

KLAMATH RIVER WATER QUALITY SAMPLING FINAL 2018 ANNUAL REPORT

Prepared for the
KHSa Water Quality Monitoring Group

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Table of Contents

1.	Introduction.....	1
2.	Program Elements.....	2
3.	Baseline Program Water Quality Sampling.....	3
4.	Public Health Sampling.....	8
5.	Water Sample Collection.....	10
5.1.	Analytical Samples.....	10
5.2.	Field Measurements.....	11
5.3.	Quality Assurance of Samples.....	11
5.4.	Water Quality Analytical Methods.....	11
5.5.	Algae Sample Analytical Methods.....	11
6.	Baseline Program Water Quality Data.....	13
6.1.	Data Summary.....	13
6.1.1.	Major Tributaries (Boxplot).....	16
6.1.2.	Mainstem Klamath River (Boxplot).....	17
6.1.3.	Major Tributaries (Time Series).....	20
6.1.4.	Mainstem Klamath River (Time Series).....	21
7.	Public Health Water Quality Data.....	29
7.1.	Public Health Advisories.....	29
7.2.	Data Summary.....	31
8.	Summary.....	44
9.	References.....	45
Appendix A.	Baseline Water Quality Sampling Site Locations.....	A-1
Appendix B.	2018 Baseline Data Summary.....	B-1
Appendix C.	Selected Results of 2018 Baseline Phytoplankton Analysis.....	C-1
Appendix D.	2018 Public Health Data.....	D-1

List of Figures

Figure 1. 2018 KHSA Klamath River baseline monitoring and public health sampling sites.....	5
Figure 2. Phytoplankton species percent biovolume for eight locations in the Klamath River: September 2018.	15
Figure 3. Baseline data for discrete dissolved oxygen, dissolved organic carbon, total nitrogen, and total phosphorus for the Shasta, Scott, Salmon, and Trinity rivers with median (–), mean (◊), outliers (*), and extreme outliers (◉) identified (February 2018 – December 2018).....	16
Figure 4. Discrete dissolved oxygen concentration in the Klamath River from Link Dam to the Klamath River Estuary with median (–), mean (◊), outliers (*), and extreme outliers (◉) identified (February 2018 – December 2018). Note: Includes reservoir sites at Keno Reservoir at Miller Island (RM 246.0; Baseline), Copco Reservoir (RM 198.74; Baseline), and Iron Gate Reservoir (RM 190.19; Baseline). River mile on x-axis not to scale.....	17
Figure 5. Dissolved organic carbon in the Klamath River from Link Dam to the Klamath River Estuary with median (–), mean (◊), outliers (*), and extreme outliers (◉) identified (February 2018 – December 2018). Note: Includes reservoir sites at Keno Reservoir at Miller Island (RM 246.0; Baseline), Copco Reservoir (RM 198.74; Baseline), and Iron Gate Reservoir (RM 190.19; Baseline). River mile on x-axis not to scale.....	17
Figure 6. Total nitrogen in the Klamath River from Link Dam to the Klamath River Estuary with median (–), mean (◊), outliers (*), and extreme outliers (◉) identified (February 2018 – December 2018). Note: Includes reservoir sites at Keno Reservoir at Miller Island (RM 246.0; Baseline), Copco Reservoir (RM 198.74; Baseline), and Iron Gate Reservoir (RM 190.19; Baseline). River mile on x-axis not to scale. Extreme outlier of 12.64 mg/l in Iron Gate Reservoir (RM 190.19; Baseline) omitted.	18
Figure 7. Total phosphorus in the Klamath River from Link Dam to the Klamath River Estuary with median (–), mean (◊), outliers (*), and extreme outliers (◉) identified (February 2018 – December 2018). Note: Includes reservoir sites at Keno Reservoir at Miller Island (RM 246.0; Baseline), Copco Reservoir (RM 198.74; Baseline), and Iron Gate Reservoir (RM 190.19; Baseline). River mile on x-axis not to scale. Extreme outlier of 1.17 mg/l in Iron Gate Reservoir (RM 190.19; Baseline) omitted.	18
Figure 8. Microcystin in the Klamath River from Link Dam to the Klamath River Estuary with median (–), mean (◊), outliers (*), and extreme outliers (◉) identified (February 2018 – December 2018). Note: Includes reservoir sites at Keno Reservoir at Miller Island (RM 246.0; Baseline), Copco Reservoir (RM 198.74; Baseline), and Iron Gate Reservoir (RM 190.19; Baseline). River mile on x-axis not to scale. Extreme outlier of 570 µg/l in Iron Gate Reservoir (RM 190.19; Baseline) omitted. Mean of 104.3 µg/l Iron Gate Reservoir (RM 190.19; Baseline) omitted. No microcystin boxplots are included for River Mile 156.26 and 101.30 because there were fewer than six data points at each of these sites.	19
Figure 9. Continuous water temperature, dissolved oxygen, pH, and specific conductance data (2018) for the Shasta River, Scott River, Salmon River, and Trinity River.	20
Figure 10. Continuous water temperature, dissolved oxygen, pH, and specific conductance data (2018) for the Klamath River (KR) at Link Dam (RM 254.44; Baseline) and Klamath River above Keno Dam (surface) (RM 234.9).....	21
Figure 11. Continuous water temperature, dissolved oxygen, pH, and specific conductance data (2018) for the Klamath River below Iron Gate Dam (RM 189.73; Baseline), Klamath River below Seiad (RM 128.5; Baseline), Klamath River at Weitchpec (RM 43.5; Baseline), and Klamath River above Turwar (RM 8.0).	22
Figure 12. Discrete 2018 water temperature (T_w) measured during grab sampling and mean daily flow at USGS flow gage locations for: Link River at Klamath Falls (USGS Gage 11507500), Klamath River at Keno (USGS Gage 11509500), Klamath River below Iron Gate Dam (USGS Gage 11516530), Klamath River near Seiad Valley (USGS Gage 11520500), Klamath River at Orleans (USGS Gage 11523000), and Klamath River near Klamath (USGS Gage 11530500). Note the scale change for the secondary y-axis for Klamath River at Orleans (USGS) (RM 59.1; Baseline) and Klamath River near Klamath (RM 6.0; Baseline).....	23

Figure 13. Discrete 2018 dissolved oxygen (DO) measured during grab sampling and mean daily flow at USGS flow gage locations for: Link River at Klamath Falls (USGS Gage 11507500), Klamath River at Keno (USGS Gage 11509500), Klamath River below Iron Gate Dam (USGS Gage 11516530), Klamath River near Seiad Valley (USGS Gage 11520500), Klamath River at Orleans (USGS Gage 11523000), and Klamath River near Klamath (USGS Gage 11530500). Note the scale change for the secondary y-axis for Klamath River at Orleans (USGS) (RM 59.1; Baseline) and Klamath River near Klamath (RM 6.0; Baseline)..... 24

Figure 14. Discrete 2018 dissolved organic carbon (DOC) measured during grab sampling and mean daily flow at USGS flow gage locations for: Link River at Klamath Falls (USGS Gage 11507500), Klamath River at Keno (USGS Gage 11509500), Klamath River below Iron Gate Dam (USGS Gage 11516530), Klamath River near Seiad Valley (USGS Gage 11520500), Klamath River at Orleans (USGS Gage 11523000), and Klamath River near Klamath (USGS Gage 11530500). Note the scale change for the secondary y-axis for Klamath River at Orleans (USGS) (RM 59.1; Baseline) and Klamath River near Klamath (RM 6.0; Baseline)..... 25

Figure 15. Discrete 2018 total nitrogen (TN) measured during grab sampling and mean daily flow at USGS flow gage locations for: Link River at Klamath Falls (USGS Gage 11507500), Klamath River at Keno (USGS Gage 11509500), Klamath River below Iron Gate Dam (USGS Gage 11516530), Klamath River near Seiad Valley (USGS Gage 11520500), Klamath River at Orleans (USGS Gage 11523000), and Klamath River near Klamath (USGS Gage 11530500). Note the scale change for the secondary y-axis for Klamath River at Orleans (USGS) (RM 59.1; Baseline) and Klamath River near Klamath (RM 6.0; Baseline)..... 26

Figure 16. Discrete 2018 total phosphorus (TP) measured during grab sampling and mean daily flow at USGS flow gage locations for: Link River at Klamath Falls (USGS Gage 11507500), Klamath River at Keno (USGS Gage 11509500), Klamath River below Iron Gate Dam (USGS Gage 11516530), Klamath River near Seiad Valley (USGS Gage 11520500), Klamath River at Orleans (USGS Gage 11523000), and Klamath River near Klamath (USGS Gage 11530500). Note the scale change for the secondary y-axis for Klamath River at Orleans (USGS) (RM 59.1; Baseline) and Klamath River near Klamath (RM 6.0; Baseline)..... 27

Figure 17. Discrete 2018 microcystin (MCYN) measured during grab sampling and mean daily flow at USGS flow gage locations for: Link River at Klamath Falls (USGS Gage 11507500), Klamath River at Keno (USGS Gage 11509500), Klamath River below Iron Gate Dam (USGS Gage 11516530), Klamath River near Seiad Valley (USGS Gage 11520500), Klamath River at Orleans (USGS Gage 11523000), and Klamath River near Klamath (USGS Gage 11530500). Note the scale change for the secondary y-axis for Klamath River at Orleans (USGS) (RM 59.1; Baseline) and Klamath River near Klamath (RM 6.0; Baseline). Only surface samples are presented. Non-detect values are presented as zeros. 28

Figure 18. Microcystin concentrations and toxic algae cell counts from 2018 public health samples collected in Upper Klamath Lake at Eagle Ridge County Park (Public Health) and Upper Klamath Lake at Howard’s Bay Park (Public Health) (ND indicates non-detect results). Other potentially toxic cyanobacteria present at Upper Klamath Lake at Howard’s Bay Park (Public Health) included *Gloetrichia echinulate*..... 33

Figure 19. Microcystin concentrations and toxic algae cell counts from 2018 public health samples collected in Upper Klamath Lake at Moore Park (Public Health) (ND indicates non-detect results). 34

Figure 20. Microcystin concentrations and toxic algae cell counts from 2018 public health samples collected in Keno Reservoir at Keno Park (Public Health) and J.C. Boyle Reservoir at Topsy Campground (Public Health) (ND indicates non-detect results). Other potentially toxic cyanobacteria present at Keno Reservoir at Keno Park (Public Health) included *Limnothrix sp.* Other potentially toxic cyanobacteria present at J.C. Boyle Reservoir at Topsy Campground (Public Health) included *Planktothrix limosa*. 35

Figure 21. Microcystin concentrations and toxic algae cell counts from 2018 public health samples collected in Copco Reservoir at Copco Cove and Mallard Cove (ND indicates non-detect results). Other potentially toxic cyanobacteria present at Copco Reservoir at Copco Cove included *Planktothrix limosa*. Other potentially toxic cyanobacteria present at Copco Reservoir at Mallard Cove included *Planktothrix limosa*. 36

Figure 22. Microcystin concentrations and toxic algae cell counts from 2018 public health samples collected in Iron Gate Reservoir at Jay Williams Boat Ramp and Camp Creek (ND indicates non-detect results). Other potentially toxic cyanobacteria present at Iron Gate Reservoir at Jay Williams Boat Ramp included <i>Planktothrix sp.</i> Other potentially toxic cyanobacteria present at Iron Gate Reservoir at Camp Creek included <i>Planktothrix limosa</i>	37
Figure 23. Microcystin concentrations and toxic algae cell counts from 2018 public health samples collected in Klamath River Klamath River below Iron Gate Dam (RM 189.73; Public Health) and Klamath River at I-5 Rest Area (RM 179.20; Public Health) (ND indicates non-detect results).	38
Figure 24. Microcystin concentrations and toxic algae cell counts from 2018 public health samples collected at Klamath River at Brown Bear River Access (RM 150.00; Public Health) and Klamath River below Seiad (RM 128.5; Public Health) (ND indicates non-detect results).	39
Figure 25. Microcystin concentrations and toxic algae cell counts from 2018 public health samples collected in Klamath River below Happy Camp (RM 101.3; Public Health) and Klamath River at Orleans (USGS) (RM 59.1; Public Health) (ND indicates non-detect results).	40
Figure 26. Microcystin concentrations and toxic algae cell counts from 2018 public health samples collected at Klamath River at Weitchpec (RM 43.5; Public Health) and Klamath River near Klamath (RM 6.0; Public Health) (ND indicates non-detect results).	41
Figure 27. Microcystin concentrations and toxic algae cell counts from 2018 public health samples collected at Klamath River at South Slough (RM 0.1; Public Health) (ND indicates non-detect results).....	42
Figure 28. 2018 microcystin (MCYN) concentrations from public health program: at all public health sampling sites (top left), Oregon sites (top right), California reservoir sites (bottom left), and California Klamath River sites from Iron Gate Dam downstream (bottom right). ND (○) indicates non-detect results. Sites in Upper Klamath Lake and reservoirs were given approximate river miles to locate them appropriately on the graph.....	43

List of Tables

Table 1. 2018 Baseline monitoring locations, sampling frequency, and sampling entities.	6
Table 2. 2018 Klamath River public health monitoring locations, constituents, method, and sampling frequency.	9
Table 3. 2018 Analyzing laboratory method references, method detection limits (MDLs), and method reporting limits (RLs) for water quality constituents. Units presented in milligrams per liter (mg/L) or parts per million (ppm) unless otherwise noted. All unique MDLs and RLs are shown.....	12
Table 4. United States Geological Survey (USGS) flow gage locations for time series data.....	14
Table 5. Oregon Health Authority public health guideline value changes.	29
Table 6. Oregon Health Authority health advisories actions in 2018.....	29
Table 7. California State Water Resources Control Board (SWRCB) health advisories actions in 2018. ...	31

1. Introduction

On November 13, 2008, the United States, the states of California and Oregon, and PacifiCorp executed an Agreement in Principle (AIP) describing a framework for possible removal of PacifiCorp's dams on the Klamath River. Interim Measure 12 of the AIP stipulated a water quality monitoring program, including on-going monitoring of cyanobacteria (blue-green algae) and associated toxins. The Klamath Hydroelectric Settlement Agreement (KHSAs), signed on February 18, 2010 (subsequently amended on April 6, 2016), superseded the AIP. Interim Measure 15 (IM 15) - Water Quality Monitoring states that PacifiCorp shall fund (\$500,000 per year) long-term baseline water quality monitoring to support water quality improvement activities, dam removal studies, permitting studies, and form a long-term record to assess trends and other potential changes in the basin. This includes funding for cyanobacteria and cyanobacteria-generated toxin monitoring to protect public health. The monitoring is performed by an entity or entities agreed upon by the parties to the KHSAs and in consultation with the appropriate water quality agencies. The 2018 water quality monitoring program conducted under IM 15 represents the tenth year of water quality monitoring under the AIP and the KHSAs.

The monitoring program is a cooperative effort of the KHSAs Monitoring Group¹. This group developed the KHSAs IM 15 monitoring study plan that is located on PacifiCorp's Klamath website², as well as the Klamath Basin Monitoring Program (KBMP) website³. Actual monitoring is completed by a sub-set of the Monitoring Group that includes the Yurok Tribe, Karuk Tribe, PacifiCorp, the Oregon Department of Environmental Quality, and the U.S. Bureau of Reclamation (USBR). The program continues to collect data from sites along 254 miles of river and reservoirs from Link Dam near Klamath Falls in Oregon to the Klamath River Estuary in California. Annual planning and coordination meetings include the IM 15 Monitoring Group and interested stakeholders. The IM 15 Monitoring Group ensures that the intent of IM 15 is met, appropriate quality assurance protocols and standard operating procedures are in place, water quality conditions and sampling matters are tracked in a timely fashion, and the process is transparent.

This report summarizes the results from the 2018 baseline data collection, as well as the 2018 public health data collection. Four appendices accompany this report: the baseline sampling locations (Appendix A); the 2018 baseline grab sample results and field measurements (Appendix B); the phytoplankton species charts and biovolume graphs (Appendix C); and the 2018 public health data (Appendix D).

¹ The KHSAs Monitoring Group consists of representatives from the North Coast Regional Water Quality Control Board; Oregon Department of Environmental Quality; U.S. Environmental Protection Agency, Region IX; Karuk Tribe; Yurok Tribe; PacifiCorp; and U.S. Bureau of Reclamation.

² <https://www.pacificcorp.com/energy/hydro/klamath-river.html>

³ <http://kbmp.net/collaboration/klamath-hydroelectric-settlement-agreement-monitoring>

2. Program Elements

The primary elements of the IM 15 monitoring program included baseline and public health monitoring. The baseline water quality monitoring element included water quality grab samples, physical observations associated with these grab samples, water quality probe measurements and algae species data. The grab samples were collected for analytical determination of a suite of water quality constituents (Section 5.1). The water quality probes recorded observations at hourly or sub-hourly intervals. Parameters sampled by probes included water temperature, dissolved oxygen, specific conductivity, and pH at specific locations in the Klamath River (Table 1). The algae data in the baseline monitoring element included algae species identification and quantification from samples collected at each sampling location. The grab sample and water quality probe data and algae species quantification are presented in this report and are available in electronic form. Monitoring was carried out from February through December 2018.

The public health monitoring program consisted of sampling of algae species at specific sites within reservoirs and river reaches and is focused on toxin-producing algae species and algal toxin sampling. These results were presented in public health memoranda produced by the sampling entities throughout the season⁴. These memoranda were used to track phytoplankton and toxin conditions and supported management decisions to post and de-post reservoir and river reaches with public health advisory information. A summary of the 2018 public health monitoring program data is presented herein.

The KBMP hosts reports from previous years, associated program documents, and other materials and features that provide transparency to the KBMP process that are directly transferable to the IM 15 monitoring program. There are other Klamath River monitoring efforts outside of the IM 15 program that are sponsored by individual entities, including those that participate in the IM 15 program. However, only data collected under the IM 15 are included in this report.

⁴ PacifiCorp public health memoranda are available online at <https://www.pacificorp.com/energy/hydro/klamath-river.html>. All memoranda (including those from the Karuk and Yurok tribes) are available online at: <http://www.kbmp.net/bga>

3. Baseline Program Water Quality Sampling

In 2018, baseline sampling was conducted at 24 sites along the Klamath River and its tributaries, from Link Dam to the Klamath River Estuary (Figure 1), by the four sampling entities: USBR, PacifiCorp, Karuk Tribe, and Yurok Tribe. Sixteen of those sites were located on the mainstem of the Klamath River, four sites were located in the reservoirs on the Klamath River, and four sites were located on the major tributaries of the Klamath River (Shasta, Scott, Salmon, and Trinity rivers). Sampling locations, sampling frequency, and sampling entity vary across the study area (Table 1).

Discrete physical parameters (water temperature, dissolved oxygen, specific conductivity, and pH) were collected at all sites when grab samples were collected during the sampling year. Continuous physical parameters were collected at six sites, four of which are baseline program sites and two of which are near baseline program sites. Sondes were deployed to collect continuous water physical parameters at the following baseline program sites: Link Dam (RM 254.44; Baseline) (maintained by USBR), Klamath River below Iron Gate Dam (RM 189.73; Baseline) (maintained by PacifiCorp), Klamath River below Seiad (RM 128.5; Baseline) (maintained by the Karuk Tribe), and Klamath River at Weitchpec (RM 43.5; Baseline) (maintained by the Yurok Tribe).

One of the two non-baseline program locations for sonde deployment was Klamath River above Keno Dam, at River Mile 234.9, which is just upstream of Klamath River below Keno Dam near a U.S. Geological Survey (USGS) gage (RM 233.4; Baseline). This sonde was maintained by USGS, with USBR providing funding and oversight for its maintenance and deployment. While data collected upstream of Keno Dam is not a proxy for water quality conditions downstream of the dam, as conditions can differ in Keno Reservoir and in the Klamath River below Keno Dam, the sonde provided data to illustrate conditions at the downstream end of the reservoir prior to being released to Klamath River. The other non-baseline program location for sonde deployment was Klamath River above Turwar, at River Mile 8.0, which is upstream of the baseline sampling site Klamath River near Klamath (RM 6.0; Baseline). This sonde was maintained by the Yurok Tribe and provided the physical conditions of the mouth of the Klamath River upstream of the estuary.

Except for four sites, grab samples of all other baseline water quality constituents were collected monthly (Table 1). At Link Dam (RM 254.44; Baseline) and Klamath River below Iron Gate Dam (RM 189.73; Baseline) samples were collected bi-monthly from May through October and monthly for the remainder of the sampling season. At the Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline) and Klamath River above Shovel Creek (RM 206.42; Baseline) sites samples were collected bi-monthly from June through September and monthly for the remainder of the sampling season.

The following constituents were analyzed in 2018: inorganic nitrogen (total nitrogen, nitrate+nitrite, and ammonia), particulate nitrogen, particulate phosphorus, particulate inorganic phosphorus, inorganic phosphorus (total phosphorus and orthophosphate),

particulate carbon, dissolved organic carbon, total suspended solids, turbidity, chlorophyll-*a*, pheophytin, and microcystin. Phytoplankton species samples were also collected. Not all parameters were analyzed for samples from every site (Table 1). Data results from the 2018 baseline grab samples are presented in Appendix B.

The baseline program has gone through several revisions throughout its implementation. In 2016, the IM 15 sampling program substantially exceeded the available budget, and therefore changes were made to the 2017 baseline sampling plan to control costs. There were no changes made to the 2018 baseline sampling program compared to the 2017 baseline program.

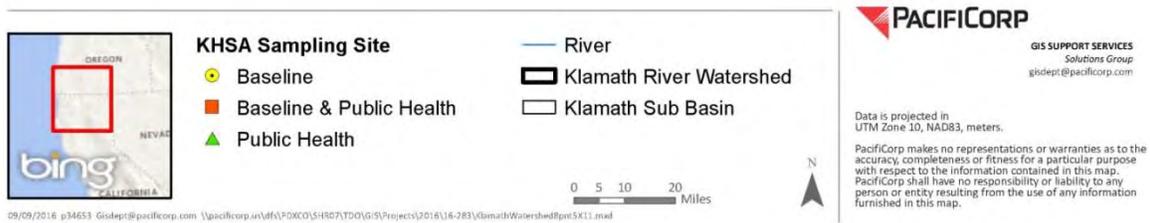
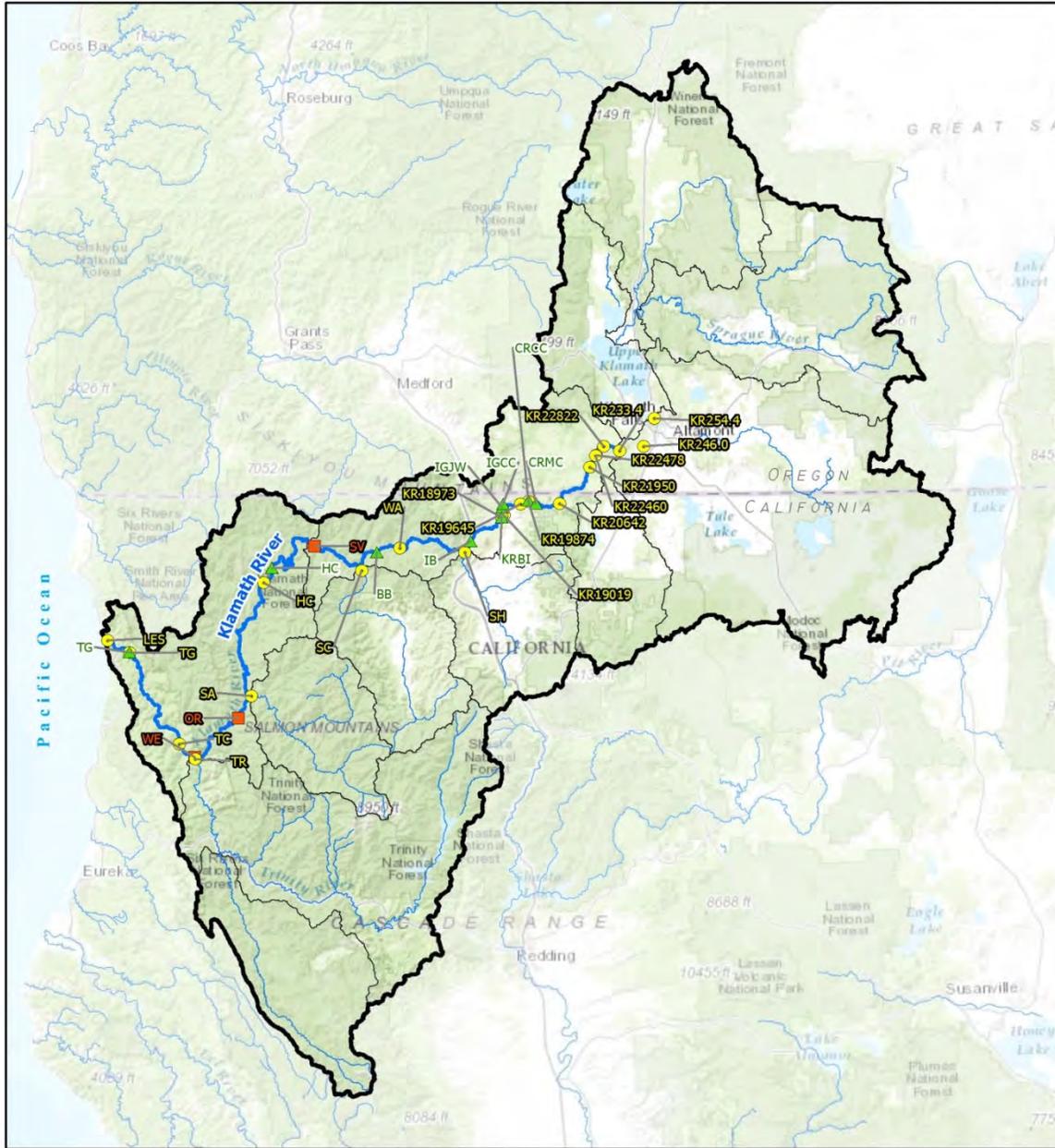


Figure 1. 2018 KHSA Klamath River baseline monitoring and public health sampling sites

Table 1. 2018 Baseline monitoring locations, sampling frequency, and sampling entities.

Monitoring Location		Water Temperature (°C)	Dissolved Oxygen (mg/l)	pH (log(H+))	Conductance (µS/cm)	Total N (mg/l)	Ammonia N (mg/l)	Nitrite + Nitrate (mg/l)	Total P (mg/L)	Ortho P (mg/L)	Particulate P & Particulate Inorganic P (mg/l)	Dissolved Organic N & P (mg/l)	Particulate and Dissolved C (mg/l)	Particulate N (mg/l)	TSS (mg/l)	Alkalinity (mg/l)	Water Column chl _a /Phaeo (µg/l)	Phytoplankton species	Microcystin (µg/l)	LCMS confirmation	Turbidity (NTU)	Sampling Entity
Site ID	Sampling Method:	T,P	P	P	P	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
KR25444	Link Dam (RM 254.44; Baseline)	H	H	H	H	M/BM	M/BM	M/BM	M/BM	M/BM	M/BM	M/BM	M/BM	M/BM	M/BM	M/BM	M/BM	M/BM	M/BM	M/BM	M2/BM2	USBR
KR24600	Keno Reservoir at Miller Island (RM 246.0; Baseline)	H	H	H	H	M2	M2	M2	M2	M2			M2		M2	M2	M2	M2	M/S	M/S	M2	USBR
KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	H	D	D	D	M2/BM2	M2/BM2	M2/BM2	M2/BM2	M2/BM2	M		M	M	M	M2/BM2**	M	M/S	M/S		M2/BM2	USBR
KR22822	Klamath River above J.C. Boyle Reservoir (RM 228.22; Baseline)																					Dropped
KR22478	J.C. Boyle Reservoir (RM 224.78; Baseline) ^a																					Dropped
KR22460	Klamath River below J.C. Boyle Dam (RM 224.60; Baseline)	P	D	D	D	M	M	M	M	M			M		M	M	M	M/S	M/S			PacifiCorp
KR21950	Klamath River below USGS Gage (RM 219.50; Baseline)	P	D	D	D	M	M	M	M	M			M		M	M	M	M/S	M/S		M	PacifiCorp
KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	P	D	D	D	M3/BM2	M3/BM2	M3/BM2	M3/BM2	M3/BM2	M		M	M	M	M	M	M/S	M/S		M	PacifiCorp
KR19874	Copco Reservoir (RM 198.74; Baseline) ^b	VP	VP	VP	VP	M	M	M	M	M			M		M	M	M	M/S	M/S			PacifiCorp
KR19645	Klamath River below Copco Dam (RM 196.45; Baseline)	P	D	D	D	M	M	M	M	M			M		M	M	M	M-/S	M/S			PacifiCorp
KR19019	Iron Gate Reservoir (RM 190.19; Baseline) ^c	VP	VP	VP	VP	M	M	M	M	M			M		M	M	M	M/S	M/S			PacifiCorp
KR18973	Klamath River below Iron Gate Dam (RM 189.73; Baseline)	H	H	H	H	M2/BM	M2/BM	M2/BM	M2/BM	M2/BM	M2/BM		M2/BM	M2/BM	M2/BM	M2/BM	M2/BM	M2/BM	M2/BM	BM/S	M2/BM	PacifiCorp
KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	H	D	D	D	M	M	M	M	M			M		M	*	M	M/S	M/S	S2		Karuk
KR12850	Klamath River below Seiad (RM 128.5; Baseline)	H	H	H	H	M	M	M	M	M	M		M	M	M	*	M	M/S	M/S		M	Karuk
KR10130	Klamath River below Happy Camp (RM 101.3; Baseline)	H	D	D	D	M	M	M	M	M			M		M	*	M	M/S	M/S			Karuk
KR05910	Klamath River at Orleans (USGS) (RM 59.1; Baseline)	H	H	H	H	M	M	M	M	M			M		M	M	M	M/S	M/S		M	Karuk
KR04350	Klamath River at Weitchpec (RM 43.5; Baseline)	H	H	H	H	M	M	M	M	M			M		M	*	M	M/S	M/S	S2		Yurok
KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	H	H	H	H	M	M	M	M	M			M		M	*	M	M/S	M/S			Yurok
KR00600	Klamath River near Klamath (RM 6.0; Baseline) ^d	H	H	H	H	M	M	M	M	M	M		M	M	M	*	M	M/S	M/S		M	Yurok
KR00050	Klamath River Estuary (RM 0.5; Baseline) ^e	HP	D	D	D	M	M	M	M	M			M		M	*	M	M/S	M/S			Yurok
SH00000	Shasta River near mouth (Baseline)	H	H	H	H	M	M	M	M	M			M		M	*	M	*			M	Karuk
SC00000	Scott River near mouth (Baseline)	H	H	H	H	M	M	M	M	M			M		M	*	M	*			M	Karuk
SA00000	Salmon River near mouth (Baseline)	H	H	H	H	M	M	M	M	M			M		M	*	M	*			M	Karuk
TR00000	Trinity River near mouth (Baseline)	H	H	H	H	M	M	M	M	M			M		M	*	M	*			M	Yurok

Notes:

^a Sampling at one depth in J.C. Boyle reservoir (0.5 m depth = surface)

^b Sampling at three depths in Copco Reservoir (0.5 m below surface, thermocline, and 0.5 m above bottom)

^c Sampling at three depths in Iron Gate Reservoir (0.5 m below surface, thermocline, and 0.5 m above bottom)

^d Continuously deployed sonde is located 2 miles upstream of this site at Klamath above Turwar (RM8.0)

^e Hourly measurements at four locations (two in lower estuary, one in mid-estuary, and one in upper estuary) at two depths (0.5 m below surface and 0.5 m above bottom)

Key:

Sampling Method

T – Thermistor

P – Probe or data sonde

G – Grab sample

Sampling Frequency Codes

VP – vertical profile at stated sampling frequency

H – hourly measurements by sondes (in some instances sub-hourly data may be collected)

D – Discrete sample

HP - Hourly measurements in a profile

M – monthly sampling, excluding January and February

M2 – monthly sampling, excluding January

M/S – monthly sampling, seasonally from May through October

M/BM – Bi-monthly sampling May - October and monthly sampling the remainder of the year, excluding January

M2/BM – Bi-monthly sampling May - October and monthly sampling the remainder of the year, excluding January and February

M2/BM2 – Bi-monthly sampling June-September and monthly the remainder of the year, excluding January

M3/BM2– Bi-monthly sampling June-September and monthly the remainder of the year, excluding January and February

M- = Monthly Sampling with exception of December, January and February

BM/S –Bimonthly sampling July-Oct

S2 – monthly sampling July – Oct

***** - Not sampled This parameter is covered at a M/S frequency by Tribal Water Quality Workgroup

4. Public Health Sampling

To determine the potential risks to public health resulting from exposure to cyanobacteria and the toxins they produce in the Klamath River, public health monitoring included water column and shoreline water sampling within Upper Klamath Lake, the Klamath River, and reservoirs. Several species of cyanobacteria have been documented in the Klamath River, including but not limited to *Aphanizomenon flos aquae* (AFA), *Microcystis aeruginosa* (MSAE), *Dolichospermum flos aquae* (formerly *Anabaena flos aquae*), and *Planktothrix* sp. (formerly *Oscillatoria* sp.). Since 2004, Klamath River public health sampling has documented elevated levels of toxin-producing cyanobacteria, primarily MSAE and the associated toxin microcystin. Microcystins are a class of toxic chemical that is produced by some strains of cyanobacteria, including MSAE, and are released into the water when cyanobacterial cells die or cell membranes degrade. Microcystins at elevated levels can present risks to human health and to terrestrial and aquatic species, and result in impairments to a number of beneficial uses for the Klamath River system. Microcystin toxins can induce skin rashes, sore throat, oral blistering, nausea, gastroenteritis, fever, and liver toxicity (WHO 2003; OEHHA 2012).

There were no changes to the 2018 public health sampling program compared to the 2017 program.

Table 2. 2018 Klamath River public health monitoring locations, constituents, method, and sampling frequency.

Location	Site ID	River Mile	Phytoplankton Species	Microcystin - EPA	LC/MS/MS water for cyanotoxins	Sampling Entity
Upper Klamath Lake at Eagle Ridge County Park (Public Health)	UKEP	-	PPLK-1	BM7-mod	-	ODEQ
Upper Klamath Lake at Howard's Bay Park (Public Health)	UKHP	-	PPLK-1	BM7-mod	-	ODEQ
Upper Klamath Lake at Moore Park (Public Health)	UKMP	-	PPLK-1	BM7-mod	-	ODEQ
Keno Reservoir at Keno Park (Public Health)	KEKP	234.0	PPLK-1	BM7-mod	-	ODEQ
J.C. Boyle Reservoir at Topsy Campground (Public Health)	BRTC	225.0	PPLK-1	BM7-mod	-	ODEQ
Copco Reservoir at Mallard Cove (Public Health)	CRMC	200.8	PPLK-1	BM7-mod	S	PacifiCorp
Copco Reservoir at Copco Cove (Public Health)	CRCC	198.5	PPLK-1	BM7-mod	S	PacifiCorp
Iron Gate Reservoir at Camp Creek (Public Health)	IRCC	192.8	PPLK-1	BM7-mod	S	PacifiCorp
Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	IRJW	192.4	PPLK-1	BM7-mod	S	PacifiCorp
Klamath River below Iron Gate Dam (RM 189.73; Public Health)	KRBI	189.7	PPLK-1	BM7-mod	-	PacifiCorp
Klamath River at I-5 Rest Area (RM 179.20; Public Health)	KRIB	179.2	PPLK-2	BM/W	BM5	Karuk
Klamath River at Brown Bear River Access (RM 150.00; Public Health)	KRBB	150.0	PPLK-2	BM/W	-	Karuk
Klamath River below Seiad (RM 128.5; Public Health)	KRSV	128.5	PPLK-2	BM/W	-	Karuk
Klamath River below Happy Camp (RM 101.3; Public Health)	KRHC	101.3	PPLK-2	BM/W	-	Karuk
Klamath River at Orleans (USGS) (RM 59.1; Public Health)	KROR	59.1	PPLK-2	BM/W	-	Karuk
Klamath River at Weitchpec (RM 43.5; Public Health)	KRWE	43.5	PPLK-2	BM/W	-	Yurok
Klamath River near Klamath (RM 6.0; Public Health)	KRTG	6.0	PPLK-2	BM/W	-	Yurok
Klamath River at South Slough (RM 0.1; Public Health)	KRSS	0.1	PPLK-2	BM/W	-	Yurok

Key:

Frequency	# of sample events	Sampling frequency description
BM7-mod	13	1x month in May and at least 2x month June through November
BM/W	16	Timing of public health monitoring will be at the discretion of the sampling entity; however, weekly sampling usually occurs from July through September during peak algae bloom season.
BM5	10	2x month June-October
S	6	Analysis for anatoxin-a will be tied to results of anatoxin-a screening tests run on each public health sample; however, six test analysis are budgeted.
PPLK-1	5	One sample in May, two in June and two in July, all rushed for toxic species identification only.
PPLK -2	4	Two samples each in June and July, all rushed for toxic species identification only.

5. Water Sample Collection

Water samples included both water quality data collected with probes (temperature, dissolved oxygen, specific conductivity, and pH) and grab samples. Grab samples (i.e., samples analyzed for the physical and chemical constituents listed in Table 1 and Table 2) were sent to respective laboratories for analysis. For turbidity, USBR used a HACH 2100P Turbidimeter, and PacifiCorp used a HACH 2100Q Turbidimeter for measurements, rather than collecting grab samples.

5.1. Analytical Samples

Grab water samples were collected for analytical determination of:

- Nitrogen: ammonia (NH₄), nitrate+nitrite (NO₃+NO₂), total nitrogen (TN), particulate nitrogen (PN)
- Phosphorus: orthophosphate (OPO₄), total phosphorus (TP), particulate phosphorus (PP), and particulate inorganic phosphorus (PIP)
- Carbon: dissolved organic carbon (DOC) and particulate carbon (PC)
- Solids: total suspended solids (TSS)
- Alkalinity (ALKT)
- Turbidity (TURB)
- Phytoplankton (algae): chlorophyll-*a* and pheophytin
- Microcystin (MCYN) and anatoxin-a (if warranted)
- Algae species

Seven laboratories completed the analytical work during the field season:

- TestAmerica Applied Sciences Laboratory (TestAmerica) in Corvallis, Oregon⁵
 - <http://www.testamericainc.com>
- Oregon State University Cooperative Chemical Analytical Laboratory (CCAL) in Corvallis, Oregon.
 - <http://ccal.oregonstate.edu/>
- IEH Aquatic Research (IEH) in Seattle, Washington.
 - <http://www.iehinc.com/ieh-locations/>
- Chesapeake Biological Laboratories (CBL) in Solomons, Maryland
 - <http://www.umces.edu/cbl>
- EPA Region 9 (EPA) laboratory in Richmond, California
 - <http://www.epa.gov/region9/lab/>
- GreenWater Laboratories in Palatka, Florida
 - [https:// http://greenwaterlab.com/](https://http://greenwaterlab.com/)
- Aquatic Analysts in Friday Harbor, Washington

⁵ In March 2018, TestAmerica changed its focus and ceased analysis of general water quality constituents. Upon learning of this change, another lab was sought for the analysis of KHSa samples. After careful consideration of multiple laboratories, the Oregon State University Cooperative Chemical Analytical Laboratory (CCAL), located in Corvallis, Oregon, was selected.

5.2. Field Measurements

Water temperature, pH, specific conductivity, and dissolved oxygen were measured at all sampling sites. In some cases, sampling entities collected additional information (e.g., turbidity) during field visits. Field measurements were recorded at each site using either thermistors or water quality probes that were maintained and calibrated by each sampling entity. In addition to the vertical profiles in reservoirs and continuous time series monitoring (Table 1), physical water quality parameters were measured when grab samples were collected. Field measurements that were collected during grab sampling are included in the field data (Appendix B) while time series monitoring data are maintained by (and available from) each sampling entity.

5.3. Quality Assurance of Samples

Baseline monitoring samples were collected under individual entity Quality Assurance Project Plans, Standard Operating Procedures, and/or Sampling Analysis Plans (Karuk 2009; PacifiCorp 2008; USBR 2009; Yurok 2008). These methods have been compared and reviewed by the KHSA Working Group to ensure consistent sampling techniques are applied (KHSA-WG 2010).

