KLAMATH RIVER WATER QUALITY SAMPLING
2021 ANNUAL REPORT

Prepared for the
KHSA Water Quality Monitoring Group

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Photo: Grant Johnson

Table of Contents

List of Figures

List of Tables

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 four 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Klamath Hydroelectric Settlement Agreement (KHSA), signed on February 18, 2010 (subsequently amended on April 6, 2016), superseded the AIP.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. Monitoring is performed by entities agreed upon by the parties to the KHSA and in consultation with the appropriate water quality agencies. The 2021 water quality monitoring program conducted under IM 15 represents the thirteenth year of water quality monitoring under the AIP and the KHSA.

The monitoring program is a cooperative effort of the KHSA Monitoring Group.[1] This group developed the KHSA IM 15 monitoring study plan, which is located on PacifiCorp's Klamath website,[2] as well as the Klamath Basin Monitoring Program (KBMP) website.[3] Actual monitoring is completed by a sub-set of the Monitoring Group that includes the Yurok Tribe, the Karuk Tribe, PacifiCorp, and the Oregon Department of Environmental Quality. The program continues to collect data from sites along 254 miles of river and reservoirs from Link River 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 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 2021 baseline and public health data collection efforts. Four appendices accompany this report: the baseline sampling locations (Appendix A); the 2021 baseline grab sample results and field measurements (Appendix B); the phytoplankton species charts and biovolume graphs (Appendix C); and the 2021 public health data (Appendix D).

[1] The KHSA 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.pacificorp.com/energy/hydro/klamath-river.html

[3] http://kbmp.net/collaboration/klamath-hydroelectric-settlement-agreement-monitoring

2. Program Elements

The primary elements of the 2021 IM 15 monitoring program included baseline and public health monitoring conducted from April through December 2021. The baseline water quality monitoring element included water quality grab samples, physical observations associated with these grab samples, water quality probe measurements, and phytoplankton (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 phytoplankton (algae) data in the baseline monitoring element included algae species identification and quantification from samples collected at each sampling location. The grab sample, water quality probe data, and algae species quantification are presented in this report and are available in electronic form.[4]

The 2021 public health monitoring program consisted of algal toxin sampling. These results were presented in public health memoranda produced by the sampling entities throughout the season.[5] These memoranda were used to track toxin conditions and supported management decisions to post and de-post reservoir and river reaches with public health advisory information. A summary of the 2021 public health monitoring program data is presented herein.

To provide transparency, the KBMP website provides access to reports from previous years, associated program documents, and other materials and features 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] https://www.pacificorp.com/energy/hydro/klamath-river.html

[5] 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 2021, baseline sampling was conducted at 22 sites along the Klamath River and its tributaries, from Link River Dam to the Klamath River Estuary (Figure 1), by the three sampling entities: PacifiCorp, Karuk Tribe, and Yurok Tribe. Fifteen of those sites were located on the mainstem of the Klamath River, three sites were located in reservoirs on the Klamath River, and four sites were located on major tributaries of the Klamath River (Shasta, Scott, Salmon, and Trinity rivers). Sampling locations, sampling frequency, and sampling entity varied 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 parameter data were collected at four sites, three of which are baseline program sites and one of which is at a non-baseline program location near a baseline program site. Sondes were deployed to collect continuous data (e.g., hourly frequency) for physical parameters at the following baseline program sites: Link Dam (RM 254.44; Baseline) (maintained by USGS, with USBR providing funding and oversight for its maintenance and deployment), Klamath River below Iron Gate Dam (RM 189.73; Baseline) (maintained by PacifiCorp), and Klamath River below Seiad (RM 128.5; Baseline) (maintained by the Karuk Tribe).

The non-baseline program location for sonde deployment was Klamath River above Keno Dam, at River Mile 234.9, just upstream of baseline program location Klamath River below Keno Dam near a U.S. Geological Survey (USGS) gage (RM 233.4; Baseline). Two sondes, (1) surface and (2) bottom, were maintained by USGS, with USBR providing funding and oversight for its maintenance and deployment. Data from the (1) surface sonde was used herein. While water quality conditions data collected upstream of Keno Dam can differ from water quality conditions downstream of the dam, as conditions can differ in Keno Reservoir and in the Klamath River downstream of Keno Dam, the sonde provided data to illustrate conditions at the downstream end of the reservoir prior to water being released to Klamath River.

Except for three sites, grab samples of all other baseline water quality constituents were collected monthly (Table 1). At Link Dam (RM 254.44; 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 2021: 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 2021 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 in late 2016 to control costs in future years. From 2017-2019, program costs increased steadily despite these changes. In 2021, the IM 15 baseline sampling program was revised again to control costs. Changes included:

- The 2021 baseline program started in April, instead of February and March.
- The 2021 baseline program no longer collected alkalinity from Copco Reservoir (RM 198.74; Baseline) or Iron Gate Reservoir (RM 190.19; Baseline)
- The 2021 baseline program collected monthly samples from Klamath River below Iron Gate Dam (RM 189.73; Baseline), instead of bimonthly.
- The 2021 baseline program collected phytoplankton species and microcystin from June through October for the eight sites in the lower part of the Klamath River [Klamath River at Walker Bridge (RM 156.26; Baseline) downstream through Klamath River Estuary (RM 0.5; Baseline)], instead of from May through October.

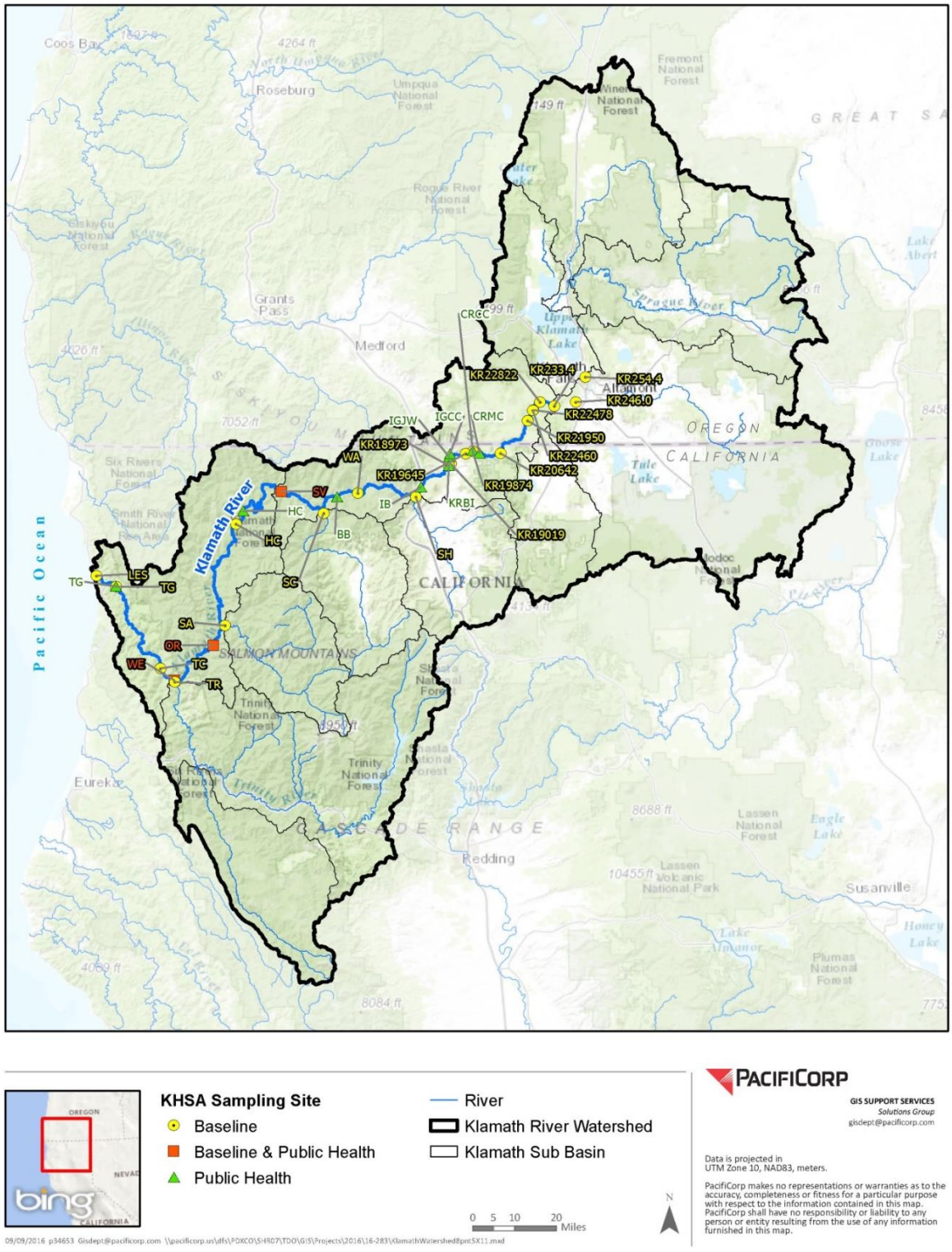

Figure 1. 2021 KHSA Klamath River baseline monitoring and public health sampling sites

Table 1. 2021 Baseline monitoring locations, sampling frequency, and sampling entities.

