Appendix A. Volume-Average Annual and June–October Scenario Results for the Link-Keno Reach, Upper Klamath River, Oregon

Table A1. Scenarios 1 and 2 annual volume-average results for the Link-Keno reach of the Klamath River, Oregon.

[2007 runs were bracketed by also using total inorganic carbon calculated with pH during low-bloom conditions (leftmost values when a range is given for the Link River, Lost River Diversion Channel, and Klamath Straits Drain inputs. Other years were run without modifying the pH of boundary inputs. The effects of recalculating total inorganic carbon with low-bloom pH values were manifested only in the simulated pH and in no other simulated constituents in the Link-Keno reach. **Abbreviations:** TMDL, total maximum daily load; °C, degrees Celsius; mg/L, milligram per liter; µg/L, microgram per liter]

Scenario	Annual in-reach volume average											
	Water temperature (°C)	Dissolved oxygen (mg/L)	pH	Ammonia (mg/L)	Nitrate (mg/L)	Ortho-phosphorus (mg/L)	Chlorophyll *a* (µg/L)	Particulate organic carbon (mg/L)	Dissolved organic carbon (mg/L)	Total phosphorus (mg/L)	Total nitrogen (mg/L)	Sediment (1st-order) (mg/L)
2006												
1a Base case	11.2	7.91	8.12	0.398	0.161	0.078	41.1	1.72	8.25	0.165	1.84	15.5
1b Sources at TMDL allocations	11.2	8.00	8.15	0.368	0.093	0.044	38.4	1.54	7.24	0.120	1.59	13.7
2a Link River at TMDL target	11.2	9.08	8.41	0.294	0.166	0.050	14.6	0.70	3.97	0.091	1.06	7.1
2b Link River and sources at TMDL	11.2	9.18	8.46	0.263	0.097	0.016	11.6	0.51	2.96	0.046	0.81	5.4
2007												
1a Base case	11.8	7.60	7.97	0.531	0.204	0.076	36.5	1.84	8.22	0.163	2.03	17.0
1b Sources at TMDL allocations	11.8	7.68	7.99–7.99	0.513	0.183	0.048	35.2	1.73	7.47	0.128	1.88	15.6
2a Link River at TMDL target	11.8	9.00	8.10–8.35	0.395	0.212	0.043	11.0	0.65	3.49	0.079	1.14	6.7
2b Link River and sources at TMDL	11.8	9.07	8.13–8.40	0.376	0.190	0.015	9.4	0.53	2.73	0.044	0.99	5.5
2008												
1a Base case	11.2	6.75	8.06	0.626	0.199	0.073	32.9	2.54	7.97	0.164	2.17	23.7
1b Sources at TMDL allocations	11.2	6.82	8.09	0.600	0.178	0.045	31.3	2.39	7.13	0.128	2.00	21.2
2a Link River at TMDL target	11.2	8.35	8.45	0.528	0.211	0.047	12.2	0.96	4.06	0.091	1.38	9.2
2b Link River and sources at TMDL	11.2	8.43	8.51	0.501	0.188	0.019	10.3	0.81	3.23	0.054	1.21	7.1
2009												
1a Base case	11.4	6.95	8.03	0.518	0.159	0.061	22.9	2.67	7.08	0.145	1.93	23.3
1b Sources at TMDL allocations	11.4	7.01	8.05	0.506	0.152	0.037	22.1	2.54	6.40	0.115	1.81	21.4
2a Link River at TMDL target	11.4	8.64	8.43	0.436	0.176	0.039	7.9	0.89	3.30	0.075	1.15	8.2
2b Link River and sources at TMDL	11.4	8.71	8.46	0.423	0.169	0.015	6.9	0.76	2.62	0.045	1.02	6.6

Table A2. Scenarios 1 and 2 June through October volume-average results for the Link-Keno reach of the Klamath River, Oregon.

[2007 runs were bracketed by also using total inorganic carbon calculated with pH during low-bloom conditions (leftmost values when a range is given for the Link River, Lost River Diversion Channel, and Klamath Straits Drain inputs. Other years were run without modifying the pH of boundary inputs. The effects of recalculating total inorganic carbon with low-bloom pH values were manifested only in the simulated pH and in no other simulated constituents in the Link-Keno reach. **Abbreviations:** TMDL, total maximum daily load; °C, degrees Celsius; mg/L, milligram per liter; µg/L, microgram per liter]

Scenario	June through October in-reach volume average											
	Water temperature (°C)	Dissolved oxygen (mg/L)	pH	Ammonia (mg/L)	Nitrate (mg/L)	Ortho-phosphorus (mg/L)	Chlorophyll *a* (µg/L)	Particulate organic carbon (mg/L)	Dissolved organic carbon (mg/L)	Total phosphorus (mg/L)	Total nitrogen (mg/L)	Sediment (1st-order) (mg/L)
2006												
1a Base case	18.9	4.42	8.34	0.458	0.060	0.105	84.1	3.12	10.6	0.224	2.27	18.7
1b Sources at TMDL allocations	18.9	4.60	8.39	0.436	0.051	0.073	81.2	2.97	9.51	0.181	2.09	17.1
2a Link River at TMDL target	18.9	6.81	8.91	0.225	0.073	0.054	28.4	1.10	4.77	0.105	1.05	6.4
2b Link River and sources at TMDL	18.9	6.99	8.99	0.199	0.061	0.021	24.8	0.95	3.72	0.062	0.86	5.0
2007												
1a Base case	18.5	4.60	8.18	0.566	0.071	0.121	85.0	3.51	11.0	0.247	2.50	24.4
1b Sources at TMDL allocations	18.5	4.70	8.20–8.21	0.549	0.065	0.090	82.9	3.41	10.3	0.208	2.37	23.0
2a Link River at TMDL target	18.5	7.62	8.27–8.94	0.232	0.091	0.055	25.0	1.16	4.51	0.105	1.05	6.7
2b Link River and sources at TMDL	18.5	7.72	8.32–9.00	0.212	0.083	0.024	22.2	1.05	3.71	0.066	0.91	5.8
2008												
1a Base case	18.7	3.17	8.43	0.448	0.044	0.093	67.0	4.61	9.65	0.217	2.32	34.0
1b Sources at TMDL allocations	18.7	3.26	8.47	0.426	0.040	0.066	65.1	4.53	8.92	0.183	2.19	31.4
2a Link River at TMDL target	18.7	6.51	9.24	0.220	0.072	0.050	23.8	1.51	4.36	0.101	1.05	9.5
2b Link River and sources at TMDL	18.7	6.63	9.32	0.195	0.064	0.023	21.3	1.42	3.63	0.067	0.91	7.6
2009												
1a Base case	18.4	2.85	8.18	0.463	0.067	0.081	43.3	5.08	7.95	0.194	2.20	32.6
1b Sources at TMDL allocations	18.4	2.92	8.20	0.453	0.067	0.059	42.7	5.00	7.50	0.168	2.12	30.5
2a Link River at TMDL target	18.5	6.44	9.01	0.264	0.111	0.040	14.3	1.51	3.32	0.082	1.00	8.0
2b Link River and sources at TMDL	18.5	6.55	9.05	0.252	0.110	0.019	13.2	1.43	2.86	0.056	0.91	6.6

Table A3. Scenario 5 annual volume-average results for the Link-Keno reach of the Klamath River, Oregon.