Public health samples were collected according to the Standard Operating Procedure developed by the Klamath Blue Green Algae Working Group (www.kbmp.net/collaboration/klamath-hydroelectric-settlement-agreement-monitoring). Because of the risk to public health from toxins produced by cyanobacteria, initial public health samples are analyzed under a ‘rush’ order with Aquatic Analysts in Friday Harbor, Washington. During analysis, only potentially toxic cyanobacteria are identified and enumerated.

5.4. Water Quality Analytical Methods

TestAmerica, CCAL, IEH, and CBL used either Standard Methods or EPA analytical methods for analysis of nutrients, dissolved and particulate carbon, alkalinity, total suspended solids and turbidity (Table 3). Each laboratory used its own internal water quality control and assurance samples during analysis of the KHSA 2018 samples. Method detection limits (MDL) and reporting limits (RL) varied among the laboratories.

5.5. Algae Sample Analytical Methods

Analysis of chlorophyll-*a* and pheophytin was performed by CBL for samples collected by USBR and PacifiCorp, and by IEH for samples collected by the Karuk and Yurok tribes (Table 3). Algae species samples collected by USBR, PacifiCorp, Karuk Tribe, and Yurok Tribe were analyzed by Aquatic Analysts. Microcystin analysis was performed using the Enzyme-Linked ImmunoSorbent Assay (ELISA) method at the EPA laboratory. Additional microcystin analysis, as well as anatoxin-a analysis was completed by the GreenWater Laboratories using liquid chromatography-tandem mass spectrometry (LCMS/MS) for selected locations. GreenWater microcystin MDLs and RLs varied and are presented in Table D-2 in Appendix D. Algae species analysis method information for Aquatic Analysts is not presented because this analysis does not include MDLs or RLs.

Table 3. 2018 Analyzing laboratory method references, method detection limits (MDLs), and method reporting limits (RLs) for water quality constituents. Units presented in milligrams per liter (mg/L) or parts per million (ppm) unless otherwise noted. All unique MDLs and RLs are shown.

Constituent Name	Constituent ID	TestAmerica			CCAL			IEH			CBL			EPA			GreenWater		
		Method	MDL	RL	Method	MDL	RL	Method	MDL	RL	Method	MDL	RL	Method	MDL	RL	Method	MDL	RL
Alkalinity	ALKT	SM2320B	n/a	20.0	SM2320	0.2	0.6	SM18 2320B	0.70	1.0	-	-	-	-	-	-	-	-	-
Ammonia	NH4	EPA 350.1	0.024	0.10	EPA 350.1	0.01	0.032	SM18 4500NH3H	0.005	0.01	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon	DOC	SM5310B	0.2	0.5	SM5310B	0.05	0.16	SM20 5310B	0.10	0.25	-	-	-	-	-	-	-	-	-
Nitrate + Nitrite	NO3+NO2	EPA 353.2	0.015	0.05	EPA 353.3	0.001	0.003	SM18 4500N03F	0.006	0.01	-	-	-	-	-	-	-	-	-
Total Nitrogen	TN	SM4500-N C	0.086	0.20	SM4500-NO3 F	0.01	0.03	SM204500NC	0.03	0.05	-	-	-	-	-	-	-	-	-
Ortho-phosphate	OPO4	EPA 365.1	0.016	0.05	EPA 365.2	0.001	0.003	SM18 4500PF	0.001	0.001	-	-	-	-	-	-	-	-	-
Total Phosphorus	TP	EPA 365.4	0.0429	0.125	EPA 365.2	0.002	0.006	SM18 4500PF	0.001	0.002	-	-	-	-	-	-	-	-	-
Total Suspended Solids	TSS	SM2540D	0.6	5.0	SM2540B	0.01	0.032	SM20 2540D	0.25	0.5	-	-	-	-	-	-	-	-	-
Turbidity	TURB	-	-	-	-	-	-	SM20 2130B	0.10	0.10	-	-	-	-	-	-	-	-	-
Chlorophyll-a ³	CHLOR-A	-	-	-	-	-	-	SM1810200H-2b	0.1	0.1	EPA 445.0	0.68	0.68	-	-	-	-	-	-
Pheophytin	PHEO	-	-	-	-	-	-	SM1810200H-2b	0.1	0.1	EPA 445.0	0.38	0.38	-	-	-	-	-	-
Particulate Carbon	PC	-	-	-	-	-	-	-	-	-	EPA 440.0	0.0633	0.1899	-	-	-	-	-	-
Particulate Inorganic Phosphorus	PIP	-	-	-	-	-	-	-	-	-	EPA 365.1	0.0021	0.0063	-	-	-	-	-	-
Particulate Phosphorus	PP	-	-	-	-	-	-	-	-	-	EPA 365.1, ASPILA	0.0021	0.0063	-	-	-	-	-	-
Particulate Nitrogen	PN	-	-	-	-	-	-	-	-	-	EPA 440.0	0.0263	0.0789	-	-	-	-	-	-
Microcystin ³	MCYN	-	-	-	-	-	-	-	-	-	-	-	-	ELISA	0.10	0.15	-	-	-
Anatoxin-a ³	ANTX-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LCMS/MS	0.05 0.10	n/a

MDL – method detection limit RL – method reporting limit

³ Units for chlorophyll-a, microcystin, and anatoxin-a are in µg/L (or ppb).

6. Baseline Program Water Quality Data

Water quality samples for the 2018 IM 15 baseline water quality monitoring program were collected from February through December. Sampling crews from the various entities typically collected samples within a few days of each other. Sampling on the same day throughout the basin was infeasible because of other obligations, shipping constraints, travel considerations, and other factors. In most cases, all 24 sites (Figure 1) were sampled each month. There were periods when one or more sites were omitted or one or more constituents were not sampled. Data was reviewed by sampling entities before being compiled for presentation in this report. Compiled data from all baseline program sampling is presented in the appendices (Appendix B) and summarized below, except for time series data, which can be obtained from the individual sampling entities (Table 1). Selected results of algae species identification are presented below and in Appendix C.

6.1. Data Summary

Field measurements collected included water temperature, pH, specific conductivity, and dissolved oxygen. Chemical and biological water quality measurements include two types of algae related estimates (chlorophyll-*a* and pheophytin), alkalinity, two forms of carbon (dissolved organic and particulate), four forms of nitrogen (ammonia, nitrate+nitrite, total nitrogen, and particulate nitrogen), four forms of phosphorus (orthophosphate, total phosphorus, particulate phosphorus, and particulate inorganic phosphorus), total suspended solids, turbidity, and microcystin. Density and biovolume for algal species were also measured.

Data are summarized in this report to illustrate general spatial and temporal patterns during the 2018 sampling period. The data summary constituents presented include: dissolved oxygen, dissolved organic carbon, total nitrogen, total phosphorus, and microcystin. The mainstem sites and major tributaries (Shasta, Scott, Salmon, and Trinity rivers) are presented separately.

In addition to the dataset (Appendix B), data also are summarized in three formats:

- (1) Longitudinal boxplots⁶ based on seasonal grab sample data
- (2) Physical water quality sonde data (hourly) at specific locations
- (3) Charts and graphs representing the groups of algae and respective biovolumes at the sampling locations for March, June, September, and November.

The box plots and hourly sonde data are presented in the main report; however, because of the small sample size at each site during 2018, the boxplots presented in the annual report are not statistically robust and are included for illustration purposes only. Also, no boxplots were generated for sites with less than six points of data for a specific parameter in 2018; the

⁶ A box-and-whisker plot is a graphical way of presenting statistical parameters including median, mean, lower and upper quartiles, and outliers. The median value is represented by a horizontal line; a box (gray) is formed by the 25th quartile and 75th quartile and represents the inter-quartile range (IQR); the whiskers extend beyond the 1.5*IQR above and below the quartiles; and points beyond the whiskers are termed outliers. Outliers are values between 1.5 to 3 times the IQR. Extreme outliers are values greater than 3 times the IQR.

captions of the boxplot figures indicate the locations that were omitted due to lack of sufficient data.

Time series data are presented for summary constituents at locations on the Klamath River for which there are USGS flow gages (Table 4). While algae data are available for the May to October period, September percent biovolume are presented for illustration at six locations (Figure 2). These locations are: (1) Link Dam (RM 254.44; Baseline), (2) Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline), (3) Copco Reservoir (RM 198.74; Baseline), (4) Klamath River below Iron Gate Dam (RM 189.73; Baseline), (5) Klamath River at Weitchpec (RM 43.5; Baseline), and (7) Klamath River Estuary (RM 0.5; Baseline). Two sites which have had September biovolume data in past KHSA datasets did not have algae collected during September in 2018: (1) Klamath River below Seiad (RM 128.5; Baseline) and (2) Klamath River at Orleans (USGS) (RM 59.1; Baseline). Plots representing algae species for other months are presented in Appendix C.

Table 4. United States Geological Survey (USGS) flow gage locations for time series data.

USGS Location Name	River Mile (RM) <i>(approximate)</i>	USGS Gage Number
Link River at Klamath Falls, OR	254	11507500
Klamath River at Keno, OR	232	11509500
Klamath River below Iron Gate Dam, CA	190	11516530
Klamath River near Seiad Valley, CA	129	11520500
Klamath River at Orleans, CA	59	11523000
Klamath River near Klamath, CA	8	11530500

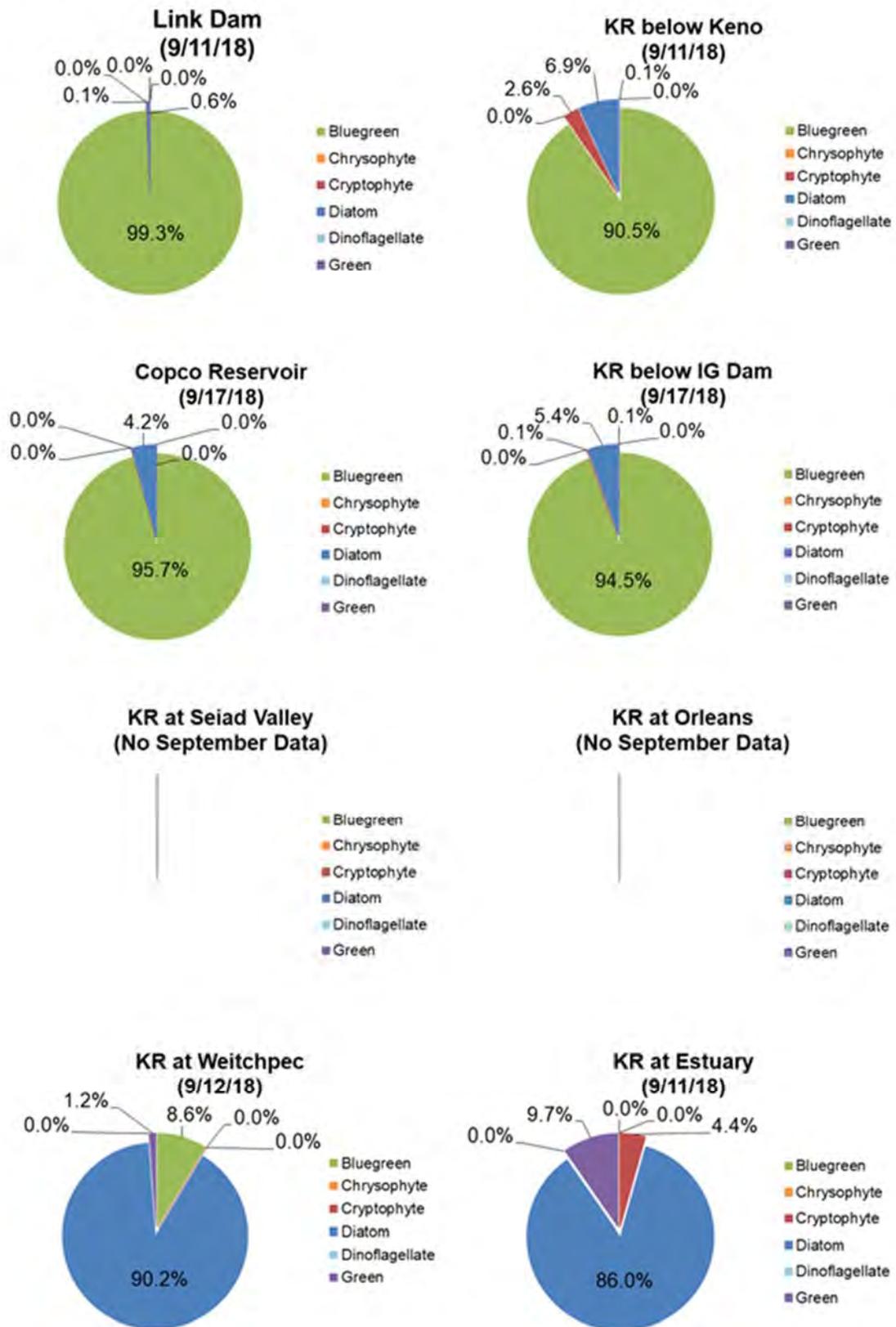


Figure 2. Phytoplankton species percent biovolume for eight locations in the Klamath River: September 2018.

6.1.1. Major Tributaries (Boxplot)

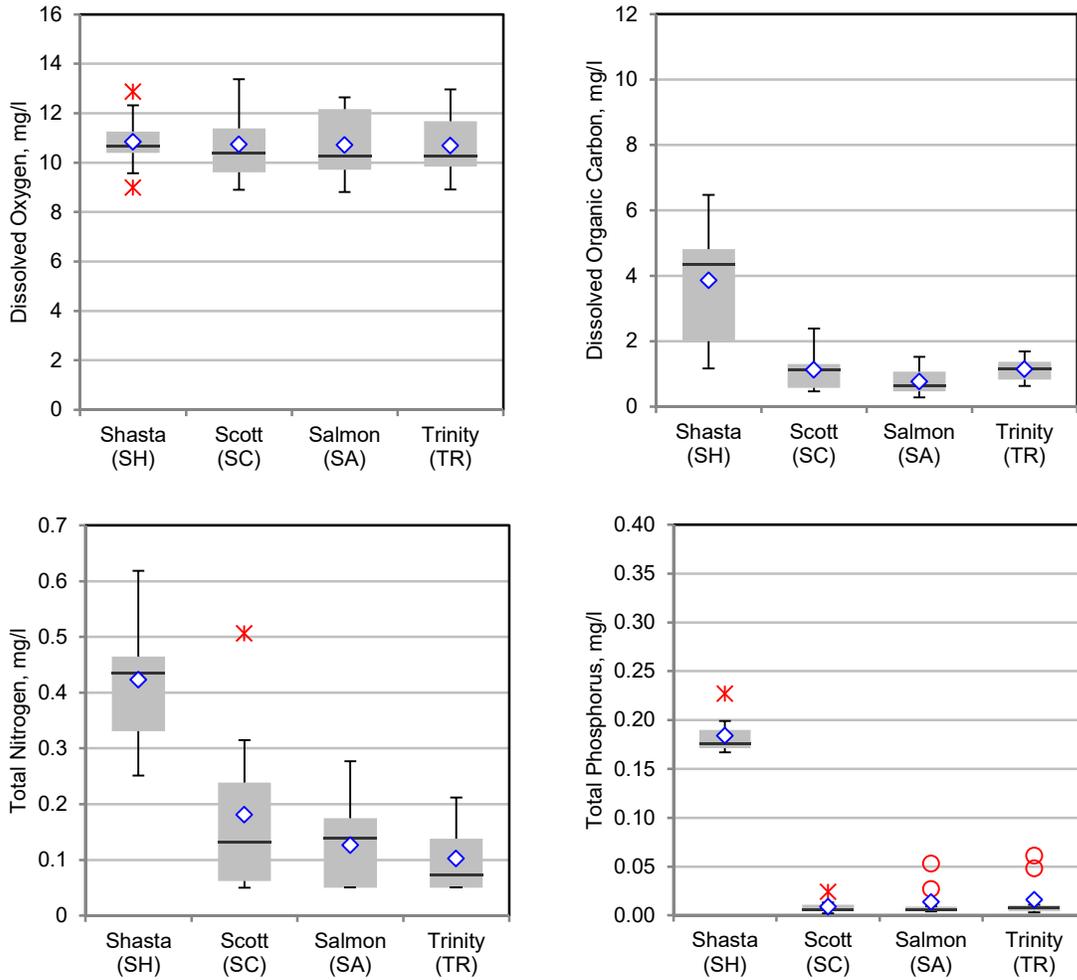


Figure 3. Baseline data for discrete dissolved oxygen, dissolved organic carbon, total nitrogen, and total phosphorus for the Shasta, Scott, Salmon, and Trinity rivers with median (—), mean (◇), outliers (*), and extreme outliers (○) identified (February 2018 – December 2018).

6.1.2. Mainstem Klamath River (Boxplot)

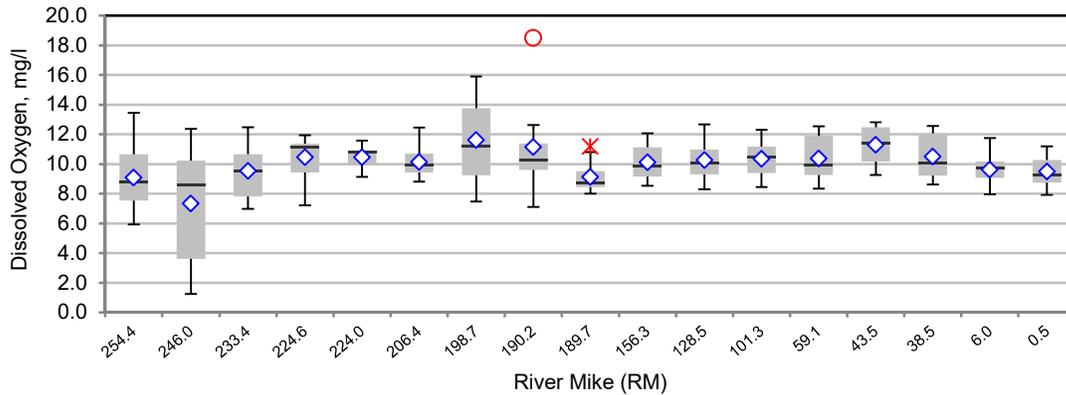


Figure 4. Discrete dissolved oxygen concentration in the Klamath River from Link Dam to the Klamath River Estuary with median (—), mean (◇), outliers (*), and extreme outliers (○) identified (February 2018 – December 2018). Note: Includes reservoir sites at Keno Reservoir at Miller Island (RM 246.0; Baseline), Copco Reservoir (RM 198.74; Baseline), and Iron Gate Reservoir (RM 190.19; Baseline). River mile on x-axis not to scale.

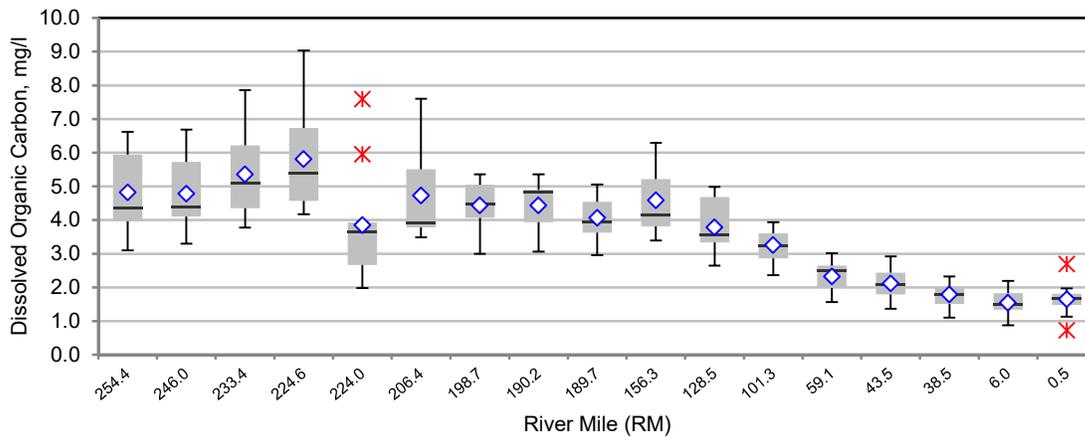


Figure 5. Dissolved organic carbon in the Klamath River from Link Dam to the Klamath River Estuary with median (—), mean (◇), outliers (*), and extreme outliers (○) identified (February 2018 – December 2018). Note: Includes reservoir sites at Keno Reservoir at Miller Island (RM 246.0; Baseline), Copco Reservoir (RM 198.74; Baseline), and Iron Gate Reservoir (RM 190.19; Baseline). River mile on x-axis not to scale.

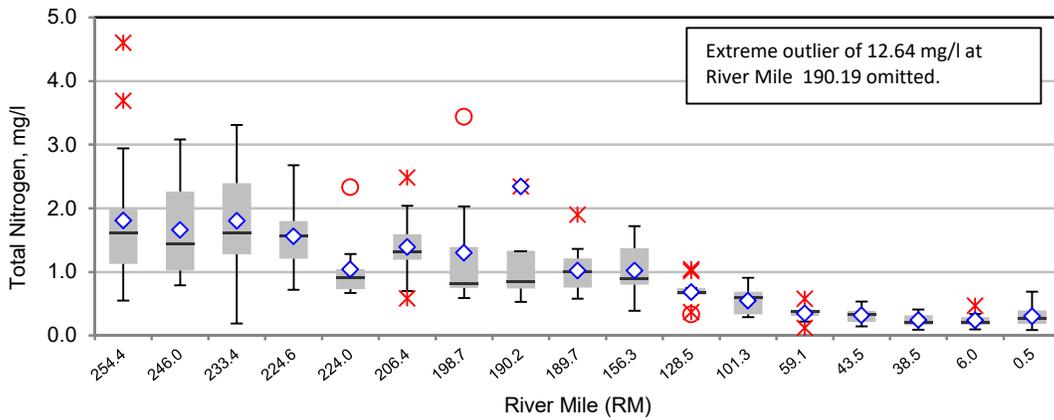


Figure 6. Total nitrogen in the Klamath River from Link Dam to the Klamath River Estuary with median (—), mean (◊), outliers (*), and extreme outliers (○) identified (February 2018 – December 2018). Note: Includes reservoir sites at Keno Reservoir at Miller Island (RM 246.0; Baseline), Copco Reservoir (RM 198.74; Baseline), and Iron Gate Reservoir (RM 190.19; Baseline). River mile on x-axis not to scale. Extreme outlier of 12.64 mg/l in Iron Gate Reservoir (RM 190.19; Baseline) omitted.

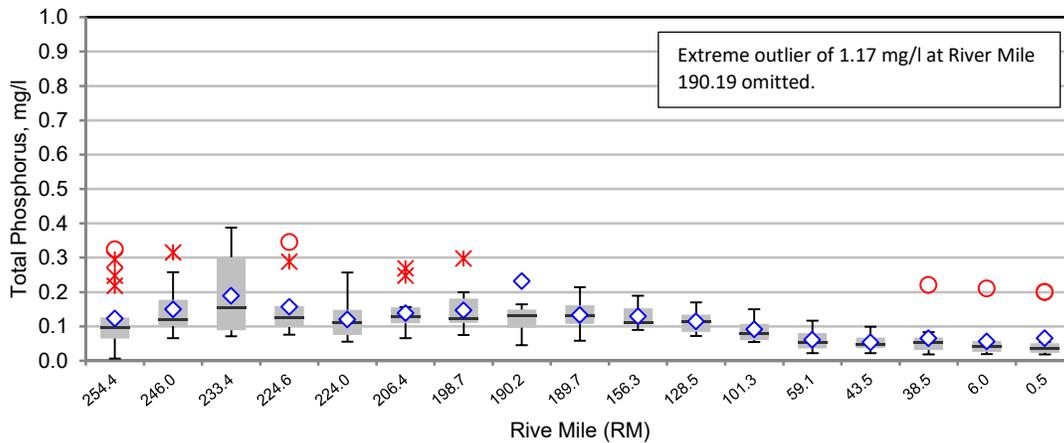


Figure 7. Total phosphorus in the Klamath River from Link Dam to the Klamath River Estuary with median (—), mean (◊), outliers (*), and extreme outliers (○) identified (February 2018 – December 2018). Note: Includes reservoir sites at Keno Reservoir at Miller Island (RM 246.0; Baseline), Copco Reservoir (RM 198.74; Baseline), and Iron Gate Reservoir (RM 190.19; Baseline). River mile on x-axis not to scale. Extreme outlier of 1.17 mg/l in Iron Gate Reservoir (RM 190.19; Baseline) omitted.

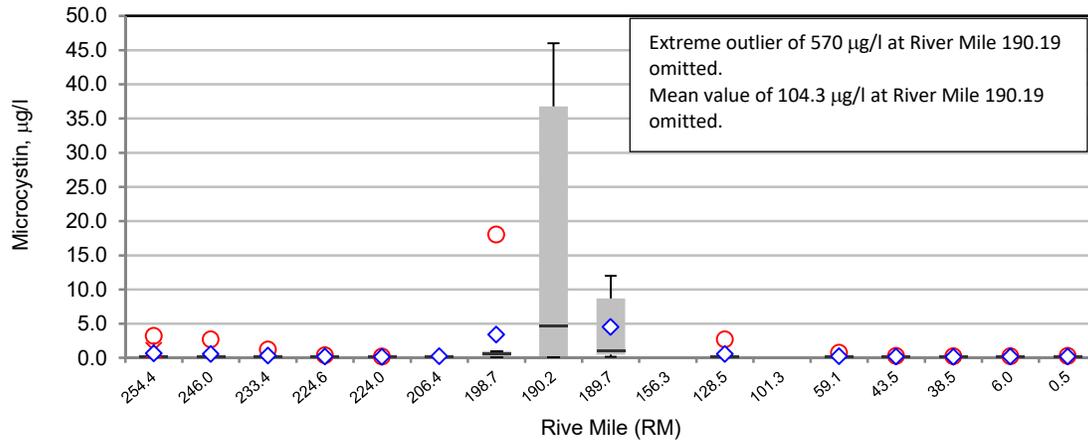


Figure 8. Microcystin in the Klamath River from Link Dam to the Klamath River Estuary with median (—), mean (◇), outliers (*), and extreme outliers (○) identified (February 2018 – December 2018). Note: Includes reservoir sites at Keno Reservoir at Miller Island (RM 246.0; Baseline), Copco Reservoir (RM 198.74; Baseline), and Iron Gate Reservoir (RM 190.19; Baseline). River mile on x-axis not to scale. Extreme outlier of 570 µg/l in Iron Gate Reservoir (RM 190.19; Baseline) omitted. Mean of 104.3 µg/l Iron Gate Reservoir (RM 190.19; Baseline) omitted. No microcystin boxplots are included for River Mile 156.26 and 101.30 because there were fewer than six microcystin data points at each of these sites.

6.1.3. Major Tributaries (Time Series)

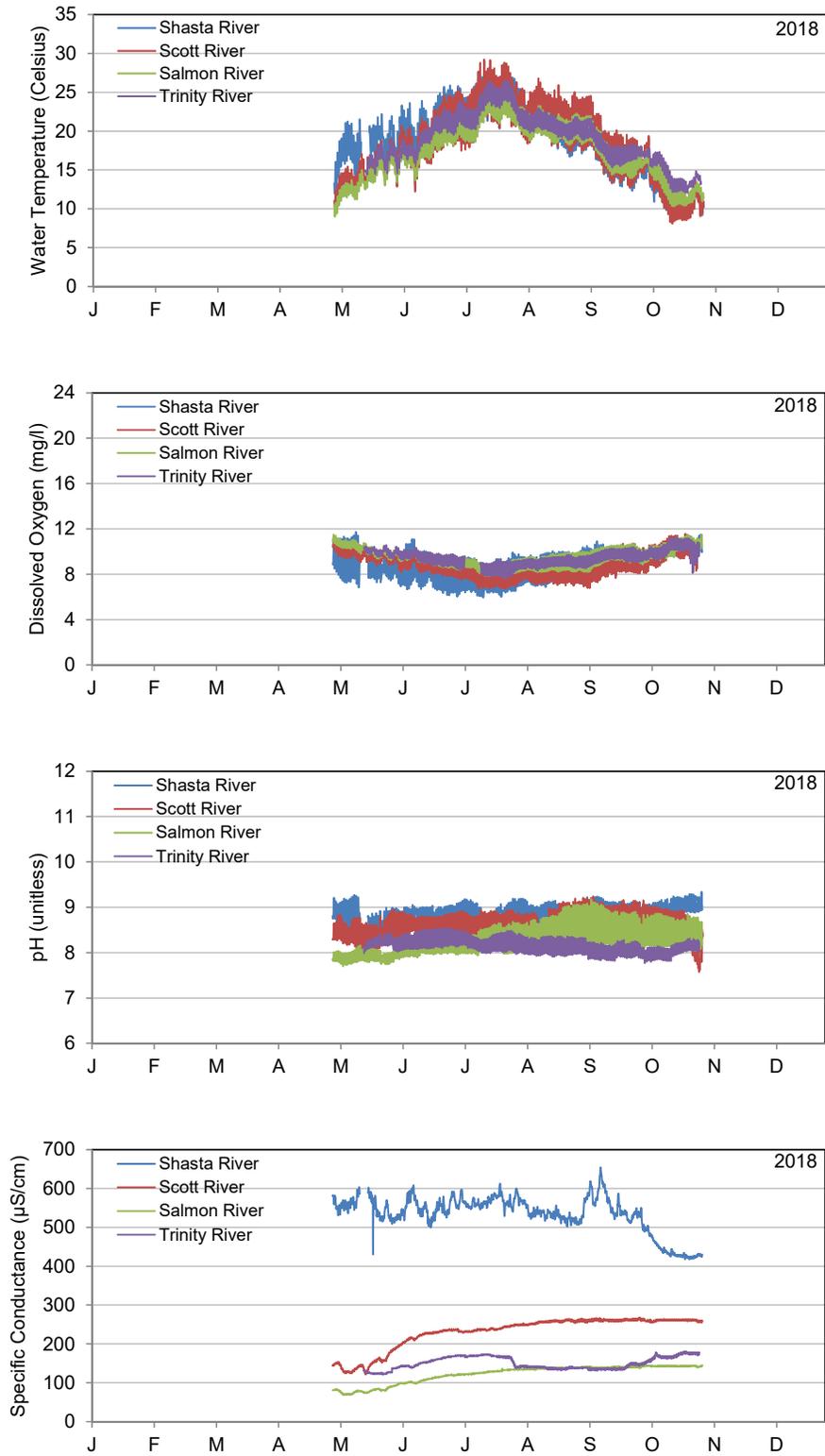


Figure 9. Continuous water temperature, dissolved oxygen, pH, and specific conductance data (2018) for the Shasta River, Scott River, Salmon River, and Trinity River.

6.1.4. Mainstem Klamath River (Time Series)

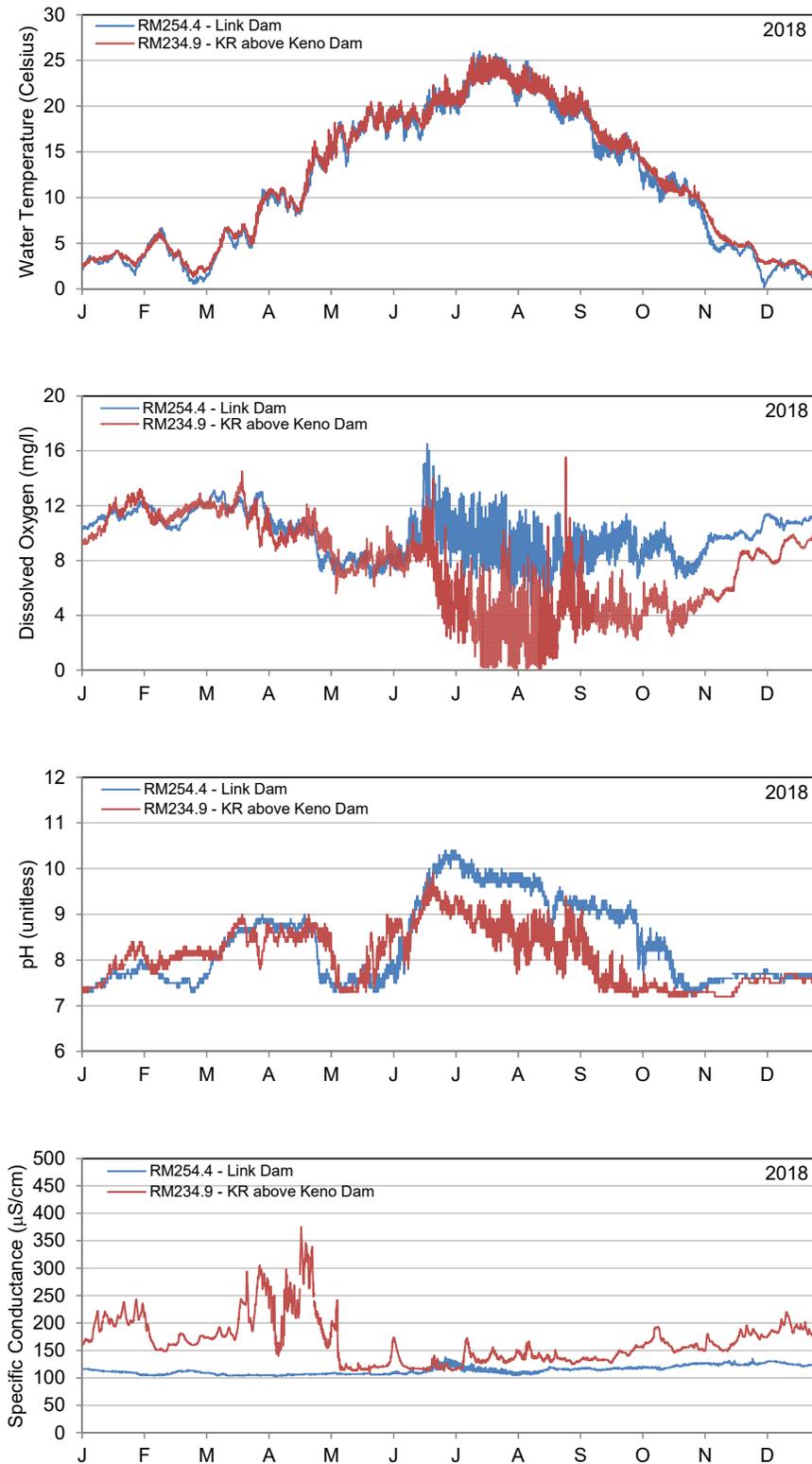


Figure 10. Continuous water temperature, dissolved oxygen, pH, and specific conductance data (2018) for the Klamath River (KR) at Link Dam (RM 254.44; Baseline) and Klamath River above Keno Dam (surface) (RM 234.9).

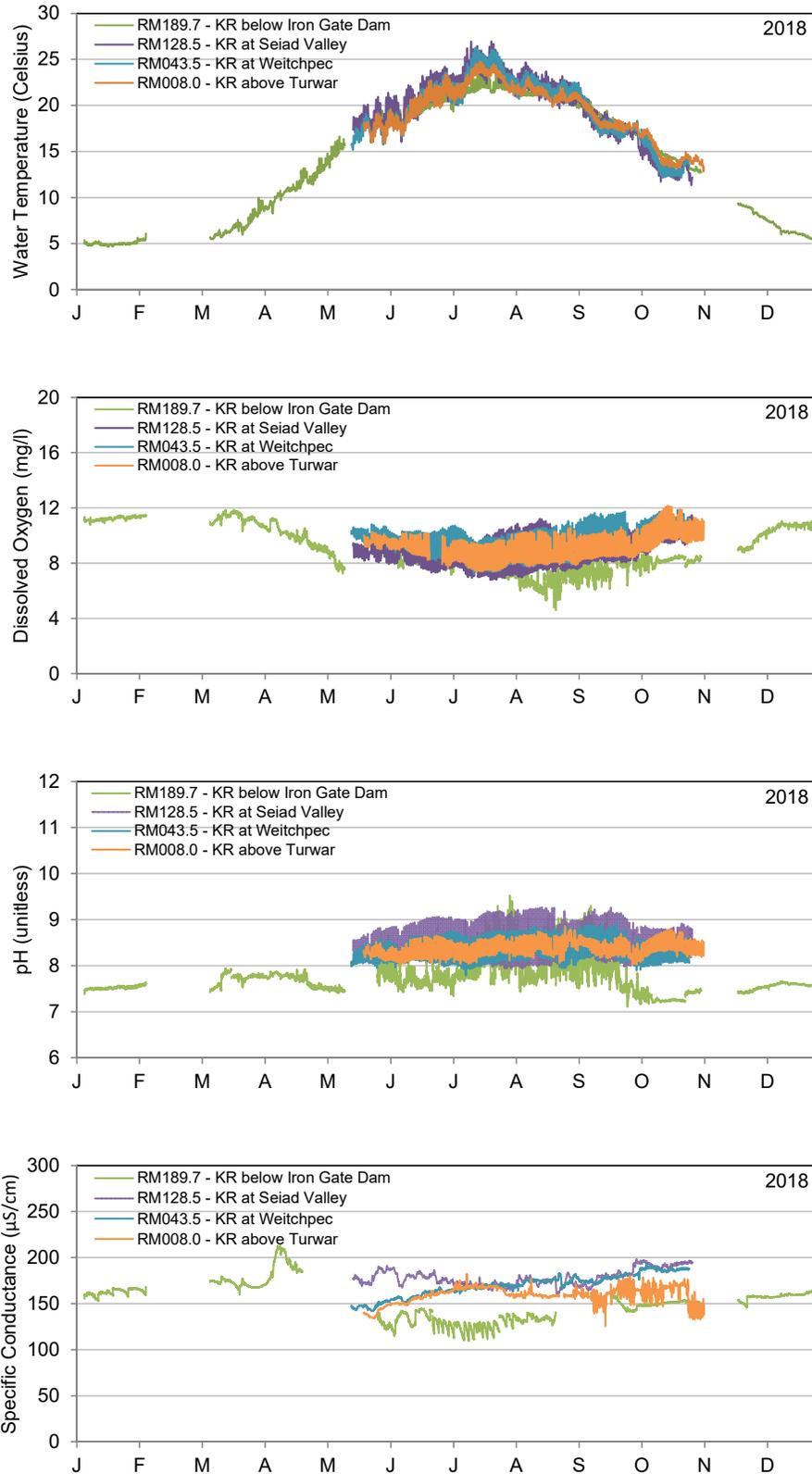


Figure 11. Continuous water temperature, dissolved oxygen, pH, and specific conductance data (2018) for the Klamath River below Iron Gate Dam (RM 189.73; Baseline), Klamath River below Seiad (RM 128.5; Baseline), Klamath River at Weitchpec (RM 43.5; Baseline), and Klamath River above Turwar (RM 8.0).