Site ID	Monitoring Location	Water Temperature (°C)	Dissolved Oxygen (mg/l)	pH (log(H+))	Conductance (@ S/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/Pheo (µg/l)	Phytoplankton species	Microcystin (µg/l)	LCMS confirmation	Turbidity (NTU)	Sampling Entity
Sampling Method:		*T, P*	*P*	*P*	*P*	*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	A1/BM	A1/BM	A1/BM	A1/BM	A1/BM	A1/BM	A1/BM	A1/BM	A1/BM	A1/BM	A1/BM	A1/BM	A1/BM	BM/S	-	A1/BM2	**PacifiCorp**
KR24600	**Keno Reservoir at Miller Island (RM 246.0; Baseline)**	H	H	H	H	A1	A1	A1	A1	A1	-	-	A1	-	A1	A1	A1	M/S	M/S	-	A1	**PacifiCorp**
KR23340	**Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)**	H	D	D	D	A1/BM2	A1/BM2	A1/BM2	A1/BM2	A1/BM2	A1	-	A1	A1	A1	A1/BM2	A1	M/S	M/S	-	A1/BM2	**PacifiCorp**
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)**	H	D	D	D	A1	A1	A1	A1	A1	-	-	A1	-	A1	A1	A1	M/S	M/S	-	-	**PacifiCorp**
KR21950	**Klamath River below USGS Gage (RM 219.50; Baseline)**	H	D	D	D	A1	A1	A1	A1	A1	-	-	A1	-	A1	A1	A1	M/S	M/S	-	A1	**PacifiCorp**
KR20642	**Klamath River above Shovel Creek (RM 206.42; Baseline)**	H	D	D	D	A1/BM2	A1/BM2	A1/BM2	A1/BM2	A1/BM2	A1	-	A1	A1	A1	A1	A1	M/S	M/S	-	A1	**PacifiCorp**
KR19874	**Copco Reservoir (RM 198.74; Baseline)**	VP	VP	VP	VP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**PacifiCorp**
	Copco Res 0.5 m from Surface					A1	A1	A1	A1	A1	-	-	A1	-	A1	-	A1	M/S	M/S	-	-	**PacifiCorp**
	Copco Res Thermocline					A1	A1	A1	A1	A1	-	-	A1	-	A1	-	A1	-	-	-	-	**PacifiCorp**
	Copco Res 1 m from Bottom					A1	A1	A1	A1	A1	-	-	A1	-	A1	A1	-	-	-	-	-	**PacifiCorp**
	Copco Res 0-8 m Integrated					-	-	-	-	-	-	-	-	-	-	-	A1	M/S	M/S	-	-	**PacifiCorp**
KR19645	**Klamath River below Copco Dam (RM 196.45; Baseline)[b]**	H	D	D	D	A1	A1	A1	A1	A1	-	-	A1	-	A1	A1	A1	M/S	M/S	-	-	**PacifiCorp**
KR19019	**Iron Gate Reservoir (RM 190.19; Baseline)**	VP	VP	VP	VP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**PacifiCorp**
	Iron Gate Res 0.5 m from Surface					A1	A1	A1	A1	A1	-	-	A1	-	A1	-	A1	M/S	M/S	-	-	**PacifiCorp**
	Iron Gate Res Thermocline					A1	A1	A1	A1	A1	-	-	A1	-	A1	-	A1	-	-	-	-	**PacifiCorp**
	Iron Gate Res 1 m from Bottom					A1	A1	A1	A1	A1	-	-	A1	-	A1	A1	-	-	-	-	-	**PacifiCorp**
	Iron Gate Res 0-8 m Integrated					-	-	-	-	-	-	-	-	-	-	-	A1	M/S	M/S	-	-	**PacifiCorp**
KR18973	**Klamath River below Iron Gate Dam (RM 189.73; Baseline)**	H	H	H	H	A1	A1	A1	A1	A1	A1	-	A1	A1	A1	A1	A1	A1	S2	-	A1	**PacifiCorp**
KR15626	**Klamath River at Walker Bridge (RM 156.26; Baseline)**	H	D	D	D	A1	A1	A1	A1	A1	-	-	A1	-	A1	*	A1	S3	S3	S2	-	**Karuk**
KR12850	**Klamath River below Seiad (RM 128.5; Baseline)**	H	H	H	H	A1	A1	A1	A1	A1	A1	-	A1	A1	A1	*	A1	S3	S3	-	A1	**Karuk**
KR10130	**Klamath River below Happy Camp (RM 101.3; Baseline)**	H	D	D	D	A1	A1	A1	A1	A1	-	-	A1	-	A1	*	A1	S3	S3	-	-	**Karuk**
KR05910	**Klamath River at Orleans (USGS) (RM 59.1; Baseline)**	H	H	H	H	A1	A1	A1	A1	A1	-	-	A1	-	A1	A1	A1	S3	S3	-	A1	**Karuk**
KR04350	**Klamath River at Weitchpec (RM 43.5; Baseline)**	H	H	H	H	A1	A1	A1	A1	A1	-	-	A1	-	A1	*	A1	S3	S3	-	-	**Yurok**
KR03850	**Klamath River below Trinity River (RM 38.5; Baseline)**	H	H	H	H	A1	A1	A1	A1	A1	-	-	A1	-	A1	*	A1	S3	S3	-	-	**Yurok**
KR00600	**Klamath River near Klamath (RM 6.0; Baseline)**	H	H	H	H	A1	A1	A1	A1	A1	A1	-	A1	A1	A1	*	A1	S3	S3	-	A1	**Yurok**
KR00050	**Klamath River Estuary (RM 0.5; Baseline)[c]**	HP	D	D	D	A1	A1	A1	A1	A1	-	-	A1	-	A1	*	A1	S3	S3	-	-	**Yurok**
SA00000	**Salmon River near mouth (Baseline)**	H	H	H	H	A1	A1	A1	A1	A1	-	-	A1	-	A1	*	A1	*	-	-	A1	**Karuk**
SC00000	**Scott River near mouth (Baseline)**	H	H	H	H	A1	A1	A1	A1	A1	-	-	A1	-	A1	*	A1	*	-	-	A1	**Karuk**
SH00000	**Shasta River near mouth (Baseline)**	H	H	H	H	A1	A1	A1	A1	A1	-	-	A1	-	A1	*	A1	*	-	-	A1	**Karuk**
TR00000	**Trinity River near mouth (Baseline)**	H	H	H	H	A1	A1	A1	A1	A1	-	-	A1	-	A1	*	A1	*	-	-	A1	**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 two 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
- = Not Sampled
***** = Not sampled. Parameter covered at M/S frequency by Tribal WQ Workgroup
A1 = Monthly sampling April - December
A1/BM = Bimonthly sampling May - October, and monthly sampling April, November & December
A1/BM2 = Bimonthly sampling June - September, and monthly sampling April, May, October, November & December
BM/S = Bimonthly sampling July - October
M/S = Monthly seasonal sampling May - October
S2 = Monthly seasonal sampling July - October
S3 = Monthly seasonal sampling June - October

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 of microcystin within Upper Klamath Lake, the Klamath River, and Copco and Iron Gate 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 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 several beneficial uses for the Klamath River system (NCRWQCB 2018). Microcystin toxins can induce skin rashes, sore throat, oral blistering, nausea, gastroenteritis, fever, liver toxicity, and general tumor promotion (WHO 2003; OEHHA 2012).

In 2021, the IM 15 public health sampling program was also revised to control costs. Changes included:

- The 2021 public health sampling program no longer included sampling for phytoplankton (algae) species identification.

- The 2021 public Health sampling program collected microcystin samples bimonthly at all eight sites below Iron Gate Dam (Klamath River at I-5 Rest Area (RM 179.20; Public Health) through Klamath River at South Slough (RM 0.1; Public Health)), instead of weekly.

Table 2. 2021 Klamath River public health monitoring locations, constituents, and sampling frequency.