[**Abbreviations:** LRDC, Lost River Diversion Channel; KSD, Klamath Straits Drain; OM, organic matter; DO, dissolved oxygen; °C, degrees Celsius; mg/L, milligram per liter; µg/L, microgram per liter]

Scenario	Annual in-reach volume average											
	Water temperature (°C)	Dissolved oxygen (mg/L)	pH	Ammonia (mg/L)	Nitrate (mg/L)	Ortho-phosphorus (mg/L)	Chlorophyll *a* (µg/L)	Particulate organic carbon (mg/L)	Dissolved organic carbon (mg/L)	Total phosphorus (mg/L)	Total nitrogen (mg/L)	Sediment (1st-order) (mg/L)
2006												
1a Base case	11.2	7.91	8.12	0.398	0.161	0.078	41.1	1.72	8.25	0.165	1.84	15.5
5a Shunt, LRDC and KSD current	11.2	7.06	7.96	0.456	0.151	0.082	55.6	2.49	8.31	0.176	1.99	25.2
5b Shunt, LRDC and KSD intermediate	11.2	7.07	7.97	0.453	0.150	0.080	55.3	2.47	8.17	0.172	1.97	24.9
5c Shunt, LRDC and KSD zero OM, nutrients and algae, DO at saturation	11.2	7.37	8.05	0.426	0.080	0.060	52.7	2.31	7.23	0.143	1.73	22.4
2007												
1a Base case	11.8	7.60	7.97	0.531	0.204	0.076	36.5	1.84	8.22	0.163	2.03	17.0
5a Shunt, LRDC and KSD current	11.8	6.43	7.78	0.607	0.189	0.080	54.9	2.97	8.33	0.179	2.25	35.1
5b Shunt, LRDC and KSD intermediate	11.8	6.44	7.79	0.605	0.188	0.079	54.7	2.96	8.24	0.177	2.23	34.9
5c Shunt, LRDC and KSD zero OM, nutrients and algae, DO at saturation	11.8	6.67	7.85	0.584	0.155	0.066	53.2	2.85	7.42	0.156	2.06	32.4
2008												
1a Base case	11.2	6.75	8.06	0.626	0.199	0.073	32.9	2.54	7.97	0.164	2.17	23.7
5a Shunt, LRDC and KSD current	11.2	5.58	7.88	0.676	0.185	0.076	49.0	4.40	8.07	0.184	2.46	59.0
5b Shunt, LRDC and KSD intermediate	11.2	5.58	7.88	0.674	0.184	0.075	48.8	4.39	7.97	0.182	2.44	58.7
5c Shunt, LRDC and KSD zero OM, nutrients and algae, DO at saturation	11.2	5.89	7.93	0.648	0.151	0.061	47.0	4.25	7.07	0.160	2.25	54.2
2009												
1a Base case	11.4	6.95	8.03	0.518	0.159	0.061	22.9	2.67	7.08	0.145	1.93	23.3
5a Shunt, LRDC and KSD current	11.3	5.88	7.87	0.553	0.143	0.063	34.2	4.73	7.14	0.166	2.22	58.8
5b Shunt, LRDC and KSD intermediate	11.3	5.88	7.88	0.550	0.142	0.061	34.0	4.72	7.03	0.163	2.20	58.5
5c Shunt, LRDC and KSD zero OM, nutrients and algae, DO at saturation	11.3	6.04	7.94	0.532	0.114	0.050	33.0	4.60	6.32	0.145	2.05	55.4

Table A4. Scenario 5 June through October volume-average results for the Link-Keno reach of the Klamath River, Oregon.

[**Abbreviations:** LRDC, Lost River Diversion Channel; KSD, Klamath Straits Drain; OM, organic matter; DO, dissolved oxygen; °C, degrees Celsius; mg/L, milligram per liter; µg/L, microgram per liter]

Scenario	June through October in-reach volume average											
	Water temperature (°C)	Dissolved oxygen (mg/L)	pH	Ammonia (mg/L)	Nitrate (mg/L)	Ortho-phosphorus (mg/L)	Chlorophyll *a* (µg/L)	Particulate organic carbon (mg/L)	Dissolved organic carbon (mg/L)	Total phosphorus (mg/L)	Total nitrogen (mg/L)	Sediment (1st-order) (mg/L)
2006												
1a Base case	18.9	4.42	8.34	0.458	0.060	0.105	84.1	3.12	10.6	0.224	2.27	18.7
5a Shunt, LRDC and KSD current	18.8	2.75	7.97	0.587	0.033	0.113	119.5	5.00	10.7	0.250	2.64	37.5
5b Shunt, LRDC and KSD intermediate	18.8	2.77	7.99	0.581	0.033	0.108	118.7	4.97	10.4	0.242	2.59	37.0
5c Shunt, LRDC and KSD zero OM, nutrients and algae, DO at saturation	18.8	2.95	8.03	0.570	0.030	0.096	116.3	4.85	9.58	0.222	2.45	34.3
2007												
1a Base case	18.5	4.60	8.18	0.566	0.071	0.121	85.0	3.51	11.0	0.247	2.50	24.4
5a Shunt, LRDC and KSD current	18.5	2.34	7.79	0.741	0.036	0.131	130.0	6.14	11.3	0.283	3.02	62.5
5b Shunt, LRDC and KSD intermediate	18.5	2.35	7.80	0.737	0.035	0.128	129.8	6.12	11.2	0.279	2.99	62.2
5c Shunt, LRDC and KSD zero OM, nutrients and algae, DO at saturation	18.5	2.50	7.82	0.725	0.032	0.116	127.4	6.02	10.4	0.259	2.86	59.0
2008												
1a Base case	18.7	3.17	8.43	0.448	0.044	0.093	67.0	4.61	9.65	0.217	2.32	34.0
5a Shunt, LRDC and KSD current	18.7	1.64	8.09	0.541	0.021	0.098	105.4	9.14	9.91	0.264	3.01	100.4
5b Shunt, LRDC and KSD intermediate	18.7	1.64	8.10	0.536	0.020	0.096	105.1	9.13	9.74	0.260	2.98	99.9
5c Shunt, LRDC and KSD zero OM, nutrients and algae, DO at saturation	18.7	1.71	8.12	0.524	0.018	0.085	103.1	9.05	9.02	0.242	2.86	94.7
2009												
1a Base case	18.4	2.85	8.18	0.463	0.067	0.081	43.3	5.08	7.95	0.194	2.20	32.6
5a Shunt, LRDC and KSD current	18.4	1.45	7.91	0.533	0.036	0.085	67.0	9.94	8.11	0.242	2.88	97.4
5b Shunt, LRDC and KSD intermediate	18.4	1.45	7.92	0.529	0.035	0.082	66.8	9.92	7.95	0.238	2.86	96.9
5c Shunt, LRDC and KSD zero OM, nutrients and algae, DO at saturation	18.4	1.52	7.93	0.520	0.035	0.076	66.1	9.86	7.58	0.228	2.79	93.2

Table A5. Scenario 6 annual volume average results for the Link-Keno reach of the Klamath River, Oregon.