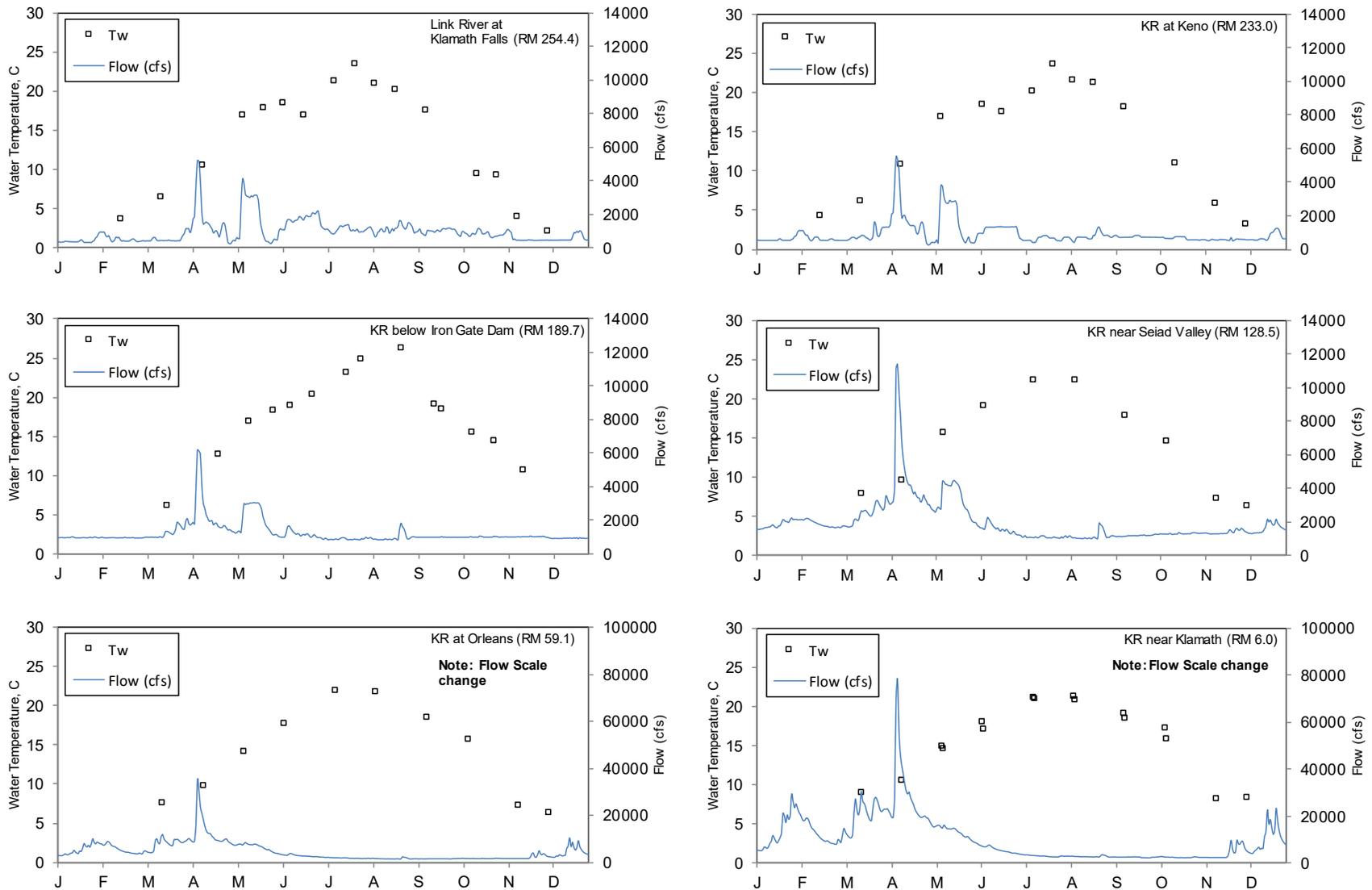


Figure 12. Discrete 2018 water temperature (T_w) measured during grab sampling and mean daily flow at USGS flow gage locations for: Link River at Klamath Falls (USGS Gage 11507500), Klamath River at Keno (USGS Gage 11509500), Klamath River below Iron Gate Dam (USGS Gage 11516530), Klamath River near Seiad Valley (USGS Gage 11520500), Klamath River at Orleans (USGS Gage 11523000), and Klamath River near Klamath (USGS Gage 11530500). Note the scale change for the secondary y-axis for Klamath River at Orleans (USGS) (RM 59.1; Baseline) and Klamath River near Klamath (RM 6.0; Baseline).

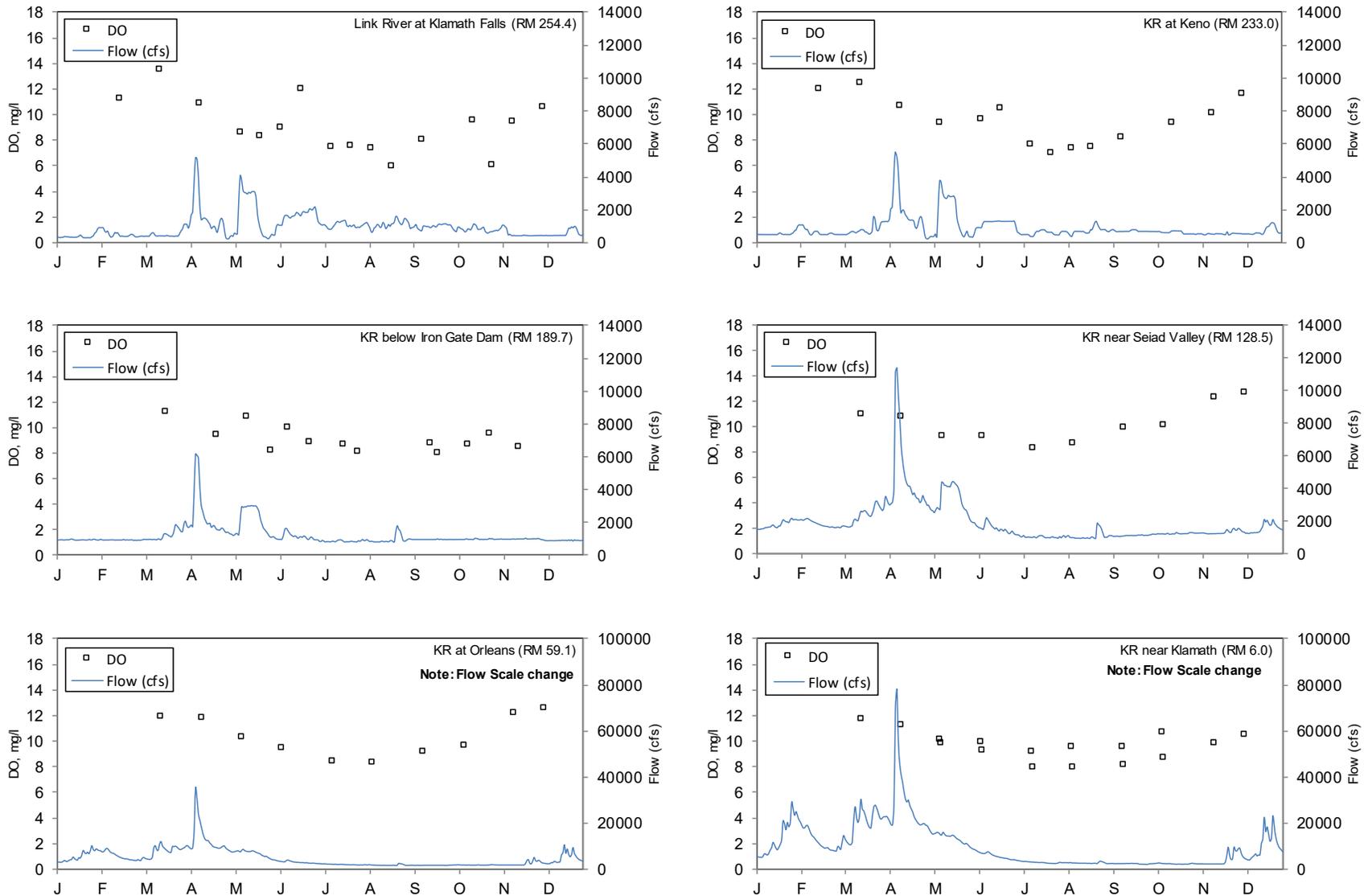


Figure 13. Discrete 2018 dissolved oxygen (DO) measured during grab sampling and mean daily flow at USGS flow gage locations for: Link River at Klamath Falls (USGS Gage 11507500), Klamath River at Keno (USGS Gage 11509500), Klamath River below Iron Gate Dam (USGS Gage 11516530), Klamath River near Seiad Valley (USGS Gage 11520500), Klamath River at Orleans (USGS Gage 11523000), and Klamath River near Klamath (USGS Gage 11530500). Note the scale change for the secondary y-axis for Klamath River at Orleans (USGS) (RM 59.1; Baseline) and Klamath River near Klamath (RM 6.0; Baseline).

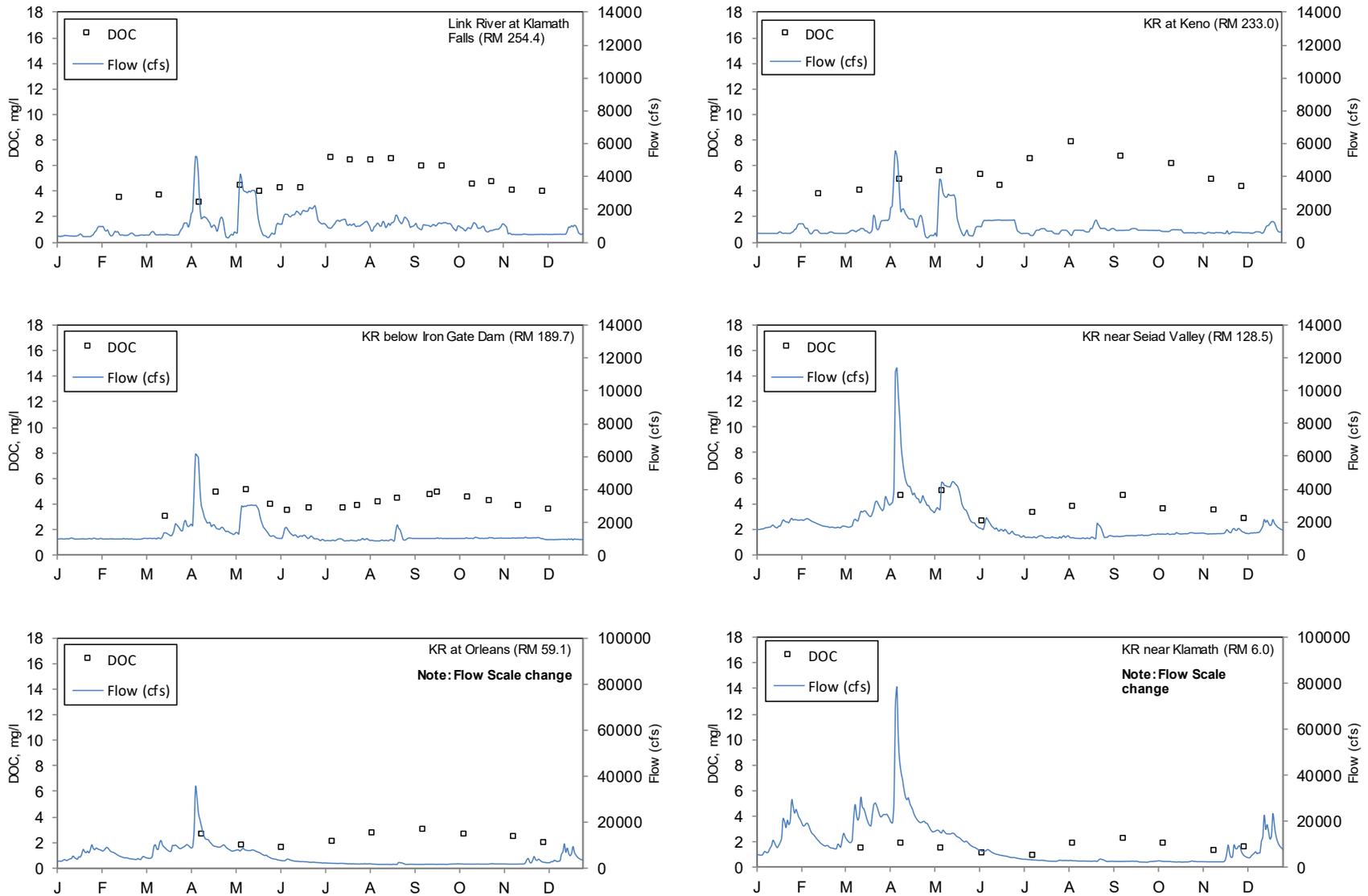


Figure 14. Discrete 2018 dissolved organic carbon (DOC) measured during grab sampling and mean daily flow at USGS flow gage locations for: Link River at Klamath Falls (USGS Gage 11507500), Klamath River at Keno (USGS Gage 11509500), Klamath River below Iron Gate Dam (USGS Gage 11516530), Klamath River near Seiad Valley (USGS Gage 11520500), Klamath River at Orleans (USGS Gage 11523000), and Klamath River near Klamath (USGS Gage 11530500). Note the scale change for the secondary y-axis for Klamath River at Orleans (USGS) (RM 59.1; Baseline) and Klamath River near Klamath (RM 6.0; Baseline).

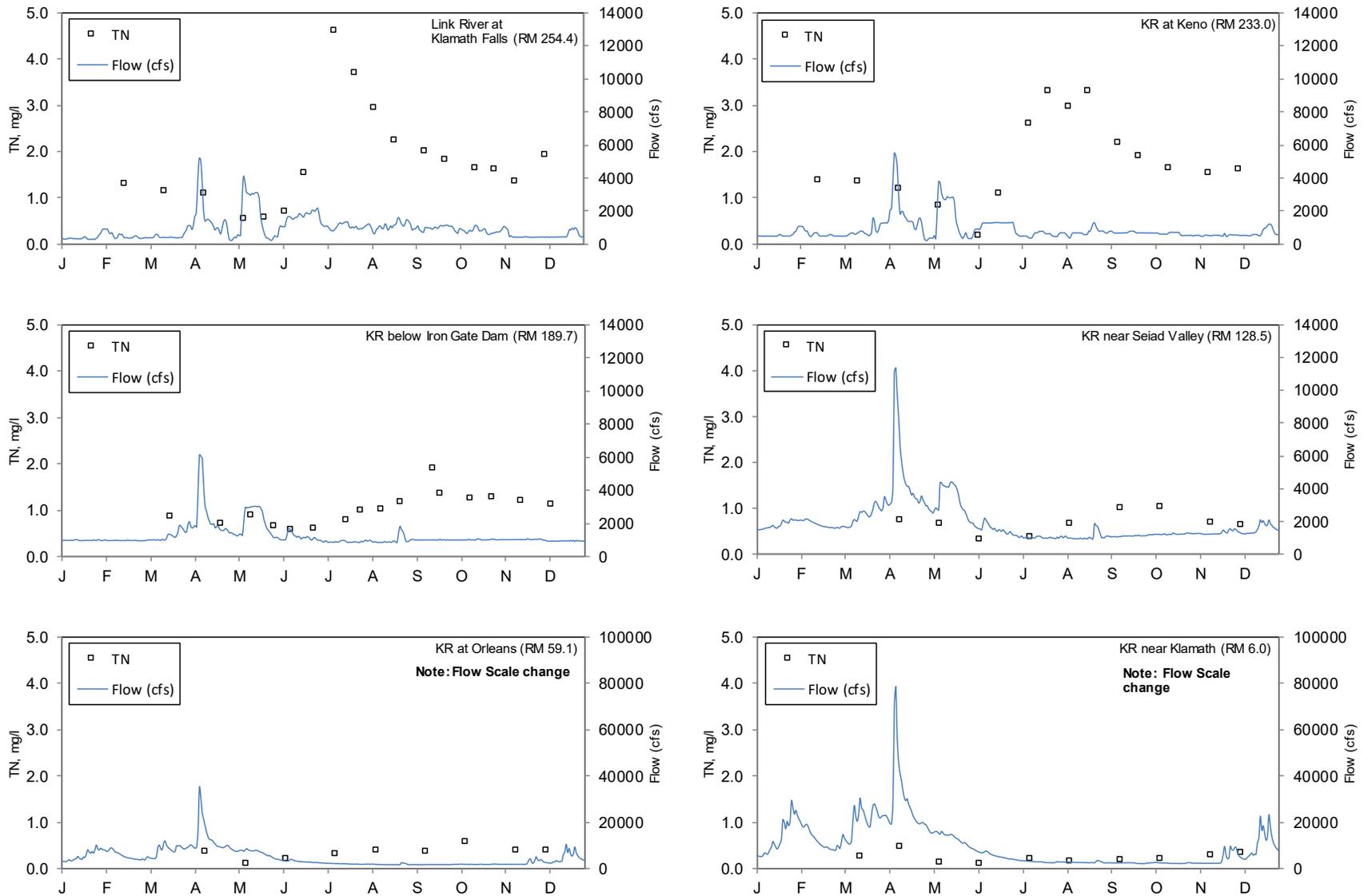


Figure 15. Discrete 2018 total nitrogen (TN) measured during grab sampling and mean daily flow at USGS flow gage locations for: Link River at Klamath Falls (USGS Gage 11507500), Klamath River at Keno (USGS Gage 11509500), Klamath River below Iron Gate Dam (USGS Gage 11516530), Klamath River near Seiad Valley (USGS Gage 11520500), Klamath River at Orleans (USGS Gage 11523000), and Klamath River near Klamath (USGS Gage 11530500). Note the scale change for the secondary y-axis for Klamath River at Orleans (USGS) (RM 59.1; Baseline) and Klamath River near Klamath (RM 6.0; Baseline).

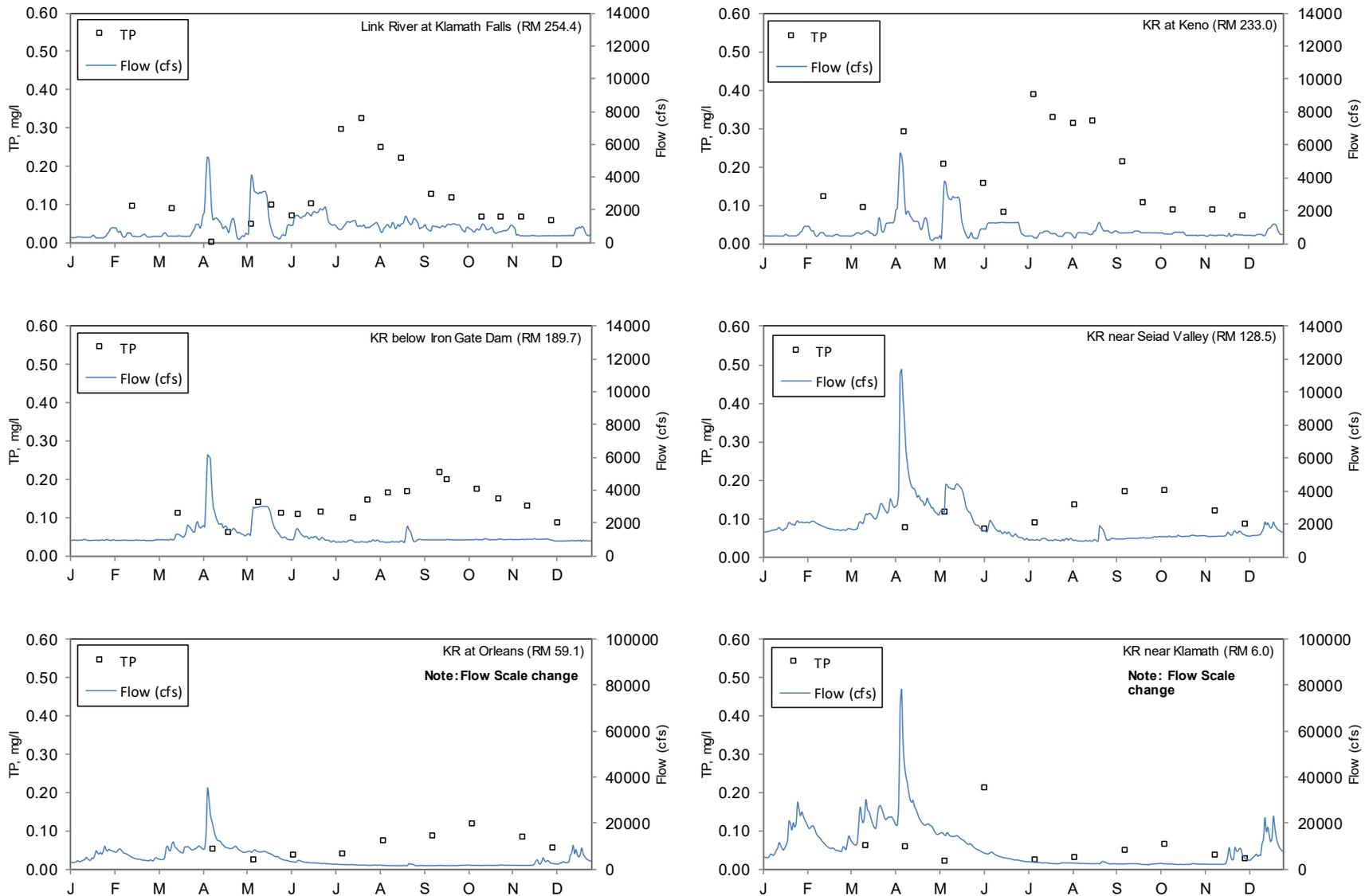


Figure 16. Discrete 2018 total phosphorus (TP) measured during grab sampling and mean daily flow at USGS flow gage locations for: Link River at Klamath Falls (USGS Gage 11507500), Klamath River at Keno (USGS Gage 11509500), Klamath River below Iron Gate Dam (USGS Gage 11516530), Klamath River near Seiad Valley (USGS Gage 11520500), Klamath River at Orleans (USGS Gage 11523000), and Klamath River near Klamath (USGS Gage 11530500). Note the scale change for the secondary y-axis for Klamath River at Orleans (USGS) (RM 59.1; Baseline) and Klamath River near Klamath (RM 6.0; Baseline).

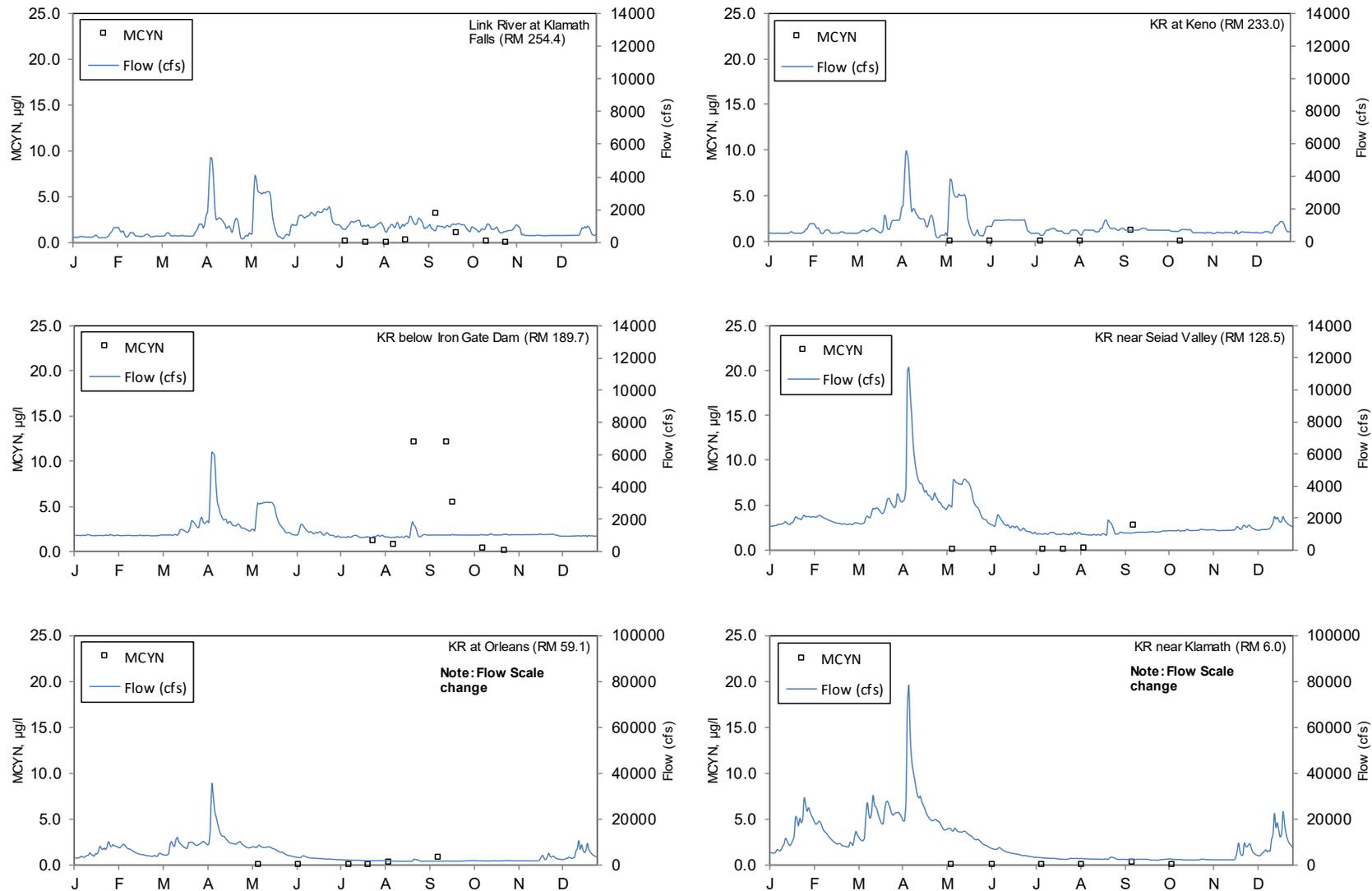


Figure 17. Discrete 2018 microcystin (MCYN) measured during grab sampling and mean daily flow at USGS flow gage locations for: Link River at Klamath Falls (USGS Gage 11507500), Klamath River at Keno (USGS Gage 11509500), Klamath River below Iron Gate Dam (USGS Gage 11516530), Klamath River near Seiad Valley (USGS Gage 11520500), Klamath River at Orleans (USGS Gage 11523000), and Klamath River near Klamath (USGS Gage 11530500). Note the scale change for the secondary y-axis for Klamath River at Orleans (USGS) (RM 59.1; Baseline) and Klamath River near Klamath (RM 6.0; Baseline). Only surface samples are presented. Non-detect values are presented as zeros.

7. Public Health Water Quality Data

Water quality samples for the 2018 IM 15 public health monitoring program were collected from May through November. Sampling crews from the various entities generally collected samples within a few days of each other. Sampling on the same day throughout the basin was infeasible because of other obligations, shipping constraints, travel considerations, and other factors. In most cases, all 18 sites were sampled each month. There were periods when one or more sites were omitted or one or more constituents were not sampled. The full public health dataset is presented in Appendix D.

7.1. Public Health Advisories

The Oregon Health Authority updated their public health guidelines in 2018, using revised guideline values for determining when a health advisory for harmful algae blooms should be issued based on toxin testing results (Table 5). Under these new guidelines, the Oregon Health Authority issued multiple health advisories in 2018 because of cyanotoxins in a specific waterbody at concentrations greater than the 2018 Oregon guideline values (OHA 2019)⁷ (Table 6).

Table 5. Oregon Health Authority public health guideline value changes.

Toxin Name	Guideline Value, µg/l	
	Before 2018	2018
Microcystin	10	4
Saxitoxin	10	4
Cylindrosperopsin	20	8
Anatoxin-a	20	8

A health advisory for the entire Upper Klamath Lake was issued on June 15, 2018 and then lifted on June 22, 2018. A second health advisory for the entire lake was issued on August 3, 2018. The second health advisory for the entire lake was lifted on December 20, 2018. The Oregon Health Authority also issued a health advisory for Klamath River from Keno Reservoir downstream to Keno Dam on August 29, 2018. The advisory was lifted December 20, 2018.

Table 6. Oregon Health Authority health advisories actions in 2018.

Waterbody	Sub-area	Date	Action
Upper Klamath Lake		6/15/2018	Advisory
	Entire Lake	6/22/2018	Lifted Advisory
		8/3/2018	Advisory
		12/20/2018	Lifted Advisory
Klamath River	Keno Reservoir to Keno Dam	8/29/2018	Advisory
		12/20/2018	Lifted Advisory

⁷ Note that the dates in the posting discussion reference the date that the Oregon Health issued an advisory or direction to post a waterbody. They do not refer to the dates that water samples were actually collected.

In 2018, the North Coast Regional Water Quality Control Board (NCRWQCB), working under the updated posting guidelines defined in 2016⁸, issued a health advisory at the Caution level for Copco Reservoir on July 27, 2018⁹. The advisory level was changed to the Danger level on August 7, 2018, and then was lowered to the Caution level on December 10, 2018 until the reservoir was de-posted on December 20, 2018. Similar postings occurred in Iron Gate Reservoir where a health advisory at the Caution level was issued on July 7, 2018 and the level was raised to Danger on August 1, 2018. On December 10, 2018, the level was lowered to Caution until the reservoir was de-posted on December 20, 2018.

The 2018 posting of public health advisories on the Klamath River downstream of Iron Gate Dam started in late July with the initial postings; the final postings were removed in December (Table 7). The Klamath River downstream of Iron Gate Dam to the I-5 Bridge was posted at the Caution level on July 27, 2018. On August 31, 2018, this posting level was increased to the Warning level where it remained until the posting level decreased to Caution on December 10, 2018. This section of river was de-posted on December 20, 2018.

Four other sections of the Klamath River were posted at the Caution level on August 1, 2018 and de-posted on December 10, 2018: (1) I-5 Bridge to Walker Road Bridge, (2) Walker Road Bridge to Brown Bear, (3) Seiad Valley to Happy Camp, and (4) Happy Camp to Orleans. The river between Brown Bear and Seiad Valley also was posted at the Caution level on August 31, 2018, increasing to the Danger level on September 7, 2018, before being de-posted on December 10, 2018. Between Orleans and Weitchpec, the Klamath River was posted at the Warning level on August 31, 2018, decreasing to the Caution level on September 7, 2018, and was de-posted on December 10, 2018.

The Klamath River between Weitchpec and the mouth was posted at Yurok Level 1 on August 20, 2018. On September 6, 2018, the river between Weitchpec and below Trinity River was increased to Yurok Level 2, while the river from the site below the Trinity River to the mouth the river was de-posted. On September 14, 2018, the Klamath River from the site below the Trinity River to the mouth was posted at Yurok Level 2, while on September 27, 2018, the river between Weitchpec and the site below the Trinity River was posted at the Danger level. On October 29, 2018, the river between Weitchpec and the mouth was decreased to Yurok Level 1 until it was de-posted on December 20, 2018.

⁸ <http://www.mywaterquality.ca.gov/habs/>

⁹ Note that the dates in the posting discussion reference the date that the North Coast Regional Water Quality Control Board issued an advisory or direction to post or de-post a waterbody. They do not refer to the dates that water samples were actually collected.

Table 7. California State Water Resources Control Board (SWRCB) health advisories actions in 2018.

Waterbody	Sub-area	Date	Posting Level/Action
Copco Reservoir		7/27/2018	Caution
		8/7/2018	Danger
		12/10/2018	Caution
		12/20/2018	De-posted
Iron Gate Reservoir		7/2/2018	Caution
		8/1/2018	Danger
		12/10/2018	Caution
		12/20/2018	De-posted
Klamath River	Iron Gate to I-5 Bridge	7/27/2018	Caution
	Iron Gate to I-5 Bridge	8/31/2018	Warning
	Iron Gate to I-5 Bridge	12/10/2018	Caution
	Iron Gate to I-5 Bridge	12/20/2018	De-posted
	I-5 Bridge to Walker Rd Bridge	8/1/2018	Caution
	I-5 Bridge to Walker Rd Bridge	12/10/2018	De-Posted
	Walker Rd Bridge to Brown Bear	8/31/2018	Caution
	Walker Rd Bridge to Brown Bear	12/10/2018	De-Posted
	Brown Bear to below Seiad	8/31/2018	Caution
	Brown Bear to below Seiad	9/7/2018	Danger
	Brown Bear to below Seiad	12/10/2018	De-Posted
	Seiad to below Happy Camp	8/31/2018	Caution
	Seiad to below Happy Camp	12/10/2018	De-Posted
	Happy Camp to Orleans	8/31/2018	Caution
	Happy Camp to Orleans	12/10/2018	De-Posted
	Orleans to Weitchpec	8/31/2018	Warning
	Orleans to Weitchpec	9/7/2018	Caution
	Orleans to Weitchpec	12/10/2018	De-Posted
	Weitchpec to below Trinity River	8/20/2018	Yurok Level 1
	Weitchpec to below Trinity River	9/6/2018	Yurok Level 2
Weitchpec to below Trinity River	9/27/2018	Danger	
Weitchpec to below Trinity River	10/29/2018	Yurok Level 1	
Weitchpec to below Trinity River	12/20/2018	De-Posted	
Below Trinity River to Estuary	8/20/2018	Yurok Level 1	
Below Trinity River to Estuary	9/6/2018	De-Posted	
Below Trinity River to Estuary	9/14/2018	Yurok Level 2	
Below Trinity River to Estuary	10/29/2018	Yurok Level 1	
Below Trinity River to Estuary	12/20/2018	De-Posted	

7.2. Data Summary

The public health data is summarized below to illustrate general spatial and temporal patterns during the 2018 sampling period (the full public health dataset is in Appendix D). Data also are summarized in (1) bar graphs representing the microcystin concentration for the different sampling events at a specific location, (2) bar graphs

representing the toxic algae cell counts for the different sampling events at a specific location, and (3) longitudinal graphs of river mile versus corresponding lab results for microcystin.

There are five sites for which algae samples were collected and archived, but not analyzed for species: (1) Klamath River at I-5 Rest Area (RM 179.20; Public Health), (2) Klamath River at Brown Bear River Access (RM 1250.00; Public Health), (3) Klamath River below Seiad (RM 128.5; Public Health), (4) Klamath River below Happy Camp (RM 101.3; Public Health), (5) Klamath River at Orleans (USGS) (RM 59.1; Public Health). Algae graphs are still included below for these sites, and annotations have been included to explain the lack of algae species data.

Anatoxin-a data was collected in accordance with the public health sampling SOP for the public health monitoring program. GreenWater analyzed all anatoxin-a samples using LC/MS-MS (Table D-3). The GreenWater method had an MDL of 0.05 µg/l, except for the sample collected on September 27, 2018, which had an MDL of 0.10 µg/l. GreenWater did not provide a reporting limit. No anatoxin-a was detected in any of the samples collected at any location in 2018.

All microcystin data included below was collected in accordance with the public health sampling SOP for the public health monitoring program. The MDL for microcystin was 0.10 µg/l and the RL was 0.15 µg/l. There were many samples where microcystin was not detected above the MDL. To clearly indicate when a sample was collected but microcystin was not detected, all non-detect values were graphed as a clearly identified, separate series on the figures below. If a sample was not collected at a location on a specific date, a note was added to the graph for that site.

There were also instances when an algae sample was collected, but no toxic algae were detected. In such cases, a value of zero for the toxic algae cell count indicated that a sample was collected and no toxic algae were detected. The toxic algae cell count graphs present values for *Dolichospermum flos-aquae* (DKFA) (formerly *Anabaena flos-aquae*) and *Microcystis aeruginosa* (MSAE). Also presented on the graphs is a summation of other potentially toxic cyanobacteria, including *Gloeotrichia echinulata*, *Planktothrix limosa* (formerly *Oscillatoria limosa*.), *Planktothrix* sp. (formerly *Oscillatoria* sp.) and *Limnothrix* sp., which were present in 2018 Klamath River samples. When present, the 'Other' potentially toxic cyanobacteria are identified in the figure captions. While *Aphanizomenon flos-aquae* cell counts were reported for the public health samples, in the Klamath River system this species of cyanobacteria has not been found to produce toxins (Carmichael et al. 2000; Li et al. 2000; Pereira 2004). Therefore, *Aphanizomenon flos-aquae* values were omitted from the public health summary graphs.

Because of the higher cell counts and microcystin concentrations at the reservoir sites, the graphs for the reservoir locations have a different scale than the graphs for the river locations.

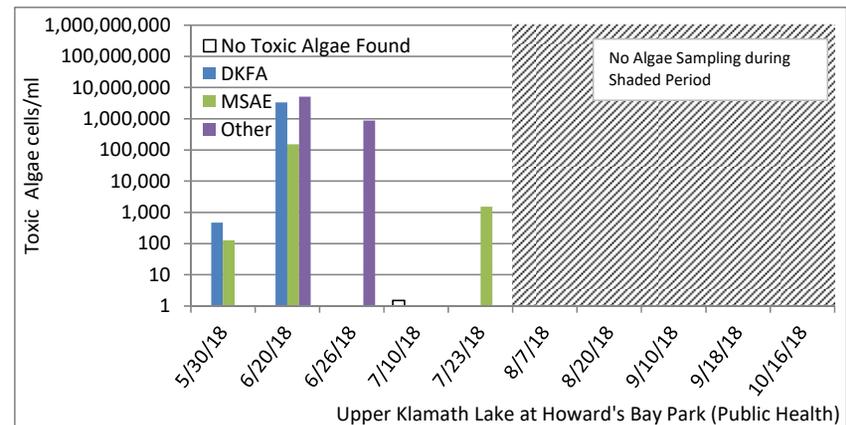
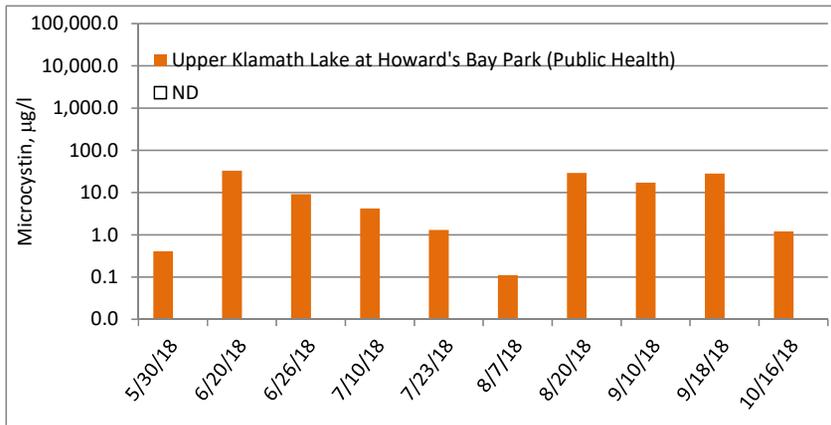
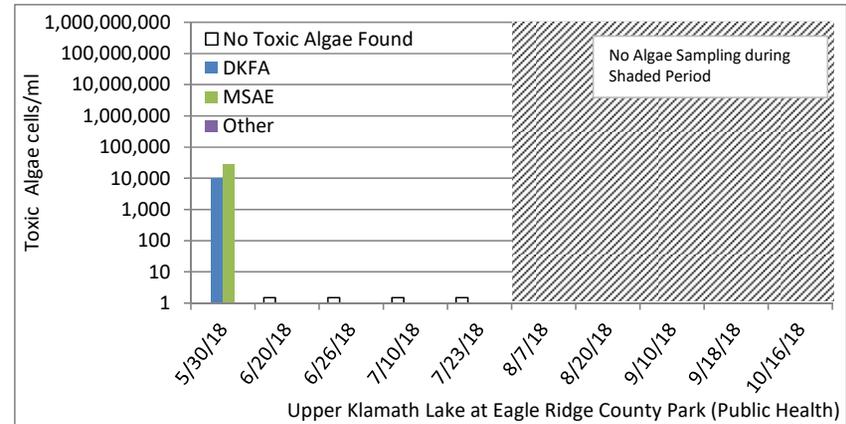
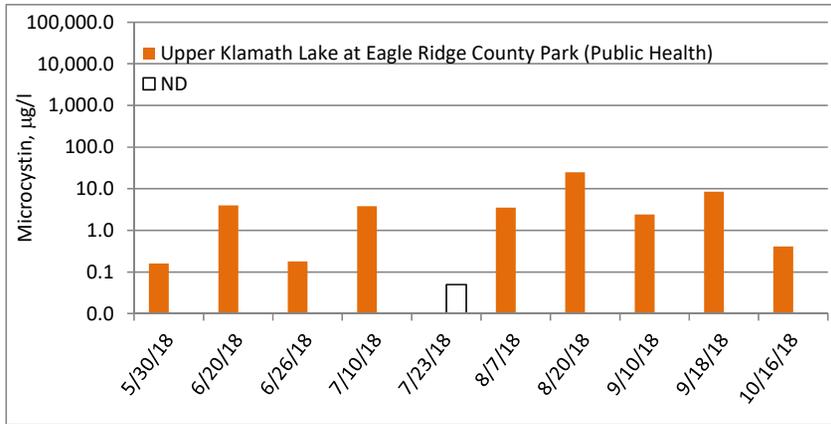


Figure 18. Microcystin concentrations and toxic algae cell counts from 2018 public health samples collected in Upper Klamath Lake at Eagle Ridge County Park (Public Health) and Upper Klamath Lake at Howard's Bay Park (Public Health) (ND indicates non-detect results). Other potentially toxic cyanobacteria present at Upper Klamath Lake at Howard's Bay Park (Public Health) included *Gloeoetrichia echinulate*.