Location	Site ID	River Mile	Microcystin	LC/MS/MS water for cyanotoxins	Sampling Entity
Upper Klamath Lake at Eagle Ridge County Park (Public Health)	UKEP	-	BM7-mod	-	ODEQ
Upper Klamath Lake at Howard's Bay Park (Public Health)	UKHP	-	BM7-mod	-	ODEQ
Upper Klamath Lake at Moore Park (Public Health)	UKMP	-	BM7-mod	-	ODEQ
Keno Reservoir at Keno Park (Public Health)	KEKP	234.0	BM7-mod	-	ODEQ
J.C. Boyle Reservoir at Topsy Campground (Public Health)	BRTC	225.0	BM7-mod	-	ODEQ
Copco Reservoir at Mallard Cove (Public Health)	CRMC	200.8	BM7-mod	S	PacifiCorp
Copco Reservoir at Copco Cove (Public Health)	CRCC	198.5	BM7-mod	S	PacifiCorp
Iron Gate Reservoir at Camp Creek (Public Health	IRCC	192.8	BM7-mod	S	PacifiCorp
Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	IRJW	192.4	BM7-mod	S	PacifiCorp
Klamath River below Iron Gate Dam (RM 189.73; Public Health)	KRBI	189.7	BM7-mod	-	PacifiCorp
Klamath River at I-5 Rest Area (RM 179.20; Public Health)	KRIB	179.2	BM5	BM5	Karuk
Klamath River at Brown Bear River Access (RM 150.00; Public Health)	KRBB	150.0	BM5	-	Karuk
Klamath River below Seiad (RM 128.5; Public Health)	KRSV	128.5	BM5	-	Karuk
Klamath River below Happy Camp (RM 101.3; Public Health)	KRHC	101.3	BM5	-	Karuk
Klamath River at Orleans (USGS) (RM 59.1; Public Health)	KROR	59.1	BM5	-	Karuk
Klamath River at Weitchpec (RM 43.5; Public Health)	KRWE	43.5	BM5	-	Yurok
Klamath River near Klamath (RM 6.0; Public Health)	KRTG	6.0	BM5	-	Yurok
Klamath River at South Slough (RM 0.1; Public Health)	KRSS	0.1	BM5	S2	Yurok

Key:

Frequency	# of sample events	Sampling frequency description
-	0	Not Sampled
BM7-mod	13	Monthly sampling in May and at least bimonthly sampling June - November
BM5	10	Bimonthly sampling June - October
S	4	Analysis for anatoxin-a will be tied to results of anatoxin-a screening tests run on each public health sample; however, four test analysis are budgeted.
S2	4	Monthly sampling from July - October

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, 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* (CHL-A) and pheophytin (PHEO)
- Microcystin (MCYN) and anatoxin-a (if warranted)
- Algae species

Seven laboratories completed the analytical work during the field season:

- Edge Analytical Laboratories (Edge) in Wilsonville, Oregon and Burlington, Washington.
    - https://www.edgeanalytical.com/
- IEH Aquatic Research (IEH) in Seattle, Washington.
    - http://www.iehinc.com/ieh-locations/
- Sprague River Water Quality Laboratory (SRWQL)
    - ben.harris@klamathtribes.com
- Chesapeake Biological Laboratories (CBL) in Solomons, Maryland
    - http://www.umces.edu/cbl
- Environmental Protection Agency Region 9 (EPA) laboratory in Richmond, California
    - http://www.epa.gov/region9/lab/
- GreenWater Laboratories in Palatka, Florida
    - http://greenwaterlab.com/
- Aquatic Analysts in Friday Harbor, Washington
    - www.AAalgae.com

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 some sites using 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; 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).

5.4. Water Quality Analytical Methods

Edge, IEH, SRWQL, CBL, and EPA laboratories used either Standard Methods, EPA, or USGS 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 2021 samples. Method detection limits (MDL) and reporting limits (RL) varied among the laboratories.[6]

5.5. Algae Sample Analytical Methods

Analysis of chlorophyll-*a* and pheophytin was performed by CBL for samples collected by PacifiCorp, by IEH for samples collected by the Karuk Tribe, and by SRWQL for samples collected by the Yurok Tribe (Table 3). Algae species analysis was performed by Aquatic Analysts for all samples. 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 and samples. GreenWater microcystin MDLs and RLs varied with each microcystin variant analysis performed (Table D-2 in Appendix D). Algae species analysis

[6] Laboratories may complete internal quality assurance, update equipment, refine analyses, or complete internal testing of MDL and/or RL, and other activities that can result in slight changes to the MDL and/or RL values. These activities can occur at any time during the year and can occur more than once during the year.

method information for Aquatic Analysts is not presented because this analysis does not include MDLs or RLs.

Table 3. 2021 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.

		Edge			IEH			SRWQL			CBL			EPA			GreenWater		
Constituent Name	**Constituent ID**	**Method**	**MDL**	**RL**	**Method**	**MDL**	**RL**	**Method**	**MDL**	**RL**	**Method**	**MDL**	**RL**	**Method**	**MDL**	**RL**	**Method**	**MDL**	**RL**
Alkalinity	ALKT	SM2320 B EPA 310.2	1.0 2.0 4.0 5.0	1.0 2.0 4.0 5.0	SM18 2320B	0.7	1	-	-	-	-	-	-	-	-	-	-	-	-
Ammonia	NH4	EPA 350.1	0.00846	0.01	SM 4500-NH3 H	0.005	0.01	EPA 350.1	0.006	0.010	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon	DOC	SM5310 B	0.045	0.5	SM 5310 B v20	0.1	0.25	SM 5310 C	0.049	0.2	-	-	-	-	-	-	-	-	-
Nitrate + Nitrite	NO3+NO2	SM4500-NO3 F	0.0023	0.01	SM 4500-NO3 F	0.006	0.01	EPA 353.2	0.008	0.02	-	-	-	-	-	-	-	-	-
Total Nitrogen[2]	TN	Calculated	0.0585	0.2	SM 4500-N C	0.024	0.05	USGS I-2650-03 SM 4500-N C	0.03 0.01	0.06 0.01	-	-	-	-	-	-	-	-	-
Orthophosphate	OPO4	SM4500-P F	0.003	0.01	SM 4500-P F	0.001	0.001	EPA 365.1	0.003	0.01	-	-	-	-	-	-	-	-	-
Total Phosphorus	TP	SM4500-P F	0.0043	0.01	SM 4500-P F	0.001	0.002	EPA 365.2 SM 4500-P F	0.01	0.01	-	-	-	-	-	-	-	-	-
Total Suspended Solids	TSS	I-3765-85	1	1	SM 2540 D v20	0.3	0.5	EPA 160.2	1	2	-	-	-	-	-	-	-	-	-
Turbidity	TURB	-	-	-	SM 2130 B	0.1	0.1	EPA 180.1	0.1	0.2	-	-	-	-	-	-	-	-	-
Chlorophyll-*a*[1]	CHLOR-A	-	-	-	SM 10200 H	0.1	0.1	EPA 445.0	0.5	1	E445.0	0.68	0.68	-	-	-	-	-	-
Pheophytin[1]	PHEO	-	-	-	SM 10200 H	0.1	0.1	EPA 445.0	0.5	1	E445.0	0.46	0.46	-	-	-	-	-	-
Particulate Carbon	PC	-	-	-	-	-	-	-	-	-	E440.0	0.0633	0.1899	-	-	-	-	-	-
Particulate Inorganic Phosphorus	PIP	-	-	-	-	-	-	-	-	-	EPA 365.1, ASPILA	0.0021	0.0063	-	-	-	-	-	-
Particulate Phosphorus	PP	-	-	-	-	-	-	-	-	-	EPA 365.1, ASPILA	0.0010	0.0030	-	-	-	-	-	-
Particulate Nitrogen	PN	-	-	-	-	-	-	-	-	-	E440.0	0.0263	0.0789	-	-	-	-	-	-
Microcystin[1, 3]	MCYN	-	-	-	-	-	-	-	-	-	-	-	-	ELISA	0.10	0.15	LCMS/MS	varied	varied
Anatoxin-a[1]	ANTX-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LCMS/MS	0.05	n/a

[1] Units for chlorophyll-*a*, pheophytin, microcystin, and anatoxin-a are in µg/L (or ppb).
[2] Edge analyzes samples for Total Kjeldahl Nitrogen (TKN) using EPA 351.2. TKN includes ammonia and organic nitrogen. Total Nitrogen is calculated as TN = TKN + NO3+NO2. MDL and RL for TN is based on the levels for TKN, which were larger than those for ammonia.
[3] Microcystin analysis at GreenWater produces different MDLs and RLS for each type of variant of microcystin, each of which are presented in Appendix D

6. Baseline Program Water Quality Data

Water quality samples for the 2021 IM 15 baseline water quality monitoring program were collected from April 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 shipping constraints, travel considerations, conflicting obligations, and other factors. In most cases, all 22 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. As in 2020, COVID-19 restrictions again caused sampling difficulties in 2021. A wildfire prevented visits to multiple sites along the Klamath River in August 2021, and hazardous winter weather conditions prevented visits to sites in Oregon in December 2021. Because of these uncontrollable events that affected the safety of the sampling crews, several planned samples were unable to be collected. 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 reported.