[**Abbreviations:** °C, degrees Celsius; mg/L, milligram per liter; µg/L, microgram per liter]

Scenario	Annual in-reach volume average											
	Water temperature (°C)	Dissolved oxygen (mg/L)	pH	Ammonia (mg/L)	Nitrate (mg/L)	Ortho-phosphorus (mg/L)	Chlorophyll *a* (µg/L)	Particulate organic carbon (mg/L)	Dissolved organic carbon (mg/L)	Total phosphorus (mg/L)	Total nitrogen (mg/L)	Sediment (1st-order) (mg/L)
2006												
1a Base case	11.2	7.91	8.12	0.398	0.161	0.078	41.1	1.72	8.25	0.165	1.84	15.5
6a 25 percent decrease, June–October	11.2	8.25	8.19	0.368	0.163	0.077	34.3	1.46	8.23	0.161	1.77	13.3
6b 50 percent decrease, June–October	11.2	8.59	8.26	0.336	0.165	0.076	27.2	1.20	8.20	0.158	1.71	11.2
6c 90 percent decrease, June–October	11.2	9.13	8.36	0.279	0.166	0.074	14.5	0.74	8.16	0.151	1.59	8.0
6d 25 percent decrease, entire year	11.2	8.29	8.19	0.366	0.163	0.077	33.4	1.39	8.23	0.161	1.76	12.4
6e 50 percent decrease, entire year	11.2	8.67	8.27	0.332	0.165	0.076	25.4	1.05	8.20	0.156	1.69	9.5
6f 90 percent decrease, entire year	11.2	9.27	8.39	0.273	0.166	0.074	11.3	0.48	8.16	0.149	1.55	5.1
2007												
1a Base case	11.8	7.60	7.97	0.531	0.204	0.076	36.5	1.84	8.22	0.163	2.03	17.0
6a 25 percent decrease, June–October	11.8	7.95	8.04	0.495	0.208	0.074	30.0	1.56	8.19	0.159	1.95	14.3
6b 50 percent decrease, June–October	11.8	8.31	8.13	0.456	0.210	0.073	23.0	1.28	8.15	0.155	1.88	12.0
6c 90 percent decrease, June–October	11.8	8.87	8.27	0.383	0.212	0.071	9.80	0.78	8.10	0.148	1.73	9.0
6d 25 percent decrease, entire year	11.8	8.00	8.06	0.495	0.208	0.074	29.8	1.48	8.19	0.159	1.94	13.2
6e 50 percent decrease, entire year	11.8	8.42	8.16	0.455	0.211	0.073	22.7	1.12	8.16	0.154	1.86	9.9
6f 90 percent decrease, entire year	11.8	9.08	8.32	0.380	0.212	0.071	9.14	0.49	8.10	0.146	1.69	5.3
2008												
1a Base case	11.2	6.75	8.06	0.626	0.199	0.073	32.9	2.54	7.97	0.164	2.17	23.7
6a 25 percent decrease, June–October	11.2	7.18	8.14	0.599	0.204	0.072	27.7	2.12	7.94	0.159	2.09	19.1
6b 50 percent decrease, June–October	11.2	7.64	8.25	0.568	0.208	0.070	22.3	1.71	7.91	0.154	2.01	15.8
6c 90 percent decrease, June–October	11.2	8.43	8.41	0.508	0.211	0.068	12.0	1.03	7.87	0.145	1.86	12.2
6d 25 percent decrease, entire year	11.2	7.24	8.15	0.599	0.204	0.072	27.6	2.01	7.94	0.158	2.08	17.4
6e 50 percent decrease, entire year	11.2	7.78	8.27	0.567	0.208	0.070	22.0	1.49	7.91	0.152	1.98	12.6
6f 90 percent decrease, entire year	11.2	8.68	8.46	0.505	0.211	0.068	11.5	0.63	7.87	0.142	1.81	6.6
2009												
1a Base case	11.4	6.95	8.03	0.518	0.159	0.061	22.9	2.67	7.08	0.145	1.93	23.3
6a 25 percent decrease, June–October	11.4	7.37	8.11	0.498	0.166	0.059	19.8	2.20	7.06	0.140	1.85	19.8
6b 50 percent decrease, June–October	11.4	7.84	8.20	0.473	0.172	0.058	16.6	1.75	7.04	0.135	1.77	14.8
6c 90 percent decrease, June–October	11.4	8.69	8.36	0.426	0.177	0.056	10.4	1.01	7.01	0.126	1.63	10.7
6d 25 percent decrease, entire year	11.4	7.44	8.12	0.496	0.166	0.059	19.4	2.08	7.06	0.139	1.83	16.9
6e 50 percent decrease, entire year	11.4	8.01	8.24	0.470	0.172	0.058	15.6	1.50	7.04	0.132	1.74	12.0
6f 90 percent decrease, entire year	11.4	8.98	8.42	0.419	0.177	0.056	8.6	0.57	7.01	0.122	1.57	5.9

Table A6. Scenario 6 June through October volume average results for the Link-Keno reach of the Klamath River, Oregon.

[**Abbreviations:** °C, degrees Celsius; mg/L, milligram per liter; µg/L, microgram per liter]

Scenario	June through October in-reach volume average											
	Water temperature (°C)	Dissolved oxygen (mg/L)	pH	Ammonia (mg/L)	Nitrate (mg/L)	Ortho-phosphorus (mg/L)	Chlorophyll *a* (µg/L)	Particulate organic carbon (mg/L)	Dissolved organic carbon (mg/L)	Total phosphorus (mg/L)	Total nitrogen (mg/L)	Sediment (1st-order) (mg/L)
2006												
1a Base case	18.9	4.42	8.34	0.458	0.060	0.105	84.1	3.12	10.6	0.224	2.27	18.7
6a 25 percent decrease, June–October	18.9	5.15	8.50	0.390	0.066	0.103	66.9	2.46	10.5	0.215	2.12	14.4
6b 50 percent decrease, June–October	18.9	5.89	8.67	0.315	0.070	0.100	48.8	1.78	10.4	0.206	1.95	10.5
6c 90 percent decrease, June–October	18.9	7.05	8.90	0.181	0.074	0.096	16.5	0.62	10.3	0.192	1.66	4.6
6d 25 percent decrease, entire year	18.9	5.18	8.51	0.389	0.066	0.102	66.8	2.45	10.5	0.215	2.12	14.1
6e 50 percent decrease, entire year	18.9	5.95	8.68	0.313	0.071	0.100	48.6	1.77	10.4	0.206	1.95	9.9
6f 90 percent decrease, entire year	18.9	7.17	8.93	0.176	0.074	0.096	16.1	0.61	10.3	0.191	1.65	3.7
2007												
1a Base case	18.5	4.60	8.18	0.566	0.071	0.121	85.0	3.51	11.0	0.247	2.50	24.4
6a 25 percent decrease, June–October	18.5	5.38	8.36	0.479	0.080	0.117	68.2	2.80	11.0	0.237	2.32	18.6
6b 50 percent decrease, June–October	18.5	6.19	8.57	0.383	0.086	0.114	50.0	2.06	10.9	0.226	2.13	13.7
6c 90 percent decrease, June–October	18.5	7.47	8.90	0.199	0.090	0.110	15.6	0.77	10.7	0.210	1.76	7.3
6d 25 percent decrease, entire year	18.5	5.45	8.38	0.479	0.080	0.117	68.1	2.79	11.0	0.237	2.32	17.6
6e 50 percent decrease, entire year	18.5	6.35	8.61	0.381	0.087	0.114	49.9	2.06	10.9	0.226	2.13	12.1
6f 90 percent decrease, entire year	18.5	7.77	8.95	0.194	0.091	0.110	15.4	0.77	10.7	0.209	1.76	4.5
2008												
1a Base case	18.7	3.17	8.43	0.448	0.044	0.093	67.0	4.61	9.65	0.217	2.32	34.0
6a 25 percent decrease, June–October	18.7	4.03	8.62	0.387	0.056	0.090	53.8	3.55	9.58	0.204	2.13	24.7
6b 50 percent decrease, June–October	18.7	5.06	8.88	0.313	0.065	0.087	39.8	2.51	9.51	0.191	1.92	18.0
6c 90 percent decrease, June–October	18.7	6.86	9.25	0.168	0.073	0.082	13.7	0.77	9.40	0.170	1.55	10.9
6d 25 percent decrease, entire year	18.7	4.10	8.64	0.387	0.056	0.090	53.8	3.54	9.58	0.204	2.13	22.9
6e 50 percent decrease, entire year	18.7	5.24	8.91	0.313	0.066	0.087	39.7	2.48	9.51	0.191	1.92	14.9
6f 90 percent decrease, entire year	18.7	7.21	9.30	0.166	0.074	0.082	13.5	0.74	9.40	0.170	1.54	5.6
2009												
1a Base case	18.4	2.85	8.18	0.463	0.067	0.081	43.3	5.08	7.95	0.194	2.20	32.6
6a 25 percent decrease, June–October	18.4	3.70	8.36	0.415	0.084	0.078	35.3	3.88	7.90	0.180	2.01	23.0
6b 50 percent decrease, June–October	18.5	4.79	8.59	0.354	0.099	0.075	26.8	2.71	7.86	0.167	1.81	15.9
6c 90 percent decrease, June–October	18.5	6.77	8.97	0.236	0.112	0.070	10.8	0.82	7.79	0.145	1.45	7.91
6d 25 percent decrease, entire year	18.4	3.80	8.38	0.412	0.085	0.078	35.2	3.87	7.90	0.180	2.01	21.7
6e 50 percent decrease, entire year	18.5	5.00	8.63	0.348	0.101	0.075	26.5	2.69	7.86	0.166	1.80	13.7
6f 90 percent decrease, entire year	18.5	7.20	9.04	0.223	0.114	0.069	10.3	0.78	7.79	0.144	1.44	4.6