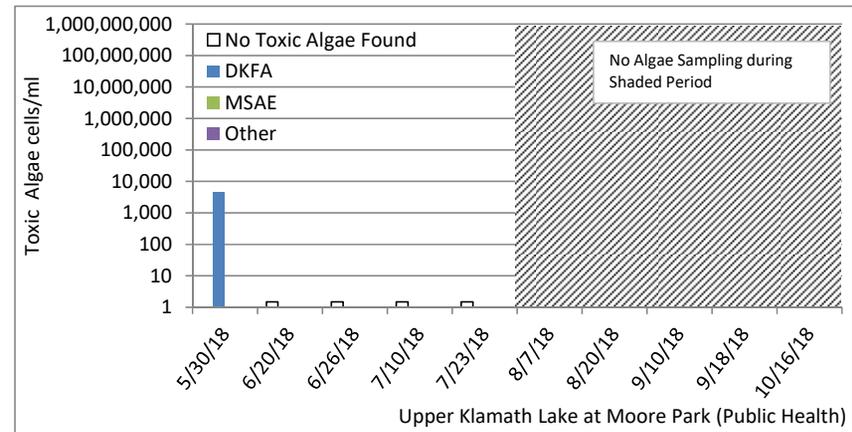
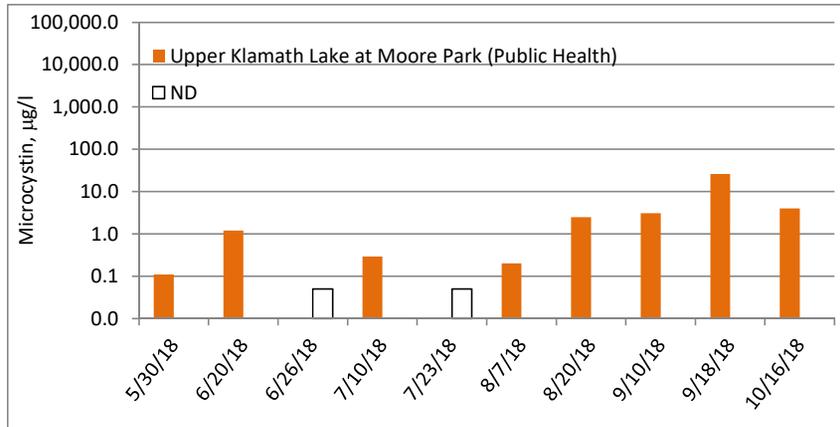


Figure 19. Microcystin concentrations and toxic algae cell counts from 2018 public health samples collected in Upper Klamath Lake at Moore Park (Public Health) (ND indicates non-detect results).

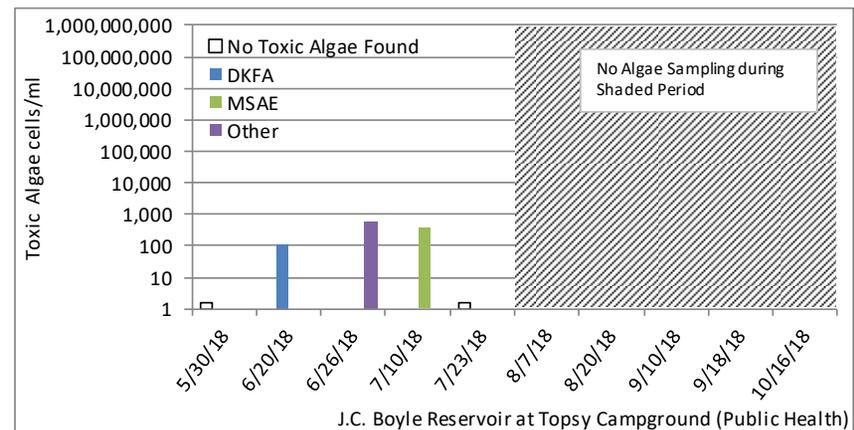
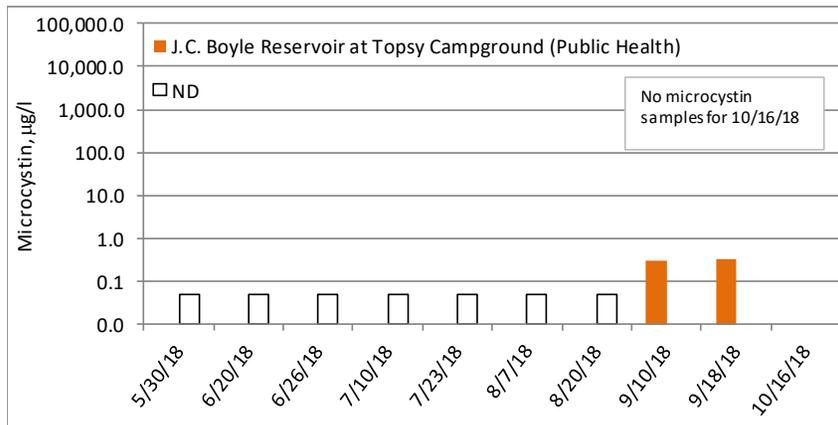
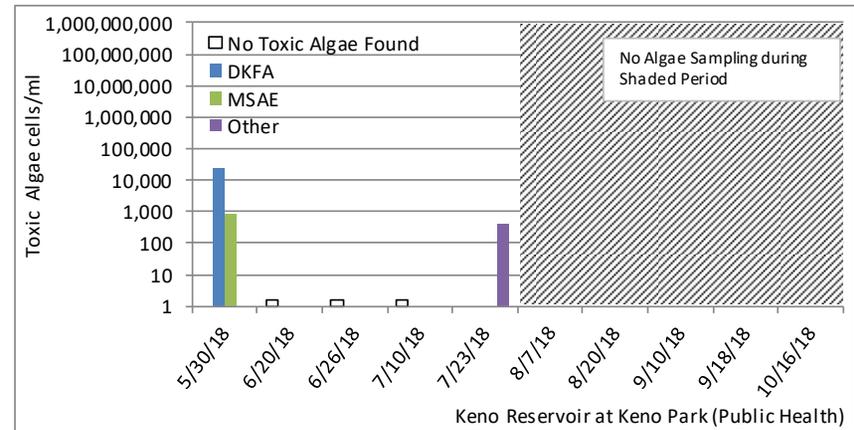
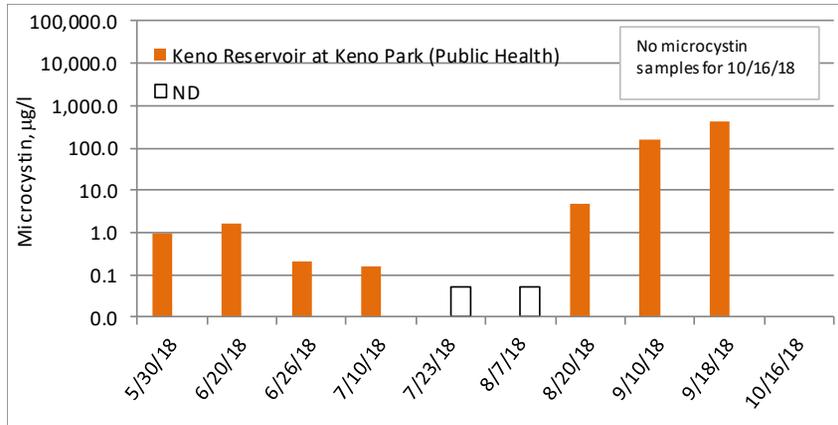


Figure 20. Microcystin concentrations and toxic algae cell counts from 2018 public health samples collected in Keno Reservoir at Keno Park (Public Health) and J.C. Boyle Reservoir at Topsy Campground (Public Health) (ND indicates non-detect results). Other potentially toxic cyanobacteria present at Keno Reservoir at Keno Park (Public Health) included *Limnothrix sp.* Other potentially toxic cyanobacteria present at J.C. Boyle Reservoir at Topsy Campground (Public Health) included *Planktothrix limosa.*

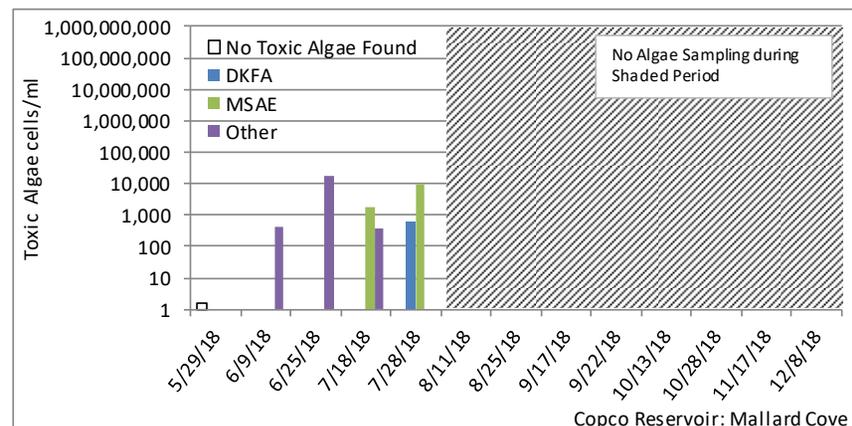
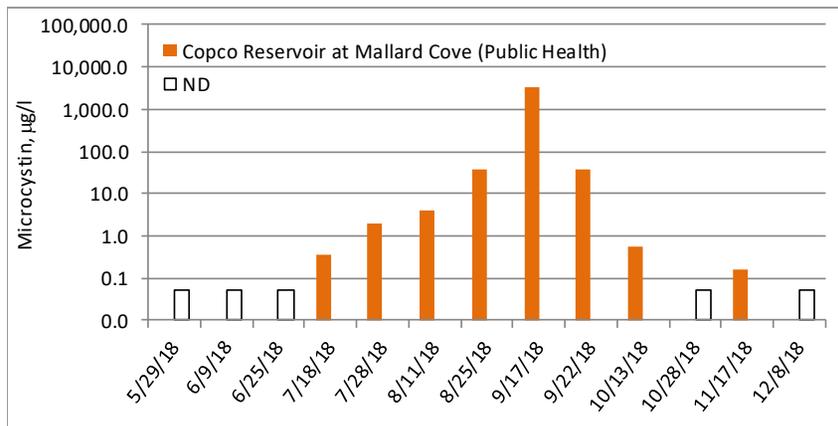
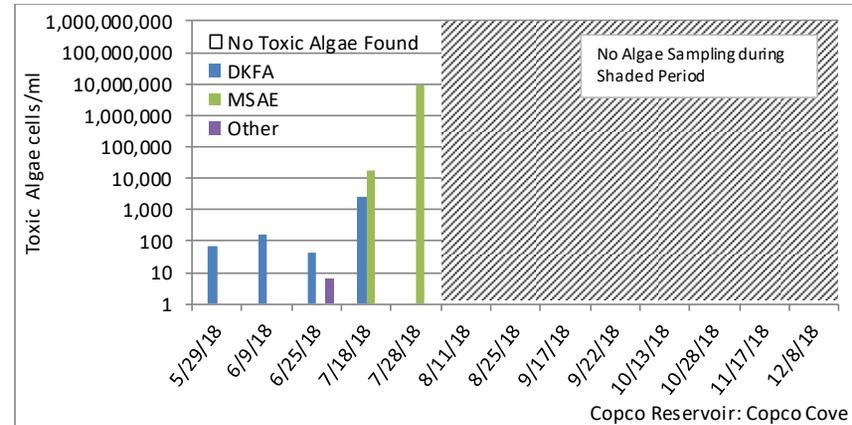
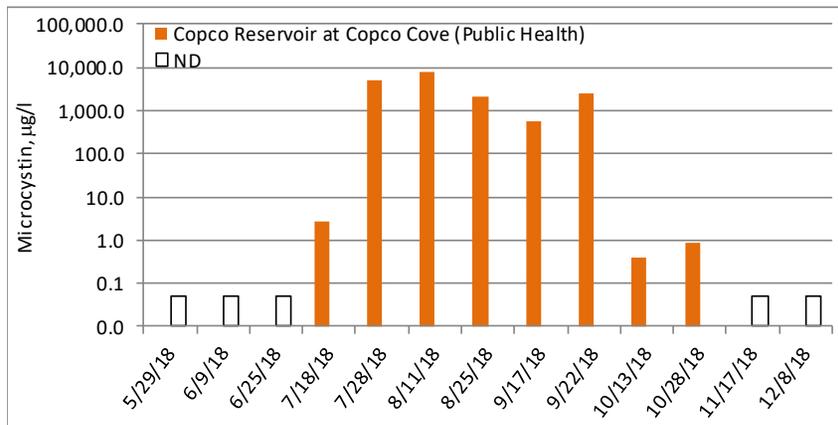


Figure 21. Microcystin concentrations and toxic algae cell counts from 2018 public health samples collected in Copco Reservoir at Copco Cove and Mallard Cove (ND indicates non-detect results). Other potentially toxic cyanobacteria present at Copco Reservoir at Copco Cove included *Planktothrix limosa*. Other potentially toxic cyanobacteria present at Copco Reservoir at Mallard Cove included *Planktothrix limosa*.

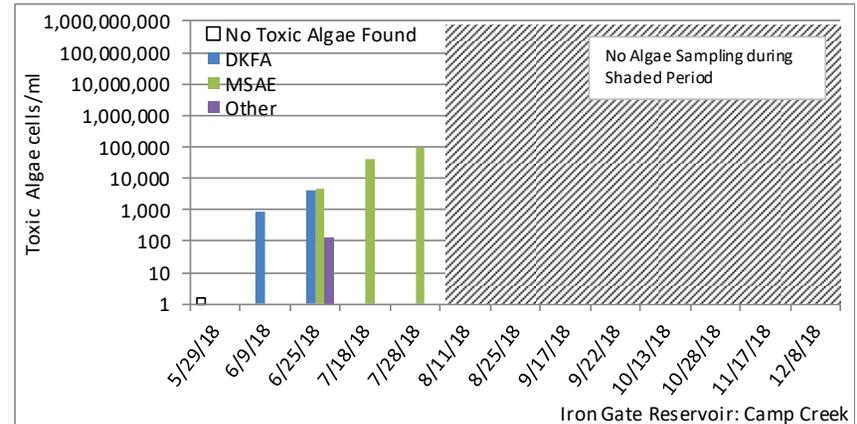
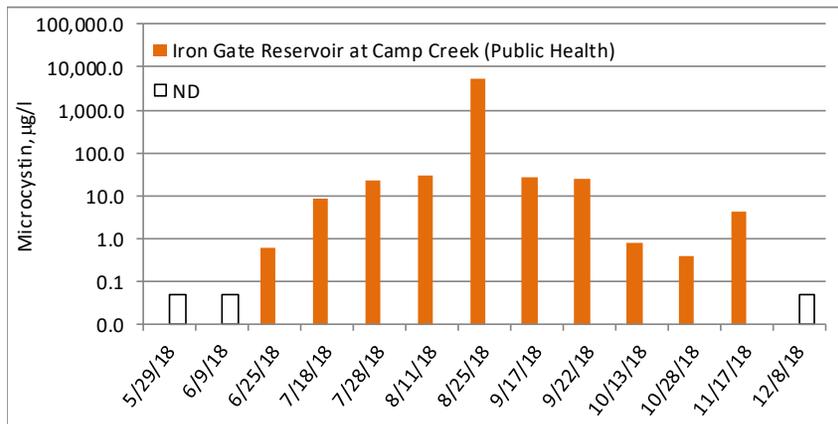
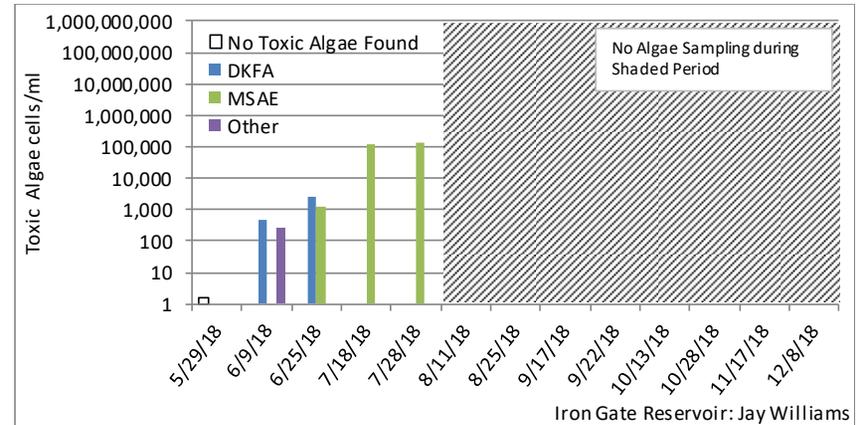
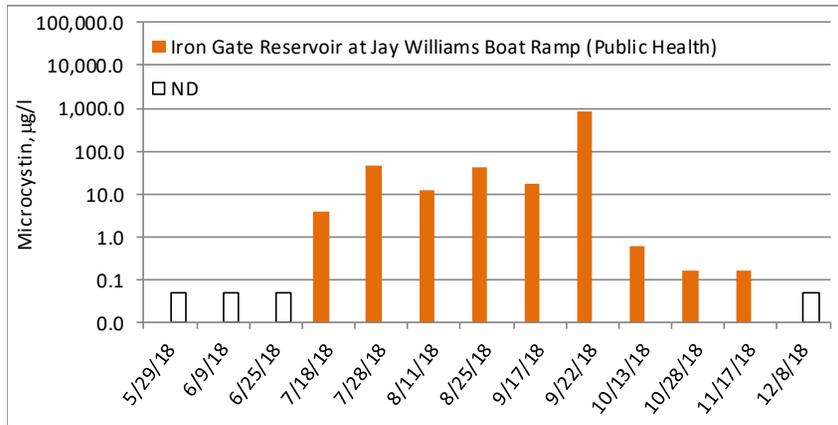


Figure 22. Microcystin concentrations and toxic algae cell counts from 2018 public health samples collected in Iron Gate Reservoir at Jay Williams Boat Ramp and Camp Creek (ND indicates non-detect results). Other potentially toxic cyanobacteria present at Iron Gate Reservoir at Jay Williams Boat Ramp included *Planktothrix sp.* Other potentially toxic cyanobacteria present at Iron Gate Reservoir at Camp Creek included *Planktothrix limosa.*

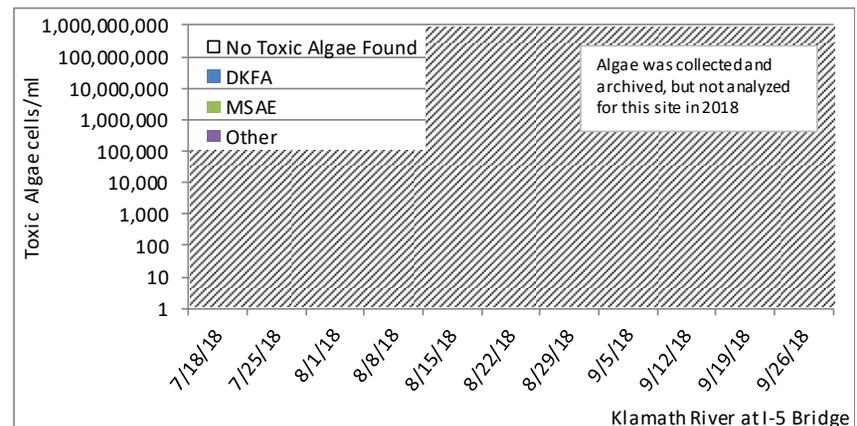
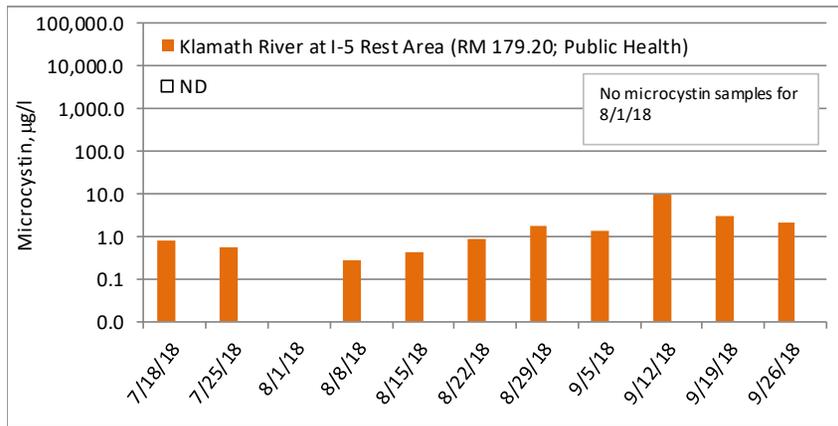
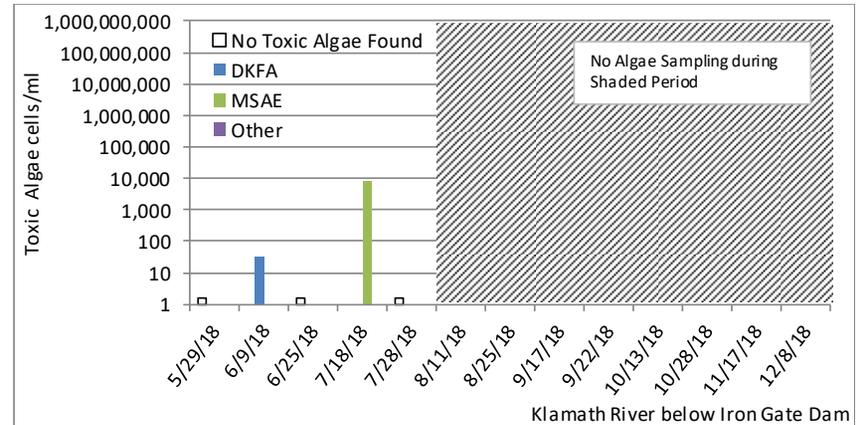
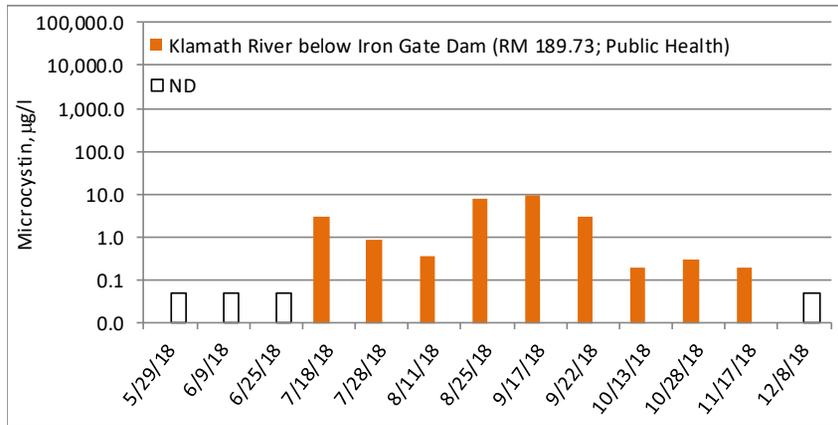


Figure 23. Microcystin concentrations and toxic algae cell counts from 2018 public health samples collected at Klamath River Klamath River below Iron Gate Dam (RM 189.73; Public Health) and Klamath River at I-5 Rest Area (RM 179.20; Public Health) (ND indicates non-detect results).

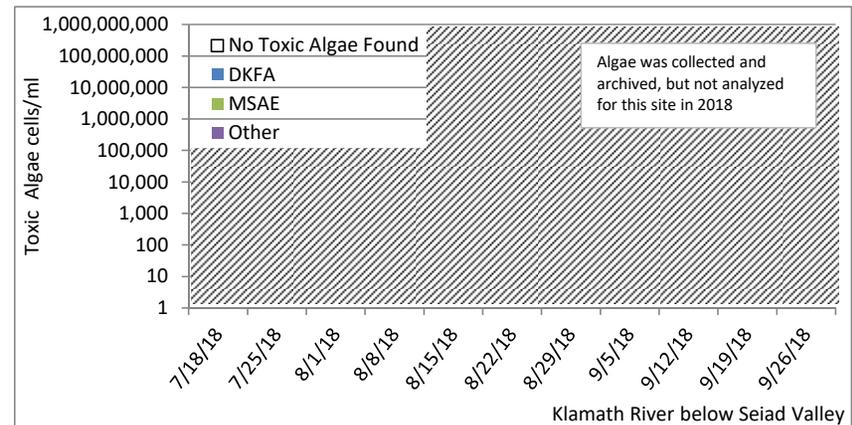
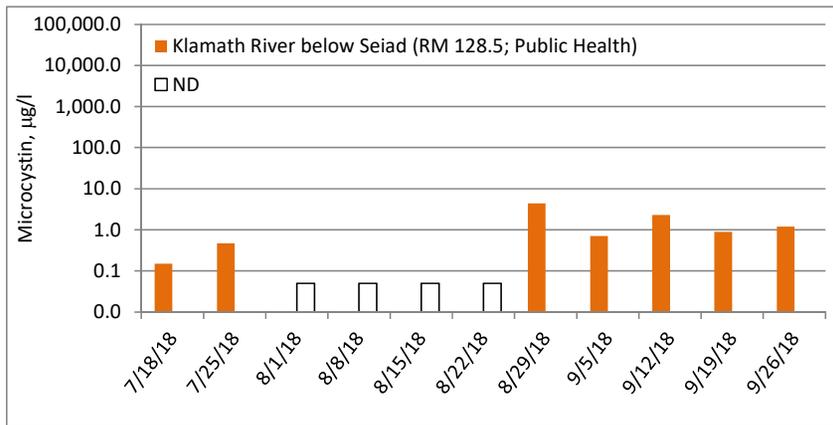
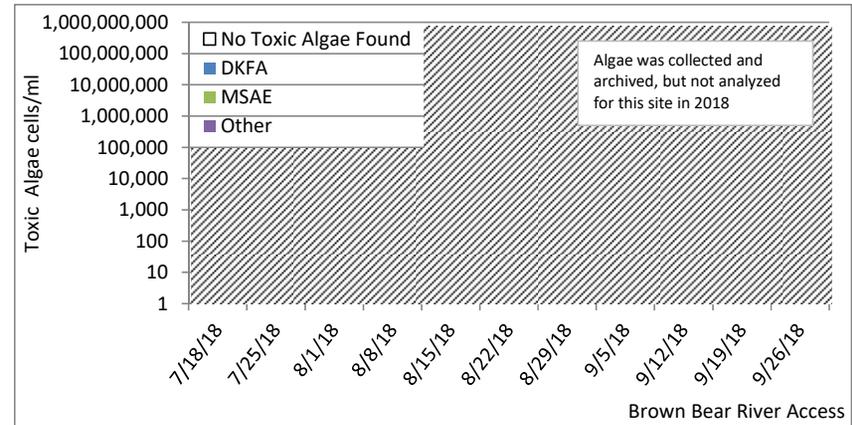
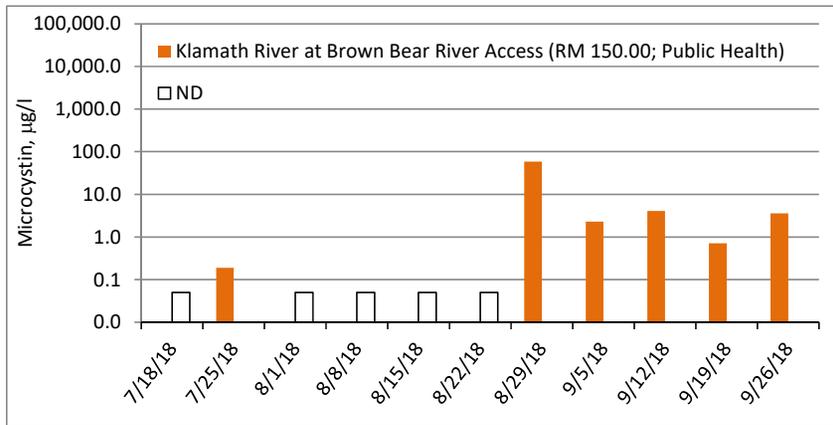


Figure 24. Microcystin concentrations and toxic algae cell counts from 2018 public health samples collected at Klamath River at Brown Bear River Access (RM 150.00; Public Health) and Klamath River below Seiad (RM 128.5; Public Health) (ND indicates non-detect results).

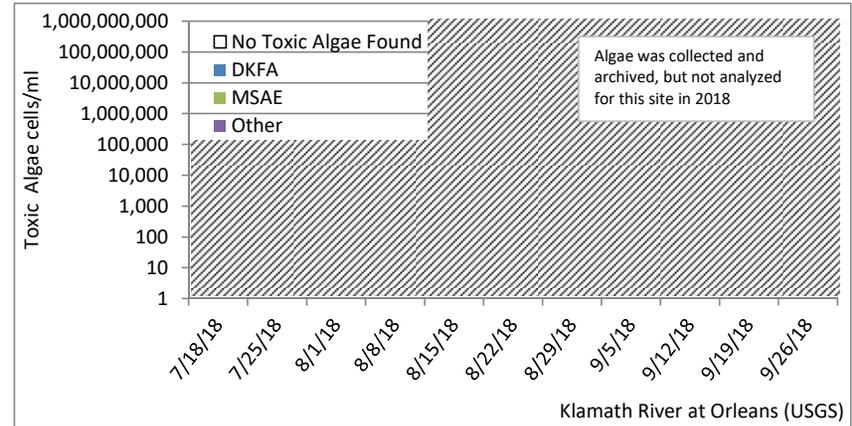
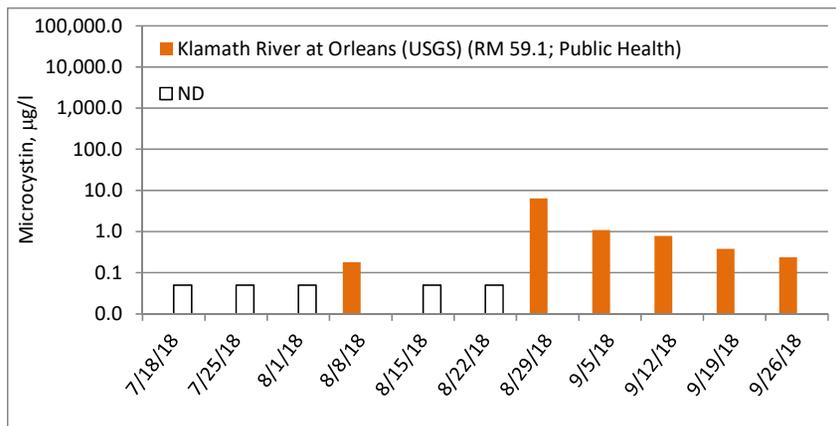
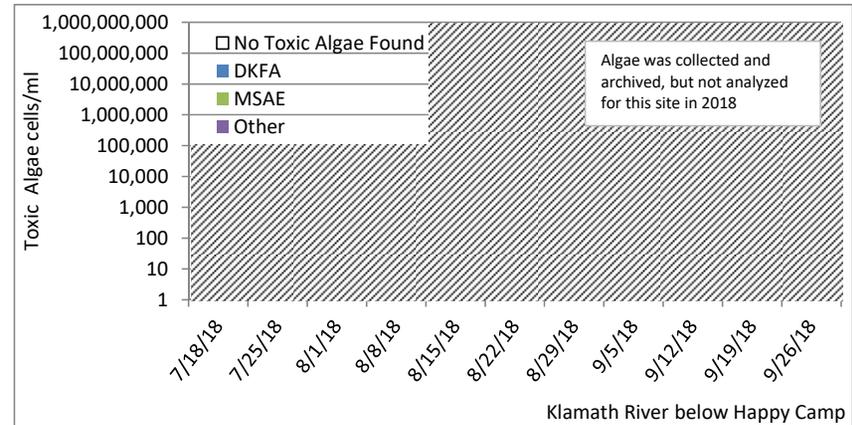
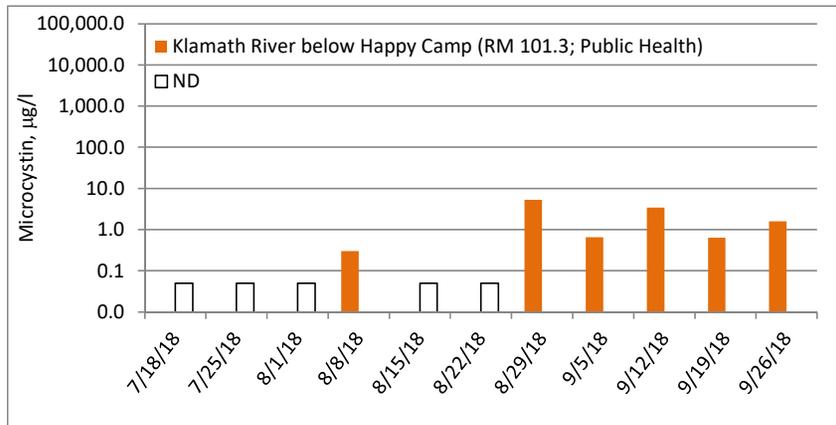


Figure 25. Microcystin concentrations and toxic algae cell counts from 2018 public health samples collected at Klamath River below Happy Camp (RM 101.3; Public Health) and Klamath River at Orleans (USGS) (RM 59.1; Public Health) (ND indicates non-detect results).

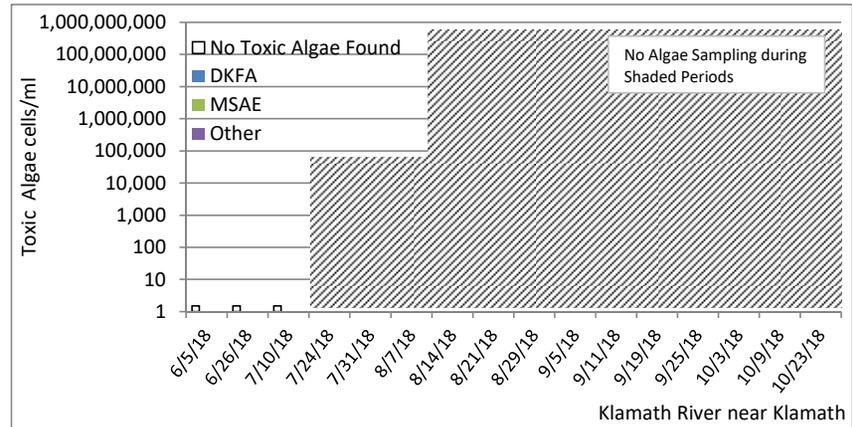
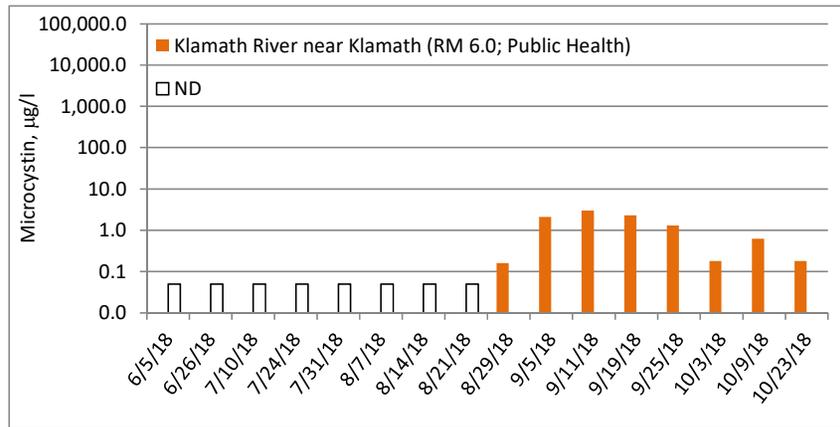
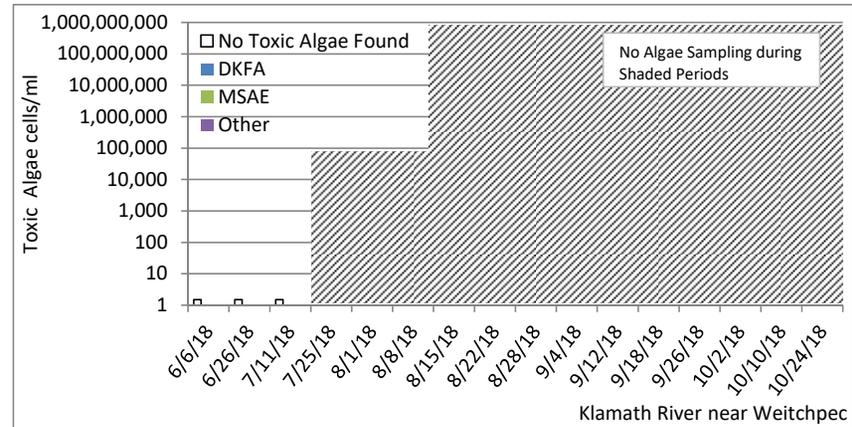
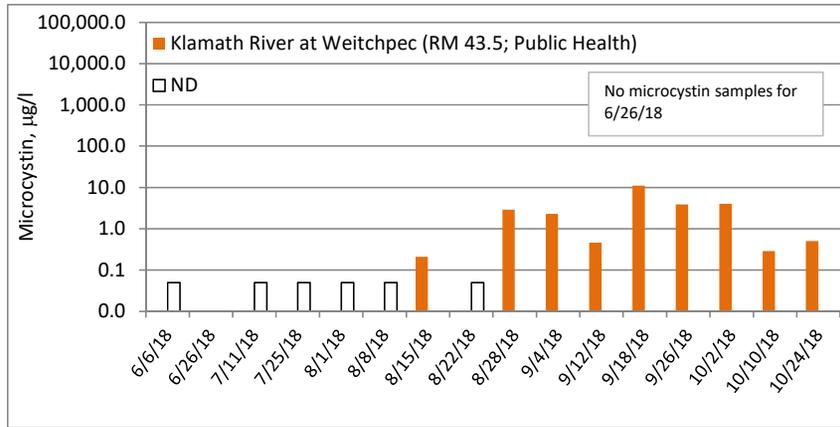


Figure 26. Microcystin concentrations and toxic algae cell counts from 2018 public health samples collected at Klamath River at Weitchpec (RM 43.5; Public Health) and Klamath River near Klamath (RM 6.0; Public Health) (ND indicates non-detect results).