Data are summarized herein illustrate general spatial and temporal patterns during the 2021 sampling period. The data summary constituents presented include dissolved oxygen, dissolved organic carbon, total nitrogen, total phosphorus, and microcystin. 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 boxplots[7] based on seasonal grab sample data.

(2) Physical water quality sonde data (hourly) at specific locations.

[7] 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.

(3) Charts and graphs representing the groups of algae and respective biovolumes at the selected sampling locations for May, June, September, and October or November (location dependent).

The boxplots and hourly sonde data are presented in the main report; however, because of the small sample size at each site during 2021, the boxplots presented in the annual report are not statistically robust and are included for illustration purposes only. No boxplots were generated for sites with less than six points of data for a specific parameter in 2021; the captions of the boxplot figures indicate the locations that were omitted because of insufficient sample size.

Time series data are presented for summary constituents at locations on the Klamath River for which there are USGS flow gages (Table 4). While phytoplankton data are available for the April through December period, September percent biovolume are presented for illustration at eight 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 below Seiad (RM 128.5; Baseline), (6) Klamath River at Orleans (USGS) (RM 59.1; Baseline), (7) Klamath River at Weitchpec (RM 43.5; Baseline), and (8) Klamath River Estuary (RM 0.5; Baseline). Plots representing algae species for May, June, and October or November (depending on location) 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) (*approximate*)	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

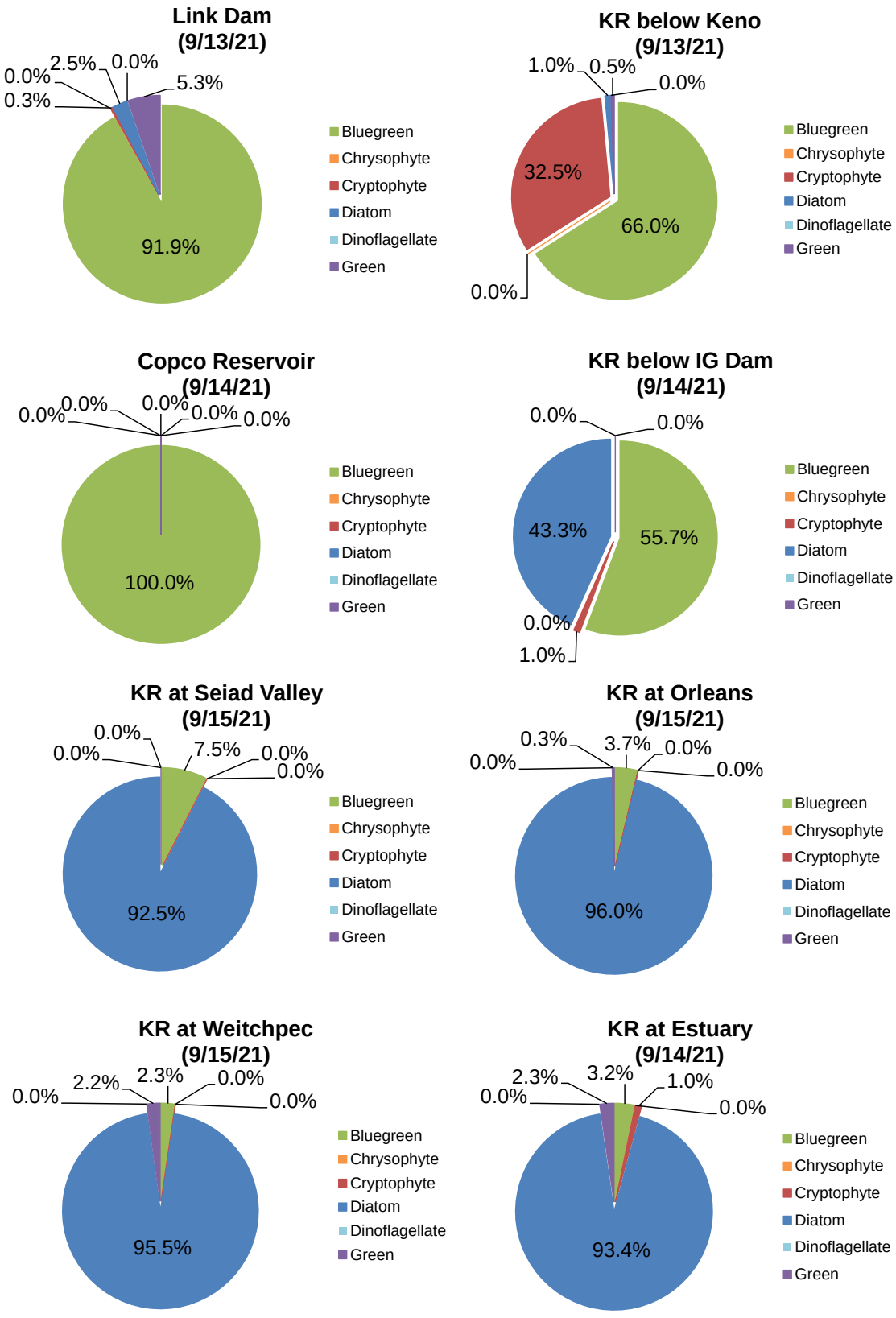

Figure 2. Phytoplankton species percent biovolume for eight locations in the Klamath River: September 2021.

6.1.1. Major Tributaries (Boxplot)

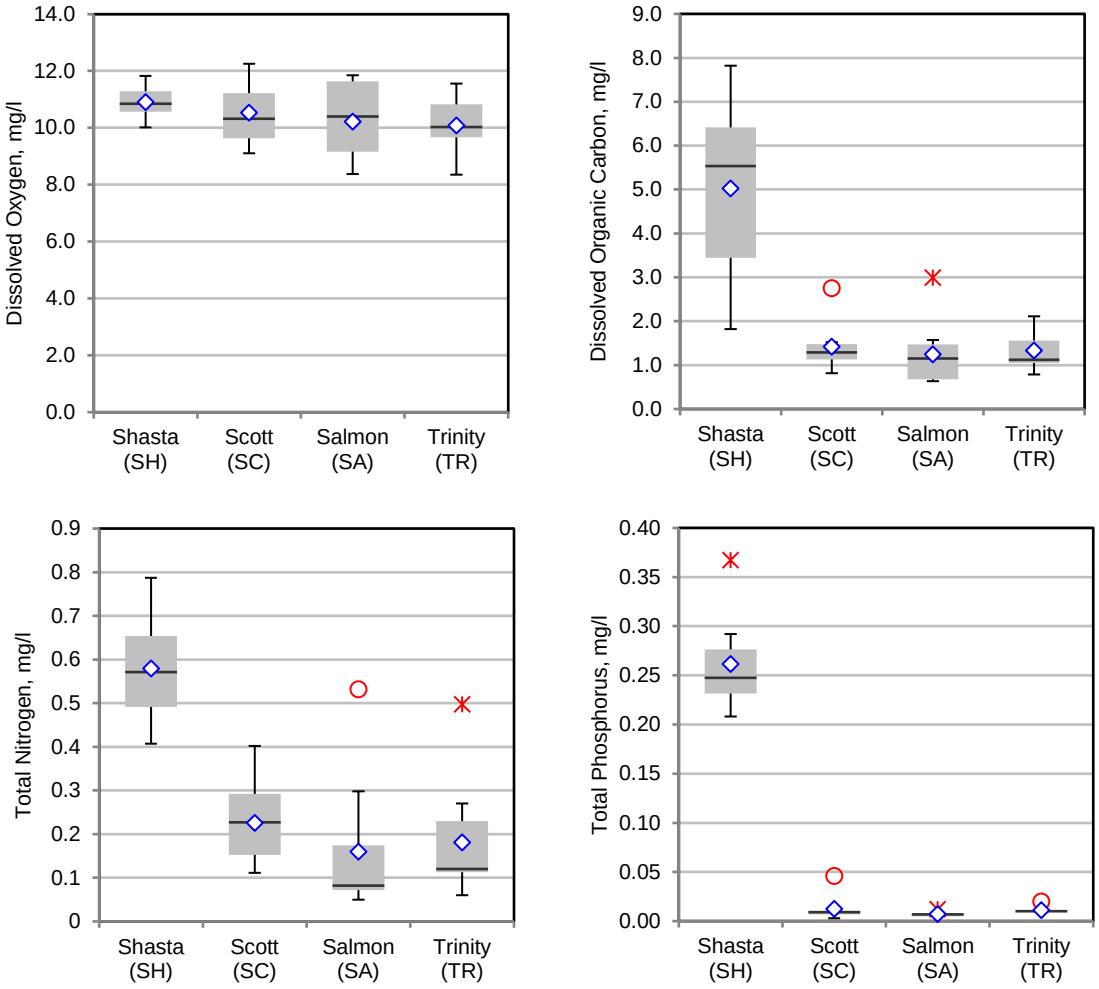

Figure 3. Baseline data for discrete dissolved oxygen, dissolved organic carbon, total nitrogen, and total phosphorus for the Shasta, Scott, Salmon, and Trinity rivers with median (–), mean (◊), outliers (*), and extreme outliers (○) identified (April 2021 – December 2021).