Table A7. Scenario 7 annual volume average results for the Link-Keno reach of the Klamath River, Oregon.

[Most scenarios routed the entire river flow through the wetlands; scenarios 7b and 7e treated 250 cubic feet per second (ft^3/s). **Abbreviations:** Seg, model segment; °C, degrees Celsius; mg/L, milligram per liter; µg/L, microgram per liter]

Scenario	Annual in-reach volume average											
	Water temperature (°C)	Dissolved oxygen (mg/L)	pH	Ammonia (mg/L)	Nitrate (mg/L)	Ortho-phosphorus (mg/L)	Chlorophyll *a* (µg/L)	Particulate organic carbon (mg/L)	Dissolved organic carbon (mg/L)	Total phosphorus (mg/L)	Total nitrogen (mg/L)	Sediment (1st-order) (mg/L)
2006												
1a Base case	11.2	7.91	8.12	0.398	0.161	0.078	41.1	1.72	8.25	0.165	1.84	15.5
7a Seg 28, 50 percent decrease	11.3	8.23	8.18	0.381	0.163	0.077	34.8	1.43	8.17	0.161	1.78	13.5
7b Seg 28, 50 percent decrease, 250 ft^3/s	11.2	8.00	8.13	0.394	0.162	0.078	39.7	1.65	8.23	0.164	1.82	14.9
7c Seg 28, 90 percent decrease	11.3	8.47	8.23	0.365	0.164	0.077	29.0	1.18	8.10	0.157	1.72	12.3
7d Seg 54, 50 percent decrease	11.3	8.04	8.14	0.392	0.162	0.078	38.2	1.57	8.21	0.163	1.81	14.6
7e Seg 54, 50 percent decrease, 250 ft^3/s	11.2	7.95	8.12	0.396	0.161	0.078	40.4	1.68	8.24	0.164	1.83	15.2
7f Seg 54, 90 percent decrease	11.3	8.14	8.17	0.386	0.162	0.078	35.6	1.45	8.17	0.161	1.78	14.1
2007												
1a Base case	11.8	7.60	7.97	0.531	0.204	0.076	36.5	1.84	8.22	0.163	2.03	17.0
7a Seg 28, 50 percent decrease	11.8	7.94	8.04	0.510	0.206	0.075	31.9	1.53	8.13	0.159	1.96	14.3
7b Seg 28, 50 percent decrease, 250 ft^3/s	11.8	7.66	7.98	0.526	0.204	0.076	35.1	1.74	8.20	0.162	2.01	16.1
7c Seg 28, 90 percent decrease	11.8	8.22	8.09	0.492	0.208	0.074	27.2	1.26	8.04	0.155	1.89	12.8
7d Seg 54, 50 percent decrease	11.8	7.74	8.00	0.522	0.204	0.076	34.7	1.68	8.17	0.161	1.99	15.9
7e Seg 54, 50 percent decrease, 250 ft^3/s	11.8	7.65	7.98	0.529	0.204	0.076	35.9	1.78	8.20	0.163	2.01	16.6
7f Seg 54, 90 percent decrease	11.8	7.86	8.02	0.516	0.205	0.075	32.9	1.55	8.13	0.159	1.96	15.3
2008												
1a Base case	11.2	6.75	8.06	0.626	0.199	0.073	32.9	2.54	7.97	0.164	2.17	23.7
7a Seg 28, 50 percent decrease	11.2	7.11	8.11	0.612	0.202	0.072	28.9	2.10	7.87	0.159	2.10	19.3
7b Seg 28, 50 percent decrease, 250 ft^3/s	11.2	6.85	8.07	0.622	0.201	0.073	31.8	2.40	7.94	0.162	2.15	22.2
7c Seg 28, 90 percent decrease	11.2	7.43	8.18	0.597	0.204	0.071	25.2	1.75	7.80	0.154	2.03	17.1
7d Seg 54, 50 percent decrease	11.2	6.90	8.08	0.621	0.200	0.073	31.3	2.32	7.91	0.162	2.13	21.9
7e Seg 54, 50 percent decrease, 250 ft^3/s	11.2	6.80	8.06	0.624	0.200	0.073	32.4	2.46	7.95	0.163	2.16	23.1
7f Seg 54, 90 percent decrease	11.2	7.04	8.10	0.615	0.201	0.072	29.8	2.15	7.88	0.159	2.10	20.9
2009												
1a Base case	11.4	6.95	8.03	0.518	0.159	0.061	22.9	2.67	7.08	0.145	1.93	23.3
7a Seg 28, 50 percent decrease	11.4	7.30	8.09	0.507	0.163	0.060	20.0	2.16	7.01	0.140	1.85	18.3
7b Seg 28, 50 percent decrease, 250 ft^3/s	11.4	7.05	8.04	0.515	0.160	0.060	22.1	2.51	7.06	0.144	1.90	21.6
7c Seg 28, 90 percent decrease	11.4	7.64	8.15	0.492	0.165	0.059	17.1	1.77	6.96	0.135	1.78	15.8
7d Seg 54, 50 percent decrease	11.4	7.09	8.05	0.514	0.160	0.060	21.6	2.42	7.04	0.143	1.89	21.3
7e Seg 54, 50 percent decrease, 250 ft^3/s	11.4	7.00	8.00	0.517	0.159	0.060	22.5	2.59	7.07	0.144	1.91	22.6
7f Seg 54, 90 percent decrease	11.4	7.24	8.08	0.508	0.160	0.060	20.4	2.23	7.01	0.140	1.85	20.2

Table A8. Scenario 7 June through October volume average results for the Link-Keno reach of the Klamath River, Oregon.

