

Table 1: Details of Whole-habitat *In Situ* Filtration and Control Trials Across Four California Sites. All Values are Means from the Entire Trial. The Trial Separated at the Bottom is within the Chlorophyll α Sensor's Error and was Removed from the Analysis. Dashes Denote Missing Values.

Site	Date	Trial	Tide	HCR ($\text{Lhr}^{-1}\text{m}^{-2}$)	Chl _{mid} (%)	Chl _{up} ($\mu\text{g/L}$)	Temp ($^{\circ}\text{C}$)	Salinity (ppt)	Turb (NTU)	TPM (mg/L)	OC (ratio)	Depth (m)	Distance (m)	Velocity (m/s)
SR	2018-07-17	Filtr	Flood	-166	-4.5	4.4	24.51	29.6	30.6	76.91	0.12	0.72	21.0	0.03
SR	2018-07-18	Filtr	Flood	302	1.1	4.5	24.32	29.9	21.7	38.59	0.20	0.79	21.0	0.20
SR	2018-09-10	Filtr	Flood	112	1.9	4.9	19.02	30.3	23.1	36.19	0.10	0.89	25.3	0.05
SR	2018-11-07	Control	Ebb	-99	-1.3	6.9	16.45	29.9	25.5	30.04	0.17	0.40	11.6	0.06
SR	2018-11-08	Filtr	Ebb	417	6.2	5.1	14.52	29.9	30.9	32.45	0.14	0.69	12.3	0.03
MB	2018-07-27	Filtr	Flood	346	17.5	4.5	17.66	35.9	7.9	17.53	0.26	0.48	26.0	0.03
MB	2018-07-28	Filtr	Flood	65	6.2	3.0	17.45	35.9	7.4	14.60	0.33	0.30	27.0	0.03
MB	2019-05-18	Filtr	Flood	-128	-3.4	3.0	16.29	37.6	17.5	-	-	0.42	30.5	0.08
MB	2019-05-19	Filtr	Flood	-242	-18.2	2.2	15.94	36.4	10.9	14.45	0.18	0.45	30.5	0.02
MB	2019-06-06	Control	Flood	-19	-0.7	2.1	17.28	38.1	11.9	12.80	0.22	0.32	20.5	0.05
NPSM	2019-05-10	Filtr	Flood	-120	-1.9	3.7	19.78	37.0	4.1	5.90	0.24	0.38	13.0	0.06
NPSM	2019-05-11	Filtr	Flood	845	19.6	2.4	21.52	36.5	4.7	5.14	0.25	0.32	12.2	0.04
NPSM	2019-05-22	Filtr	Flood	-2485	-60.3	2.7	19.29	33.7	3.8	4.92	0.20	0.26	8.6	0.04
NPSM	2019-06-08	Filtr	Flood	-97	-2.1	2.7	20.06	36.0	4.0	3.95	0.20	0.26	8.6	0.04
NPSM	2019-06-09	Control	Flood	-8844	-203.8	1.1	22.40	36.0	5.9	4.02	0.18	0.30	11.2	0.04
NPD	2018-10-25	Filtr	Ebb	-216	-10.1	3.2	21.09	33.5	4.8	-	-	0.18	19.2	0.06
NPD	2018-10-26	Filtr	Ebb	467	16.4	4.0	20.96	36.4	2.4	4.39	0.36	0.19	19.2	0.08
NPD	2019-04-15	Filtr	Ebb	-22	-0.7	1.3	19.43	36.4	3.4	4.73	0.32	0.23	16.4	0.07
NPD	2019-05-09	Filtr	Ebb	242	4.6	5.4	19.44	37.0	2.3	2.67	0.21	0.32	15.0	0.07
NPD	2019-05-10	Filtr	Ebb	383	5.6	4.0	19.25	37.4	2.9	5.10	0.16	0.31	14.8	0.09
NPD	2019-05-11	Filtr	Ebb	248	2.9	3.7	18.85	36.5	2.9	4.00	0.24	0.35	15.0	0.10
NPD	2019-05-21	Filtr	Ebb	-153	-3.5	6.3	18.89	34.2	3.3	3.57	0.23	0.24	16.0	0.08
NPD	2019-05-22	Filtr	Ebb	149	4.8	7.4	18.62	33.9	2.8	3.83	0.23	0.22	15.7	0.06
NPD	2019-06-08	Filtr	Ebb	-156	-2.8	4.3	19.07	37.1	2.7	3.65	0.27	0.26	15.7	0.09
NPD	2019-06-09	Control	Ebb	-210	-1.3	3.0	19.29	37.0	1.7	2.80	0.21	0.48	12.8	0.12
NPD	2019-04-17	Filtr	Ebb	-4867	-108.9	0.1	19.41	37.4	4.9	4.03	0.23	0.18	16.4	0.11

San Rafael (SR); Morro Bay (MB); Shellmaker (NPSM); Deanza (NPD); Filtration (Filtr); habitat clearance rate (HCR); chlorophyll α removed (Chl_{mid}); chlorophyll α upstream (Chl_{up}); temperature (Temp); turbidity (Turb); total particulate matter (TPM); seston organic content (OC).