6.1.2. Mainstem Klamath River (Boxplot)

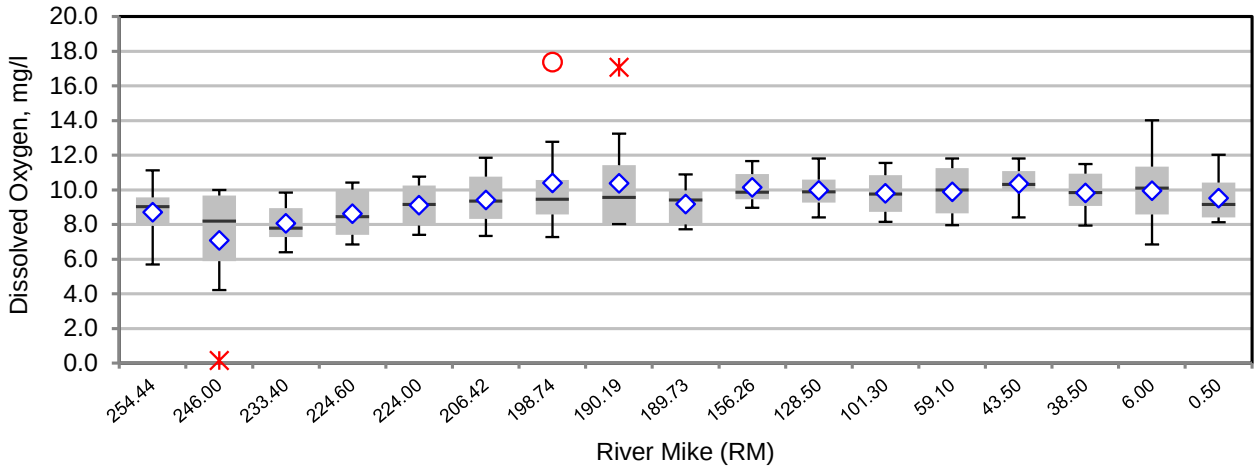

Figure 4. Discrete dissolved oxygen concentration in the Klamath River from Link River Dam to the Klamath River Estuary with median (–), mean (◊), outliers (*), and extreme outliers (○) identified (April 2021 – December 2021). Note: Includes reservoir sites at Keno Reservoir at Miller Island (RM 246.0; Baseline), Copco Reservoir (RM 198.74; Baseline), and Iron Gate Reservoir (RM 190.19; Baseline). River mile on x-axis not to scale.

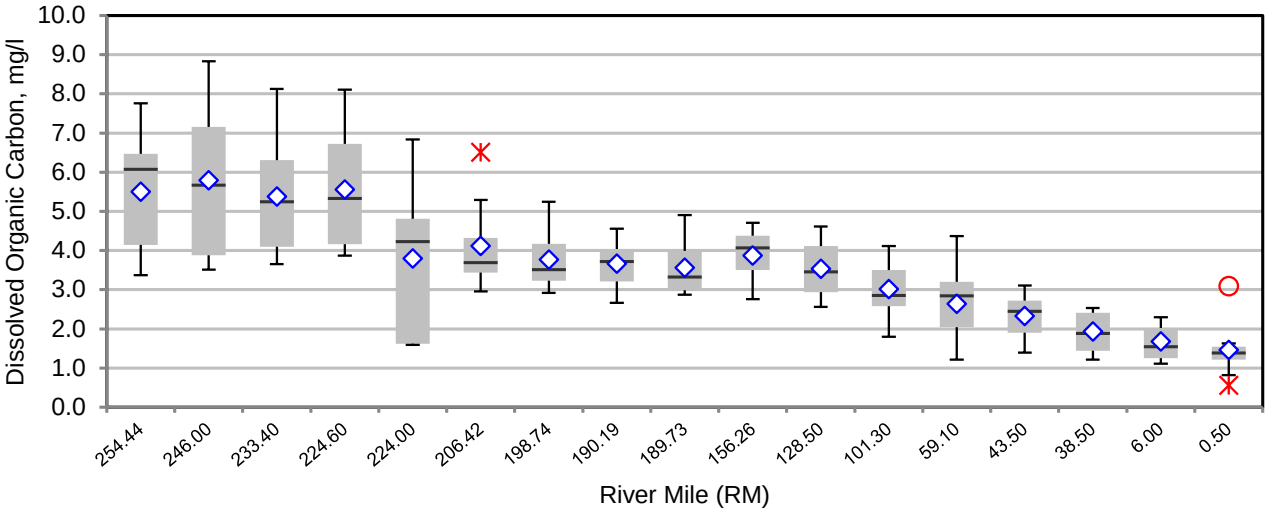

Figure 5. Dissolved organic carbon in the Klamath River from Link River Dam to the Klamath River Estuary with median (–), mean (◊), outliers (*), and extreme outliers (○) identified (April 2021 – December 2021). Note: Includes reservoir sites at Keno Reservoir at Miller Island (RM 246.0; Baseline), Copco Reservoir (RM 198.74; Baseline), and Iron Gate Reservoir (RM 190.19; Baseline). River mile on x-axis not to scale.

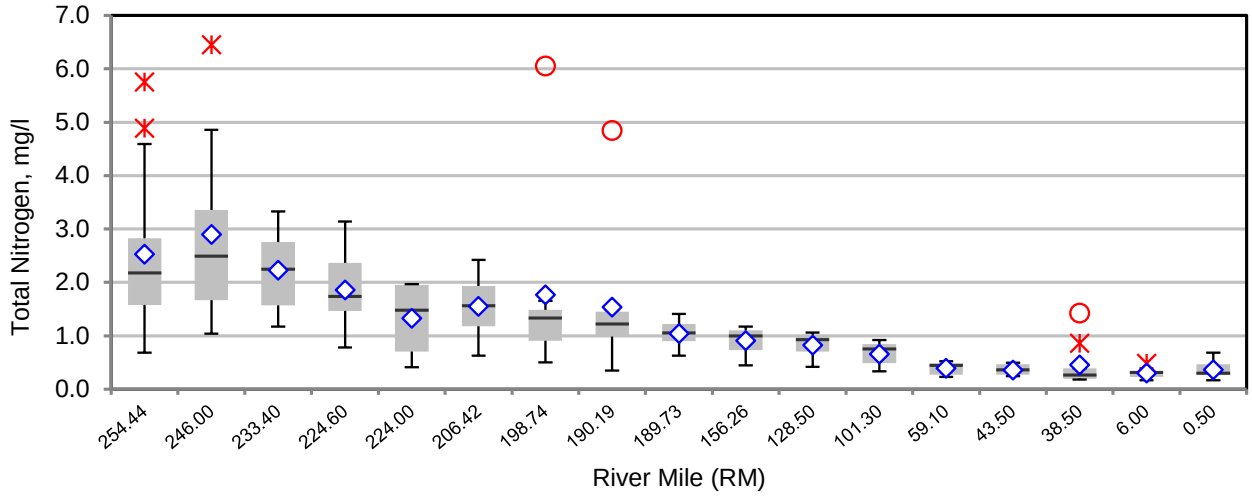

Figure 6. Total nitrogen in the Klamath River from Link River Dam to the Klamath River Estuary with median (–), mean (◊), outliers (*), and extreme outliers (○) identified (April 2021 – December 2021). Note: Includes reservoir sites at Keno Reservoir at Miller Island (RM 246.0; Baseline), Copco Reservoir (RM 198.74; Baseline), and Iron Gate Reservoir (RM 190.19; Baseline). River mile on x-axis not to scale.