[Most scenarios treated the entire river flow; scenarios 7b and 7e treated 250 cubic feet per second (ft^3/s). **Abbreviations:** Seg, model segment; °C, degrees Celsius; mg/L, milligram per liter; µg/L, microgram per liter]

Scenario	June through October in-reach volume average											
	Water temperature (°C)	Dissolved oxygen (mg/L)	pH	Ammonia (mg/L)	Nitrate (mg/L)	Ortho-phosphorus (mg/L)	Chlorophyll *a* (µg/L)	Particulate organic carbon (mg/L)	Dissolved organic carbon (mg/L)	Total phosphorus (mg/L)	Total nitrogen (mg/L)	Sediment (1st-order) (mg/L)
2006												
1a Base case	18.9	4.42	8.34	0.458	0.060	0.105	84.1	3.12	10.6	0.224	2.27	18.7
7a Seg 28, 50 percent decrease	18.9	5.15	8.49	0.417	0.065	0.103	70.2	2.45	10.4	0.214	2.13	15.0
7b Seg 28, 50 percent decrease, 250 ft^3/s	18.9	4.62	8.38	0.448	0.062	0.105	80.8	2.93	10.5	0.221	2.23	17.5
7c Seg 28, 90 percent decrease	18.9	5.71	8.61	0.378	0.067	0.102	57.2	1.89	10.2	0.207	1.99	12.8
7d Seg 54, 50 percent decrease	18.9	4.74	8.41	0.443	0.062	0.104	77.8	2.78	10.4	0.219	2.20	17.0
7e Seg 54, 50 percent decrease, 250 ft^3/s	18.9	4.52	8.36	0.454	0.061	0.105	82.5	3.01	10.5	0.223	2.25	18.1
7f Seg 54, 90 percent decrease	18.9	4.99	8.46	0.429	0.062	0.104	72.3	2.51	10.4	0.216	2.14	16.1
2007												
1a Base case	18.5	4.60	8.18	0.566	0.071	0.121	85.0	3.51	11.0	0.247	2.50	24.4
7a Seg 28, 50 percent decrease	18.4	5.41	8.34	0.515	0.078	0.118	73.6	2.78	10.8	0.236	2.33	18.5
7b Seg 28, 50 percent decrease, 250 ft^3/s	18.4	4.76	8.20	0.553	0.072	0.120	81.4	3.26	11.0	0.244	2.45	22.4
7c Seg 28, 90 percent decrease	18.4	6.07	8.47	0.469	0.082	0.116	62.4	2.17	10.6	0.227	2.18	15.4
7d Seg 54, 50 percent decrease	18.4	4.96	8.25	0.544	0.072	0.120	80.5	3.15	10.9	0.242	2.42	21.9
7e Seg 54, 50 percent decrease, 250 ft^3/s	18.5	4.73	8.20	0.560	0.072	0.120	83.5	3.38	11.0	0.245	2.48	23.4
7f Seg 54, 90 percent decrease	18.4	5.26	8.31	0.528	0.073	0.119	76.5	2.85	10.8	0.237	2.35	20.7
2008												
1a Base case	18.7	3.17	8.43	0.448	0.044	0.093	67.0	4.61	9.65	0.217	2.32	34.0
7a Seg 28, 50 percent decrease	18.7	3.87	8.56	0.417	0.051	0.091	58.1	3.59	9.42	0.204	2.14	25.3
7b Seg 28, 50 percent decrease, 250 ft^3/s	18.7	3.35	8.46	0.439	0.046	0.093	64.5	4.29	9.58	0.213	2.26	31.2
7c Seg 28, 90 percent decrease	18.8	4.61	8.71	0.379	0.055	0.090	49.6	2.79	9.26	0.194	1.98	21.0
7d Seg 54, 50 percent decrease	18.7	3.47	8.48	0.436	0.046	0.092	63.6	4.11	9.53	0.211	2.23	30.5
7e Seg 54, 50 percent decrease, 250 ft^3/s	18.7	3.26	8.45	0.444	0.045	0.093	66.0	4.44	9.61	0.215	2.29	32.8
7f Seg 54, 90 percent decrease	18.7	3.79	8.54	0.421	0.047	0.092	60.5	3.73	9.43	0.206	2.16	28.7
2009												
1a Base case	18.4	2.85	8.18	0.463	0.067	0.081	43.3	5.08	7.95	0.194	2.20	32.6
7a Seg 28, 50 percent decrease	18.5	3.56	8.30	0.437	0.076	0.079	37.4	3.91	7.78	0.181	2.01	23.0
7b Seg 28, 50 percent decrease, 250 ft^3/s	18.5	3.03	8.21	0.456	0.070	0.080	41.6	4.71	7.90	0.190	2.14	29.4
7c Seg 28, 90 percent decrease	18.5	4.33	8.46	0.402	0.083	0.077	31.7	3.01	7.66	0.170	1.85	18.2
7d Seg 54, 50 percent decrease	18.5	3.15	8.23	0.453	0.069	0.080	40.9	4.51	7.86	0.188	2.11	28.7
7e Seg 54, 50 percent decrease, 250 ft^3/s	18.5	2.95	8.20	0.460	0.068	0.080	42.5	4.88	7.92	0.192	2.17	31.2
7f Seg 54, 90 percent decrease	18.5	3.50	8.31	0.439	0.070	0.079	38.7	4.08	7.80	0.182	2.03	26.8

Table A9. Scenario 8 annual volume average results for the Link-Keno reach of the Klamath River, Oregon.

[**Abbreviations:** LRDC, Lost River Diversion Channel; KSD, Klamath Straits Drain; °C, degrees Celsius; mg/L, milligram per liter; µg/L, microgram per liter]

Scenario	Annual in-reach volume average											
	Water temperature (°C)	Dissolved oxygen (mg/L)	pH	Ammonia (mg/L)	Nitrate (mg/L)	Ortho-phosphorus (mg/L)	Chlorophyll *a* (µg/L)	Particulate organic carbon (mg/L)	Dissolved organic carbon (mg/L)	Total phosphorus (mg/L)	Total nitrogen (mg/L)	Sediment (1st-order) (mg/L)
2006												
1a Base case	11.2	7.91	8.12	0.398	0.161	0.078	41.1	1.72	8.25	0.165	1.84	15.5
8a Flow to LRDC	11.3	7.97	8.10	0.394	0.164	0.084	38.6	1.64	8.26	0.170	1.83	14.7
8b Flow to KSD	11.2	7.95	8.08	0.400	0.163	0.084	36.7	1.61	8.42	0.171	1.85	14.7
8c Flow to LRDC and KSD	11.3	7.96	8.09	0.397	0.164	0.084	37.5	1.62	8.34	0.170	1.84	14.7
2007												
1a Base case	11.8	7.60	7.97	0.531	0.204	0.076	36.5	1.84	8.22	0.163	2.03	17.0
8a Flow to LRDC	11.9	7.56	7.96	0.523	0.206	0.081	33.9	1.73	8.13	0.166	1.99	16.1
8b Flow to KSD	11.8	7.64	7.94	0.546	0.207	0.083	31.3	1.69	8.44	0.171	2.05	16.1
8c Flow to LRDC and KSD	11.8	7.60	7.94	0.535	0.207	0.082	32.5	1.71	8.30	0.169	2.03	16.1
2008												
1a Base case	11.2	6.75	8.06	0.626	0.199	0.073	32.9	2.54	7.97	0.164	2.17	23.7
8a Flow to LRDC	11.3	6.77	8.00	0.628	0.202	0.077	31.1	2.40	7.98	0.167	2.16	22.5
8b Flow to KSD	11.2	6.82	8.00	0.638	0.204	0.079	29.1	2.33	8.19	0.171	2.19	22.3
8c Flow to LRDC and KSD	11.2	6.79	8.01	0.633	0.203	0.078	30.1	2.37	8.08	0.169	2.18	22.4
2009												
1a Base case	11.4	6.95	8.03	0.518	0.159	0.061	22.9	2.67	7.08	0.145	1.93	23.3
8a Flow to LRDC	11.4	6.96	8.02	0.520	0.159	0.067	22.2	2.53	7.08	0.151	1.91	22.1
8b Flow to KSD	11.3	7.00	7.99	0.524	0.159	0.066	20.9	2.46	7.33	0.151	1.94	22.2
8c Flow to LRDC and KSD	11.4	6.98	8.00	0.522	0.159	0.066	21.5	2.50	7.21	0.151	1.93	22.2

Table A10. Scenario 8 June through October volume average results for the Link-Keno reach of the Klamath River, Oregon.