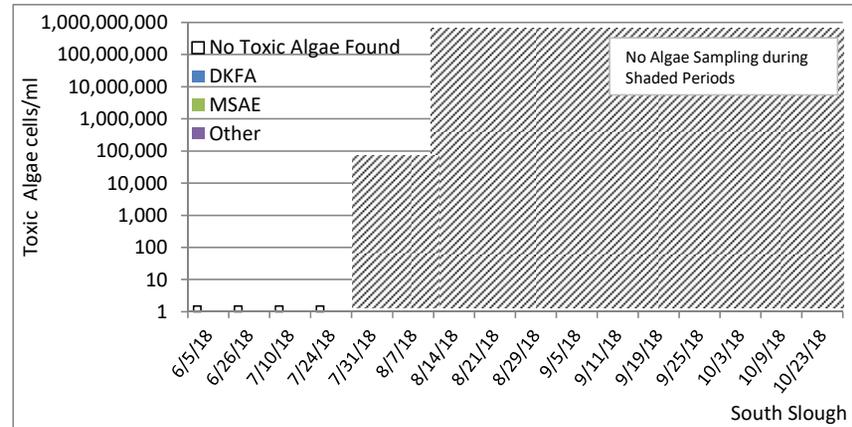
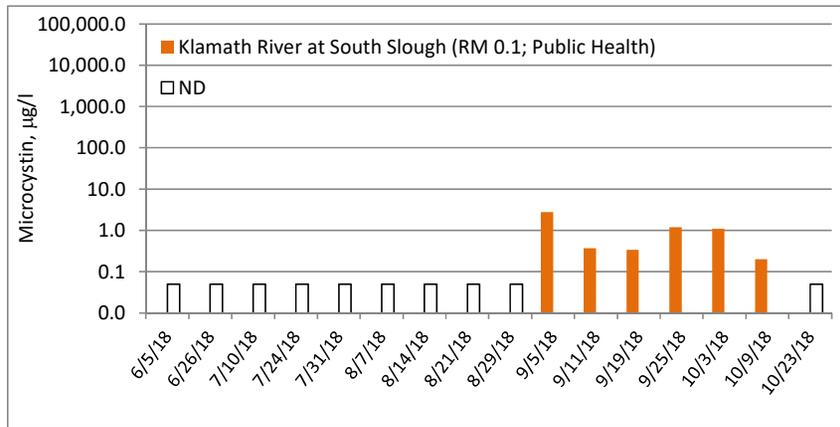


Figure 27. Microcystin concentrations and toxic algae cell counts from 2018 public health samples collected at Klamath River at South Slough (RM 0.1; Public Health) (ND indicates non-detect results)

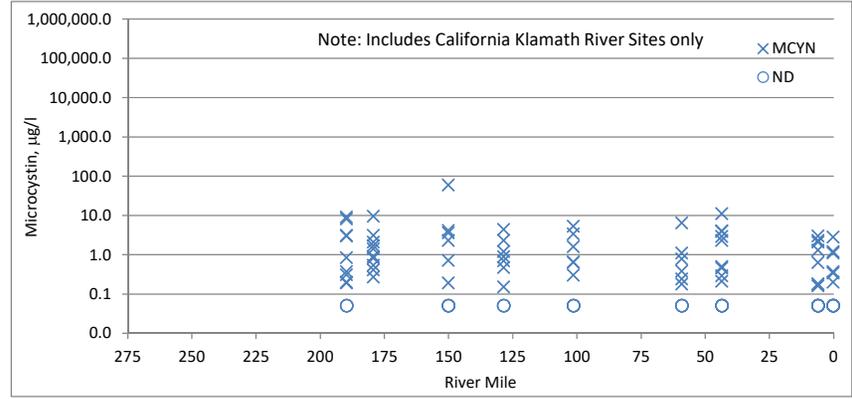
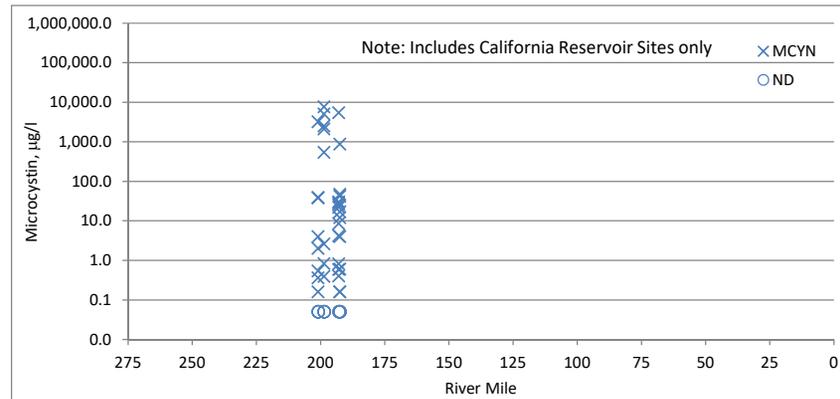
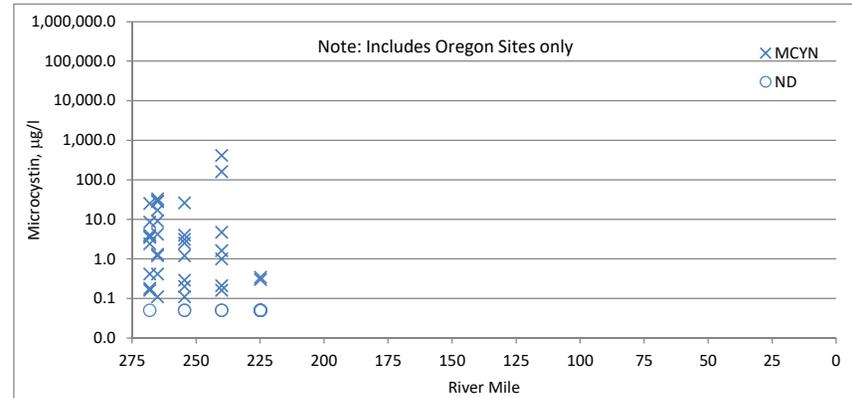
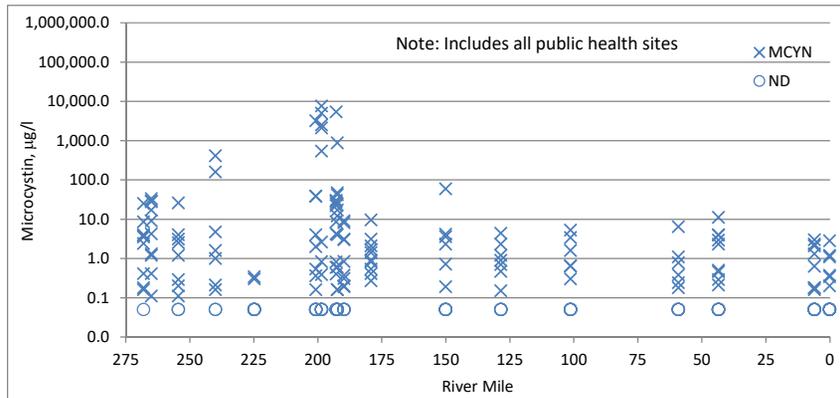


Figure 28. 2018 microcystin (MCYN) concentrations from public health program: at all public health sampling sites (top left), Oregon sites (top right), California reservoir sites (bottom left), and California Klamath River sites from Iron Gate Dam downstream (bottom right). ND (o) indicates non-detect results. Sites in Upper Klamath Lake and reservoirs were given approximate river miles to locate them appropriately on the graph.

8. Summary

The KHSA IM 15 baseline water quality sampling program and public health monitoring program are an interagency cooperative effort to characterize water quality conditions in the Klamath Basin in support of ongoing and future measures pertaining to restoration, dam removal studies, public health, and other factors. The programs were originally implemented in 2009 under the AIP and have been on-going in a consistent manner ever since. Quality assurance measures have been incorporated into the process and final data sets are available to all interested parties. This planning and monitoring effort has laid the groundwork for continued cooperation and quality data collection in the Klamath River basin.

9. References

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Appendix A. Baseline Water Quality Sampling Site Locations

Table A-1. 2018 baseline water quality sampling locations in the Klamath River mainstem and major tributaries.

Site ID	Location	Site Type	River Mile	Sampling Entity
KR25444	Link Dam (RM 254.44; Baseline)	Mainstem	254.44	USBR
KR24600	Keno Reservoir at Miller Island (RM 246.0; Baseline)	Mainstem	246.00	USBR
KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	Mainstem	233.40	USBR
KR22822	Klamath River above J.C. Boyle Reservoir (RM 228.22; Baseline)	Mainstem	228.22	PacifiCorp
KR22478	J.C. Boyle Reservoir (RM 224.78; Baseline)	Reservoir	224.78	PacifiCorp
KR22460	Klamath River below J.C. Boyle Dam (RM 224.60; Baseline)	Mainstem	224.60	PacifiCorp
KR21950	Klamath River below USGS Gage (RM 219.50; Baseline)	Mainstem	219.50	PacifiCorp
KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	Mainstem	206.42	PacifiCorp
KR19874	Copco Reservoir (RM 198.74; Baseline)(0.5 m, thermocline, 0.5 m from bottom, and 0-8m integrated)	Reservoir	198.74	PacifiCorp
KR19645	Klamath River below Copco Dam (RM 196.45; Baseline)	Mainstem	196.45	PacifiCorp
KR19019	Iron Gate Reservoir (RM 190.19; Baseline)(0.5 m, thermocline, 0.5 m from bottom, and 0-8m integrated)	Reservoir	190.19	PacifiCorp
KR18973	Klamath River below Iron Gate Dam (RM 189.73; Baseline)	Mainstem	189.73	PacifiCorp
KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	Mainstem	156.26	Karuk
KR12850	Klamath River below Seiad (RM 128.5; Baseline)	Mainstem	128.50	Karuk
KR10130	Klamath River below Happy Camp (RM 101.3; Baseline)	Mainstem	101.30	Karuk
KR05910	Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Mainstem	59.10	Karuk
KR04350	Klamath River at Weitchpec (RM 43.5; Baseline)	Mainstem	43.50	Yurok
KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Mainstem	38.50	Yurok
KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Mainstem	6.00	Yurok
KR00050	Klamath River Estuary (RM 0.5; Baseline)	Mainstem	0.50	Yurok
SH00000	Shasta River near mouth (Baseline)	Tributary	-	Karuk
SC00000	Scott River near mouth (Baseline)	Tributary	-	Karuk
SA00000	Salmon River near mouth (Baseline)	Tributary	-	Karuk
TR00000	Trinity River near mouth (Baseline)	Tributary	-	Yurok

Appendix B. 2018 Baseline Data Summary

Appendix Table B-1 presents the complete general water quality and nutrient data set for the 2018 KHSA baseline sampling. The four sampling entities are United States Bureau of Reclamation (USBR), PacifiCorp, the Karuk Tribe, and the Yurok Tribe. CBOD, TKN and VSS were not sampled in 2018 but columns are in the table to preserve data formatting with historic datasets. While VSS was removed from the KHSA program it was not removed from the Karuk Tribe or Yurok Tribe water quality monitoring programs and because VSS was still collected by those two entities the results are presented here.

Table B-1. 2018 Klamath River Baseline Data Summary. All Non-detect values were replaced with “<” and the RL value. Sample Types include: P- Production sample; R – Regular sample associated with QA sample set; I = Depth Integrated sample.

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Type	Water Temperature °C	pH	Specific Conductivity µS/cm	Dissolved Oxygen mg/l	Algae, Chlorophyll-a µg/l	Algae, Pheophytin µg/l	Alkalinity mg/l	Carbon, Dissolved Organic Carbon mg/l	Carbon, Particulate Carbon mg/l	Demand, Carbonaceous Biological Oxygen Demand mg/l	Nitrogen, Ammonia mg/l	Nitrogen, Nitrate+Nitrite mg/l	Nitrogen, Particulate Nitrogen mg/l	Nitrogen, Total Kjeldahl Nitrogen mg/l	Nitrogen, Total Nitrogen mg/l	Phosphorus, Phosphate mg/l	Phosphorus, Total Phosphorus mg/l	Phosphorus, Particulate Phosphorus mg/l	Phosphorus, Particulate Inorganic Phosphorus mg/l	Turbidity NTU	Solids, Total Suspended Solids mg/l	Solids, Volatile Suspended Solids mg/l	Toxins, Microcystin µg/l
2018KHSA-001	2/13/2018	11:15	KR25444	Link Dam (RM 254.44; Baseline)	USBR	0.5	P	3.57	7.85	104.0	11.22	14.59	3.70	45.90	3.44	1.9500		0.16	0.43	0.3060		1.30	0.01	0.10	0.0230	0.0064	15.7	17.2		
2018KHSA-007	3/13/2018	9:00	KR25444	Link Dam (RM 254.44; Baseline)	USBR	0.5	P	6.40	8.20	104.0	13.47	41.19	5.41	45.90	3.65	3.8400		0.06	0.23	0.5980		1.13	0.01	0.09	0.0315	0.0168	30.4	35.2		
2018KHSA-013	4/10/2018	9:30	KR25444	Link Dam (RM 254.44; Baseline)	USBR	0.5	P	10.53	8.72	104.0	10.88	61.57	10.94	42.00	3.10	5.4600		<0.032	<0.003	0.7230		1.10	<0.003	<0.006	0.0519	0.0218	34.3	37.0		
2018KHSA-019	5/8/2018	9:45	KR25444	Link Dam (RM 254.44; Baseline)	USBR	0.5	P	16.91	6.30	110.0	8.60	7.00	1.25	48.33	4.37	1.7200		<0.032	<0.003	0.2500		0.55	0.02	0.05	0.0193	0.0067	14.0	15.7		
2018KHSA-025	5/22/2018	9:15	KR25444	Link Dam (RM 254.44; Baseline)	USBR	0.5	P	17.86	7.52	108.0	8.28	7.63	1.73	48.55	3.97	1.3600		<0.032	<0.003	0.2400		0.58	0.03	0.10	0.0288	0.0093	7.4	6.4		
2018KHSA-029	6/5/2018	9:30	KR25444	Link Dam (RM 254.44; Baseline)	USBR	0.5	P	18.39	7.21	109.0	8.93	4.98	0.98	49.50	4.19	1.7300		0.05	0.01	0.3420		0.71	0.03	0.07	0.0167	<0.0063	8.6	6.5		
2018KHSA-035	6/19/2018	9:45	KR25444	Link Dam (RM 254.44; Baseline)	USBR	0.5	P	16.86	9.40	110.0	11.96	67.90	1.40	50.76	4.17	5.4900		<0.032	0.00	1.1120		1.54	0.01	0.10	0.0725	0.0544	25.7	16.8		
2018KHSA-040	7/10/2018	8:00	KR25444	Link Dam (RM 254.44; Baseline)	USBR	0.5	P	21.18	9.90	111.0	7.46	316.57	9.33	52.83	6.62	16.0000		0.05	0.01	3.4000		4.60	0.05	0.29	0.2810	0.1580	54.7	36.6	0.2	
2018KHSA-046	7/24/2018	9:05	KR25444	Link Dam (RM 254.44; Baseline)	USBR	0.5	P	23.35	9.70	110.0	7.55	192.12	55.20	51.58	6.44	11.4000		<0.032	0.00	2.3000		3.69	0.12	0.32	0.2240	0.0754	58.9	31.5	<0.15	
2018KHSA-051	8/7/2018	9:40	KR25444	Link Dam (RM 254.44; Baseline)	USBR	0.5	P	20.92	9.57	105.0	7.41	158.89	20.08	49.85	6.37	8.9000		0.03	0.02	1.8300		2.94	0.10	0.25	0.1420	0.0761	57.3	30.3	<0.15	
2018KHSA-057	8/21/2018	9:30	KR25444	Link Dam (RM 254.44; Baseline)	USBR	0.5	P	20.14	8.54	117.0	5.93	38.09	1.76	55.34	6.50	3.4100		0.42	0.19	0.7090		2.23	0.14	0.22	0.1260	0.0153	12.7	15.1	0.2	
2018KHSA-062	9/11/2018	9:40	KR25444	Link Dam (RM 254.44; Baseline)	USBR	0.5	P	17.42	9.10	115.0	8.06	80.41	2.12	54.94	5.94	5.2200		0.06	0.03	1.0700		2.00	0.02	0.13	0.0861	0.0544	23.0	25.0	3.2	
2018KHSA-068	9/25/2018	9:30	KR25444	Link Dam (RM 254.44; Baseline)	USBR	0.45	P					56.22	2.25	55.13	5.94	4.1000		0.04	0.03	0.8010		1.83	0.01	0.12	0.0869	0.0243	19.5	18.5	1.1	
2018KHSA-073	10/16/2018	10:45	KR25444	Link Dam (RM 254.44; Baseline)	USBR	0.5	P	9.46	7.95	114.0	9.57	49.27	3.19	53.89	4.54	3.3500		0.06	0.05	0.6170		1.63	0.01	0.07	0.0470	0.0120	25.3	19.6	0.2	
2018KHSA-079	10/30/2018	9:40	KR25444	Link Dam (RM 254.44; Baseline)	USBR	0.45	P	9.18	7.05	121.0	6.01	29.87	2.38	57.54	4.68	1.9300		0.38	0.18	0.3440		1.61	0.02	0.07	0.0250	0.0252	12.0	11.4	<0.15	
2018KHSA-083	11/13/2018	9:40	KR25444	Link Dam (RM 254.44; Baseline)	USBR	0.45	P	3.94	7.55	129.0	9.43	12.33	2.02	55.04	4.01	2.0900		0.27	0.27	0.3220		1.36	0.01	0.07	0.0204	0.0069	13.9	15.0		
2018KHSA-089	12/4/2018	11:00	KR25444	Link Dam (RM 254.44; Baseline)	USBR	0.5	P	2.13	8.07	125.0	10.59	6.68	2.29	56.97	3.96	1.3200		0.74	0.29	0.1940		1.91	0.01	0.06	0.0349	<0.0063	18.3	17.2		
2018KHSA-004	2/13/2018	9:15	KR24600	Keno Reservoir at Miller Island (RM 246.0; Baseline)	USBR	0.5	P	3.85	7.67	156.0	9.95	17.25	3.27	64.80	3.54	1.3600		0.28	0.44	0.2320		1.36	0.02	0.12			11.8	9.6		

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Type	Water Temperature °C	pH	Specific Conductivity µS/cm	Dissolved Oxygen mg/l	Algae, Chlorophyll-a µg/l	Algae, Pheophytin µg/l	Alkalinity mg/l	Carbon, Dissolved Organic Carbon mg/l	Carbon, Particulate Carbon mg/l	Demand, Carbonaceous Biological Oxygen Demand mg/l	Nitrogen, Ammonia mg/l	Nitrogen, Nitrate+Nitrite mg/l	Nitrogen, Particulate Nitrogen mg/l	Nitrogen, Total Kjeldahl Nitrogen mg/l	Nitrogen, Total Nitrogen mg/l	Phosphorus, Phosphate mg/l	Phosphorus, Total Phosphorus mg/l	Phosphorus, Particulate Phosphorus mg/l	Phosphorus, Particulate Inorganic Phosphorus mg/l	Turbidity NTU	Solids, Total Suspended Solids mg/l	Solids, Volatile Suspended Solids mg/l	Toxins, Microcystin µg/l
2018KHS-010	3/13/2018	10:55	KR24600	Keno Reservoir at Miller Island (RM 246.0, Baseline)	USBR	0.5	P	6.33	8.22	184.0	12.37	52.47	8.15	78.80	4.09	4.1300		0.14	0.37	0.6620		1.44	0.02	0.15		36.9	42.0			
2018KHS-016	4/10/2018	10:50	KR24600	Keno Reservoir at Miller Island (RM 246.0, Baseline)	USBR	0.5	P	10.39	8.58	161.0	10.51	86.96	13.64	66.00	3.30	4.6400		<0.032	<0.003	0.7590		1.10	<0.003	0.12		34.1	41.0			
2018KHS-022	5/8/2018	10:50	KR24600	Keno Reservoir at Miller Island (RM 246.0, Baseline)	USBR	0.5	P	17.44	6.33	120.0	8.63	15.34	3.34	53.32	4.47	1.6700		0.12	0.03	0.2490		0.81	0.07	0.13		46.1	16.5		<0.15	
2018KHS-032	6/5/2018	11:00	KR24600	Keno Reservoir at Miller Island (RM 246.0, Baseline)	USBR	0.5	P	19.40	8.14	123.0	11.58	21.65	3.62	52.97	4.27	2.7600		<0.032	<0.003	0.3660		0.79	0.02	0.10		7.9	10.4		<0.15	
2018KHS-043	7/10/2018	12:10	KR24600	Keno Reservoir at Miller Island (RM 246.0, Baseline)	USBR	0.5	P	21.30	9.13	117.0	2.16	24.08	4.59	53.95	6.22	3.6000		0.75	0.01	0.8210		2.63	0.12	0.26		6.6	7.9		<0.15	
2018KHS-054	8/7/2018	11:15	KR24600	Keno Reservoir at Miller Island (RM 246.0, Baseline)	USBR	0.5	P	22.63	8.74	116.0	1.25	59.97	14.45	53.91	6.69	5.1600		1.03	0.01	1.1000		3.08	0.11	0.32		11.4	15.3		<0.15	
2018KHS-065	9/11/2018	11:00	KR24600	Keno Reservoir at Miller Island (RM 246.0, Baseline)	USBR	0.5	P	18.97	8.16	125.0	4.56	86.35	0.46	58.08	6.11	6.5800		0.43	0.03	1.3700		2.57	0.06	0.20		19.0	15.5		2.7	
2018KHS-076	10/16/2018	12:00	KR24600	Keno Reservoir at Miller Island (RM 246.0, Baseline)	USBR	0.45	P	11.60	7.00	145.0	2.67	14.26	2.33	66.43	5.35	1.5200		0.37	0.17	0.2690		1.54	0.03	0.08		12.2	9.8		<0.15	
2018KHS-086	11/13/2018	9:00	KR24600	Keno Reservoir at Miller Island (RM 246.0, Baseline)	USBR	0.5	P	4.61	6.93	147.0	7.28	8.04	2.64	63.11	4.40	1.1900		0.39	0.31	0.1680		0.95	0.02	0.07		14.8	10.2			
2018KHS-092	12/4/2018	9:00	KR24600	Keno Reservoir at Miller Island (RM 246.0, Baseline)	USBR	0.5	P	2.58	8.28	167.0	9.70	17.73	4.17	78.07	4.12	1.7700		0.63	0.37	0.2750		1.96	0.05	0.10		18.1	19.4			
2018KHS-005	2/13/2018	10:10	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	USBR	0.5	P	4.29	8.02	152.0	11.97	56.47	0.38	65.10	3.78	3.0500		0.04	0.35	0.5735		1.38	0.00	0.12	0.0502	0.0324	14.3	14.8		
2018KHS-011	3/13/2018	8:20	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	USBR	0.5	P	6.13	8.09	171.0	12.48	75.02	11.71	70.40	4.07	3.4600		<0.032	0.37	0.5760		1.35	0.01	0.09	0.0708	0.0334	30.1	32.5		
2018KHS-017	4/10/2018	8:40	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	USBR	0.6	P	10.88	8.39	193.0	10.71	80.81	13.33	65.00	4.90	6.3400		0.08	<0.003	0.9510		1.20	<0.003	0.29	0.0927	0.0473	41.4	53.0		
2018KHS-023	5/8/2018	8:45	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	USBR	0.5	P	16.83	6.29	164.0	9.38	16.47	5.52	62.30	5.53	2.3100		0.04	0.01	0.3260		0.82	0.13	0.20	0.0572	0.0226	17.0	21.7		<0.15
2018KHS-033	6/5/2018	8:40	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	USBR	0.6	P	18.43	7.21	166.0	9.63	12.19	2.83	74.50	5.27	1.9200		0.04	0.01	0.3430		0.19	0.10	0.15	0.0413	0.0180	8.1	8.8		<0.15
2018KHS-038	6/19/2018	8:55	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	USBR	0.5	P	17.49	8.97	114.0	10.51			51.59	4.37			0.05	0.01			1.09	0.02	0.08		20.9				
2018KHS-044	7/10/2018	9:35	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	USBR	0.5	P	20.25	9.08	123.0	7.67	27.26	3.05	54.88	6.48	2.7500		0.65	0.01	0.6170		2.60	0.25	0.39	0.0680	0.0399	11.3	6.7		<0.15
2018KHS-049	7/24/2018	8:30	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	USBR	0.5	P	23.56	8.60	144.0	6.98			63.75				1.16	0.01			3.31	0.15	0.33		7.7				
2018KHS-055	8/7/2018	8:55	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	USBR	0.4	P	21.52	7.96	144.0	7.34	34.75	10.53	66.40	7.86	2.9800		1.40	0.02	0.5580		2.96	0.17	0.31	0.0755	0.0318	7.6	8.8		<0.15
2018KHS-060	8/21/2018	8:05	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	USBR	0.5	P	21.27	8.34	139.0	7.46			62.44				0.13	0.03			3.30	0.16	0.32		9.2				

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Type	Water Temperature °C	pH	Specific Conductivity µS/cm	Dissolved Oxygen mg/l	Algae, Chlorophyll-a µg/l	Algae, Pheophytin µg/l	Alkalinity mg/l	Carbon, Dissolved Organic Carbon mg/l	Carbon, Particulate Carbon mg/l	Demand, Carbonaceous Biological Oxygen Demand mg/l	Nitrogen, Ammonia mg/l	Nitrogen, Nitrate-Nitrite mg/l	Nitrogen, Particulate Nitrogen mg/l	Nitrogen, Total Kjeldahl Nitrogen mg/l	Nitrogen, Total Nitrogen mg/l	Phosphorus, Phosphate mg/l	Phosphorus, Total Phosphorus mg/l	Phosphorus, Particulate Phosphorus mg/l	Phosphorus, Particulate Inorganic Phosphorus mg/l	Turbidity NTU	Solids, Total Suspended Solids mg/l	Solids, Volatile Suspended Solids mg/l	Toxins, Microcystin µg/l
2018KHS-066	9/11/2018	8:45	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	USBR	0.5	P	18.22	7.80	132.0	8.22	14.03	2.97	60.51	6.71	21300		0.55	0.05	0.4040		2.19	0.11	0.21	0.0774	0.0116	5.9	6.6		1.2
2018KHS-071	9/25/2018	8:40	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	USBR	0.45	P							64.48				0.50	0.10			1.89	0.03	0.11			10.0			
2018KHS-077	10/16/2018	9:45	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	USBR	0.45	P	11.02	6.91	176.0	9.40	13.15	3.48	77.97	6.13	12000		0.49	0.16	0.2000		1.63	0.02	0.09	0.0373	0.0915	8.6	10.2		<0.15
2018KHS-087	11/13/2018	11:00	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	USBR	0.5	P	5.92	7.01	177.0	10.09	3.65	1.71	66.63	4.84	0.9240		0.52	0.25	0.1300		1.54	0.03	0.09	0.0269	0.0219	6.5	3.9		
2018KHS-093	12/4/2018	10:00	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	USBR	0.5	P	3.16	9.25	170.0	11.66	5.91	2.33	75.54	4.32	0.8790		0.39	0.44	0.1170		1.61	0.04	0.07	0.0397	0.0209	9.8	13.9		
KR18015	3/18/2018	12:30	KR22460	Klamath River below J.C. Boyle Dam (RM 224.60; Baseline)	PacifiCorp	0.5	P	5.63	9.29	179.2	11.04	72.65	16.63	70.9	4.8	28400		<0.1	0.265	0.4710		1.18	<0.05	0.159			31.0			
KR18031	4/22/2018	12:40	KR22460	Klamath River below J.C. Boyle Dam (RM 224.60; Baseline)	PacifiCorp	0.5	P	12.49		321.6	9.43	52.04	5.13	95.48	9.03	29100		<0.032	0.009	0.4310		1.28	0.044	0.134			32.5			
KR18047	5/13/2018	16:30	KR22460	Klamath River below J.C. Boyle Dam (RM 224.60; Baseline)	PacifiCorp	0.5	P	16.20	7.97	126.3	11.95	8.56	2.35	52.42	4.17	10900		0.056	0.059	0.1670		0.72	0.078	0.118			12.9			<0.15
KR18064	6/10/2018	7:30	KR22460	Klamath River below J.C. Boyle Dam (RM 224.60; Baseline)	PacifiCorp	0.5	P	18.01		129.1	11.10	2.60	1.25	56.27	4.57	0.8400		0.064	0.082	0.1360		0.76	0.079	0.116			6.1			<0.15
KR18082	7/19/2018	6:50	KR22460	Klamath River below J.C. Boyle Dam (RM 224.60; Baseline)	PacifiCorp	0.5	P	23.20	7.74	135.5	7.22	1.38	1.28	55.51	6.83	0.7650		0.412	0.939	0.1110		2.33	0.287	0.345			3.3			<0.15
KR18100	8/12/2018	7:50	KR22460	Klamath River below J.C. Boyle Dam (RM 224.60; Baseline)	PacifiCorp	0.5	P					25.71	14.54	56.47	7.34	13300		0.273	1.219	0.2020		2.68	0.223	0.288			5.3			<0.15
KR18118	9/18/2018	6:20	KR22460	Klamath River below J.C. Boyle Dam (RM 224.60; Baseline)	PacifiCorp	0.5	P	15.79	6.52	125.2	9.12	3.22	3.67	56.04	6.46	10100		0.159	0.75	0.1190		1.85	0.113	0.159			5.2			0.4
KR18136	10/14/2018	7:15	KR22460	Klamath River below J.C. Boyle Dam (RM 224.60; Baseline)	PacifiCorp	0.5	P	11.48	8.19	157.1	11.24	4.15	4.51	71.51	5.98	0.8000		0.122	0.596	0.0914		1.65	0.055	0.092			8.8			0.2
KR18153	11/18/2018	8:20	KR22460	Klamath River below J.C. Boyle Dam (RM 224.60; Baseline)	PacifiCorp	0.5	P	6.09		0.1	11.65	3.33	2.40	61.24	4.58	0.7010		0.149	0.649	<0.0789		1.57	0.042	0.076			4.1			
KR18169	12/7/2018	15:10	KR22460	Klamath River below J.C. Boyle Dam (RM 224.60; Baseline)	PacifiCorp	0.5	P	3.12	6.77	166.3	11.36	3.73	2.49	73.05	4.27	0.6980		0.178	0.703	<0.0789		1.55	0.051	0.08			7.4			
KR18016	3/18/2018	11:40	KR21950	Klamath River below USGS Gage (RM 219.50; Baseline)	PacifiCorp	0.5	P	6.34	9.36	174.1	10.81	70.23	13.52	70.6	3.77	25300		<0.1	0.249	0.4270		1.01	<0.05	0.155			18.3	26.0		
KR18032	4/22/2018	12:00	KR21950	Klamath River below USGS Gage (RM 219.50; Baseline)	PacifiCorp	0.5	P	12.14		298.0	9.90	53.41	12.20	92.94	7.59	24300		<0.032	0.029	0.3740		1.06	0.048	0.128			16.4	27.9		
KR18048	5/13/2018	16:00	KR21950	Klamath River below USGS Gage (RM 219.50; Baseline)	PacifiCorp	0.5	P	15.74	7.32	128.7	11.53	6.52	2.14	53.72	3.95	11200		0.045	0.081	0.1590		0.7	0.077	0.115			7.6	11.9		<0.15
KR18065	6/10/2018	8:30	KR21950	Klamath River below USGS Gage (RM 219.50; Baseline)	PacifiCorp	0.5	P	17.08		130.5	9.14	2.77	1.27	58.39	3.86	0.7350		0.043	0.083	0.1120		0.67	0.072	0.104			3.6	5.8		<0.15

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Type	Water Temperature °C	pH	Specific Conductivity µS/cm	Dissolved Oxygen mg/l	Algae, Chlorophyll-a µg/l	Algae, Pheophytin µg/l	Alkalinity mg/l	Carbon, Dissolved Organic Carbon mg/l	Carbon, Particulate Carbon mg/l	Demand, Carbonaceous Biological Oxygen Demand mg/l	Nitrogen, Ammonia mg/l	Nitrogen, Nitrate+Nitrite mg/l	Nitrogen, Particulate Nitrogen mg/l	Nitrogen, Total Kjeldahl Nitrogen mg/l	Nitrogen, Total Nitrogen mg/l	Phosphorus, Phosphate mg/l	Phosphorus, Total Phosphorus mg/l	Phosphorus, Particulate Phosphorus mg/l	Phosphorus, Particulate Inorganic Phosphorus mg/l	Turbidity NTU	Solids, Total Suspended Solids mg/l	Solids, Volatile Suspended Solids mg/l	Toxins, Microcystin µg/l
KR18083	7/19/2018	7:40	KR21950	Klamath River below USGS Gage (RM 219.50; Baseline)	PacifiCorp	0.5	P	15.12	8.02	139.1	9.29	1.33	1.22	64.82	2.63	0.5520	<0.032	0.562	<0.0789	0.99	0.136	0.155					1.9	3.8		<0.15
KR18101	8/12/2018	8:40	KR21950	Klamath River below USGS Gage (RM 219.50; Baseline)	PacifiCorp	0.5	P					44.36	21.68	58.79	5.95	1.1200	0.151	1.106	0.1700	2.33	0.192	0.257					5.1		<0.15	
KR18119	9/18/2018	7:05	KR21950	Klamath River below USGS Gage (RM 219.50; Baseline)	PacifiCorp	0.5	P	11.91	6.55	132.6	10.01	2.18	2.43	63.77	2.43	0.5590	<0.032	0.415	<0.0789	0.85	0.074	0.092					2.4	<2.0	<0.15	
KR18137	10/14/2018	7:50	KR21950	Klamath River below USGS Gage (RM 219.50; Baseline)	PacifiCorp	0.5	P	9.98	8.27	149.4	11.57	2.04	2.10	69.63	2.77	0.3920	<0.032	0.392	<0.0789	0.82	0.054	0.065					2.8	3.3	0.2	
KR18154	11/18/2018	9:00	KR21950	Klamath River below USGS Gage (RM 219.50; Baseline)	PacifiCorp	0.5	P	7.02	7.02	140.9	10.84	2.01	1.70	66.51	1.98	0.4090	<0.032	0.381	<0.0789	0.67	0.048	0.055					2.7	<2.0		
KR18170	12/7/2018	16:25	KR21950	Klamath River below USGS Gage (RM 219.50; Baseline)	PacifiCorp	0.5	P	4.29	7.22	160.6	10.92	3.94	2.55	70.3	3.56	0.6700	0.116	0.623	<0.0789	1.28	0.047	0.069					4.9			
KR18011	3/17/2018	16:20	KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	PacifiCorp	0.5	P	6.74	9.40	176.9	11.12	68.69	15.06	71.4	3.79	3.3000	<0.1	0.283	0.5320	1.04	<0.05	0.144	0.0672	0.0369	19.1	27.8				
KR18027	4/21/2018	16:40	KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	PacifiCorp	0.5	P	13.52		302.6	9.58	65.75	9.74	90.7	7.6	3.2400	<0.032	0.023	0.4950	1.19	0.04	0.13	0.0767	0.0422	19.8	24.8				
KR18043	5/12/2018	15:10	KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	PacifiCorp	0.5	P	16.95	8.04	125.6	9.92	9.63	4.62	53.42	3.9	0.9730	<0.032	0.099	0.1320	0.7	0.085	0.129	0.0325	0.0143	8.7	17.8			<0.15	
KR18060	6/9/2018	15:50	KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	PacifiCorp	0.5	P	18.30		138.8	10.34	5.79	3.18	61.22	3.93	0.8760	<0.032	0.052	0.1280	0.58	0.082	0.114	0.0155	<0.0063	3.7	6.1			<0.15	
KR18067	6/25/2018	12:50	KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	PacifiCorp	0.5	P	20.44	8.54	129.1	8.82						0.044	0.292		1.45	0.06	0.109								
KR18078	7/18/2018	19:50	KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	PacifiCorp	0.5	P	23.00	7.95	137.8	7.45	2.03	1.74	56.87	5.64	0.9840	0.056	1.05	0.1400	1.91	0.252	0.298	0.0270	0.0100	3.8	7.1			<0.15	
KR18085	7/28/2018	13:40	KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	PacifiCorp	0.5	P	19.09	10.02	144.0	8.87						<0.032	0.625		1.71	0.131	0.156								
KR18096	8/11/2018	15:00	KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	PacifiCorp	0.5	P	23.77				22.04	7.91	57.98	5.7	0.9700	<0.032	1.1	0.1450	2.48	0.197	0.247	0.0176	0.0084	3.9	5.8			<0.15	
KR18103	8/25/2018	14:45	KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	PacifiCorp	0.5	P	25.20										<0.032	0.979		2.04	0.181	0.268							
KR18114	9/17/2018	17:20	KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	PacifiCorp	0.5	P	16.37	7.36	129.3	9.37	3.23	2.90	58.12	5.51	0.8660	<0.032	0.654	0.0920	1.45	0.106	0.155	0.0158	<0.0063	6.6	8.9			0.3	
KR18121	9/22/2018	10:00	KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	PacifiCorp	0.5	P	13.87	8.43	134.7	9.51						0.038	0.639		1.59	0.074	0.122								0.2
KR18132	10/13/2018	16:10	KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	PacifiCorp	0.5	P	12.52	8.36	155.8	10.76	4.07	3.60	69.23	4.78	0.6750	<0.032	0.514	0.0840	1.25	0.054	0.088	0.0194	<0.0063	6.2	11.4			0.4	
KR18149	11/17/2018	12:45	KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	PacifiCorp	0.5	P	8.84	7.79	0.1	10.64	3.74	2.01	64.76	3.79	0.6000	<0.032	0.622	<0.0789	1.29	0.041	0.072	0.0078	<0.0063	5.1	3.5				
KR18165	12/8/2018	12:40	KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	PacifiCorp	0.5	P	4.10	8.20	164.2	12.45	5.86	3.26	75.81	3.49	0.5730	<0.032	0.706	<0.0789	1.31	0.045	0.066	<0.0063	<0.0063	7.1	5.1				

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KR18007	3/17/2018	14:25	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0.5	P	7.22	9.14	168.2	11.23	14.48	3.71	71	3	1.0100		<0.1	0.308	0.1600		0.811	<0.05	0.143			7.8			
KR18008	3/17/2018	14:35	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0-8	I					15.56	4.51																	
KR18009	3/17/2018	14:45	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	1	P	6.97	9.15	168.3	11.19	12.11	4.27	69	2.82	0.9210		<0.1	0.326	0.1180		0.785	<0.05	0.107			8.2			
KR18010	3/17/2018	14:55	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	29	P	5.34	8.57	168.9	9.51			69.8	3.03	0.7620		0.131	0.341	0.1030		0.843	<0.05	0.193			6.6			
KR18023	4/21/2018	14:30	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0.5	P	12.83		203.2	9.25	16.33	4.12	73.44	5.36	1.2800		0.053	0.011	0.1880		0.75	0.034	0.076			12.5			
KR18024	4/21/2018	14:40	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0-8	I					18.77	4.55																	
KR18025	4/21/2018	14:50	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0.5	P	12.78		203.3	9.28	14.69	2.35	73.03	5.31	1.1700		0.05	0.009	0.1780		0.75	0.031	0.075			10.8			
KR18026	4/21/2018	15:00	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	22	P							73.13	5.32	1.4200		0.036	0.009	0.2200		0.75	0.031	0.072			12.3			
KR18039	5/13/2018	10:00	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0.5	P	17.76	7.59	145.4	13.77	2.02	0.48	57.21	4.07	0.5600		0.058	0.091	<0.0789		0.61	0.091	0.113			2.8			<0.15
KR18040	5/13/2018	10:10	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0-8	I					3.76	0.79																	<0.15
KR18041	5/13/2018	10:20	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	12	P	16.52	7.42	169.3	19.58	5.33	1.10	60.81	4.4	0.7330		0.072	0.1	0.1050		0.68	0.104	0.126			4.7			
KR18042	5/13/2018	10:30	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	27	P	9.97	7.06	241.2	42.49			82.57	5.94	0.8500		0.502	0.021	0.0907		1.1	0.236	0.272			6.0			
KR18056	6/9/2018	13:20	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0.5	P	19.00		137.8	12.85	2.99	1.16	61.12	3.41	0.6540		0.074	0.061	0.0944		0.59	0.089	0.11			3.0			<0.15
KR18057	6/9/2018	13:30	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0-8	I					3.04	0.90																	<0.15
KR18058	6/9/2018	13:40	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	15	P	14.91		171.7	40.85	1.07	0.83	60.31	3.28	0.4610		0.265	0.085	<0.0789		0.74	0.142	0.165			4.4			
KR18059	6/9/2018	13:50	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	20	P	10.83		241.8	42.47			84.15	5.38	0.8220		0.926	0.004	0.1070		1.46	0.421	0.439			6.2			
KR18074	7/18/2018	14:55	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0.5	P	25.73	9.65	144.9	15.90	42.94	0.46	61.05	4.21	3.2100		0.033	0.13	0.5810		2.03	0.079	0.2			8.3			1.0
KR18075	7/18/2018	15:15	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0-8	I					48.45	0.53																	1.1
KR18076	7/18/2018	15:35	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	22	P	15.51	7.27	180.2	0.01	0.79	0.46	64.08	3.72	0.3970		0.384	0.227	<0.0789		1.03	0.25	0.25			3.5			
KR18077	7/18/2018	15:20	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	28	P	11.62	7.11	246.4	0.03			93.46	4.99	0.9770		1.583	0.012	0.1430		2.08	0.752	0.819			8.9			
KR18092	8/11/2018	12:40	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0.5	P	24.03	9.59	144.2	15.88	289.11	104.01	62.53	5.05	12.6000		0.039	0.171	2.4700		3.44	0.115	0.297			24.3			18.0
KR18093	8/11/2018	12:50	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0-8	I					228.22	87.92																	3.0
KR18094	8/11/2018	13:00	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	18	P	17.93	7.55	153.7	0.01	46.70	18.48	61.82	4.88	4.7100		0.053	0.174	0.9590		1.99	0.113	0.203			13.2			
KR18095	8/11/2018	13:10	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	39	P							62.43	3.9	2.2600		0.322	0.373	0.2900		1.66	0.226	0.339			106.8			
KR18110	9/17/2018	15:25	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0.5	P	18.72	6.68	137.0	7.47	9.86	0.86	61.29	5.04	0.6830		0.172	0.418	0.0920		1.39	0.148	0.181			2.3			1.0
KR18111	9/17/2018	15:40	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0-8	I					6.35	1.41																	2.0