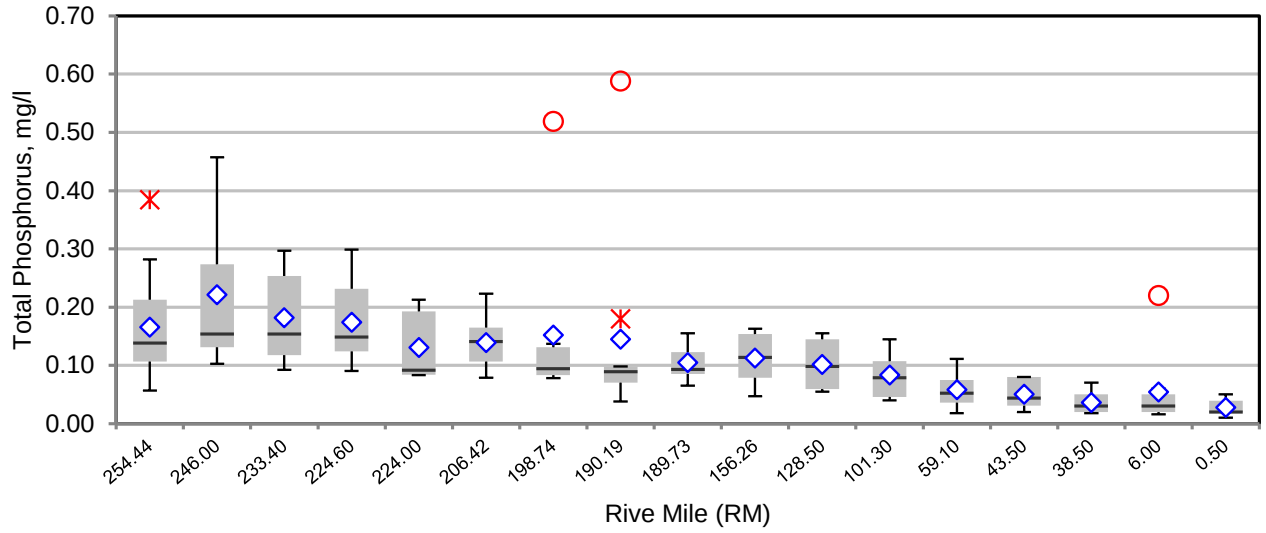

Figure 7. Total phosphorus in the Klamath River from Link River Dam to the Klamath River Estuary with median (–), mean (◊), outliers (*), and extreme outliers (○) identified (April 2021 – December 2021). Note: Includes reservoir sites at Keno Reservoir at Miller Island (RM 246.0; Baseline), Copco Reservoir (RM 198.74; Baseline), and Iron Gate Reservoir (RM 190.19; Baseline). River mile on x-axis not to scale.

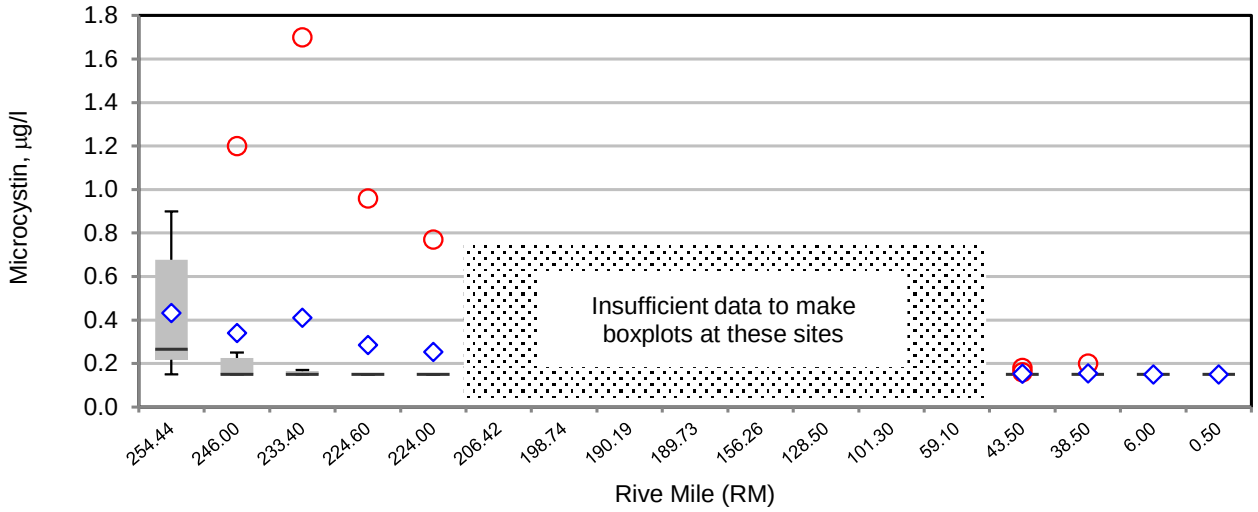

Figure 8. Microcystin in the Klamath River from Link River Dam to the Klamath River Estuary with median (–), mean (◊), outliers (*), and extreme outliers (○) identified (April 2021 – December 2021). Note: Includes reservoir sites at Keno Reservoir at Miller Island (RM 246.0; Baseline), Copco Reservoir (RM 198.74; Baseline), and Iron Gate Reservoir (RM 190.19; Baseline). River mile on x-axis not to scale. No microcystin boxplots are included for River Mile 206.42, 198.74, 190.19, 189.73, 156.29, 128.50, 101.30, and 59.10 as there were fewer than six microcystin data points at each of these sites.

6.1.3. Major Tributaries (Time Series)

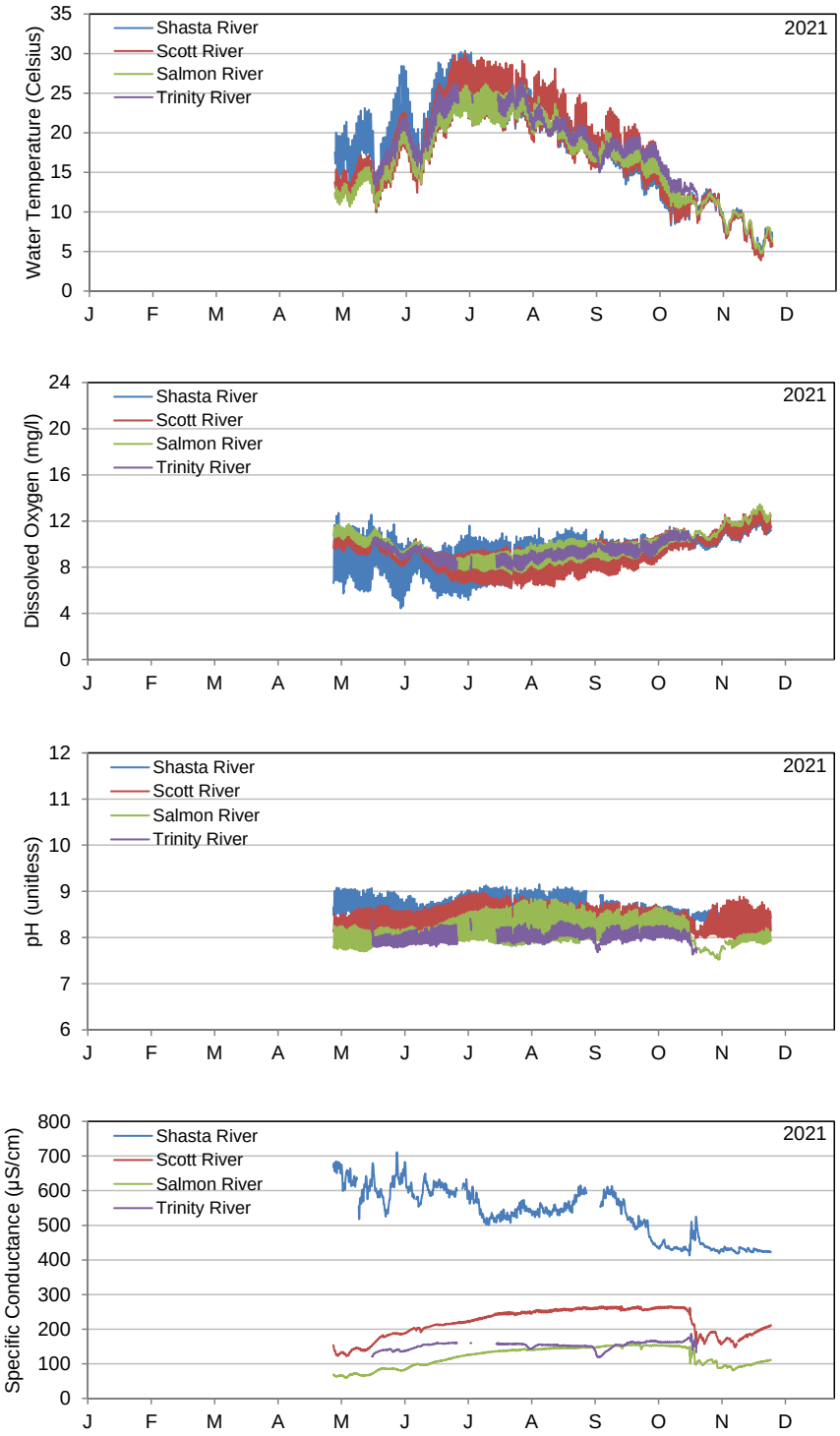

Figure 9. Continuous water temperature, dissolved oxygen, pH, and specific conductance data (2021) for the Shasta River, Scott River, and Salmon River.