[**Abbreviations:** LRDC, Lost River Diversion Channel; KSD, Klamath Straits Drain; °C, degrees Celsius; mg/L, milligram per liter; µg/L, microgram per liter]

Scenario	Annual in-reach volume average											
	Water temperature (°C)	Dissolved oxygen (mg/L)	pH	Ammonia (mg/L)	Nitrate (mg/L)	Ortho-phosphorus (mg/L)	Chlorophyll *a* (µg/L)	Particulate organic carbon (mg/L)	Dissolved organic carbon (mg/L)	Total phosphorus (mg/L)	Total nitrogen (mg/L)	Sediment (1st-order) (mg/L)
2006												
1a Base case	18.9	4.42	8.34	0.458	0.060	0.105	84.1	3.12	10.6	0.224	2.27	18.7
8a Flow to LRDC	18.9	4.55	8.29	0.453	0.069	0.121	77.3	2.89	10.6	0.238	2.25	17.2
8b Flow to KSD	18.9	4.44	8.23	0.469	0.065	0.120	72.9	2.83	11.0	0.240	2.31	17.3
8c Flow to LRDC and KSD	18.9	4.49	8.26	0.460	0.067	0.119	74.8	2.86	10.8	0.238	2.28	17.3
2007												
1a Base case	18.5	4.60	8.18	0.566	0.071	0.121	85.0	3.51	11.0	0.247	2.50	24.4
8a Flow to LRDC	18.4	4.52	8.14	0.548	0.078	0.132	77.4	3.20	10.8	0.253	2.42	22.6
8b Flow to KSD	18.5	4.62	8.08	0.609	0.078	0.140	71.5	3.13	11.6	0.268	2.58	22.5
8c Flow to LRDC and KSD	18.4	4.58	8.11	0.579	0.079	0.136	74.3	3.17	11.2	0.261	2.50	22.5
2008												
1a Base case	18.7	3.17	8.43	0.448	0.044	0.093	67.0	4.61	9.65	0.217	2.32	34.0
8a Flow to LRDC	18.7	3.18	8.36	0.457	0.051	0.104	62.0	4.24	9.66	0.224	2.29	31.7
8b Flow to KSD	18.7	3.27	8.28	0.483	0.055	0.110	57.4	4.08	10.2	0.234	2.37	31.1
8c Flow to LRDC and KSD	18.7	3.21	8.32	0.470	0.053	0.106	59.7	4.17	9.94	0.229	2.33	31.6
2009												
1a Base case	18.4	2.85	8.18	0.463	0.067	0.081	43.3	5.08	7.95	0.194	2.20	32.6
8a Flow to LRDC	18.5	2.86	8.15	0.470	0.068	0.097	41.1	4.69	7.96	0.207	2.16	30.6
8b Flow to KSD	18.5	2.92	8.08	0.479	0.067	0.094	38.2	4.54	8.61	0.209	2.23	30.4
8c Flow to LRDC and KSD	18.5	2.88	8.10	0.475	0.067	0.095	39.6	4.63	8.29	0.207	2.20	30.6

Table A11. Scenario 9 dissolved oxygen supplementation annual volume average results for the Link-Keno reach of the Klamath River, Oregon.

[**Abbreviations:** DO, dissolved oxygen; °C, degrees Celsius; mg/L, milligram per liter; µg/L, microgram per liter]

Scenario		Annual in-reach volume average											
		Water temperature °C	Dissolved oxygen (mg/L)	pH	Ammonia (mg/L)	Nitrate (mg/L)	Ortho-phosphorus (mg/L)	Chlorophyll *a* (µg/L)	Particulate organic carbon (mg/L)	Dissolved organic carbon (mg/L)	Total phosphorus (mg/L)	Total nitrogen (mg/L)	Sediment (1st-order) (mg/L)
2006													
1a	Base case	11.2	7.91	8.12	0.398	0.161	0.078	41.1	1.72	8.25	0.165	1.84	15.5
9a	DO saturation, segment 7 (Railroad Bridge)	11.2	8.35	8.12	0.394	0.164	0.077	41.1	1.72	8.23	0.164	1.84	14.9
9b	DO saturation, segment 21 (Highway 97)	11.2	8.51	8.13	0.392	0.165	0.078	40.7	1.71	8.23	0.164	1.83	14.8
9c	DO saturation, segment 38 (Miller Island)	11.2	8.33	8.11	0.397	0.163	0.078	41.0	1.71	8.24	0.165	1.84	15.2
9d	DO supersaturation, segment 7 (Railroad Bridge)	11.2	9.08	8.10	0.399	0.166	0.078	41.0	1.71	8.24	0.165	1.84	15.0
9e	DO supersaturation, segment 21 (Highway 97)	11.2	9.21	8.10	0.399	0.166	0.078	41.0	1.71	8.24	0.165	1.84	15.0
9f	DO supersaturation, segment 38 (Miller Island)	11.3	9.23	8.13	0.394	0.167	0.078	40.4	1.71	8.23	0.164	1.84	14.6
2007													
1a	Base case	11.8	7.60	7.97	0.531	0.204	0.076	36.5	1.84	8.22	0.163	2.03	17.0
9a	DO saturation, segment 7 (Railroad Bridge)	11.8	7.74	7.95	0.532	0.205	0.075	37.1	1.85	8.24	0.162	2.03	16.8
9b	DO saturation, segment 21 (Highway 97)	11.8	7.88	7.95	0.535	0.207	0.076	36.8	1.84	8.23	0.164	2.03	16.4
9c	DO saturation, segment 38 (Miller Island)	11.8	7.88	7.95	0.535	0.205	0.076	36.6	1.83	8.23	0.164	2.03	16.2
9d	DO supersaturation, segment 7 (Railroad Bridge)	11.8	8.65	7.94	0.536	0.210	0.077	36.6	1.83	8.23	0.164	2.04	15.8
9e	DO supersaturation, segment 21 (Highway 97)	11.8	8.79	7.94	0.537	0.210	0.077	36.6	1.83	8.23	0.164	2.04	15.6
9f	DO supersaturation, segment 38 (Miller Island)	11.8	8.68	7.94	0.536	0.207	0.077	36.6	1.83	8.23	0.164	2.03	15.7
2008													
1a	Base case	11.2	6.75	8.06	0.626	0.199	0.073	32.9	2.54	7.97	0.164	2.17	23.7
9a	DO saturation, segment 7 (Railroad Bridge)	11.2	7.03	8.04	0.628	0.203	0.072	33.3	2.54	7.96	0.164	2.18	22.4
9b	DO saturation, segment 21 (Highway 97)	11.2	7.21	8.03	0.631	0.204	0.073	33.0	2.52	7.96	0.164	2.18	21.6
9c	DO saturation, segment 38 (Miller Island)	11.2	7.22	8.04	0.629	0.202	0.073	32.9	2.52	7.96	0.164	2.18	21.8
9d	DO supersaturation, segment 7 (Railroad Bridge)	11.2	7.75	8.03	0.633	0.206	0.073	32.8	2.51	7.96	0.164	2.18	21.0
9e	DO supersaturation, segment 21 (Highway 97)	11.2	7.89	8.02	0.634	0.207	0.073	32.8	2.50	7.96	0.164	2.18	20.5
9f	DO supersaturation, segment 38 (Miller Island)	11.2	7.81	8.03	0.631	0.203	0.073	32.8	2.51	7.96	0.164	2.18	21.0
2009													
1a	Base case	11.4	6.95	8.03	0.518	0.159	0.061	22.9	2.67	7.08	0.145	1.93	23.3
9a	DO saturation, segment 7 (Railroad Bridge)	11.3	7.27	8.00	0.522	0.164	0.060	23.1	2.67	7.07	0.144	1.94	21.9
9b	DO saturation, segment 21 (Highway 97)	11.3	7.44	7.99	0.524	0.166	0.061	23.0	2.65	7.07	0.146	1.94	21.0
9c	DO saturation, segment 38 (Miller Island)	11.4	7.45	8.00	0.522	0.163	0.061	22.9	2.65	7.07	0.145	1.93	21.0
9d	DO supersaturation, segment 7 (Railroad Bridge)	11.3	7.91	7.99	0.526	0.169	0.061	22.9	2.64	7.07	0.146	1.94	20.5
9e	DO supersaturation, segment 21 (Highway 97)	11.4	8.08	7.98	0.527	0.170	0.061	22.9	2.63	7.07	0.146	1.94	19.9
9f	DO supersaturation, segment 38 (Miller Island)	11.4	8.03	8.03	0.524	0.164	0.061	22.9	2.64	7.07	0.145	1.93	20.3

