
Nutrients	Ammonia as N	0.01	mg/L	7/27/2021	ND	ND	ND
				8/3/2021	ND	ND	ND
				8/10/2021	ND	ND	ND
				8/17/2021	ND	ND	ND
				8/24/2021	ND	ND	ND
				8/31/2021	0.32	ND	ND
				9/7/2021	ND	ND	ND
				9/14/2021	ND	ND	ND
				9/21/2021	ND	ND	ND
	9/23/2021	ND	ND	ND			
	Nitrate as N	0.03	mg/L	7/27/2021	ND	ND	ND
				8/3/2021	0.12	ND	ND
				8/10/2021	ND	ND	ND
				8/17/2021	ND	ND	ND
				8/24/2021	0.12	0.11	0.11
				8/31/2021	0.11	0.12	0.11
				9/7/2021	0.11	0.12	0.11
				9/14/2021	0.11	0.12	0.11
9/21/2021				ND	ND	ND	
9/23/2021	0.11	0.12	0.12				
Nutrients	Nitrite as N	0.03	mg/L	7/27/2021	ND	ND	ND
				8/3/2021	ND	ND	ND
				8/10/2021	ND	ND	ND
				8/17/2021	ND	ND	ND
				8/24/2021	ND	ND	ND
				8/31/2021	ND	ND	ND
				9/7/2021	ND	ND	ND
				9/14/2021	ND	ND	ND
				9/21/2021	ND	ND	ND
	9/23/2021	ND	ND	ND			
	Total Organic Nitrogen as N	0.2	mg/L	7/27/2021	ND	ND	ND
				8/3/2021	0.18	0.18	0.18
				8/10/2021	ND	0.21	ND
				8/17/2021	0.26	0.18	0.10
				8/24/2021	0.14	0.14	0.14
				8/31/2021	ND	ND	ND
				9/7/2021	ND	ND	ND
				9/14/2021	ND	ND	ND
				9/21/2021	ND	ND	ND
	9/23/2021	ND	ND	0.70			
	Total Kjeldahl Nitrogen	0.1	mg/L	7/27/2021	ND	ND	ND
				8/3/2021	ND	ND	ND
				8/10/2021	ND	0.21	ND
				8/17/2021	0.26	ND	ND
				8/24/2021	ND	ND	ND
				8/31/2021	ND	ND	ND
				9/7/2021	ND	ND	ND
				9/14/2021	ND	ND	ND
				9/21/2021	ND	ND	ND
	9/23/2021	ND	ND	0.70			
	Total Phosphorus	0.02	mg/L	7/27/2021	0.046	0.044	0.036
				8/3/2021	0.045	0.042	0.042
				8/10/2021	0.040	0.039	0.030
				8/17/2021	0.038	0.035	0.026
				8/24/2021	0.040	0.033	0.022
				8/31/2021	0.026	0.022	0.017
9/7/2021				0.026	0.028	0.013	
9/14/2021				0.028	0.023	0.017	
9/21/2021				0.020	0.280	0.018	
9/23/2021	0.019	0.020	0.060				
Total Orthophosphate	0.02	mg/L	7/27/2021	0.082	0.070	0.054	
			8/3/2021	0.097	0.064	0.056	
			8/10/2021	0.055	0.051	0.039	
			8/17/2021	0.047	0.039	0.031	
			8/24/2021	0.055	0.039	0.031	
			8/31/2021	0.046	0.038	0.038	
			9/7/2021	ND	ND	ND	
			9/14/2021	0.032	ND	ND	
			9/21/2021	ND	ND	ND	
9/23/2021	ND	ND	0.038				

Russian River Water Quality Grab Samples (July 27 - September 23, 2021)
Provisional Data Subject to Revision

Parameter		MDL*	Units	Date	Patterson Point	Monte Rio	Vacation Beach
Chlorophyll	Chlorophyll A	0.00005	mg/L	7/27/2021	ND	ND	ND
				8/3/2021	0.0040	ND	ND
				8/10/2021	ND	ND	ND
				8/17/2021	ND	ND	ND
				8/24/2021	ND	ND	ND
				8/31/2021	ND	ND	ND
				9/7/2021	ND	0.0032	0.0040
				9/14/2021	ND	ND	0.0035
				9/21/2021	ND	ND	ND
				9/23/2021	ND	0.0630	0.0083
Carbon	Total Organic Carbon	0.04	mg/L	7/27/2021	1.87	1.90	1.83
				8/3/2021	2.08	2.03	1.84
				8/10/2021	1.80	1.73	1.66
				8/17/2021	1.71	1.65	1.60
				8/24/2021	1.62	1.59	1.51
				8/31/2021	1.65	1.72	1.66
				9/7/2021	1.65	1.67	1.65
				9/14/2021	1.97	1.89	1.90
				9/21/2021	1.74	1.76	1.78
	9/23/2021	1.78	1.74	1.76			
	Dissolved Organic Carbon	0.04	mg/L	7/27/2021	1.62	1.58	1.73
				8/3/2021	1.40	1.36	1.33
				8/10/2021	1.46	1.36	1.60
				8/17/2021	1.46	1.35	1.56
				8/24/2021	1.27	1.20	1.21
				8/31/2021	1.22	1.23	1.12
				9/7/2021	1.75	1.47	1.49
				9/14/2021	1.47	1.51	1.52
9/21/2021				1.42	1.40	1.43	
9/23/2021	1.45	1.44	1.30				
Solids	Turbidity	0.02	NTU	7/27/2021	1.20	2.80	1.60
				8/3/2021	1.10	2.10	1.60
				8/10/2021	7.50	3.00	1.50
				8/17/2021	0.61	1.00	0.54
				8/24/2021	0.97	1.20	0.83
				8/31/2021	1.20	0.82	0.87
				9/7/2021	0.88	1.00	0.88
				9/14/2021	0.75	0.91	0.86
				9/21/2021	0.69	0.98	0.81
	9/23/2021	0.89	1.40	3.10			
	TDS	4.2	mg/L	7/27/2021	140	140	130
				8/3/2021	160	150	140
				8/10/2021	140	140	140
				8/17/2021	170	150	140
				8/24/2021	150	140	150
				8/31/2021	160	160	160
				9/7/2021	160	170	160
				9/14/2021	170	130	140
9/21/2021				140	150	130	
9/23/2021	190	170	130				