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KR18112	9/17/2018	16:00	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	13	P	17.69	7.57	138.0	6.93	3.17	1.45	61.1	5	0.7070		0.175	0.423	<0.0789		1.41	0.149	0.181			3.2			
KR18113	9/17/2018	15:50	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	21	P	16.67	7.39	150.1	1.65			63.28	4.82	0.7380		0.373	0.387	<0.0789		1.26	0.187	0.224			5.1			
KR18128	10/13/2018	13:55	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0.5	P	14.97	7.73	146.0	8.87	4.70	1.09	63.97	4.48	0.4680		0.272	0.505	<0.0789		1.34	0.102	0.122			3.0		<0.15	
KR18129	10/13/2018	14:05	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0-8	I					2.07	1.11																0.2	
KR18130	10/13/2018	14:15	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	30	P	13.73	7.59	151.2	8.65	1.27	1.19	64.07	4.39	0.4260		0.241	0.455	<0.0789		1.26	0.099	0.117			3.8			
KR18131	10/13/2018	14:25	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	33	P							65.76	4.33	2.6800		0.241	0.411	0.3580		1.55	0.083	0.199			96.2			
KR18006	3/17/2018	13:20	KR19645	Klamath River below Copco Dam (RM 196.45; Baseline)	PacifiCorp	0.5	P	6.16	8.63	167.6	10.58	10.76	3.54	67.4	3.61	0.8470		<0.1	0.326	0.1320		0.644	<0.05	0.097			7.0			
KR18022	4/21/2018	13:35	KR19645	Klamath River below Copco Dam (RM 196.45; Baseline)	PacifiCorp	0.5	P	10.68		213.5	8.17	23.83	5.57	76.28	5.35	1.2300		0.096	0.029	0.1930		0.85	0.049	0.103			16.4			
KR18038	5/12/2018	13:15	KR19645	Klamath River below Copco Dam (RM 196.45; Baseline)	PacifiCorp	0.5	P	16.58	7.49	185.5	18.72	4.47	1.38	67.3	4.62	0.7060		0.11	0.108	0.0895		0.73	0.118	0.145			4.5		<0.15	
KR18055	6/9/2018	12:00	KR19645	Klamath River below Copco Dam (RM 196.45; Baseline)	PacifiCorp	0.5	P	18.38		138.1	15.76	2.05	0.86	60.31	3.37	0.2120		0.123	0.085	<0.0789		0.61	0.107	0.128			4.5		<0.15	
KR18073	7/18/2018	13:50	KR19645	Klamath River below Copco Dam (RM 196.45; Baseline)	PacifiCorp	0.5	P	22.38	8.63	139.5	8.43	231.95	32.23	62.93	4.16	33.0000		0.119	0.316	6.0000		8.74	0.136	0.644			95.4		3.6	
KR18091	8/11/2018	11:50	KR19645	Klamath River below Copco Dam (RM 196.45; Baseline)	PacifiCorp	0.5	P	21.31	8.97	147.0	8.37	112.58	38.42	62.23	4.78	3.3300		0.12	0.296	0.6910		3.26	0.154	0.309			15.0		5.7	
KR18109	9/17/2018	14:30	KR19645	Klamath River below Copco Dam (RM 196.45; Baseline)	PacifiCorp	0.5	P	18.33	6.51	144.3	6.66	56.13	1.44	62.68	5.07	3.3800		0.181	0.491	0.6540		1.99	0.187	0.282			13.7		66.0	
KR18127	10/13/2018	12:45	KR19645	Klamath River below Copco Dam (RM 196.45; Baseline)	PacifiCorp	0.5	P	14.62	7.91	146.3	9.98	1.31	1.25	65.56	4.04	0.6100		0.14	0.459	0.0791		1.15	0.094	0.112			5.2		0.4	
KR18144	11/17/2018	10:30	KR19645	Klamath River below Copco Dam (RM 196.45; Baseline)	PacifiCorp	0.5	P	10.83	7.47			1.85	1.32	77.25	3.08	0.6670		0.075	0.45	<0.0789		1.23	0.084	0.105			5.4			
KR18160	12/8/2018	11:00	KR19645	Klamath River below Copco Dam (RM 196.45; Baseline)	PacifiCorp	0.5	P	6.14	7.60	152.8	10.05	2.03	1.24	69.67	3.49	0.5460		0.112	0.479	<0.0789		1.09	0.051	0.071			4.0			
KR18002	3/17/2018	10:15	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0.5	P	6.50	6.49	178.8	10.30	4.84	0.98	68.3	3.06	0.5860		<0.1	0.474	0.0932		0.852	<0.05	0.102			<5.0			
KR18003	3/17/2018	10:25	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0-8	I					5.29	0.91																	
KR18004	3/17/2018	10:45	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	2	P	6.28	7.07	178.8	10.26	6.56	1.25	70.5	3.03	0.7700		<0.1	0.469	0.1250		0.912	<0.05	0.091			<5.0			
KR18005	3/17/2018	10:35	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	48	P	5.46	8.14	184.9	8.44			72.4	3.09	0.5570		<0.1	0.583	<0.0789		0.963	<0.05	0.106			<5.0			
KR18018	4/21/2018	10:50	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0.5	P	15.22		186.9	9.60	2.51	0.93	71.61	4.86	0.7100		<0.032	0.031	0.0941		0.63	0.013	0.045			5.1			
KR18019	4/21/2018	11:00	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0-8	I					14.69	3.34																	
KR18020	4/21/2018	11:10	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0.5	P	14.97		187.9	9.59	5.68	1.01	71.71	4.84	0.9830		0.032	0.03	0.1510		0.74	0.016	0.073			6.6			

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Type	Water Temperature °C	pH	Specific Conductivity µS/cm	Dissolved Oxygen mg/l	Algae, Chlorophyll-a µg/l	Algae, Pheophytin µg/l	Alkalinity mg/l	Carbon, Dissolved Organic Carbon mg/l	Carbon, Particulate Carbon mg/l	Demand, Carbonaceous Biological Oxygen Demand mg/l	Nitrogen, Ammonia mg/l	Nitrogen, Nitrate-Nitrite mg/l	Nitrogen, Particulate Nitrogen mg/l	Nitrogen, Total Kjeldahl Nitrogen mg/l	Nitrogen, Total Nitrogen mg/l	Phosphorus, Phosphate mg/l	Phosphorus, Total Phosphorus mg/l	Phosphorus, Particulate Phosphorus mg/l	Phosphorus, Particulate Inorganic Phosphorus mg/l	Turbidity NTU	Solids, Total Suspended Solids mg/l	Solids, Volatile Suspended Solids mg/l	Toxins, Microcystin µg/l
KR18021	4/21/2018	11:20	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	51	P							76.08	3.11	0.7120		0.089	0.643	0.0968		1.13	0.094	0.152			6.8			
KR18034	5/12/2018	10:50	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0.5	P	17.39	7.39	227.3	18.50	0.82	0.46	77.58	5.04	0.4730		0.155	0.097	<0.0789		0.77	0.11	0.13			<2.0		<0.15	
KR18035	5/12/2018	11:00	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0-8	I					2.56	0.78																<0.15	
KR18036	5/12/2018	11:10	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	1	P	17.02	7.45	225.8	18.60	1.03	0.60	78.88	5.03	0.7800		0.168	0.093	0.1150		0.82	0.108	0.129			2.4			
KR18037	5/12/2018	11:20	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	45	P	6.03	7.20	185.5	31.93			74.68	3.17	0.7510		0.155	0.586	0.0882		1.09	0.139	0.158			3.4			
KR18051	6/9/2018	8:30	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0.5	P	19.41		142.5	9.86	2.44	0.58	59.3	3.46	0.6710		0.033	0.045	0.0993		0.53	0.071	0.096			3.6		<0.15	
KR18053	6/9/2018	8:40	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	10	P	16.27	6.02	167.0	29.87	2.15	0.74	60.21	3.42	0.5510		0.079	0.101	0.0847		0.62	0.091	0.115			3.4			
KR18054	6/9/2018	8:50	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	30	P	6.64		183.5	30.34			59.4	3.41	0.6170		0.035	0.047	<0.0789		0.53	0.072	0.096			6.2			
KR18069	7/18/2018	10:30	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0.5	P	26.19		142.0	11.24	25.31	0.94	61.26	3.94	4.8300		<0.032	0.014	0.8800		1.33	0.024	0.148			12.8		46.0	
KR18070	7/18/2018	10:55	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0-8	I					8.22	0.53																2.1	
KR18071	7/18/2018	11:35	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	16	P	16.22		169.6	1.14	0.68	0.46	63.77	3.35	0.4270		0.037	0.288	<0.0789		0.66	0.114	0.126			2.3			
KR18072	7/18/2018	11:15	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	47	P							78.72	3.28	0.6940		0.358	0.545	0.1110		1.18	0.194	0.229			3.7			
KR18087	8/11/2018	9:00	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0.5	P	23.82	9.38	146.3	11.39	76.23	38.07	62.13	4.9	5.9800		0.05	0.003	1.1100		2.34	0.017	0.149			16.4		9.0	
KR18088	8/11/2018	9:10	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0-8	I					58.49	22.13																4.3	
KR18089	8/11/2018	9:20	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	19	P	15.28	7.55	179.7	0.01	38.12	17.02	67.38	3.39	0.4250		<0.032	0.297	<0.0789		0.68	0.141	0.157			2.3			
KR18090	8/11/2018	9:30	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	38	P	7.08	7.13	198.2	0.00			77.58	3.27	0.3410		0.193	0.478	<0.0789		1.01	0.147	0.175			3.8			
KR18105	9/17/2018	12:00	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0.5	P	19.67	8.04	143.6	12.62	818.79	0.46	63.87	5.36	58.2000		<0.032	0.261	12.4400		12.64	0.133	1.173			116.8		570.0	
KR18106	9/17/2018	12:10	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0-8	I					82.28	0.46																30.0	
KR18107	9/17/2018	12:25	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	22	P	13.09	7.45	192.0	0.00	1.22	0.78	65.86	3.63	0.7350		0.154	0.167	0.0945		0.77	0.184	0.205			5.5			
KR18108	9/17/2018	12:40	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	43	P	7.73	7.27	196.2	0.00			64.86	4.82	3.4500		0.075	0.291	0.7120		2.27	0.134	0.321			13.9			
KR18123	10/13/2018	9:40	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0.5	P	15.79	7.51	145.7	7.11	9.34	0.89	64.77	4.43	0.5170		0.247	0.421	<0.0789		1.24	0.145	0.164			<2.0		0.3	
KR18124	10/13/2018	10:00	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0-8	I					4.55	0.84																0.5	
KR18125	10/13/2018	10:45	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	27	P	10.24	7.17	193.8	4.34	0.68	0.67	70.62	4.16	0.4510		0.361	0.158	<0.0789		1.03	0.195	0.213			8.9			
KR18126	10/13/2018	11:00	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	41	P							82.62	3.56	0.6290		0.79	0.038	<0.0789		1.18	0.292	0.333			10.1			
KR18001	3/17/2018	17:50	KR18973	Klamath River below Iron Gate Dam (RM 189.73; Baseline)	PacifiCorp	0.5	R	6.11	8.93	176.5	11.18	7.81	1.40	72.3	2.96	0.5270		<0.1	0.501	<0.0789		0.866	<0.05	0.108	0.0152	<0.0063	4.6	<5.0		
KR18017	4/21/2018	18:00	KR18973	Klamath River below Iron Gate	PacifiCorp	0.5	R	12.61		191.2	9.46	8.14	2.10	72.42	4.81	0.9940		0.05	0.073	0.1510		0.71	0.023	0.058	0.0197	0.0071	8.2	8.7		

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				Dam (RM 189.73; Baseline)																										
KR18033	5/12/2018	18:00	KR18973	Klamath River below Iron Gate Dam (RM 189.73; Baseline)	PacifiCorp	0.5	R	16.76	7.73	223.7	10.80	3.68	0.67	77.08	5.06	0.8930		0.147	0.112	0.1490		0.89	0.11	0.136	0.0137	0.0115	2.1	2.6		
KR18049	5/29/2018	9:00	KR18973	Klamath River below Iron Gate Dam (RM 189.73; Baseline)	PacifiCorp	0.5	P	18.25		147.4	8.18	7.90	3.20	59.29	3.87	0.9510		0.036	0.07	0.1620		0.64	0.073	0.108	0.0475	0.0105	3.9	4.6		
KR18050	6/9/2018	18:00	KR18973	Klamath River below Iron Gate Dam (RM 189.73; Baseline)	PacifiCorp	0.5	R	18.80		139.6	9.98	3.01	1.16	60.11	3.42	0.9630		0.05	0.084	0.1550		0.58	0.079	0.106	0.0104	<0.0063	3.2	5.0		
KR18066	6/25/2018	10:30	KR18973	Klamath River below Iron Gate Dam (RM 189.73; Baseline)	PacifiCorp	0.5	P	20.26	7.94	148.7	8.89	3.70	1.42	62.66	3.57	0.3650		0.062	0.1	<0.0789		0.61	0.093	0.113	<0.0063	<0.0063	1.9	<2.0		
KR18068	7/18/2018	18:15	KR18973	Klamath River below Iron Gate Dam (RM 189.73; Baseline)	PacifiCorp	0.5	R	23.04	8.52	135.0	8.62	3.20	0.93	60.84	3.65	0.8960		0.06	0.179	0.1550		0.77	0.066	0.095	0.0338	0.0068	2.2	3.4		
KR18084	7/28/2018	16:20	KR18973	Klamath River below Iron Gate Dam (RM 189.73; Baseline)	PacifiCorp	0.5	P	24.81	9.52	136.6	8.08	5.37	1.88	61.05	3.78	0.3670		0.109	0.41	<0.0789		0.98	0.121	0.144	0.0090	0.0084	1.8	<2.0	1.1	
KR18086	8/11/2018	17:25	KR18973	Klamath River below Iron Gate Dam (RM 189.73; Baseline)	PacifiCorp	0.5	R					29.09	11.09	62.33	4.05	0.6390		0.125	0.353	0.1080		1.02	0.13	0.161	0.0136	<0.0063	2.2	3.3	0.7	
KR18102	8/25/2018	17:20	KR18973	Klamath River below Iron Gate Dam (RM 189.73; Baseline)	PacifiCorp	0.5	P	26.20				20.62	1.38	63.79	4.4	1.7100		0.12	0.22	0.3030		1.16	0.123	0.165	0.0272	0.0134	4.0	4.8	12.0	
KR18104	9/17/2018	10:15	KR18973	Klamath River below Iron Gate Dam (RM 189.73; Baseline)	PacifiCorp	0.5	R	19.04	7.82	147.8	8.71	53.62	1.32	64.07	4.67	3.3300		0.112	0.342	0.6710		1.9	0.143	0.214	0.0351	0.0228	4.1	6.7	12.0	
KR18120	9/22/2018	8:00	KR18973	Klamath River below Iron Gate Dam (RM 189.73; Baseline)	PacifiCorp	0.5	P	18.33	8.99	145.3	8.01	6.52	1.56	63.08	4.83	1.1300		0.133	0.355	0.1950		1.36	0.147	0.196	0.0163	0.0104	2.1	3.4	5.4	
KR18122	10/13/2018	7:45	KR18973	Klamath River below Iron Gate Dam (RM 189.73; Baseline)	PacifiCorp	0.5	R	15.38	7.38	148.2	8.64	2.37	1.56	64.27	4.5	0.5760		0.232	0.458	0.0840		1.25	0.154	0.17	0.0123	0.0097	2.6	2.2	0.3	
KR18138	10/28/2018	10:10	KR18973	Klamath River below Iron Gate Dam (RM 189.73; Baseline)	PacifiCorp	0.5	P	14.31	6.63	124.3	9.52	1.24	0.59	67.68	4.17	0.4110		0.235	0.465	<0.0789		1.28	0.131	0.145	0.0088	<0.0063	1.8	2.2	<0.15	
KR18139	11/17/2018	14:15	KR18973	Klamath River below Iron Gate Dam (RM 189.73; Baseline)	PacifiCorp	0.5	R	10.64	7.53	143.5	8.46	1.85	0.71	70.13	3.82	0.4480		0.201	0.422	<0.0789		1.2	0.11	0.126	0.0098	<0.0063	2.3	<2.0		
KR18155	12/8/2018	15:25	KR18973	Klamath River below Iron Gate Dam (RM 189.73; Baseline)	PacifiCorp	0.5	R					1.74	0.98	70.94	3.56	0.4760		0.126	0.475	<0.0789		1.11	0.068	0.083	<0.0063	<0.0063	3.2	2.5		
WA031418-OC	3/14/2018	10:38	KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	Karuk	0.5	P	6.99	8.13	234.0	11.31					0.5480														
WA041118-OC	4/11/2018	9:53	KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	Karuk	0.5	P	10.35	8.17	223.9	10.55	11.00	7.80		5.87	1.1800		0.056	0.233			1.54	0.049	0.09			12.0			
WA050918-OC	5/9/2018	10:38	KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	Karuk	0.5	P	15.92	8.24	239.5	9.27	3.70	2.80		6.29	0.9260		0.062	0.145			0.797	0.078	0.111			5.0		<0.15	
WA060618-OC	6/6/2018	10:06	KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	Karuk	0.5	P	19.68	8.02	172.0	9.13	1.60	2.10		3.82	0.8300		0.016	0.083			0.391	0.08	0.105			2.8	0.6	<0.15	
WA071118-OC	7/11/2018	9:00	KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	Karuk	0.5	P	22.59	8.58	159.0	8.55	1.60	1.60		3.8	0.4990		0.033	0.104			0.694	0.078	0.106			1.7		<0.15	

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WA080818-OC	8/8/2018	9:21	KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	Karuk	0.5	P	22.86	8.61	166.0	8.58	3.20	3.50		4.16	0.5040		<0.01	0.378			0.924	0.137	0.152			1.5	1.3		
WA091218-OC	9/12/2018	9:55	KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	Karuk	0.5	P	18.50	8.63	164.0	9.73	15.00	4.40		5.22	1.5200		0.016	0.462			1.37	0.147	0.173			5.0		3.0	
WA101018-OC	10/10/2018	11:28	KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	Karuk	0.5	P	15.19	8.69	186.0	9.96	2.00	1.90		4.58	0.8350		0.025	0.453			1.72	0.141	0.189			2.6			
WA111418-OC	11/14/2018	12:43	KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	Karuk	0.5	P	8.53	8.45	196.7	11.95	1.60	2.30		4.12	0.5890		0.03	0.532			0.838	0.11	0.134			4.3			
WA120518-OC	12/5/2018	12:02	KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	Karuk	0.5	P	7.18	8.28	209.4	12.08	1.60	2.40		3.39	0.4650		0.016	0.522			0.899	0.083	0.103			2.3			
WA072518-OC	7/25/2018	10:25	KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	Karuk	0.5	P																							0.3
SV031418-OC	3/14/2018	9:32	KR12850	Klamath River below Seiad (RM 128.5; Baseline)	Karuk	0.5	P	7.82	8.15	203.0	11.03					0.8110				0.0829				0.0167	<0.0063					
SV041118-OC	4/11/2018	8:48	KR12850	Klamath River below Seiad (RM 128.5; Baseline)	Karuk	0.5	P	9.60	8.14	181.4	10.84	5.90	4.40		4.68	1.3700		0.036	0.178	0.1570		0.743	0.032	0.074	0.0278	0.0086	5.0	18.0		
SV050918-OC	5/9/2018	9:20	KR12850	Klamath River below Seiad (RM 128.5; Baseline)	Karuk	0.5	P	15.58	8.25	171.8	9.32	8.60	5.90		4.98	0.7660		0.014	0.124	0.1030		0.659	0.052	0.115	0.0217	<0.0063	2.4	7.7	<0.15	
SV060618-OC	6/6/2018	8:56	KR12850	Klamath River below Seiad (RM 128.5; Baseline)	Karuk	0.5	P	18.99	8.32	190.0	9.30	2.00	1.90		2.65	0.7460		0.01	0.051	<0.0789		0.334	0.05	0.072	0.0063	<0.0063	0.9	3.1	1.3	<0.15
SV071118-OC	7/11/2018	7:47	KR12850	Klamath River below Seiad (RM 128.5; Baseline)	Karuk	0.5	P	22.24	8.38	175.0	8.31	1.90	1.30		3.34	0.3210		<0.01	<0.01	<0.0789		0.367	0.066	0.088	<0.0063	<0.0063	0.7	2.3	<0.15	
SV072518-OC	7/25/2018	8:11	KR12850	Klamath River below Seiad (RM 128.5; Baseline)	Karuk	0.5	P																							<0.15
SV080818-OC	8/8/2018	8:00	KR12850	Klamath River below Seiad (RM 128.5; Baseline)	Karuk	0.5	P	22.37	8.51	179.0	8.72	5.50	5.70		3.77	0.5860		<0.01	0.223			0.671	0.108	0.134	0.0090	<0.0063	0.5	2.0	1.5	0.2
SV091218-OC	9/12/2018	8:17	KR12850	Klamath River below Seiad (RM 128.5; Baseline)	Karuk	0.5	P	17.82	8.64	171.0	9.93	5.60	3.20		4.68	0.7550		0.011	0.435	0.1120		1.01	0.125	0.167	0.0194	<0.0063	1.0	3.0		2.7
SV101018-OC	10/10/2018	10:03	KR12850	Klamath River below Seiad (RM 128.5; Baseline)	Karuk	0.5	P	14.57	8.61	195.2	10.16	2.30	2.70		3.56	0.7320		0.013	0.419	0.0854		1.04	0.131	0.17	0.0076	<0.0063	0.8	2.0		
SV111418-OC	11/14/2018	11:27	KR12850	Klamath River below Seiad (RM 128.5; Baseline)	Karuk	0.5	P	7.26	8.39	203.7	12.33	2.00	2.30		3.51	0.4110		<0.01	0.467	<0.0789		0.681	0.098	0.119	<0.0063	<0.0063	0.9	2.5		
SV120518-OC	12/5/2018	10:53	KR12850	Klamath River below Seiad (RM 128.5; Baseline)	Karuk	0.5	P	6.26	8.29	217.6	12.66	1.60	3.00		2.88	0.4020		<0.01	0.481			0.642	0.069	0.084	0.0539	<0.0063	1.0	2.0		
HC031418-OC	3/14/2018	8:50	KR10130	Klamath River below Happy Camp (RM 101.3; Baseline)	Karuk	0.5	P	7.46	7.92	154.0	11.11																			
HC041118-OC	4/11/2018	7:55	KR10130	Klamath River below Happy Camp (RM 101.3; Baseline)	Karuk	0.5	P	9.64	8.13	161.8	11.20	4.80	3.40		3.94	1.0100		0.024	0.147			0.7	0.026	0.06			20.0			
HC050918-OC	5/9/2018	8:29	KR10130	Klamath River below Happy Camp (RM 101.3; Baseline)	Karuk	0.5	P	14.88	8.24	179.3	9.54	5.10	5.80		3.21	0.6780		<0.01	0.027			0.333	0.024	0.054			10.0		<0.15	
HC060618-OC	6/6/2018	8:04	KR10130	Klamath River below Happy Camp (RM 101.3; Baseline)	Karuk	0.5	P	18.35	8.25	182.0	9.34	1.50	1.80		2.37	0.6210		0.012	0.019			0.318	0.04	0.055			2.5	0.7	<0.15	
HC071118-OC	7/11/2018	6:59	KR10130	Klamath River below Happy Camp (RM 101.3; Baseline)	Karuk	0.5	P	21.45	8.30	174.0	8.51	1.50	<0.10		2.87	0.2590		<0.01	<0.01			0.29	0.05	0.07			1.3		<0.15	
HC080818-OC	8/8/2018	7:06	KR10130	Klamath River below Happy Camp (RM 101.3; Baseline)	Karuk	0.5	P	21.60	8.44	181.0	8.45	15.00	9.50		3.59	1.2100		<0.01	<0.01			0.48	0.074	0.107			4.3	2.3	0.3	

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Type	Water Temperature °C	pH	Specific Conductivity µS/cm	Dissolved Oxygen mg/l	Algae, Chlorophyll-a µg/l	Algae, Pheophytin µg/l	Alkalinity mg/l	Carbon, Dissolved Organic Carbon mg/l	Carbon, Particulate Carbon mg/l	Demand, Carbonaceous Biological Oxygen Demand mg/l	Nitrogen, Ammonia mg/l	Nitrogen, Nitrate/Nitrite mg/l	Nitrogen, Particulate Nitrogen mg/l	Nitrogen, Total Kjeldahl Nitrogen mg/l	Nitrogen, Total Nitrogen mg/l	Phosphorus, Phosphate mg/l	Phosphorus, Total Phosphorus mg/l	Phosphorus, Particulate Phosphorus mg/l	Phosphorus, Particulate Inorganic Phosphorus mg/l	Turbidity NTU	Solids, Total Suspended Solids mg/l	Solids, Volatile Suspended Solids mg/l	Toxins, Microcystin µg/l	
HC091218-OC	9/12/2018	7:24	KR10130	Camp (RM 101.3; Baseline) Klamath River below Happy Camp (RM 101.3; Baseline)	Karuk	0.5	P	17.71	8.79	171.0	10.40	21.00	9.70		3.61	1.0700		0.012	0.174			0.687	0.101	0.137			5.2		3.0		
HC101018-OC	10/10/2018	8:58	KR10130	Camp (RM 101.3; Baseline) Klamath River below Happy Camp (RM 101.3; Baseline)	Karuk	0.5	P	14.49	8.48	195.5	10.47	3.60	4.50		3.71	0.7720		0.013	0.318			0.91	0.1	0.15			3.0				
HC111418-OC	11/14/2018	10:41	KR10130	Camp (RM 101.3; Baseline) Klamath River below Happy Camp (RM 101.3; Baseline)	Karuk	0.5	P	6.49	8.22	203.5	12.14	2.70	3.80		3.24	0.4030		0.014	0.39			0.603	0.085	0.106			2.3				
HC120518-OC	12/5/2018	09:56	KR10130	Camp (RM 101.3; Baseline) Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Karuk	0.5	P	6.01	7.95	219.4	12.30	2.70	4.80		2.8	0.4330		<0.01	0.376			0.609	0.06	0.079			2.8				
OR031418-OC	3/14/2018	7:31	KR05910	Camp (RM 101.3; Baseline) Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Karuk	0.5	P	7.52	7.53	105.0	11.91					0.7630															
OR041118-OC	4/11/2018	6:33	KR05910	Camp (RM 101.3; Baseline) Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Karuk	0.5	P	9.71	8.05	121.8	11.84	2.70	2.00	58.2	2.6	0.8160		0.018	0.099			0.379	0.016	0.048			5.9	21.0			
OR050918-OC	5/9/2018	6:58	KR05910	Camp (RM 101.3; Baseline) Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Karuk	0.5	P	14.12	8.43	124.3	10.25	1.10	1.20	56	1.8	0.4300		<0.01	<0.01			0.117	0.01	0.022			1.1	2.7		<0.15	
OR060618-OC	6/6/2018	6:33	KR05910	Camp (RM 101.3; Baseline) Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Karuk	0.5	P	17.70	7.73	153.0	9.47	2.30	0.90	73.1	1.57	0.7030		<0.01	<0.01			0.221	0.022	0.034			0.4	1.7	<0.5	<0.15	
OR071118-OC	7/11/2018	5:45	KR05910	Camp (RM 101.3; Baseline) Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Karuk	0.5	P	21.97	8.50	162.0	8.38	1.10	0.80	75.6	2.11	0.2930		0.013	<0.01			0.309	0.023	0.036			0.4	1.1		<0.15	
OR080818-OC	8/8/2018	5:46	KR05910	Camp (RM 101.3; Baseline) Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Karuk	0.5	P	21.74	8.74	165.0	8.35	9.10	3.10	75.8	2.69	0.8650		<0.01	<0.01			0.386	0.038	0.07			0.7	4.3	3.0	0.2	
OR091218-OC	9/12/2018	6:02	KR05910	Camp (RM 101.3; Baseline) Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Karuk	0.5	P	18.51	8.66	114.0	9.19	5.9	4.7	74.7	3.02	0.5870		0.015	0.087			0.371	0.066	0.084			0.9	3.4		0.7	
OR101018-OC	10/10/2018	7:13	KR05910	Camp (RM 101.3; Baseline) Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Karuk	0.5	P	15.72	8.60	187.0	9.67	2.5	2.9	82.4	2.65	0.5610		0.012	0.233			0.579	0.088	0.116			0.5	2.2			
OR111418-OC	11/14/2018	09:16	KR05910	Camp (RM 101.3; Baseline) Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Karuk	0.5	P	7.27	8.33	197.0	12.16	5.5	3.8	84.2	2.49	0.4860		<0.01	0.251			0.399	0.059	0.08			0.7	3.8			
OR120518-OC	12/5/2018	07:24	KR05910	Camp (RM 101.3; Baseline) Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Karuk	0.5	P	6.38	7.77	182.3	12.55	3.3	3.6	77.4	1.98	0.5290		<0.01	0.245			0.386	0.037	0.052			0.6	5.0	2.0		
OR072518-OC	7/25/2018	5:45	KR05910	Camp (RM 101.3; Baseline) Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Karuk	0.5	P																								<0.15
WE031418-OC	3/14/2018	10:19	KR04350	Weihspec (RM 43.5; Baseline) Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Yurok	0.5	P	7.74	7.32	103.0	12.40	4	0.7		1.63	1.0600		0.011	0.07	0.0807		0.203	0.01	0.036			20.0	3.3			
WE041118-OC	4/11/2018	9:56	KR04350	Weihspec (RM 43.5; Baseline) Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Yurok	0.5	P	9.63	7.33	117.0	12.01	3.3	2.5		2.34	0.7440		0.021	0.09	<0.0789		0.436	0.015	0.051			31.0	2.4			
WE050918-OC	5/9/2018	10:05	KR04350	Weihspec (RM 43.5; Baseline) Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Yurok	0.5	P	14.15	7.82	131.0	10.75	1.1	1.2		1.78	0.4030		0.01	0.012	<0.0789		0.145	0.01	0.022			3.3	1.3		<0.15	
WE060618-OC	6/6/2018	10:19	KR04350	Weihspec (RM 43.5; Baseline) Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Yurok	0.5	P	17.93	7.98	153.0	10.03	1.2	<0.1		1.37	0.3650		0.01	0.01	<0.0789		0.17	0.02	0.039			1.3	0.6		<0.15	
WE071118-OC	7/11/2018	10:19	KR04350	Weihspec (RM 43.5; Baseline) Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Yurok	0.5	P	21.28	7.94	164.0	9.26	3	1.4		1.84	0.5090		0.01	0.01	<0.0789		0.252	0.018	0.034			3.2	1.0		<0.15	

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Type	Water Temperature °C	pH	Specific Conductivity µS/cm	Dissolved Oxygen mg/l	Algae, Chlorophyll-a µg/l	Algae, Pheophytin µg/l	Alkalinity mg/l	Carbon, Dissolved Organic Carbon mg/l	Carbon, Particulate Carbon mg/l	Demand, Carbonaceous Biological Oxygen Demand mg/l	Nitrogen, Ammonia mg/l	Nitrogen, Nitrate/Nitrite mg/l	Nitrogen, Particulate Nitrogen mg/l	Nitrogen, Total Kjeldahl Nitrogen mg/l	Nitrogen, Total Nitrogen mg/l	Phosphorus, Phosphate mg/l	Phosphorus, Total Phosphorus mg/l	Phosphorus, Particulate Phosphorus mg/l	Phosphorus, Particulate Inorganic Phosphorus mg/l	Turbidity NTU	Solids, Total Suspended Solids mg/l	Solids, Volatile Suspended Solids mg/l	Toxins, Microcystin µg/l
WE080818-OC	8/8/2018	10:29	KR04350	Klamath River at Weitchpec (RM 43.5; Baseline)	Yurok	0.5	P	21.35	8.27	169.0	9.81	9.9	2.8	2.28	0.9180		0.01	0.01	0.1510		0.33	0.033	0.058			3.2	1.4	<0.15		
WE091218-OC	9/12/2018	10:26	KR04350	Klamath River at Weitchpec (RM 43.5; Baseline)	Yurok	0.5	P	18.37	8.76	171.0	12.51	9.6	6	2.92	0.7740		0.013	0.01	0.1190		0.367	0.06	0.082			4.7	2.2	0.3		
WE101018-OC	10/10/2018	10:55	KR04350	Klamath River at Weitchpec (RM 43.5; Baseline)	Yurok	0.5	P	15.19	8.07	190.0	10.57	3.4	3.1	2.68	0.4090		0.012	0.167	<0.0789		0.535	0.075	0.099			2.2	1.2	<0.15		
WE111418-OC	11/14/2018	10:55	KR04350	Klamath River at Weitchpec (RM 43.5; Baseline)	Yurok	0.5	P	6.70	8.29	192.0	12.82	2.1	3.1	2.47	0.2170		0.01	0.227	<0.0789		0.395	0.055	0.07			0.5	0.5			
WE120518-OC	12/5/2018	11:19	KR04350	Klamath River at Weitchpec (RM 43.5; Baseline)	Yurok	0.5	P	6.68	8.14	174.5	12.72	2.1	1.6	1.9	<0.1899		0.01	0.211	<0.0789		0.32	0.041	0.041			1.0	0.5			
TC031418-OC	3/14/2018	9:20	KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Yurok	0.5	P	8.28	7.29	111.0	12.16	5.6	1.5	1.85	1.3700		0.012	0.059	0.1070		0.089	0.008	0.057			36.0	4.0			
TC041118-OC	4/11/2018	8:59	KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Yurok	0.5	P	9.99	7.30	121.0	11.78	3	3.5	1.99	0.8910		0.019	0.078	0.0824		0.411	0.012	0.083			40.0	3.3			
TC050918-OC	5/9/2018	9:00	KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Yurok	0.5	P	14.29	7.64	134.0	10.34	1.3	1	1.44	0.3370		0.01	0.011	<0.0789		0.156	0.007	0.018			3.1	1.6	<0.15		
TC060618-OC	6/6/2018	9:04	KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Yurok	0.5	P	17.22	7.72	148.0	9.56	1.6	0.4	1.1	0.4320		0.01	0.01	<0.0789		0.131	0.013	0.22			1.8	0.9	<0.15		
TC071118-OC	7/11/2018	9:10	KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Yurok	0.5	P	21.15	7.78	166.0	8.63	3	1	1.42	0.3340		0.011	0.01	<0.0789		0.322	0.013	0.029			1.8	0.5	<0.15		
TC080818-OC	8/8/2018	9:03	KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Yurok	0.5	P	20.78	7.95	158.0	8.65	5.6	2.2	1.72	0.5390		0.01	0.01	0.0800		0.193	0.021	0.038	0.0593	<0.0063	2.4	1.3	<0.15		
TC091218-OC	9/12/2018	9:07	KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Yurok	0.5	P	18.06	8.05	160.0	9.11	5.2	3.1	2.33	0.5400		0.011	0.01	<0.0789		0.206	0.04	0.051			2.0	1.2	0.2		
TC101018-OC	10/10/2018	9:45	KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Yurok	0.5	P	15.66	7.95	183.0	9.78	2.8	3.3	2	0.3930		0.01	0.114	<0.0789		0.387	0.053	0.071			1.4	1.0	<0.15		
TC111418-OC	11/14/2018	09:51	KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Yurok	0.5	P	6.87	8.26	180.5	12.56	2.5	2.7	2.26	0.2800		0.01	0.168	<0.0789		0.304	0.04	0.052			1.5	1.3			
TC120518-OC	12/5/2018	10:20	KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Yurok	0.5	P	6.97	8.07	176.7	12.39	2.1	1	1.73	0.2460		0.01	0.149	<0.0789		0.226	0.023	0.028			2.0	1.3			
TG031418-OC	3/14/2018	6:57	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	8.86	7.01	113.0	11.75	5.6	0.4	1.48	1.3600		0.011	0.07	0.1010		0.268	0.009	0.058	0.0306	0.0214	7.3	36.0	4.3		
TG041118-OC	4/11/2018	6:47	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	10.52	7.21	119.0	11.22	2.7	3.9	1.84	0.7930		0.021	0.103	<0.0789		0.468	0.013	0.056	0.0313	0.0264	15.0	37.0	2.9		
TG050818-OC	5/8/2018	10:11	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	14.84	7.21	134.0	10.08																		<0.15	
TG050918-OC	5/9/2018	6:29	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	14.47	7.44	135.0	9.86	1.1	0.7	1.44	0.3850		0.01	0.039	<0.0789		0.124	0.007	0.019	<0.0063	<0.0063	1.7	4.3	1.3		
TG060518-OC	6/5/2018	10:41	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	18.00	7.88	147.0	9.91																		<0.15	
TG060618-OC	6/6/2018	6:38	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	17.03	7.54	148.0	9.29	1.8	0.5	1.1	0.2770		0.01	0.012	<0.0789		0.097	0.01	0.21	<0.0063	<0.0063	0.5	1.9	1.1		
TG071018-OC	7/10/2018	10:54	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	21.14	7.90	164.0	9.19																		<0.15	
TG071118-OC	7/11/2018	6:50	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	20.94	7.67	165.0	7.97	1.8	1	0.88	0.3170		0.018	0.019	<0.0789		0.209	0.01	0.022	<0.0063	<0.0063	0.6	2.0	0.8		

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Type	Water Temperature °C	pH	Specific Conductivity µS/cm	Dissolved Oxygen mg/l	Algae, Chlorophyll-a µg/l	Algae, Pheophytin µg/l	Alkalinity mg/l	Carbon, Dissolved Organic Carbon mg/l	Carbon, Particulate Carbon mg/l	Demand, Carbonaceous Biological Oxygen Demand mg/l	Nitrogen, Ammonia mg/l	Nitrogen, Nitrate+Nitrite mg/l	Nitrogen, Particulate Nitrogen mg/l	Nitrogen, Total Kjeldahl Nitrogen mg/l	Nitrogen, Total Nitrogen mg/l	Phosphorus, Phosphate mg/l	Phosphorus, Total Phosphorus mg/l	Phosphorus, Particulate Phosphorus mg/l	Phosphorus, Particulate Inorganic Phosphorus mg/l	Turbidity NTU	Solids, Total Suspended Solids mg/l	Solids, Volatile Suspended Solids mg/l	Toxins, Microcystin µg/l	
TG080718-OC	8/7/2018	10:25	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	21.22	8.24	159.0	9.53																			<0.15	
TG080818-OC	8/8/2018	6:46	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	20.73	7.84	160.0	7.98	3.2	1.8		1.83	0.3320		0.01	0.012	<0.0789		0.164	0.015	0.028	<0.0063	<0.0063	0.4	2.3	1.3		
TG091118-OC	9/11/2018	10:33	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	19.10	8.03	160.0	9.57																			0.2	
TG091218-OC	9/12/2018	6:48	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	18.38	7.69	161.0	8.10	3.9	4.6		2.2	0.6670		0.013	0.017	0.0843		0.192	0.033	0.046	0.0121	<0.0063	1.0	6.0	1.8		
TG100918-OC	10/9/2018	10:56	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	17.13	8.19	177.0	10.63																			<0.15	
TG101018-OC	10/10/2018	7:38	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	15.85	7.65	181.0	8.70	4.6	6.6		1.81	0.6620		0.01	0.074	<0.0789		0.223	0.038	0.061	0.0104	<0.0063	0.7	3.4	1.4		
TG111418-OC	11/14/2018	07:43	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	8.16	7.71	185.9	9.85	3.4	3.8		1.31	0.2070		0.017	0.153	<0.0789		0.295	0.023	0.035	<0.0063	<0.0063	0.4	3.3	1.5		
TG120518-OC	12/5/2018	08:11	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	8.28	7.64	171.4	10.44	1.6	1.8		1.51	0.2560		0.011	0.207	<0.0789		0.339	0.022	0.025	<0.0063	<0.0063	0.5	1.5	0.5		
LES031418-OC	3/14/2018	6:23	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	9.32	6.62	115.0	11.14	2.4	<0.1		1.72	0.2420		0.014	0.121	<0.0789		0.316	0.008	0.018			5.8	0.8			
LES041118-OC	4/11/2018	6:06	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	10.40	6.73	119.0	11.19	6	9.4		1.84	4.0600		0.021	0.095	0.3630		0.69	0.011	0.2			178.0	13.0			
LES050818-OC	5/8/2018	10:42	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	14.71	7.49	135.0	10.13																			<0.15	
LES050918-OC	5/9/2018	5:57	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	14.46	7.57	133.0	9.94	0.7	0.8		1.45	0.2860		0.010	0.026	<0.0789		0.133	0.007	0.018			3.4	1.4			
LES060518-OC	6/5/2018	9:51	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	17.76	7.57	146.0	9.24																			<0.15	
LES060618-OC	6/6/2018	6:02	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	17.85	7.49	148.0	9.01	1.4	0.2		1.13	0.2390		0.010	0.010	<0.0789		0.084	0.008	0.200			1.5	0.5			
LES071018-OC	7/10/2018	9:43	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	19.92	7.86	8245.0	8.12																			<0.15	
LES071118-OC	7/11/2018	6:05	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	19.57	7.98	8114.0	8.25	1.1	0.7		1.6	0.4770		0.022	0.010	<0.0789		0.464	0.011	0.025			1.8	1.0			
LES080718-OC	8/7/2018	9:37	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	20.83	7.83	2623.0	7.92																			<0.15	
LES080818-OC	8/8/2018	5:55	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	19.76	8.17	4997.0	8.76	0.8	0.9		1.97	<0.1899		0.010	0.010	<0.0789		0.185	0.012	0.022			0.9	0.7			
LES091118-OC	9/11/2018	12:05	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	15.87	7.92	25250.0	8.88																			0.3	
LES091218-OC	9/12/2018	6:16	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	17.79	8.01	3398.0	8.71	1.6	1.5		2.69	0.3740		0.022	0.011	<0.0789		0.191	0.030	0.041			1.8	0.8			
LES100918-OC	10/9/2018	9:47	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	16.56	7.86	2456.0	9.29																			<0.15	
LES101018-OC	10/10/2018	6:21	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	15.98	7.89	2358.0	9.58	1.2	2.5		1.74	0.4070		0.012	0.052	<0.0789		0.237	0.039	0.054			2.0	1.6			
LES111418-OC	11/14/2018	07:02	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	8.35	7.79	6020.0	10.74	1.1	2.9		0.726	<0.1899		0.017	0.121	<0.0789		0.421	0.032	0.042			2.5	1.3			
LES120518-OC	12/5/2018	07:35	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	8.52	7.51	330.0	10.84	2.1	2.3		1.59	0.4230		0.029	0.193	<0.0789		0.298	0.024	0.033			3.3	1.3			
SH031418-OC	3/14/2018	11:18	SH00000	Shasta River near mouth (Baseline)	Karuk	0.5	P	9.58	8.70	465.0	11.28					1.9600															
SH041118-OC	4/11/2018	10:34	SH00000	Shasta River near mouth (Baseline)	Karuk	0.5	P	11.94	8.72	495.7	10.50	5.9	3.1		4.82	0.6480		<0.01	0.175			0.619	0.164	0.171			1.4	4.5			