6.1.4. Mainstem Klamath River (Time Series)

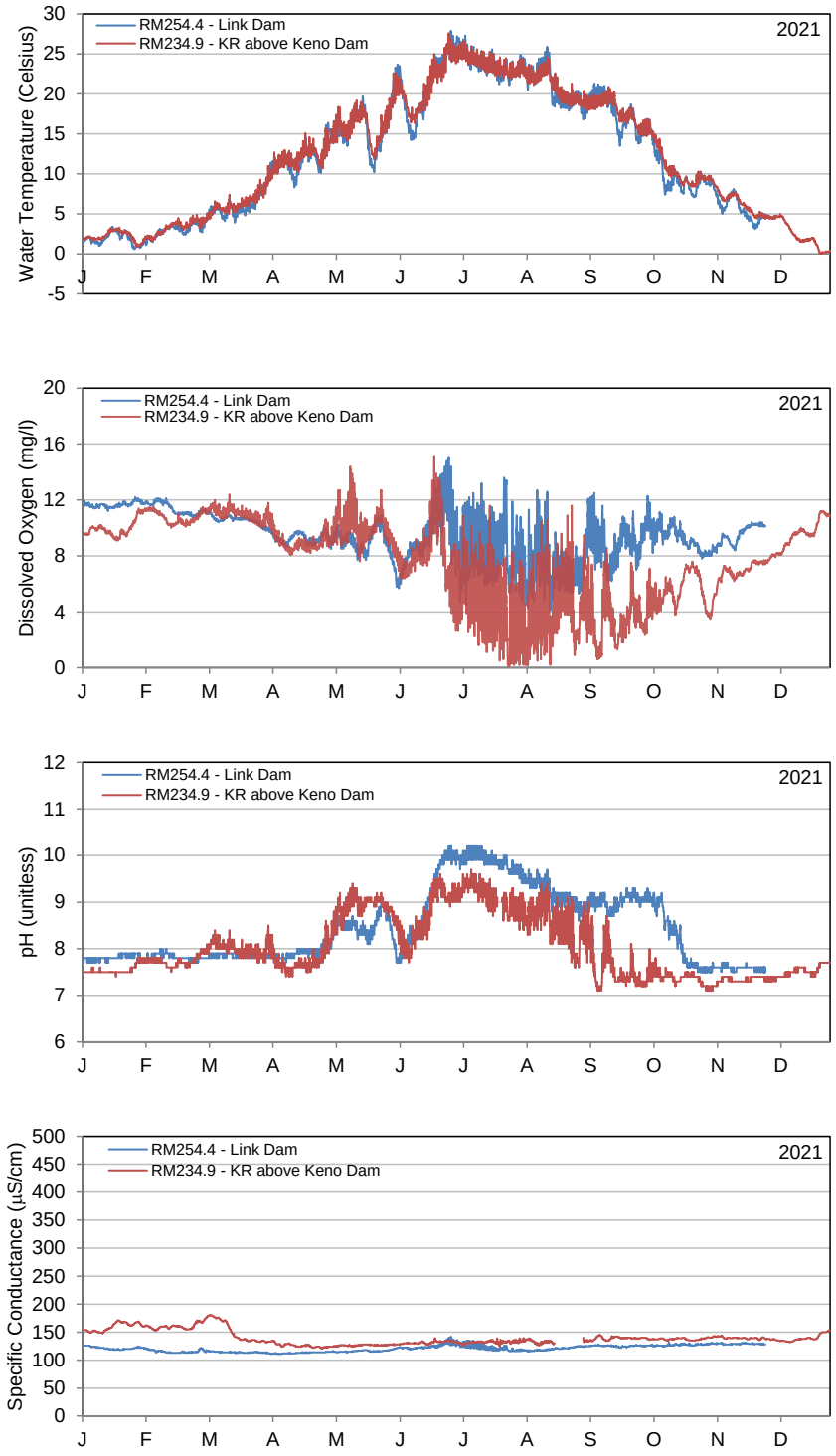

Figure 10. Continuous water temperature, dissolved oxygen, pH, and specific conductance data (2021) for the Klamath River (KR) at Link Dam (RM 254.44; Baseline) and Klamath River above Keno Dam (surface) (RM 234.9).

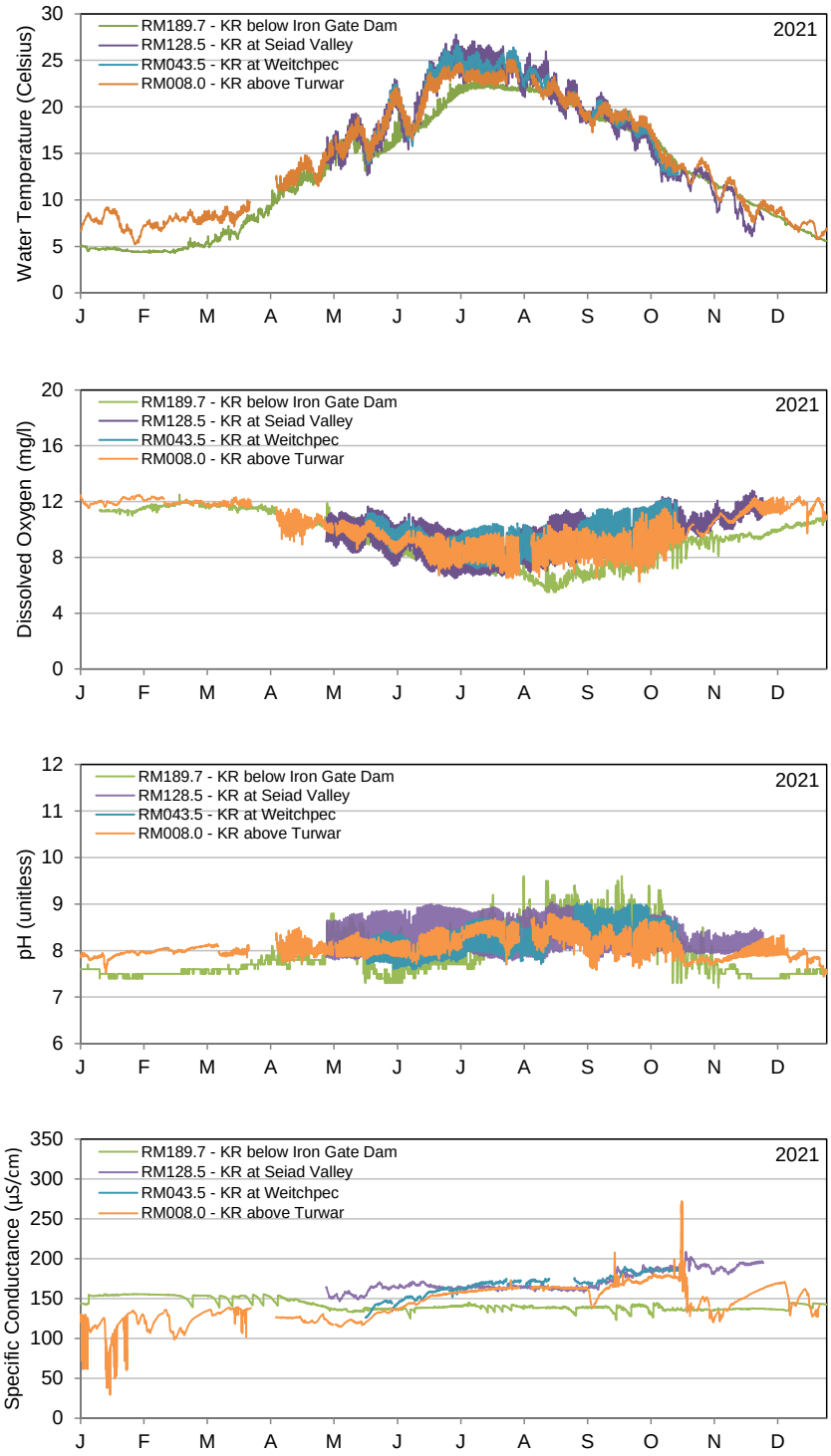

Figure 11. Continuous water temperature, dissolved oxygen, pH, and specific conductance data (2021) for the Klamath River below Iron Gate Dam (RM 189.73; Baseline), Klamath River below Seiad (RM 128.5; Baseline), and Klamath River at Weitchpec (RM 43.5; Baseline).