Table A12. Scenario 9 dissolved oxygen supplementation June through October volume average results for the Link-Keno reach of the Klamath River, Oregon.

[**Abbreviations:** DO, dissolved oxygen; °C, degrees Celsius; mg/L, milligram per liter; µg/L, microgram per liter]

Scenario		June through October in-reach volume average											
		Water temperature (°C)	Dissolved oxygen (mg/L)	pH	Ammonia (mg/L)	Nitrate (mg/L)	Ortho-phosphorus (mg/L)	Chlorophyll *a* (µg/L)	Particulate organic carbon (mg/L)	Dissolved organic carbon (mg/L)	Total phosphorus (mg/L)	Total nitrogen (mg/L)	Sediment (1st-order) (mg/L)
						2006							
1a	Base case	18.9	4.42	8.34	0.458	0.060	0.105	84.1	3.12	10.6	0.224	2.27	18.7
9a	DO saturation, segment 7 (Railroad Bridge)	19.0	5.43	8.36	0.454	0.068	0.103	84.9	3.14	10.6	0.222	2.28	17.3
9b	DO saturation, segment 21 (Highway 97)	19.0	5.84	8.38	0.449	0.070	0.104	83.8	3.11	10.6	0.223	2.27	17.2
9c	DO saturation, segment 38 (Miller Island)	18.9	5.42	8.32	0.461	0.065	0.105	84.0	3.10	10.6	0.224	2.28	17.9
9d	DO supersaturation, segment 7 (Railroad Bridge)	18.8	7.33	8.30	0.464	0.073	0.106	84.2	3.10	10.6	0.224	2.29	17.6
9e	DO supersaturation, segment 21 (Highway 97)	18.9	7.67	8.30	0.464	0.072	0.106	84.2	3.10	10.5	0.224	2.29	17.5
9f	DO supersaturation, segment 38 (Miller Island)	18.9	7.45	8.29	0.462	0.069	0.106	84.1	3.10	10.6	0.224	2.28	17.5
						2007							
1a	Base case	18.5	4.60	8.18	0.566	0.071	0.121	85.0	3.51	11.0	0.247	2.50	24.4
9a	DO saturation, segment 7 (Railroad Bridge)	18.4	4.99	8.13	0.568	0.074	0.117	85.9	3.51	11.1	0.243	2.51	23.7
9b	DO saturation, segment 21 (Highway 97)	18.4	5.35	8.12	0.575	0.078	0.122	85.2	3.49	11.0	0.248	2.52	22.9
9c	DO saturation, segment 38 (Miller Island)	18.4	5.35	8.12	0.575	0.075	0.122	84.6	3.48	11.0	0.248	2.51	22.5
9d	DO supersaturation, segment 7 (Railroad Bridge)	18.4	7.26	8.10	0.579	0.087	0.122	84.7	3.46	11.0	0.248	2.53	21.5
9e	DO supersaturation, segment 21 (Highway 97)	18.4	7.62	8.10	0.580	0.086	0.122	84.7	3.46	11.0	0.248	2.53	20.9
9f	DO supersaturation, segment 38 (Miller Island)	18.4	7.38	8.11	0.577	0.080	0.122	84.6	3.46	11.0	0.248	2.52	21.3
						2008							
1a	Base case	18.7	3.17	8.43	0.448	0.044	0.093	67.0	4.61	9.65	0.217	2.32	34.0
9a	DO saturation, segment 7 (Railroad Bridge)	18.7	3.80	8.38	0.456	0.052	0.092	68.0	4.61	9.63	0.216	2.34	31.3
9b	DO saturation, segment 21 (Highway 97)	18.7	4.22	8.37	0.463	0.056	0.094	67.3	4.57	9.63	0.218	2.34	29.8
9c	DO saturation, segment 38 (Miller Island)	18.7	4.27	8.38	0.458	0.050	0.094	66.9	4.57	9.63	0.217	2.33	30.0
9d	DO supersaturation, segment 7 (Railroad Bridge)	18.7	5.57	8.34	0.469	0.062	0.095	66.8	4.53	9.62	0.218	2.35	28.2
9e	DO supersaturation, segment 21 (Highway 97)	18.7	5.93	8.33	0.472	0.062	0.095	66.8	4.52	9.62	0.218	2.35	27.1
9f	DO supersaturation, segment 38 (Miller Island)	18.7	5.74	8.36	0.464	0.054	0.094	66.8	4.55	9.63	0.217	2.34	28.3
						2009							
1a	Base case	18.4	2.85	8.18	0.463	0.067	0.081	43.3	5.08	7.95	0.194	2.20	32.6
9a	DO saturation, segment 7 (Railroad Bridge)	18.4	3.59	8.11	0.474	0.079	0.079	43.8	5.07	7.93	0.192	2.22	29.7
9b	DO saturation, segment 21 (Highway 97)	18.4	3.98	8.08	0.481	0.085	0.082	43.4	5.02	7.93	0.195	2.23	28.0
9c	DO saturation, segment 38 (Miller Island)	18.5	4.02	8.11	0.476	0.077	0.081	43.2	5.03	7.94	0.194	2.22	28.0
9d	DO supersaturation, segment 7 (Railroad Bridge)	18.4	5.15	8.06	0.485	0.094	0.082	43.2	4.99	7.93	0.194	2.24	27.0
9e	DO supersaturation, segment 21 (Highway 97)	18.4	5.58	8.05	0.488	0.096	0.082	43.1	4.97	7.92	0.194	2.24	25.6
9f	DO supersaturation, segment 38 (Miller Island)	18.5	5.48	8.09	0.481	0.081	0.082	43.2	5.00	7.93	0.194	2.22	26.3

Table A13. Scenario 9 annual volume average results for the Link-Keno reach of the Klamath River, Oregon.