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Type	Water Temperature °C	pH	Specific Conductivity µS/cm	Dissolved Oxygen mg/l	Algae, Chlorophyll-a µg/l	Algae, Pheophytin µg/l	Alkalinity mg/l	Carbon, Dissolved Organic Carbon mg/l	Carbon, Particulate Carbon mg/l	Demand, Carbonaceous Biological Oxygen Demand mg/l	Nitrogen, Ammonia mg/l	Nitrogen, Nitrate+Nitrite mg/l	Nitrogen, Particulate Nitrogen mg/l	Nitrogen, Total Kjeldahl Nitrogen mg/l	Nitrogen, Total Nitrogen mg/l	Phosphorus, Phosphate mg/l	Phosphorus, Total Phosphorus mg/l	Phosphorus, Particulate Phosphorus mg/l	Phosphorus, Particulate Inorganic Phosphorus mg/l	Turbidity NTU	Solids, Total Suspended Solids mg/l	Solids, Volatile Suspended Solids mg/l	Toxins, Microcystin µg/l
SH050918-OC	5/9/2018	11:23	SH00000	Shasta River near mouth (Baseline)	Karuk	0.5	P	18.19	8.94	556.0	10.80	2.4	1.3		6.48	0.3680		<0.01	<0.01			0.558	0.166	0.176		0.7	1.4			
SH060618-OC	6/6/2018	10:50	SH00000	Shasta River near mouth (Baseline)	Karuk	0.5	P	19.70	8.74	509.0	10.54	1.6	1.1		4.4	0.7240		0.011	<0.01			0.381	0.154	0.167		0.4	1.4	0.6		
SH071118-OC	7/11/2018	9:40	SH00000	Shasta River near mouth (Baseline)	Karuk	0.5	P	21.78	8.75	558.0	8.98	1.8	<0.10		4.36	0.3230		<0.01	<0.01			0.465	0.179	0.227		0.4	0.9			
SH080818-OC	8/8/2018	10:28	SH00000	Shasta River near mouth (Baseline)	Karuk	0.5	P	21.95	8.95	527.0	9.57	2.7	0.2		4.07	0.3630		<0.01	<0.01			0.331	0.161	0.182		0.4	1.3	0.8		
SH091218-OC	9/12/2018	11:00	SH00000	Shasta River near mouth (Baseline)	Karuk	0.5	P	15.98	9.03	611.0	11.18	1.6	<0.10		5.91	0.2940		<0.01	<0.01			0.464	0.167	0.168		0.3	<0.5			
SH101018-OC	10/10/2018	12:36	SH00000	Shasta River near mouth (Baseline)	Karuk	0.5	P	13.28	9.01	454.5	10.36	2.5	1.5		1.56	0.6630		<0.01	0.101			0.251	0.162	0.190		1.0	4.8			
SH111418-OC	11/14/2018	13:24	SH00000	Shasta River near mouth (Baseline)	Karuk	0.5	P	5.31	8.64	431.5	12.86	3.4	1.6		1.17	0.3130		<0.01	0.226			0.304	0.158	0.176		0.5	0.8			
SH120518-OC	12/5/2018	12:48	SH00000	Shasta River near mouth (Baseline)	Karuk	0.5	P	6.00	8.59	466.5	12.32	3.2	1.7		2	0.3330		0.010	0.311			0.436	0.174	0.199		0.5	2.0			
SC031418-OC	3/14/2018	10:05	SC00000	Scott River near mouth (Baseline)	Karuk	0.5	P	7.46	8.09	166.0	10.99					1.6300														
SC041118-OC	4/11/2018	9:22	SC00000	Scott River near mouth (Baseline)	Karuk	0.5	P	7.93	8.16	104.7	11.52	1.6	1.6		2.39	0.5620		0.017	0.085			0.506	0.006	0.024		2.8	13.0			
SC050918-OC	5/9/2018	9:49	SC00000	Scott River near mouth (Baseline)	Karuk	0.5	P	12.67	8.52	123.6	10.34	2.1	2.3		1.62	0.4430		<0.01	0.047			0.131	0.002	0.013		1.2	3.7			
SC060618-OC	6/6/2018	9:32	SC00000	Scott River near mouth (Baseline)	Karuk	0.5	P	17.30	8.18	203.0	9.36	2	2.8		1.3	0.7940		0.017	0.173			0.315	0.002	0.011		0.3	2.5	0.9		
SC071118-OC	7/11/2018	8:27	SC00000	Scott River near mouth (Baseline)	Karuk	0.5	P	20.62	8.61	233.0	8.91	1.6	<0.10		1.17	0.2850		<0.01	0.012			0.190	0.002	0.007		0.3	<0.5			
SC080818-OC	8/8/2018	8:38	SC00000	Scott River near mouth (Baseline)	Karuk	0.5	P	20.98	8.67	250.0	8.90	0.9	<0.10		0.957	0.2500		<0.01	<0.01			0.053	0.002	0.005		0.2	<0.5	<0.5		
SC091218-OC	9/12/2018	9:02	SC00000	Scott River near mouth (Baseline)	Karuk	0.5	P	16.14	8.79	259.0	10.34	1	<0.10		0.57	0.3440		<0.01	<0.01			0.084	<0.001	0.006		0.2	<0.5			
SC101018-OC	10/10/2018	10:45	SC00000	Scott River near mouth (Baseline)	Karuk	0.5	P	13.33	8.96	263.8	10.45	0.7	0.9		0.496	0.3470		<0.01	<0.01			<0.05	0.001	0.006		0.2	0.6			
SC111418-OC	11/14/2018	12:11	SC00000	Scott River near mouth (Baseline)	Karuk	0.5	P	3.51	8.39	264.7	13.37	1.1	<0.10		0.469	0.2580		<0.01	0.045			0.062	<0.001	0.005		0.3	0.8			
SC120518-OC	12/5/2018	11:30	SC00000	Scott River near mouth (Baseline)	Karuk	0.5	P	5.10	8.50	244.0	13.16	2.7	0.3		1.12	<0.1899		<0.01	0.230			0.239	0.001	0.002		0.3	0.5			
SA031418-OC	3/14/2018	7:56	SA00000	Salmon River near mouth (Baseline)	Karuk	0.5	P	6.57	7.54	76.0	12.13					0.9800														
SA041118-OC	4/11/2018	6:57	SA00000	Salmon River near mouth (Baseline)	Karuk	0.5	P	7.97	7.97	72.3	12.18	1.5	<0.10		1.52	0.5150		<0.01	0.068			0.184	0.003	0.027		1.3	19.0			
SA050918-OC	5/9/2018	7:23	SA00000	Salmon River near mouth (Baseline)	Karuk	0.5	P	12.17	8.36	69.8	10.46	0.7	0.5		1.07	0.2910		0.012	0.027			0.175	0.002	0.009		0.5	1.6			
SA060618-OC	6/6/2018	7:06	SA00000	Salmon River near mouth (Baseline)	Karuk	0.5	P	15.30	7.73	99.0	9.85	0.7	<0.10		0.629	0.3700		<0.01	<0.01			0.139	0.003	0.006		0.2	0.7	0.7		
SA071118-OC	7/11/2018	6:10	SA00000	Salmon River near mouth (Baseline)	Karuk	0.5	P	19.30	8.19	124.0	8.81	0.7	<0.10		0.671	0.1990		<0.01	<0.01			0.162	0.003	0.006		0.3	<0.5			
SA080818-OC	8/8/2018	6:14	SA00000	Salmon River near mouth (Baseline)	Karuk	0.5	P	19.27	8.35	135.0	8.86	0.9	0.4		0.612	0.1900		<0.01	<0.01			<0.05	0.002	0.004		0.2	<0.5	<0.5		
SA091218-OC	9/12/2018	6:30	SA00000	Salmon River near mouth (Baseline)	Karuk	0.5	P	16.07	8.15	142.0	9.66	1.3	<0.10		0.392	0.3110		<0.01	<0.01			<0.05	0.002	0.006		0.3	0.6			
SA101018-OC	10/10/2018	7:48	SA00000	Salmon River near mouth (Baseline)	Karuk	0.5	P	13.27	8.41	144.3	10.07	1.2	<0.10		0.462	0.3950		<0.01	<0.01			<0.05	0.003	0.005		0.2	1.0			

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Type	Water Temperature °C	pH	Specific Conductivity µS/cm	Dissolved Oxygen mg/l	Algae, Chlorophyll-a µg/l	Algae, Pheophytin µg/l	Alkalinity mg/l	Carbon, Dissolved Organic Carbon mg/l	Carbon, Particulate Carbon mg/l	Demand, Carbonaceous Biological Oxygen Demand mg/l	Nitrogen, Ammonia mg/l	Nitrogen, Nitrate+Nitrite mg/l	Nitrogen, Particulate Nitrogen mg/l	Nitrogen, Total Kjeldahl Nitrogen mg/l	Nitrogen, Total Nitrogen mg/l	Phosphorus, Phosphate mg/l	Phosphorus, Total Phosphorus mg/l	Phosphorus, Particulate Phosphorus mg/l	Phosphorus, Particulate Inorganic Phosphorus mg/l	Turbidity NTU	Solids, Total Suspended Solids mg/l	Solids, Volatile Suspended Solids mg/l	Toxins, Microcystin µg/l
SA111418-OC	11/14/2018	09:41	SA00000	Salmon River near mouth (Baseline)	Karuk	0.5	P	5.26	8.07	147.2	12.64	1.8	<0.10		0.283	0.2910		<0.01	<0.01			<0.05	0.003	0.006			0.2	1.2		
SA120518-OC	12/5/2018	08:36	SA00000	Salmon River near mouth (Baseline)	Karuk	0.5	P	5.94	7.85	122.2	12.41	11	4.1		1.21	2.5400		0.017	0.099			0.277	0.002	0.053			0.7	23.0		
TR031418-OC	3/14/2018	10:06	TR00000	Trinity River near mouth (Baseline)	Yurok	0.5	P	8.89	7.40	128.0	11.75	6.4	2.2		1.69	1.7800		0.017	0.040	0.1370		0.137	0.005	0.061			9.8	47.0	3.5	
TR041118-OC	4/11/2018	9:41	TR00000	Trinity River near mouth (Baseline)	Yurok	0.5	P	10.32	7.46	123.0	11.44	3.3	5.5		1.3	0.7060		0.017	0.053	<0.0789		0.191	0.006	0.048			16.0	41.0	2.4	
TR050918-OC	5/9/2018	9:50	TR00000	Trinity River near mouth (Baseline)	Yurok	0.5	P	14.72	7.98	139.0	10.39	0.5	0.8		0.895	0.2600		0.010	0.010	<0.0789		0.084	0.003	0.011			1.4	5.1	3.6	
TR060618-OC	6/6/2018	10:00	TR00000	Trinity River near mouth (Baseline)	Yurok	0.5	P	16.44	7.80	142.0	9.89	0.5	<0.1		0.708	0.2030		0.010	0.010	<0.0789		0.050	0.001	0.008			0.5	0.5	0.5	
TR071118-OC	7/11/2018	10:05	TR00000	Trinity River near mouth (Baseline)	Yurok	0.5	P	21.24	7.85	170.0	8.92	1.1	<0.1		1.27	0.2170		0.013	0.010	<0.0789		0.212	0.001	0.008			0.4	1.5	0.6	
TR080818-OC	8/8/2018	10:13	TR00000	Trinity River near mouth (Baseline)	Yurok	0.5	P	20.22	7.90	140.0	9.15	1.2	<0.1		1.06	0.1960		0.010	0.010	<0.0789		0.051	0.002	0.005			0.3	1.4	2.4	<0.15
TR091218-OC	9/12/2018	10:10	TR00000	Trinity River near mouth (Baseline)	Yurok	0.5	P	16.95	8.07	135.0	9.82	0.7	<0.1		0.635	0.2200		0.010	0.010	<0.0789		0.050	<0.001	0.003			0.3	0.5	0.5	
TR101018-OC	10/10/2018	10:37	TR00000	Trinity River near mouth (Baseline)	Yurok	0.5	P	15.63	7.98	165.0	10.16	1.1	0.3		0.803	0.1920		0.010	0.010	<0.0789		0.050	<0.001	0.004			0.3	0.5	0.5	
TR111418-OC	11/14/2018	10:41	TR00000	Trinity River near mouth (Baseline)	Yurok	0.5	P	6.34	8.27	178.1	12.96	0.9	<0.1		1.63	<0.1899		0.010	0.013	<0.0789		0.062	<0.001	0.003			0.2	0.5	0.5	
TR120518-OC	12/5/2018	11:06	TR00000	Trinity River near mouth (Baseline)	Yurok	0.5	P	7.53	8.09	185.2	12.30	1.6	<0.1		1.39	<0.1899		0.010	0.026	<0.0789		0.138	0.003	0.008			0.5	1.5	1.0	

Appendix C. Selected Results of 2018 Baseline Phytoplankton Analysis

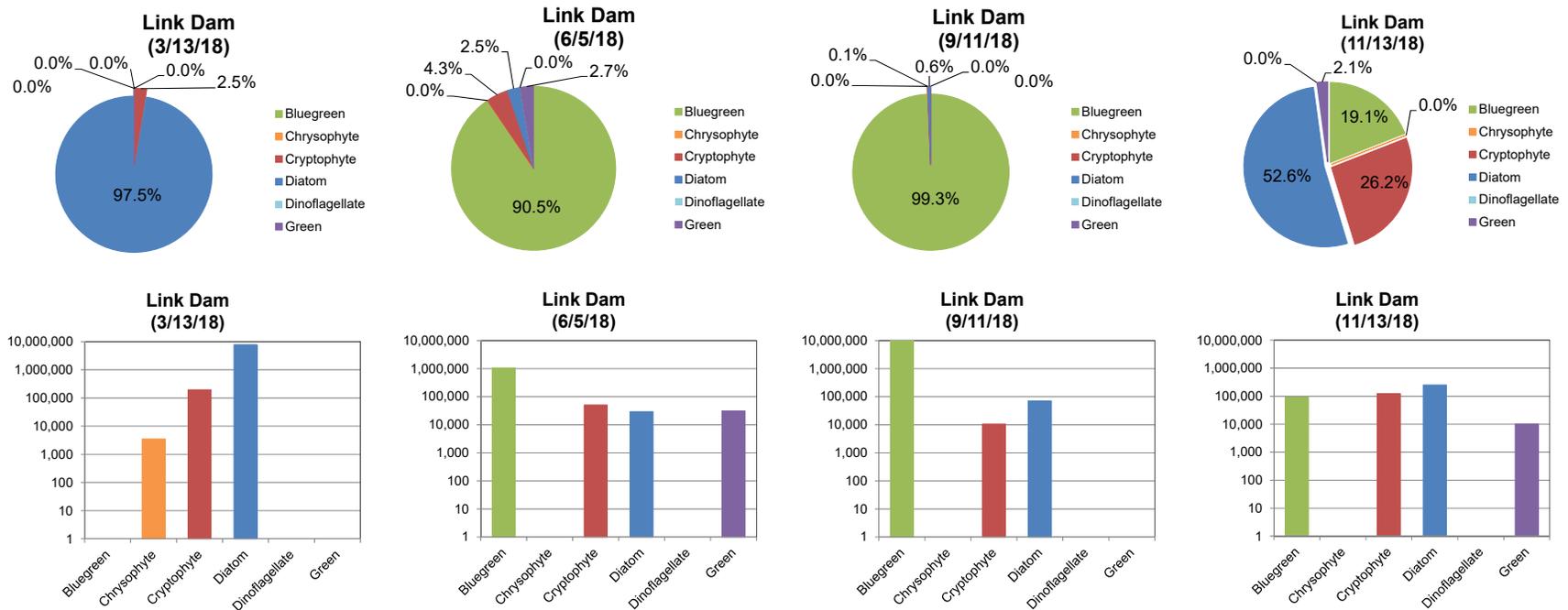


Figure C-1. Phytoplankton species percent biovolume (top) and biovolume by taxa (bottom) at Link River Dam for samples collected as part of Baseline sampling on 3/13/18, 6/5/18, 9/11/18, and 11/13/18. Note: y-axis in logarithmic scale.

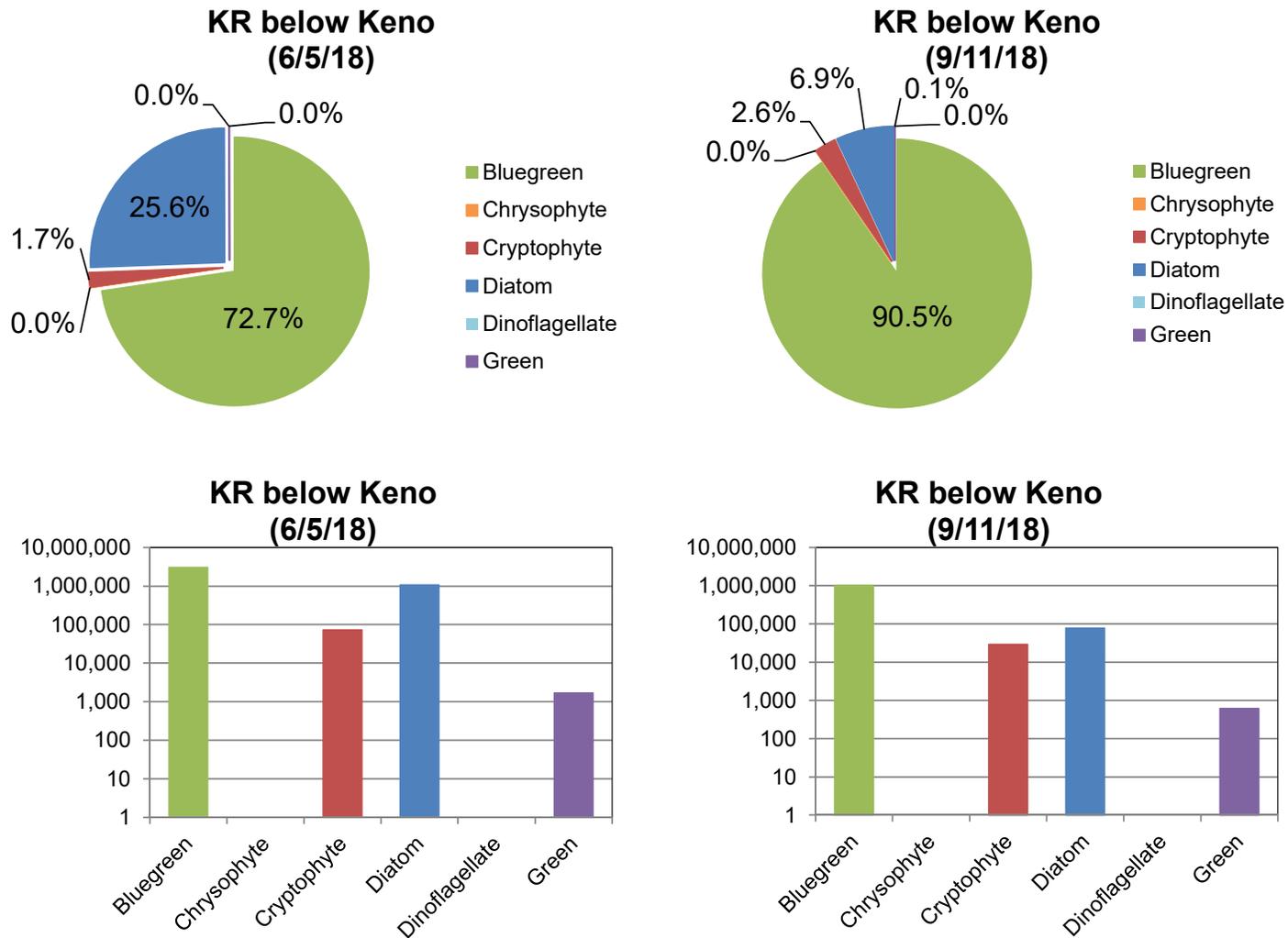


Figure C-2. Phytoplankton species percent biovolume (top) and biovolume by taxa (bottom) at Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline) for samples collected as part of Baseline sampling on 6/5/18 and 9/11/18. No samples were collected for March or November 2018. Note: y-axis in logarithmic scale.

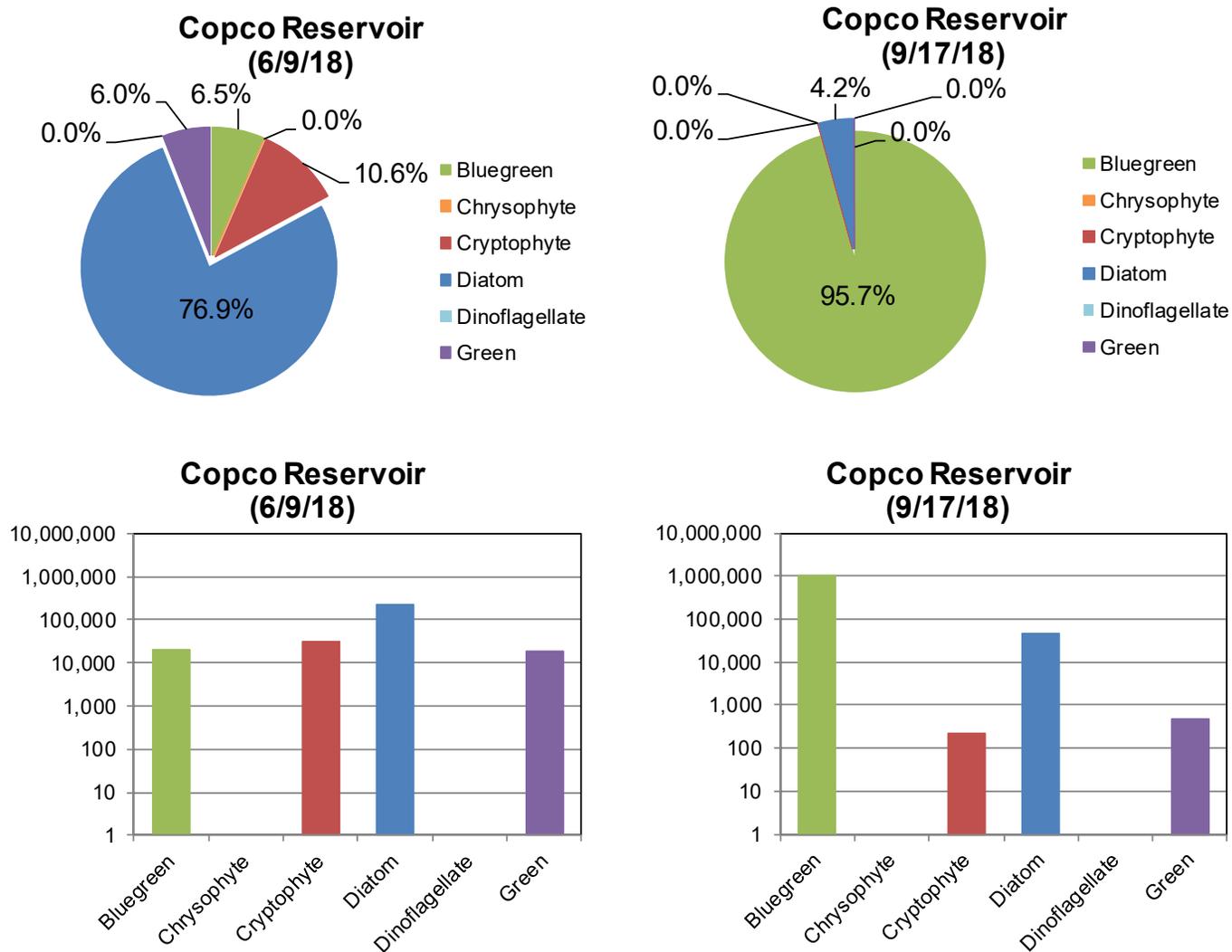


Figure C-3. Phytoplankton species percent biovolume (top) and biovolume by taxa (bottom) at Copco Reservoir near dam for samples collected as part of Baseline sampling on 6/9/18 and 9/17/18. No samples were collected for March or November 2018. Note: y-axis in logarithmic scale.

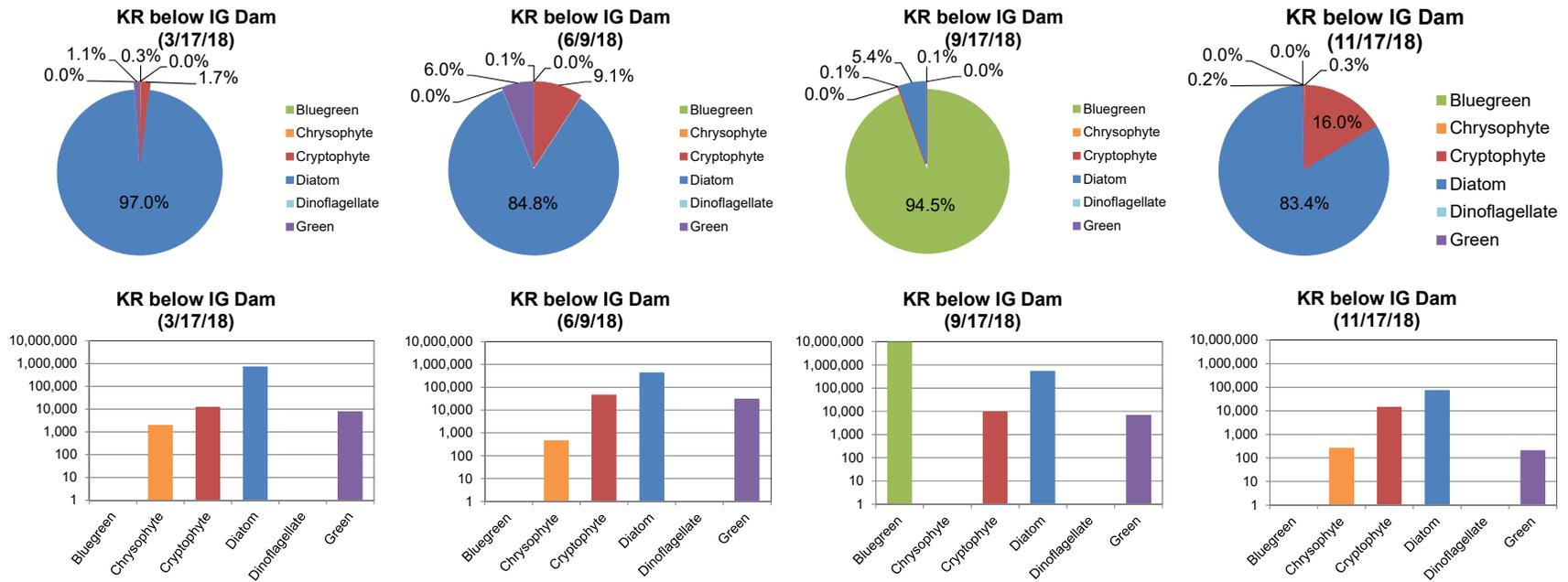


Figure C-4. Phytoplankton species percent biovolume (top) and biovolume by taxa (bottom) at Klamath River below Iron Gate Dam (RM 189.73; Baseline) for samples collected as part of Baseline sampling on 3/17/18, 6/9/18, 9/17/18, and 11/17/18. Note: y-axis in logarithmic scale.

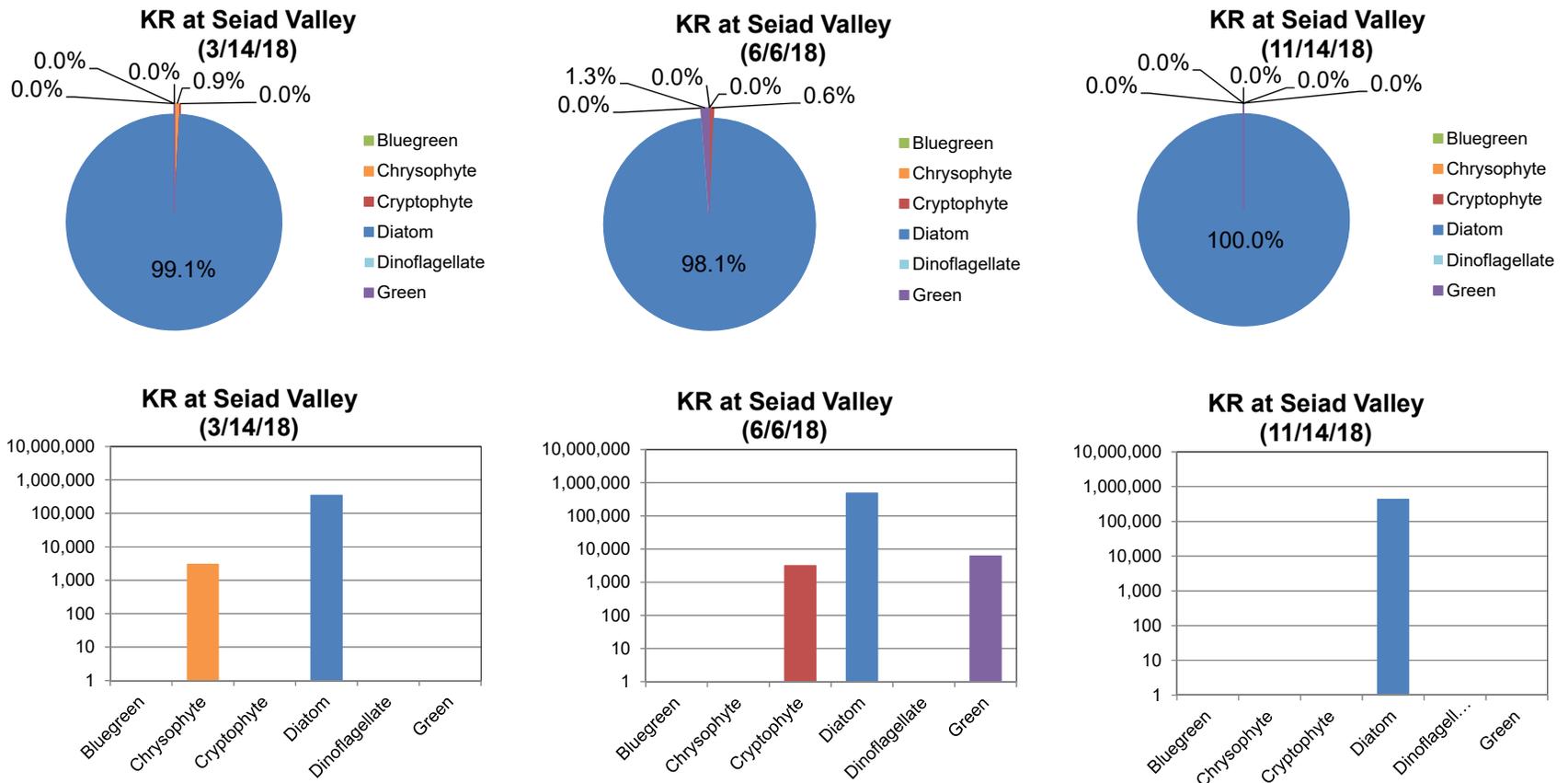


Figure C-5. Phytoplankton species percent biovolume (top) and biovolume by taxa (bottom) at Klamath River below Seiad (RM 128.5; Baseline) for samples collected as part of Baseline sampling on 3/14/18, 6/6/18 and 11/14/18. No samples were collected for September 2018. Note: y-axis in logarithmic scale.

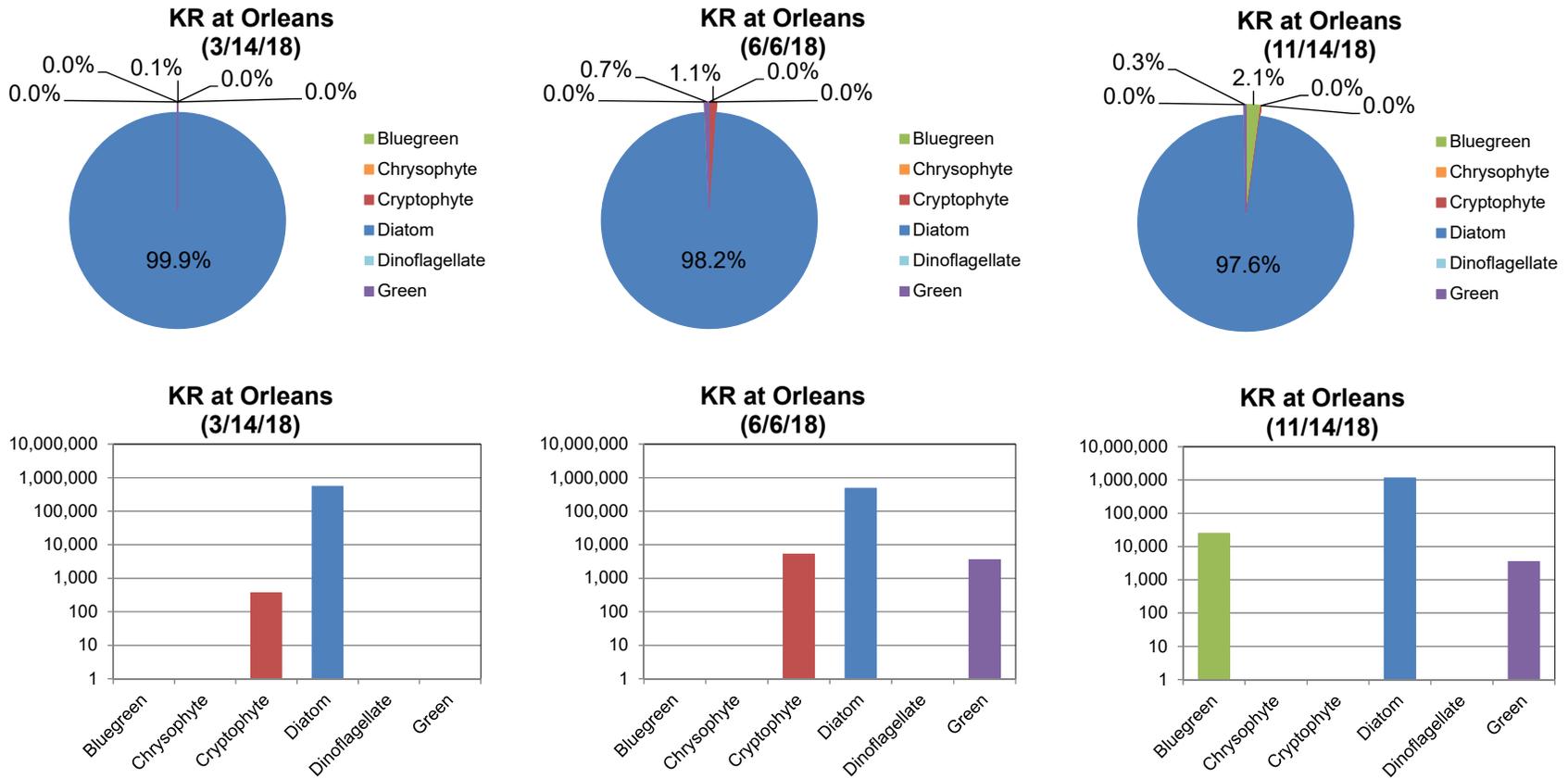


Figure C-6. Phytoplankton species percent biovolume (top) and biovolume by taxa (bottom) at Klamath River at Orleans (USGS) (RM 59.1; Baseline) for samples collected as part of Baseline sampling on 3/14/18, 6/6/18 and 11/14/18. No samples were collected for September 2018. Note: y-axis in logarithmic scale.

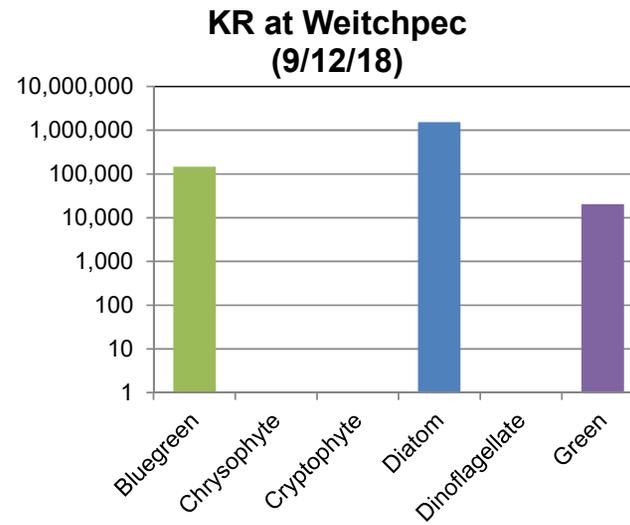
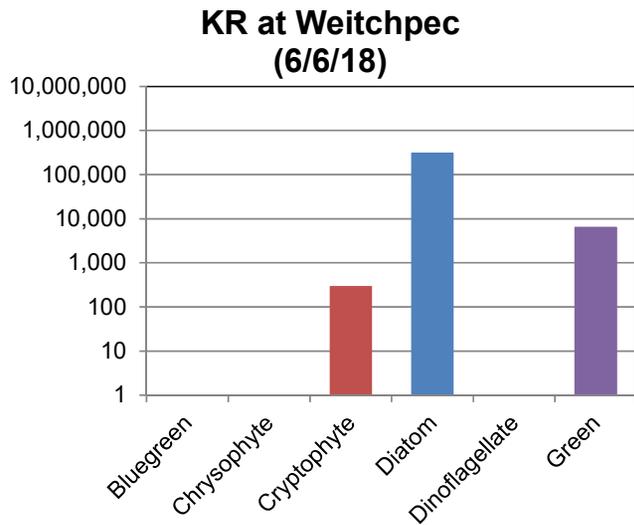
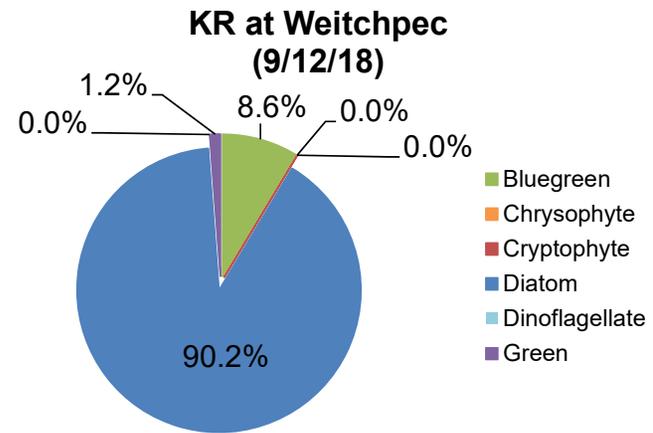
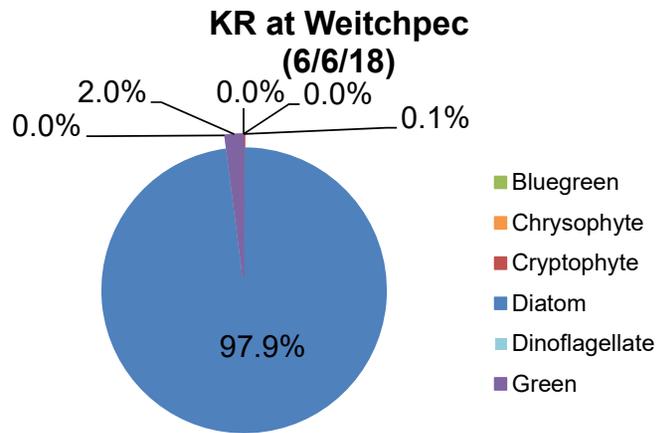


Figure C-7. Phytoplankton species percent biovolume (top) and biovolume by taxa (bottom) at Klamath River at Weitchpec (RM 43.5; Baseline) for samples collected as part of Baseline sampling on 6/6/18 and 9/12/18. No samples were collected for March or November 2018. Note: y-axis in logarithmic scale.

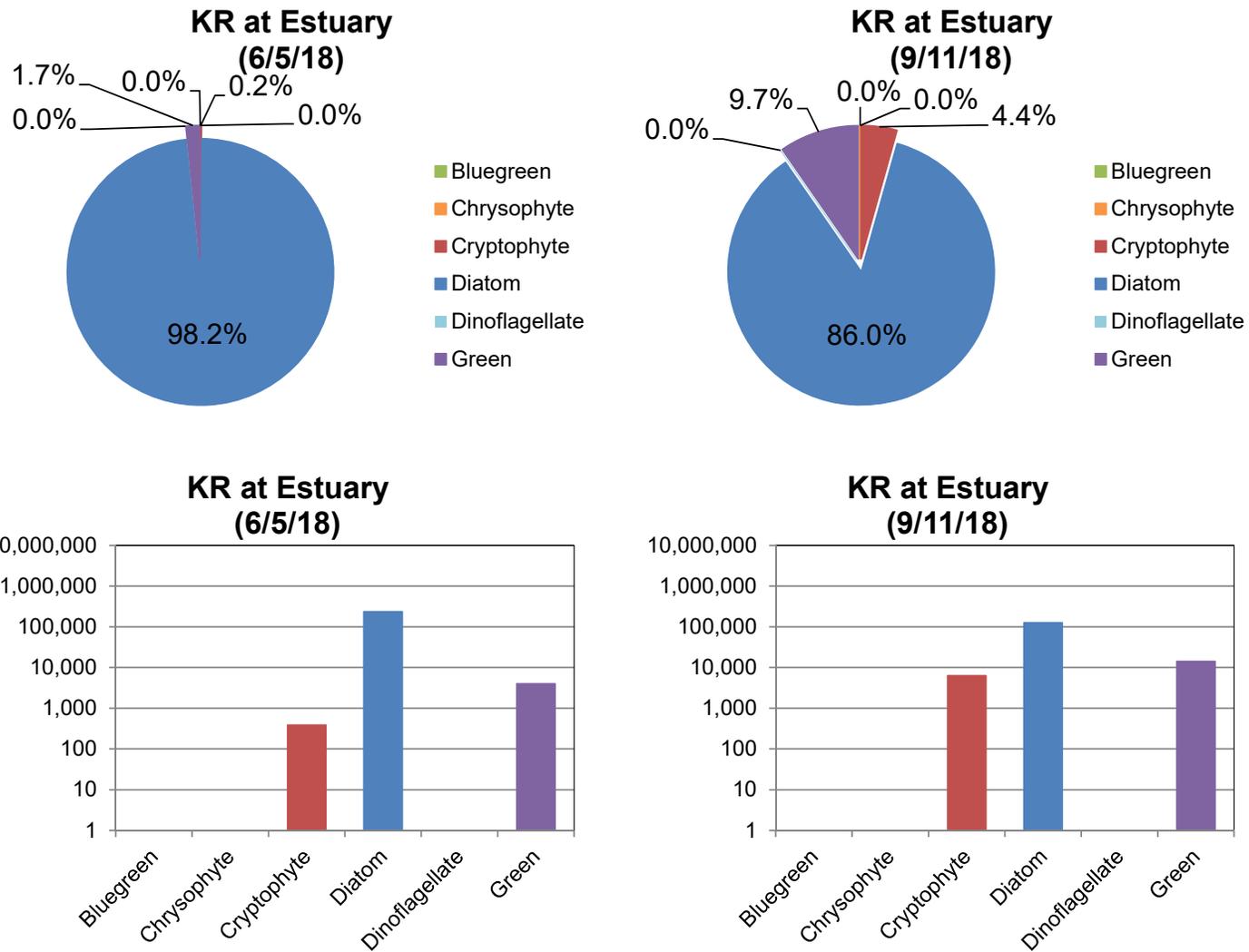


Figure C-8. Phytoplankton species percent biovolume (top) and biovolume by taxa (bottom) at Klamath River Estuary (RM 0.5; Baseline) for samples collected as part of Baseline sampling on 6/5/18 and 9/11/18. No samples were collected for March or November 2018. Note: y-axis in logarithmic scale.

Appendix D. 2018 Public Health Data

Table D-1. 2018 Public Health Dataset. NS indicates an analysis for a sample that was not conducted or a sample that was not collected. Sample IDs for Karuk and Yurok algae species data were assigned based on date and location and matched with microcystin sample IDs as no unique sample IDs were provided to the algae speciation laboratory for analysis. Microcystin test results of non-detect or values less than the reporting limit of 0.15 µg/l have been replaced with <0.15 µg/l. Algae genera names were updated to reflect the newest nomenclature of the field: *Anabaena* was renamed *Dolichospermum* and *Oscillatoria* was renamed *Planktothrix* for all species.

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Microcystin µg/l	<i>Dolichospermum flos-aquae</i> cells/ml	<i>Aphanizomenon flos-aquae</i> cells/ml	<i>Microcystis aeruginosa</i> cells/ml	<i>Dolichospermum circinalis</i> cells/ml	<i>Dolichospermum planctonica</i> cells/ml	<i>Dolichospermum</i> sp. cells/ml	<i>Aphanizomenon</i> sp. cells/ml	<i>Gloetrichia echinulata</i> cells/ml	<i>Lyngbya</i> sp. cells/ml	<i>Planktothrix limosa</i> cells/ml	<i>Planktothrix</i> sp. cells/ml	<i>Pseudodolichospermum</i> sp. cells/ml	<i>Dolichospermum variabilis</i> cells/ml	<i>Limnothrix</i> sp. cells/ml
UKEP18001	5/30/2018	10:15	UKEP	Upper Klamath Lake at Eagle Ridge County Park (Public Health)	ODEQ	0.1	0.16	9822	76069	27561	0	0	0	0	0	0	0	0	0	0	0
UKEP18002	6/20/2018	11:05	UKEP	Upper Klamath Lake at Eagle Ridge County Park (Public Health)	ODEQ	0.1	4	0	5683065	0	0	0	0	0	0	0	0	0	0	0	0
UKEP18003	6/26/2018	12:41	UKEP	Upper Klamath Lake at Eagle Ridge County Park (Public Health)	ODEQ	0.1	0.18	0	1270693	0	0	0	0	0	0	0	0	0	0	0	0
UKEP18004	7/10/2018	11:52	UKEP	Upper Klamath Lake at Eagle Ridge County Park (Public Health)	ODEQ	0.1	3.8	0	16388798	0	0	0	0	0	0	0	0	0	0	0	0
UKEP18005	7/23/2018	12:02	UKEP	Upper Klamath Lake at Eagle Ridge County Park (Public Health)	ODEQ	0.1	<0.15	0	113087	0	0	0	0	0	0	0	0	0	0	0	0
UKEP18006	8/7/2018	10:25	UKEP	Upper Klamath Lake at Eagle Ridge County Park (Public Health)	ODEQ	0.1	3.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
UKEP18007	8/20/2018	10:58	UKEP	Upper Klamath Lake at Eagle Ridge County Park (Public Health)	ODEQ	0.1	25	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
UKEP18008	9/10/2018	10:26	UKEP	Upper Klamath Lake at Eagle Ridge County Park (Public Health)	ODEQ	0.1	2.4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
UKEP18009	9/18/2018	10:43	UKEP	Upper Klamath Lake at Eagle Ridge County Park (Public Health)	ODEQ	0.1	8.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
UKEP18010	10/16/2018	10:22	UKEP	Upper Klamath Lake at Eagle Ridge County Park (Public Health)	ODEQ	0.1	0.41	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
UKEP18011	10/23/2018	10:26	UKEP	Upper Klamath Lake at Eagle Ridge County Park (Public Health)	ODEQ	0.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
UKHP18001	5/30/2018	10:31	UKHP	Upper Klamath Lake at Howard's Bay Park (Public Health)	ODEQ	0.1	0.41	471	11569	126	0	0	0	0	0	0	0	0	0	0	0
UKHP18002	6/20/2018	11:22	UKHP	Upper Klamath Lake at Howard's Bay Park (Public Health)	ODEQ	0.1	33	3363390	6206983	152881	0	0	0	0	5136814	0	0	0	0	0	0
UKHP18003	6/26/2018	12:57	UKHP	Upper Klamath Lake at Howard's Bay Park (Public Health)	ODEQ	0.1	9.1	0	1529172	0	0	0	0	0	873813	0	0	0	0	0	0
UKHP18004	7/10/2018	12:13	UKHP	Upper Klamath Lake at Howard's Bay Park (Public Health)	ODEQ	0.1	4.2	0	1539413	0	0	0	0	0	0	0	0	0	0	0	0
UKHP18005	7/23/2018	12:19	UKHP	Upper Klamath Lake at Howard's Bay Park (Public Health)	ODEQ	0.1	1.3	0	78695	1534	0	0	0	0	0	0	0	0	0	0	0
UKHP18006	8/7/2018	10:47	UKHP	Upper Klamath Lake at Howard's Bay Park (Public Health)	ODEQ	0.1	0.11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
UKHP18007	8/20/2018	11:12	UKHP	Upper Klamath Lake at Howard's Bay Park (Public Health)	ODEQ	0.1	29	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
UKHP18008	9/10/2018	10:40	UKHP	Upper Klamath Lake at Howard's Bay Park (Public Health)	ODEQ	0.1	17	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
UKHP18009	9/18/2018	10:59	UKHP	Upper Klamath Lake at Howard's Bay Park (Public Health)	ODEQ	0.1	28	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
UKHP18010	10/16/2018	10:37	UKHP	Upper Klamath Lake at Howard's Bay Park (Public Health)	ODEQ	0.1	1.2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Microcystin µg/l	Dolichospermum flos-aquae cells/ml	Aphanizomenon flos-aquae cells/ml	Microcystis aeruginosa cells/ml	Dolichospermum circinale cells/ml	Dolichospermum planctonica cells/ml	Dolichospermum sp. cells/ml	Aphanizomenon sp. cells/ml	Gloeotrichia echinulata cells/ml	Lyngbya sp. cells/ml	Planktothrix limosa cells/ml	Planktothrix sp. cells/ml	Pseudodolichospermum um sp. cells/ml	Dolichospermum variabilis cells/ml	Limnothrix sp. cells/ml
UKHP18011	10/23/2018	10:44	UKHP	Upper Klamath Lake at Howard's Bay Park (Public Health)	ODEQ	0.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
UKMP18001	5/30/2018	10:46	UKMP	Upper Klamath Lake at Moore Park (Public Health)	ODEQ	0.1	0.11	4672	9577	0	0	0	0	0	0	0	0	0	0	0	0
UKMP18002	6/20/2018	11:38	UKMP	Upper Klamath Lake at Moore Park (Public Health)	ODEQ	0.1	1.2	0	14093750	0	0	0	0	0	0	0	0	0	0	0	0
UKMP18003	6/26/2018	13:15	UKMP	Upper Klamath Lake at Moore Park (Public Health)	ODEQ	0.1	<0.15	0	155011	0	0	0	0	0	0	0	0	0	0	0	0
UKMP18004	7/10/2018	12:27	UKMP	Upper Klamath Lake at Moore Park (Public Health)	ODEQ	0.1	0.29	0	2634092	0	0	0	0	0	0	0	0	0	0	0	0
UKMP18005	7/23/2018	12:42	UKMP	Upper Klamath Lake at Moore Park (Public Health)	ODEQ	0.1	<0.15	0	575218	0	0	0	0	0	0	0	0	0	0	0	0
UKMP18006	8/7/2018	11:05	UKMP	Upper Klamath Lake at Moore Park (Public Health)	ODEQ	0.1	0.2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
UKMP18007	8/20/2018	11:25	UKMP	Upper Klamath Lake at Moore Park (Public Health)	ODEQ	0.1	2.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
UKMP18008	9/10/2018	10:55	UKMP	Upper Klamath Lake at Moore Park (Public Health)	ODEQ	0.1	3.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
UKMP18009	9/18/2018	11:13	UKMP	Upper Klamath Lake at Moore Park (Public Health)	ODEQ	0.1	26	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
UKMP18010	10/16/2018	10:52	UKMP	Upper Klamath Lake at Moore Park (Public Health)	ODEQ	0.1	4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
UKMP18011	10/23/2018	10:59	UKMP	Upper Klamath Lake at Moore Park (Public Health)	ODEQ	0.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KEKP18001	5/30/2018	9:31	KEKP	Keno Reservoir at Keno Park (Public Health)	ODEQ	0.1	1	23678	93886	867	0	0	0	0	0	0	0	0	0	0	0
KEKP18002	6/20/2018	10:24	KEKP	Keno Reservoir at Keno Park (Public Health)	ODEQ	0.1	1.6	0	2596132	0	0	0	0	0	0	0	0	0	0	0	0
KEKP18003	6/26/2018	12:00	KEKP	Keno Reservoir at Keno Park (Public Health)	ODEQ	0.1	0.21	0	1322607	0	0	0	0	0	0	0	0	0	0	0	0
KEKP18004	7/10/2018	11:05	KEKP	Keno Reservoir at Keno Park (Public Health)	ODEQ	0.1	0.16	0	502567	0	0	0	0	0	0	0	0	0	0	0	0
KEKP18005	7/23/2018	10:52	KEKP	Keno Reservoir at Keno Park (Public Health)	ODEQ	0.1	<0.15	0	4303	0	0	0	0	0	0	0	0	0	0	0	430
KEKP18006	8/7/2018	9:32	KEKP	Keno Reservoir at Keno Park (Public Health)	ODEQ	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KEKP18007	8/20/2018	10:18	KEKP	Keno Reservoir at Keno Park (Public Health)	ODEQ	0.1	4.7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KEKP18008	9/10/2018	9:47	KEKP	Keno Reservoir at Keno Park (Public Health)	ODEQ	0.1	160	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KEKP18009	9/18/2018	10:00	KEKP	Keno Reservoir at Keno Park (Public Health)	ODEQ	0.1	410	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KEKP18010	10/16/2018		KEKP	Keno Reservoir at Keno Park (Public Health)	ODEQ	0.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KEKP18011	10/23/2018		KEKP	Keno Reservoir at Keno Park (Public Health)	ODEQ	0.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BRTC18001	5/30/2018	9:15	BRTC	J.C. Boyle Reservoir at Topsy Campground (Public Health)	ODEQ	0.1	<0.15	0	546	0	0	0	0	0	0	0	0	0	0	0	0
BRTC18002	6/20/2018	10:08	BRTC	J.C. Boyle Reservoir at Topsy Campground (Public Health)	ODEQ	0.1	<0.15	112	12659	0	0	0	0	0	0	0	0	0	0	0	0
BRTC18003	6/26/2018	11:43	BRTC	J.C. Boyle Reservoir at Topsy Campground (Public Health)	ODEQ	0.1	<0.15	0	136397	0	0	0	0	0	0	609	0	0	0	0	0

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Microcystin µg/l	Dolichospermum flos-aquae cells/ml	Aphanizomenon flos-aquae cells/ml	Microcystis aeruginosa cells/ml	Dolichospermum circinalis cells/ml	Dolichospermum planctonica cells/ml	Dolichospermum sp. cells/ml	Aphanizomenon sp. cells/ml	Gloeotrichia echinulata cells/ml	Lynngbya sp. cells/ml	Planktothrix limosa cells/ml	Planktothrix sp. cells/ml	Pseudodolichospermum um sp. cells/ml	Dolichospermum variabilis cells/ml	Limnothrix sp. cells/ml	
BRTC18004	7/10/2018	10:47	BRTC	J.C. Boyle Reservoir at Topsy Campground (Public Health)	ODEQ	0.1	<0.15	0	29548	389	0	0	0	0	0	0	0	0	0	0	0	
BRTC18005	7/23/2018	10:34	BRTC	J.C. Boyle Reservoir at Topsy Campground (Public Health)	ODEQ	0.1	<0.15	0	256	0	0	0	0	0	0	0	0	0	0	0	0	0
BRTC18006	8/7/2018	9:02	BRTC	J.C. Boyle Reservoir at Topsy Campground (Public Health)	ODEQ	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
BRTC18007	8/20/2018	10:00	BRTC	J.C. Boyle Reservoir at Topsy Campground (Public Health)	ODEQ	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
BRTC18008	9/10/2018	9:32	BRTC	J.C. Boyle Reservoir at Topsy Campground (Public Health)	ODEQ	0.1	0.3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
BRTC18009	9/18/2018	9:45	BRTC	J.C. Boyle Reservoir at Topsy Campground (Public Health)	ODEQ	0.1	0.34	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
BRTC18010	10/16/2018	9:30	BRTC	J.C. Boyle Reservoir at Topsy Campground (Public Health)	ODEQ	0.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
BRTC18011	10/23/2018	9:38	BRTC	J.C. Boyle Reservoir at Topsy Campground (Public Health)	ODEQ	0.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
KR18801	5/29/2018	11:30	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	<0.15	65	0	0	0	0	0	0	0	0	0	0	0	0	0	
KR18806	6/9/2018	14:45	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	<0.15	161	0	0	0	0	0	0	0	0	0	0	0	0	0	
KR18811	6/25/2018	12:05	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	<0.15	44	922	0	0	0	0	0	0	0	6	0	0	0	0	
KR18816	7/18/2018	16:15	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	2.6	2495	810030	17241	0	0	0	0	0	0	0	0	0	0	0	
KR18821	7/28/2018	12:45	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	5000	0	8528000	8636650	0	0	0	0	0	0	0	0	0	0	0	
KR18826	8/11/2018	12:15	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	7600	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
KR18831	8/25/2018	14:00	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	2100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
KR18836	9/17/2018	14:55	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	540	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
KR18841	9/22/2018	9:20	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	2500	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
KR18846	10/13/2018	13:20	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	0.39	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
KR18851	10/28/2018	11:30	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	0.83	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
KR18856	11/17/2018	11:40	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
KR18861	12/8/2018	11:40	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
KR18805	6/9/2018	16:30	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	<0.15	0	0	0	0	0	0	0	0	0	401	0	0	0	0	
KR18810	6/25/2018	13:30	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	<0.15	0	2349	0	0	0	0	0	0	0	17681	0	0	0	0	
KR18815	7/18/2018	19:25	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	0.36	0	9311	1819	0	0	0	0	0	0	364	0	0	0	0	
KR18820	7/28/2018	14:00	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	2	631	41082	9466	0	0	0	0	0	0	0	0	0	0	0	
KR18800	5/29/2018	12:00	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Microcystin µg/l	Dolichospermum flos-aquae cells/ml	Aphanizomenon flos-aquae cells/ml	Microcystis aeruginosa cells/ml	Dolichospermum circinale cells/ml	Dolichospermum planctonica cells/ml	Dolichospermum sp. cells/ml	Aphanizomenon sp. cells/ml	Gloeotrichia echinulata cells/ml	Lyngbya sp. cells/ml	Planktothrix limosa cells/ml	Planktothrix sp. cells/ml	Pseudodolichospermum um sp. cells/ml	Dolichospermum variabilis cells/ml	Limnothrix sp. cells/ml
KR18825	8/11/2018	15:50	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18830	8/25/2018	15:15	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	39	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18835	9/17/2018	17:50	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	3200	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18840	9/22/2018	10:30	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	38	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18845	10/13/2018	16:55	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	0.54	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18850	10/28/2018	12:10	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18855	11/17/2018	13:20	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	0.16	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18860	12/8/2018	13:15	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18803	5/29/2018	10:30	IGIW	Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	PacifiCorp	0.1	<0.15	0	76	0	0	0	0	0	0	0	0	0	0	0	0
KR18808	6/9/2018	11:00	IGJW	Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	PacifiCorp	0.1	<0.15	466	85	0	0	0	0	0	0	0	0	254	0	0	0
KR18813	6/25/2018	11:15	IGIW	Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	PacifiCorp	0.1	<0.15	2587	0	1179	0	0	0	0	0	0	0	0	0	0	0
KR18818	7/18/2018	12:45	IGJW	Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	PacifiCorp	0.1	4	0	45306	115685	0	0	0	0	0	0	0	0	0	0	0
KR18823	7/28/2018	11:45	IGIW	Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	PacifiCorp	0.1	47	0	2427293	127100	0	0	0	0	0	0	0	0	0	0	0
KR18828	8/11/2018	11:00	IGJW	Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	PacifiCorp	0.1	12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18833	8/25/2018	13:00	IGIW	Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	PacifiCorp	0.1	42	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18838	9/17/2018	13:45	IGJW	Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	PacifiCorp	0.1	17	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18843	9/22/2018	8:30	IGIW	Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	PacifiCorp	0.1	870	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18848	10/13/2018	12:05	IGJW	Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	PacifiCorp	0.1	0.6	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18853	10/28/2018	10:45	IGIW	Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	PacifiCorp	0.1	0.16	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18858	11/17/2018	9:30	IGJW	Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	PacifiCorp	0.1	0.16	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18863	12/8/2018	10:00	IGIW	Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	PacifiCorp	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18807	6/9/2018	11:20	IGCC	Iron Gate Reservoir at Camp Creek (Public Health)	PacifiCorp	0.1	<0.15	885	173	0	0	0	0	0	0	0	0	0	0	0	0
KR18812	6/25/2018	11:30	IGCC	Iron Gate Reservoir at Camp Creek (Public Health)	PacifiCorp	0.1	0.59	3924	178	4883	0	0	0	0	0	0	133	0	0	0	0
KR18817	7/18/2018	13:20	IGCC	Iron Gate Reservoir at Camp Creek (Public Health)	PacifiCorp	0.1	8.5	0	71211	41963	0	0	0	0	0	0	0	0	0	0	0
KR18822	7/28/2018	12:20	IGCC	Iron Gate Reservoir at Camp Creek (Public Health)	PacifiCorp	0.1	22	0	1972557	90038	0	0	0	0	0	0	0	0	0	0	0
KR18802	5/29/2018	10:40	IGCC	Iron Gate Reservoir at Camp Creek (Public Health)	PacifiCorp	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Microcystin µg/l	Dolichospermum flos-aquae cells/ml	Aphanizomenon flos-aquae cells/ml	Microcystis aeruginosa cells/ml	Dolichospermum circinale cells/ml	Dolichospermum planctonica cells/ml	Dolichospermum sp. cells/ml	Aphanizomenon sp. cells/ml	Gloeotrichia echinulata cells/ml	Lynghya sp. cells/ml	Planktothrix limosa cells/ml	Planktothrix sp. cells/ml	Pseudodolichospermum um sp. cells/ml	Dolichospermum variabilis cells/ml	Limnothrix sp. cells/ml
KR18827	8/11/2018	11:15	IGCC	Iron Gate Reservoir at Camp Creek (Public Health)	PacifiCorp	0.1	30	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18832	8/25/2018	13:20	IGCC	Iron Gate Reservoir at Camp Creek (Public Health)	PacifiCorp	0.1	5400	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18837	9/17/2018	14:00	IGCC	Iron Gate Reservoir at Camp Creek (Public Health)	PacifiCorp	0.1	28	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18842	9/22/2018	8:50	IGCC	Iron Gate Reservoir at Camp Creek (Public Health)	PacifiCorp	0.1	25	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18847	10/13/2018	12:20	IGCC	Iron Gate Reservoir at Camp Creek (Public Health)	PacifiCorp	0.1	0.82	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18852	10/28/2018	11:00	IGCC	Iron Gate Reservoir at Camp Creek (Public Health)	PacifiCorp	0.1	0.4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18857	11/17/2018	9:50	IGCC	Iron Gate Reservoir at Camp Creek (Public Health)	PacifiCorp	0.1	4.2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18862	12/8/2018	10:30	IGCC	Iron Gate Reservoir at Camp Creek (Public Health)	PacifiCorp	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18809	6/9/2018	18:40	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	PacifiCorp	0.1	<0.15	35	43	0	0	0	0	0	0	0	0	0	0	0	0
KR18819	7/18/2018	18:05	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	PacifiCorp	0.1	3	0	8988	8016	0	0	0	0	0	0	0	0	0	0	0
KR18824	7/28/2018	16:30	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	PacifiCorp	0.1	0.84	0	5157	0	0	0	0	0	0	0	0	0	0	0	0
KR18804	5/29/2018	9:30	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	PacifiCorp	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18814	6/25/2018	10:45	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	PacifiCorp	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18829	8/11/2018	16:45	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	PacifiCorp	0.1	0.37	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18834	8/25/2018	17:10	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	PacifiCorp	0.1	8.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18839	9/17/2018	10:05	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	PacifiCorp	0.1	9.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18844	9/22/2018	7:55	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	PacifiCorp	0.1	3.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18849	10/13/2018	8:10	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	PacifiCorp	0.1	0.19	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18854	10/28/2018	10:05	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	PacifiCorp	0.1	0.31	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18859	11/17/2018	14:55	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	PacifiCorp	0.1	0.2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KR18864	12/8/2018	16:15	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	PacifiCorp	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
IB071818-SG	7/18/2018	9:10	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	0.82	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
IB072518-SG	7/25/2018	11:36	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	0.54	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
IB080118-SG	8/1/2018	9:37	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
IB080818-SG	8/8/2018	10:11	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	0.27	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
IB081518-SG	8/15/2018	9:12	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	0.41	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Microcystin µg/l	Dolichospermum flos-aquae cells/ml	Aphanizomenon flos-aquae cells/ml	Microcystis aeruginosa cells/ml	Dolichospermum circinale cells/ml	Dolichospermum planctonica cells/ml	Dolichospermum sp. cells/ml	Aphanizomenon sp. cells/ml	Gloeotrichia echinulata cells/ml	Lynngbya sp. cells/ml	Planktothrix limosa cells/ml	Planktothrix sp. cells/ml	Pseudodolichospermum um sp. cells/ml	Dolichospermum variabilis cells/ml	Limnothrix sp. cells/ml
IB082218-SG	8/22/2018	12:13	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	0.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
IB082918-SG	8/29/2018	9:30	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	1.7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
IB090518-SG	9/5/2018	9:56	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	1.4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
IB091218-SG	9/12/2018	10:42	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	9.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
IB091918-SG	9/19/2018	11:16	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	3.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
IB092618-SG	9/26/2018	10:36	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	2.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BB071818-SG	7/18/2018	8:22	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BB072518-SG	7/25/2018	9:52	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	0.19	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BB080118-SG	8/1/2018	8:56	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BB080818-SG	8/8/2018	9:04	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BB081518-SG	8/15/2018	8:26	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BB082218-SG	8/22/2018	10:20	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BB082918-SG	8/29/2018	8:38	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	59	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BB090518-SG	9/5/2018	9:07	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	2.3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BB091218-SG	9/12/2018	9:34	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	4.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BB091918-SG	9/19/2018	10:35	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	0.71	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BB092618-SG	9/26/2018	9:05	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	3.6	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SV071818-SG	7/18/2018	7:41	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SV080118-SG	8/1/2018	8:15	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SV081518-SG	8/15/2018	7:51	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SV082918-SG	8/29/2018	8:02	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	4.4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SV090518-SG	9/5/2018	8:33	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	0.7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SV091918-SG	9/19/2018	9:45	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	0.89	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SV100218-SG	10/2/2018	8:16	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SV101718-SG	10/17/2018	9:19	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SV072518-SG	7/25/2018	8:11	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	0.47	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Microcystin µg/l	Dolichospermum flos-aquae cells/ml	Aphanizomenon flos-aquae cells/ml	Microcystis aeruginosa cells/ml	Dolichospermum circinale cells/ml	Dolichospermum planctonica cells/ml	Dolichospermum sp. cells/ml	Aphanizomenon sp. cells/ml	Gloeotrichia echinulata cells/ml	Lynngbya sp. cells/ml	Planktothrix limosa cells/ml	Planktothrix sp. cells/ml	Pseudodolichospermum um sp. cells/ml	Dolichospermum variabilis cells/ml	Limnothrix sp. cells/ml
SV080818-SG	8/8/2018	8:00	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SV082218-SG	8/22/2018	9:25	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SV091218-SG	9/12/2018	8:17	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	2.3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SV092618-SG	9/26/2018	7:50	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	1.2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
HC071818-SG	7/18/2018	6:57	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
HC072518-SG	7/25/2018	7:14	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
HC080118-SG	8/1/2018	7:31	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
HC081518-SG	8/15/2018	6:55	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
HC082218-SG	8/22/2018	8:31	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
HC082918-SG	8/29/2018	7:19	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	5.3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
HC090518-SG	9/5/2018	7:52	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	0.65	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
HC091918-SG	9/19/2018	8:42	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	0.64	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
HC092618-SG	9/26/2018	7:01	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	1.6	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
HC080818-SG	8/8/2018	7:06	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	0.3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
HC091218-SG	9/12/2018	7:24	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	3.4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
OR071818-SG	7/18/2018	5:56	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
OR080118-SG	8/1/2018	6:16	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
OR081518-SG	8/15/2018	5:54	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
OR082918-SG	8/29/2018	6:26	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	6.4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
OR090518-SG	9/5/2018	6:02	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	1.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
OR091918-SG	9/19/2018	7:30	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	0.38	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
OR072518-SG	7/25/2018	5:45	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
OR080818-SG	8/8/2018	5:46	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	0.18	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
OR082218-SG	8/22/2018	7:06	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
OR091218-SG	9/12/2018	6:02	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	0.78	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
OR092618-SG	9/26/2018	5:24	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	0.24	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Microcystin µg/l	Dolichospermum flos-aquae cells/ml	Aphanizomenon flos-aquae cells/ml	Microcystis aeruginosa cells/ml	Dolichospermum circinalis cells/ml	Dolichospermum planctonica cells/ml	Dolichospermum sp. cells/ml	Aphanizomenon sp. cells/ml	Gloeotrichia echinulata cells/ml	Lynghya sp. cells/ml	Planktothrix limosa cells/ml	Planktothrix sp. cells/ml	Pseudodolichospermum um sp. cells/ml	Dolichospermum variabilis cells/ml	Limnothrix sp. cells/ml
WE060618-SG	6/6/2018	10:19	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	<0.15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WE062618-SG	6/26/2018	9:12	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	NS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WE062718-SG	6/27/2018	9:12	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
WE071118-SG	7/11/2018	10:19	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	<0.15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WE072518-SG	7/25/2018	10:27	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
WE080118-SG	8/1/2018	12:42	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
WE080818-SG	8/8/2018	10:29	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
WE081518-SG	8/15/2018	9:00	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	0.21	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
WE082218-SG	8/22/2018	11:08	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
WE082818-SG	8/28/2018	9:12	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	2.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
WE090418-SG	9/4/2018	12:11	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	2.3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
WE091218-SG	9/12/2018	10:26	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	0.46	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
WE091818-SG	9/18/2018	9:48	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
WE092618-SG	9/26/2018	10:22	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	3.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
WE100218-SG	10/2/2018	11:49	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
WE101018-SG	10/10/2018	10:55	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	0.29	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
WE102418-SG	10/24/2018	10:10	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	0.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TG060518-SG	6/5/2018	10:41	KRTG	Klamath River near Klamath (RM 6.0; Public Health)	Yurok	0.1	<0.15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TG062618-SG	6/26/2018	10:06	KRTG	Klamath River near Klamath (RM 6.0; Public Health)	Yurok	0.1	<0.15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TG071018-SG	7/10/2018	10:54	KRTG	Klamath River near Klamath (RM 6.0; Public Health)	Yurok	0.1	<0.15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TG072418-SG	7/24/2018	9:53	KRTG	Klamath River near Klamath (RM 6.0; Public Health)	Yurok	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TG073118-SG	7/31/2018	12:12	KRTG	Klamath River near Klamath (RM 6.0; Public Health)	Yurok	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TG080718-SG	8/7/2018	10:25	KRTG	Klamath River near Klamath (RM 6.0; Public Health)	Yurok	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TG081418-SG	8/14/2018	11:19	KRTG	Klamath River near Klamath (RM 6.0; Public Health)	Yurok	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TG082118-SG	8/21/2018	10:02	KRTG	Klamath River near Klamath (RM 6.0; Public Health)	Yurok	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TG082918-SG	8/29/2018	9:05	KRTG	Klamath River near Klamath (RM 6.0; Public Health)	Yurok	0.1	0.16	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Microcystin µg/l	Dolichospermum flos-aquae cells/ml	Aphanizomenon flos-aquae cells/ml	Microcystis aeruginosa cells/ml	Dolichospermum circinale cells/ml	Dolichospermum planctonica cells/ml	Dolichospermum sp. cells/ml	Aphanizomenon sp. cells/ml	Gloeotrichia echinulata cells/ml	Lynghya sp. cells/ml	Planctothrix limosa cells/ml	Planctothrix sp. cells/ml	Pseudodolichospermum um sp. cells/ml	Dolichospermum variabilis cells/ml	Limnothrix sp. cells/ml
TG090518-SG	9/5/2018	10:38	KRTG	Klamath River near Klamath (RM 6.0; Public Health)	Yurok	0.1	2.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TG091118-SG	9/11/2018	10:33	KRTG	Klamath River near Klamath (RM 6.0; Public Health)	Yurok	0.1	3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TG091918-SG	9/19/2018	9:00	KRTG	Klamath River near Klamath (RM 6.0; Public Health)	Yurok	0.1	2.3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TG092518-SG	9/25/2018	11:49	KRTG	Klamath River near Klamath (RM 6.0; Public Health)	Yurok	0.1	1.3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TG100318-SG	10/3/2018	10:29	KRTG	Klamath River near Klamath (RM 6.0; Public Health)	Yurok	0.1	0.18	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TG100918-SG	10/9/2018	10:56	KRTG	Klamath River near Klamath (RM 6.0; Public Health)	Yurok	0.1	0.63	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TG102318-SG	10/23/2018	10:05	KRTG	Klamath River near Klamath (RM 6.0; Public Health)	Yurok	0.1	0.18	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SS060518-SG	6/5/2018	11:14	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	<0.15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SS062618-SG	6/26/2018	9:23	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	<0.15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SS071018-SG	7/10/2018	11:32	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	<0.15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SS072418-SG	7/24/2018	9:00	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	<0.15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SS073118-SG	7/31/2018	9:42	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SS080718-SG	8/7/2018	11:30	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SS081418-SG	8/14/2018	10:28	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SS082118-SG	8/21/2018	10:49	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SS082918-SG	8/29/2018	9:36	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SS090518-SG	9/5/2018	9:51	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	2.8	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SS091118-SG	9/11/2018	11:39	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	0.37	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SS091918-SG	9/19/2018	9:39	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	0.34	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SS092518-SG	9/25/2018	11:09	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	1.2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SS100318-SG	10/3/2018	11:23	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	1.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SS100918-SG	10/9/2018	11:36	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	0.2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SS102318-SG	10/23/2018	10:38	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	<0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Table D-2. Mass spectroscopy data for the 2018 samples collected by the Karuk Tribe and Yurok Tribe. Note: Results are presented in micrograms per liter (µg/l). NA = Samples not analyzed for these constituents during 2018.

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Lab	Microcystin-RR µg/l	MC-Desmethyl-RR µg/l	Microcystin-LR µg/l	MC-Desmethyl-LR µg/l	Microcystin-YR µg/l	Microcystin-LA µg/l	Microcystin-LW (screening only) µg/l	Microcystin-LF µg/l	Microcystin-LY µg/l	Domoic acid µg/l	Okadaic acid µg/l	Nodularin µg/l
IB082218-SG	8/22/2018	12:13	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Baseline)	Karuk	0.1	GreenWater	<0.03	<0.02	0.1	<0.02	<0.03	0.29	<0.01	<0.01	<0.01	NA	NA	<0.10
IB091218-SG	9/12/2018	10:42	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Baseline)	Karuk	0.1	GreenWater	<0.03	<0.02	1.36	0.03	<0.03	3.78	<0.01	0.02	0.03	NA	NA	<0.10
IB092618-SG	9/26/2018	10:36	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Baseline)	Karuk	0.1	GreenWater	<0.03	<0.02	<0.02	<0.02	<0.03	0.06	<0.01	<0.01	<0.01	NA	NA	<0.10
WA091218-OC	9/12/2018	9:55	KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	Karuk	0.5	GreenWater	<0.03	<0.02	0.43	0.02	<0.03	1.03	<0.01	0.01	0.02	NA	NA	<0.10
WA101018-SG	10/10/2018	11:28	KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	Karuk	0.1	GreenWater	<0.02	<0.02	0.04	<0.05	<0.02	0.12	<0.02	<0.02	<0.02	NA	NA	<0.02
WE071118-OC	7/11/2018	10:19	KR04350	Klamath River at Weitchpec (RM 43.5; Baseline)	Yurok	0.5	GreenWater	<0.005	NA	<0.01	<0.04	<0.01	<0.01	<0.01	<0.005	<0.01	NA	NA	<0.06
WE080818-OC	8/8/2018	10:29	KR04350	Klamath River at Weitchpec (RM 43.5; Baseline)	Yurok	0.5	GreenWater	<0.005	NA	<0.01	<0.04	<0.01	<0.01	<0.01	<0.005	0.04	NA	NA	<0.06
WE091218-OC	9/12/2018	10:26	KR04350	Klamath River at Weitchpec (RM 43.5; Baseline)	Yurok	0.5	GreenWater	<0.005	NA	<0.01	0.2	<0.01	<0.01	<0.01	<0.005	0.35	NA	NA	<0.06
WE101018-OC	10/10/2018	10:55	KR04350	Klamath River at Weitchpec (RM 43.5; Baseline)	Yurok	0.5	GreenWater	<0.005	NA	<0.01	<0.04	<0.01	<0.01	<0.01	<0.005	<0.01	NA	NA	<0.06
TC080818-OC	8/8/2018	9:03	KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Yurok	0.5	GreenWater	NA	<0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TG060618-OC	6/6/2018	6:38	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	GreenWater	NA	<0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TG071118-OC	7/11/2018	6:50	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	GreenWater	NA	<0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TG111418-OC	11/14/2018	07:43	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	GreenWater	NA	<0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TG120518-OC	12/5/2018	08:11	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	GreenWater	NA	<0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TG080818-OC	8/8/2018	6:46	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	GreenWater	NA	<0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TG050918-OC	5/9/2018	6:29	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	GreenWater	NA	<0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TG101018-OC	10/10/2018	7:38	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	GreenWater	NA	<0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TG091218-OC	9/12/2018	6:48	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	GreenWater	NA	<0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TG031418-OC	3/14/2018	6:57	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	GreenWater	NA	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TG041118-OC	4/11/2018	6:47	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	GreenWater	NA	0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table D-3. Results for anatoxin-a analysis for samples collected by PacifiCorp, the Karuk Tribe, and the Yurok Tribe (shaded row indicates change in reporting limit).

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Lab	Total Anatoxin-a µg/l
KR18821	7/28/2018	12:45	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	GreenWater	<0.05
KR18826	8/11/2018	12:15	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	GreenWater	<0.05
KR18835	9/17/2018	17:50	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	GreenWater	<0.1
IB060618-SG	6/6/2018	11:07	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	GreenWater	<0.05
IB072518-SG	7/25/2018	11:36	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	GreenWater	<0.05
IB080818-SG	8/8/2018	10:11	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	GreenWater	<0.05