[**Abbreviations:** DO, dissolved oxygen; °C, degrees Celsius; m, meter; mg/L, milligram per liter; µg/L, microgram per liter]

Scenario	Annual in-reach volume average											
	Water temperature (°C)	Dissolved oxygen (mg/L)	pH	Ammonia (mg/L)	Nitrate (mg/L)	Ortho-phosphorus (mg/L)	Chlorophyll *a* (µg/L)	Particulate organic carbon (mg/L)	Dissolved organic carbon (mg/L)	Total phosphorus (mg/L)	Total nitrogen (mg/L)	Sediment (1st-order) (mg/L)
2006												
1a Base case	11.2	7.91	8.12	0.398	0.161	0.078	41.1	1.72	8.25	0.165	1.84	15.5
9g Shade, 10 m trees	11.1	7.84	8.10	0.396	0.161	0.079	40.3	1.69	8.24	0.165	1.83	15.3
9g Shade, 20 m trees	11.0	7.82	8.09	0.396	0.162	0.079	40.0	1.68	8.24	0.165	1.83	15.3
2007												
1a Base case	11.8	7.60	7.97	0.531	0.204	0.076	36.5	1.84	8.22	0.163	2.03	17.0
9g Shade, 10 m trees	11.7	7.43	7.93	0.527	0.203	0.076	35.7	1.79	8.21	0.163	2.01	16.7
9g Shade, 20 m trees	11.5	7.37	7.91	0.527	0.203	0.077	35.5	1.78	8.21	0.163	2.01	16.8
2008												
1a Base case	11.2	6.75	8.06	0.626	0.199	0.073	32.9	2.54	7.97	0.164	2.17	23.7
9g Shade, 10 m trees	11.1	6.67	7.97	0.622	0.199	0.073	32.3	2.51	7.96	0.164	2.16	23.4
9g Shade, 20 m trees	10.9	6.64	8.03	0.622	0.199	0.073	32.1	2.50	7.96	0.164	2.16	23.3
2009												
1a Base case	11.4	6.95	8.03	0.518	0.159	0.061	22.9	2.67	7.08	0.145	1.93	23.3
9g Shade, 10 m trees	11.2	6.90	8.01	0.516	0.159	0.061	22.5	2.65	7.07	0.145	1.92	23.2
9g Shade, 20 m trees	11.1	6.88	8.00	0.516	0.159	0.061	22.3	2.64	7.07	0.145	1.92	23.0

Table A14. Scenario 9 June through October volume average results for the Link-Keno reach of the Klamath River, Oregon.

[**Abbreviations:** DO, dissolved oxygen; °C, degrees Celsius; m, meter; mg/L, milligram per liter; µg/L, microgram per liter]

Scenario	June through October in-reach volume average											
	Water temperature (°C)	Dissolved oxygen (mg/L)	pH	Ammonia (mg/L)	Nitrate (mg/L)	Ortho-phosphorus (mg/L)	Chlorophyll *a* (µg/L)	Particulate organic carbon (mg/L)	Dissolved organic carbon (mg/L)	Total phosphorus (mg/L)	Total nitrogen (mg/L)	Sediment (1st-order) (mg/L)
2006												
1a Base case	18.9	4.42	8.34	0.458	0.060	0.105	84.1	3.12	10.6	0.224	2.27	18.7
9g Shade, 10 m trees	18.7	4.30	8.30	0.453	0.060	0.106	82.0	3.04	10.5	0.224	2.26	18.1
9g Shade, 20 m trees	18.5	4.27	8.29	0.452	0.061	0.106	81.3	3.02	10.5	0.224	2.25	17.9
2007												
1a Base case	18.5	4.60	8.18	0.566	0.071	0.121	85.0	3.51	11.0	0.247	2.50	24.4
9g Shade, 10 m trees	18.2	4.30	8.11	0.555	0.069	0.121	82.8	3.39	11.0	0.247	2.47	23.6
9g Shade, 20 m trees	18.0	4.16	8.09	0.555	0.067	0.122	82.0	3.35	11.0	0.247	2.46	23.6
2008												
1a Base case	18.7	3.17	8.43	0.448	0.044	0.093	67.0	4.61	9.65	0.217	2.32	34.0
9g Shade, 10 m trees	18.5	3.06	8.36	0.443	0.044	0.094	65.6	4.55	9.63	0.217	2.31	33.5
9g Shade, 20 m trees	18.3	3.03	8.39	0.442	0.044	0.094	65.1	4.52	9.62	0.217	2.30	33.1
2009												
1a Base case	18.4	2.85	8.18	0.463	0.067	0.081	43.3	5.08	7.95	0.194	2.20	32.6
9g Shade, 10 m trees	18.3	2.75	8.15	0.459	0.067	0.081	42.4	5.02	7.93	0.193	2.19	32.1
9g Shade, 20 m trees	18.1	2.72	8.14	0.459	0.067	0.081	42.0	5.00	7.92	0.193	2.18	31.7

Table A15. Scenario 10 annual volume-average results for the Link-Keno reach of the Klamath River, Oregon.

[**Abbreviations:** °C, degrees Celsius; mg/L, milligram per liter; µg/L, microgram per liter]

Scenario	Annual in-reach volume average											
	Water temperature (°C)	Dissolved oxygen (mg/L)	pH	Ammonia (mg/L)	Nitrate (mg/L)	Ortho-phosphorus (mg/L)	Chlorophyll *a* (µg/L)	Particulate organic carbon (mg/L)	Dissolved organic carbon (mg/L)	Total phosphorus (mg/L)	Total nitrogen (mg/L)	Sediment (1st-order) (mg/L)
	2007											
1a Base case	11.8	7.60	7.97	0.531	0.204	0.076	36.5	1.84	8.22	0.163	2.03	17.0
10a Minimum future temperature increase	12.4	7.54	7.96	0.531	0.204	0.076	36.4	1.83	8.21	0.163	2.02	16.6
10b Median future temperature increase	13.2	7.45	7.96	0.531	0.203	0.075	36.2	1.83	8.19	0.163	2.02	16.0
10c Maximum future temperature increase	14.2	7.35	7.95	0.531	0.202	0.075	36.1	1.82	8.18	0.162	2.02	15.6

Table A16. Scenario 10 June through October volume average concentrations for the Link-Keno reach of the Klamath River, Oregon.

[**Abbreviations:** °C, degrees Celsius; mg/L, milligram per liter; µg/L, microgram per liter]

Scenario	June through October in-reach volume average											
	Water temperature (°C)	Dissolved oxygen (mg/L)	pH	Ammonia (mg/L)	Nitrate (mg/L)	Ortho-phosphorus (mg/L)	Chlorophyll *a* (µg/L)	Particulate organic carbon (mg/L)	Dissolved organic carbon (mg/L)	Total phosphorus (mg/L)	Total nitrogen (mg/L)	Sediment (1st-order) (mg/L)
	2007											
1a Base case	18.5	4.60	8.18	0.566	0.071	0.121	85.0	3.51	11.0	0.247	2.50	24.4
10a Minimum future temperature increase	19.1	4.49	8.16	0.567	0.070	0.120	85.0	3.50	11.0	0.247	2.50	24.1
10b Median future temperature increase	19.9	4.35	8.14	0.570	0.069	0.120	85.0	3.49	11.0	0.246	2.50	23.8
10c Maximum future temperature increase	20.7	4.26	8.14	0.571	0.068	0.120	85.2	3.50	11.0	0.246	2.50	23.8