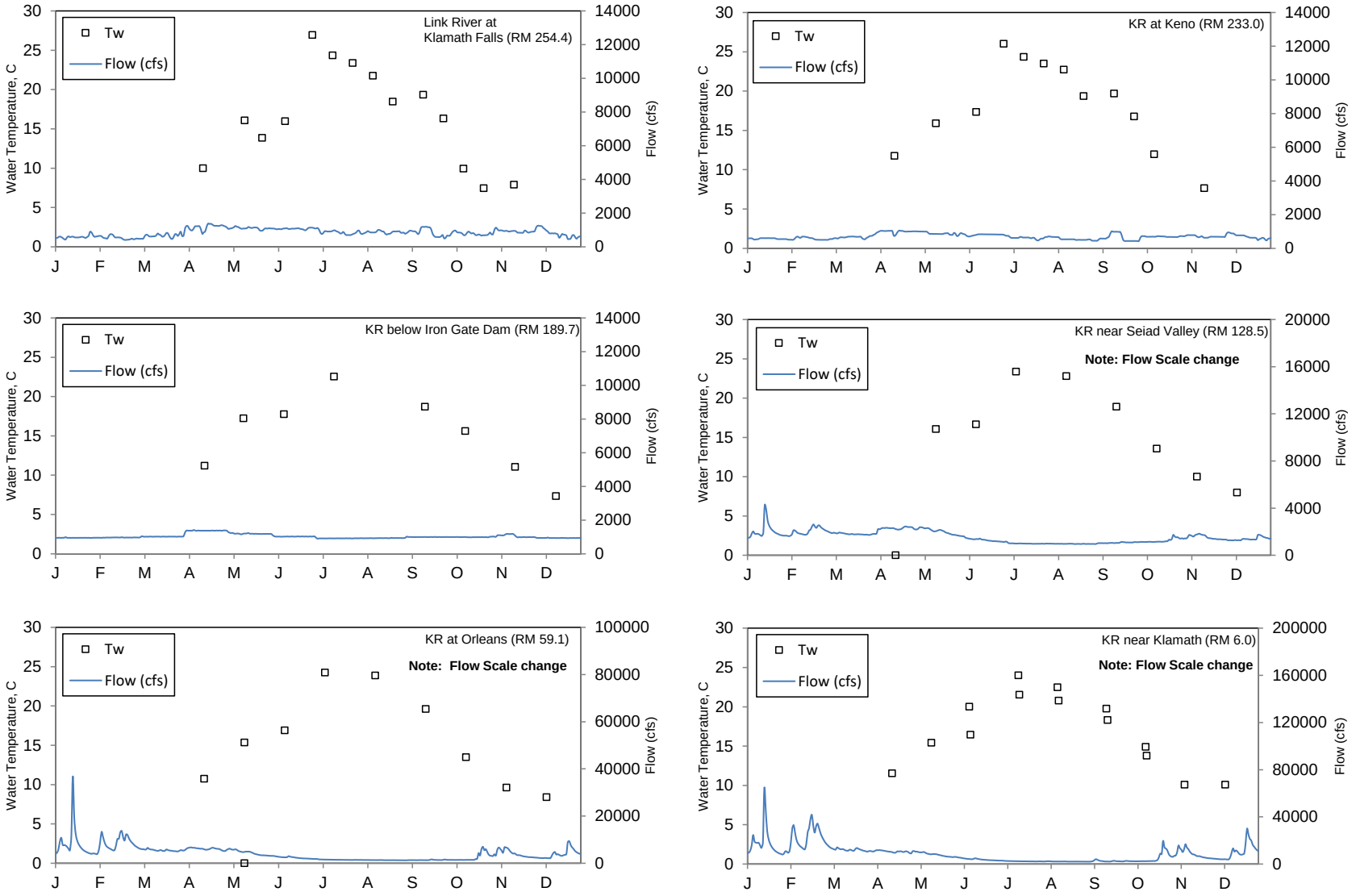

Figure 12. Discrete 2021 water temperature (T_w) measured during grab sampling and mean daily flow at USGS flow gage locations for: Link River at Klamath Falls (USGS Gage 11507500), Klamath River at Keno (USGS Gage 11509500), Klamath River below Iron Gate Dam (USGS Gage 11516530), Klamath River near 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).

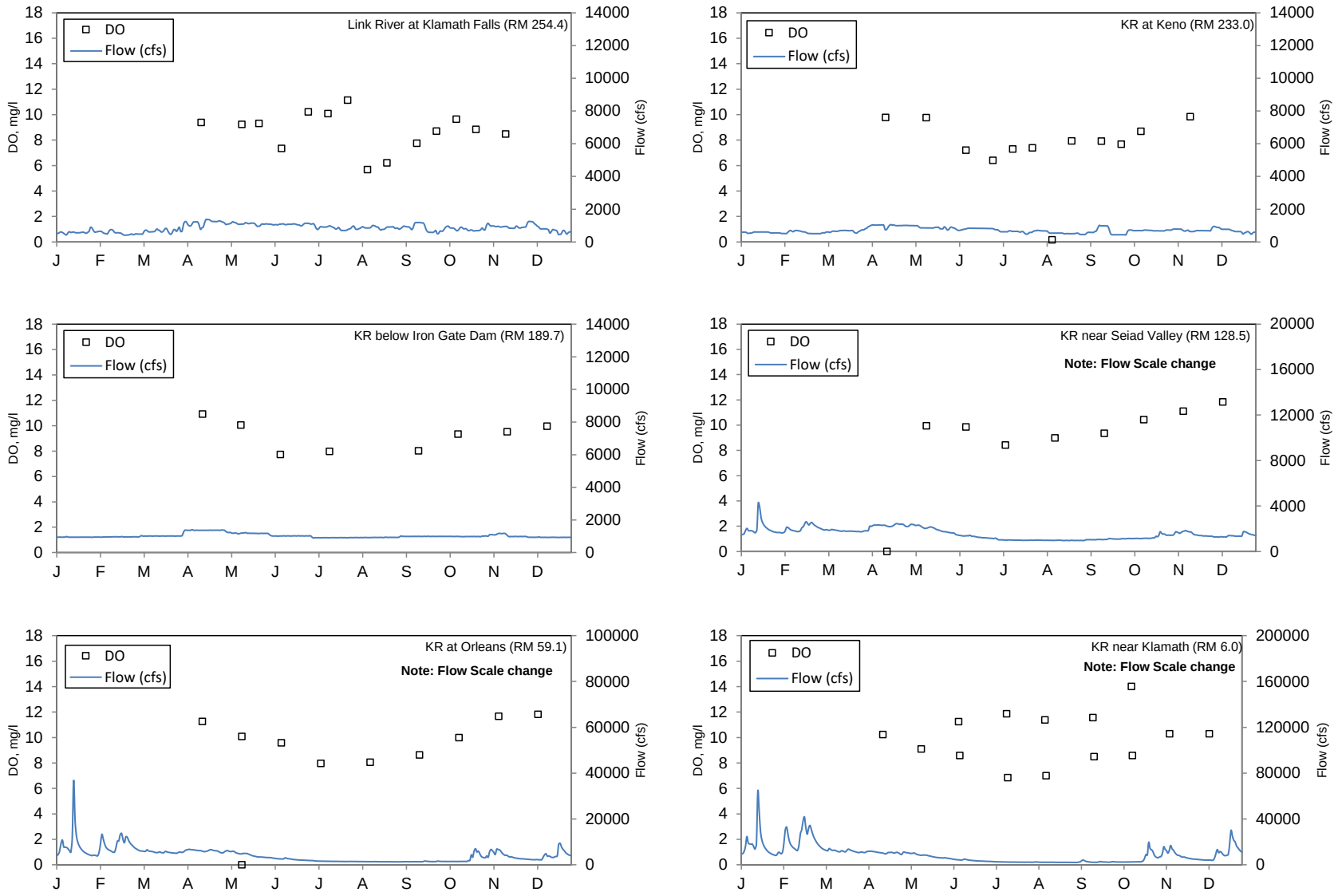

Figure 13. Discrete 2021 dissolved oxygen (DO) measured during grab sampling and mean daily flow at USGS flow gage locations for: Link River at Klamath Falls (USGS Gage 11507500), Klamath River at Keno (USGS Gage 11509500), Klamath River below Iron Gate Dam (USGS Gage 11516530), Klamath River near Seiad 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).

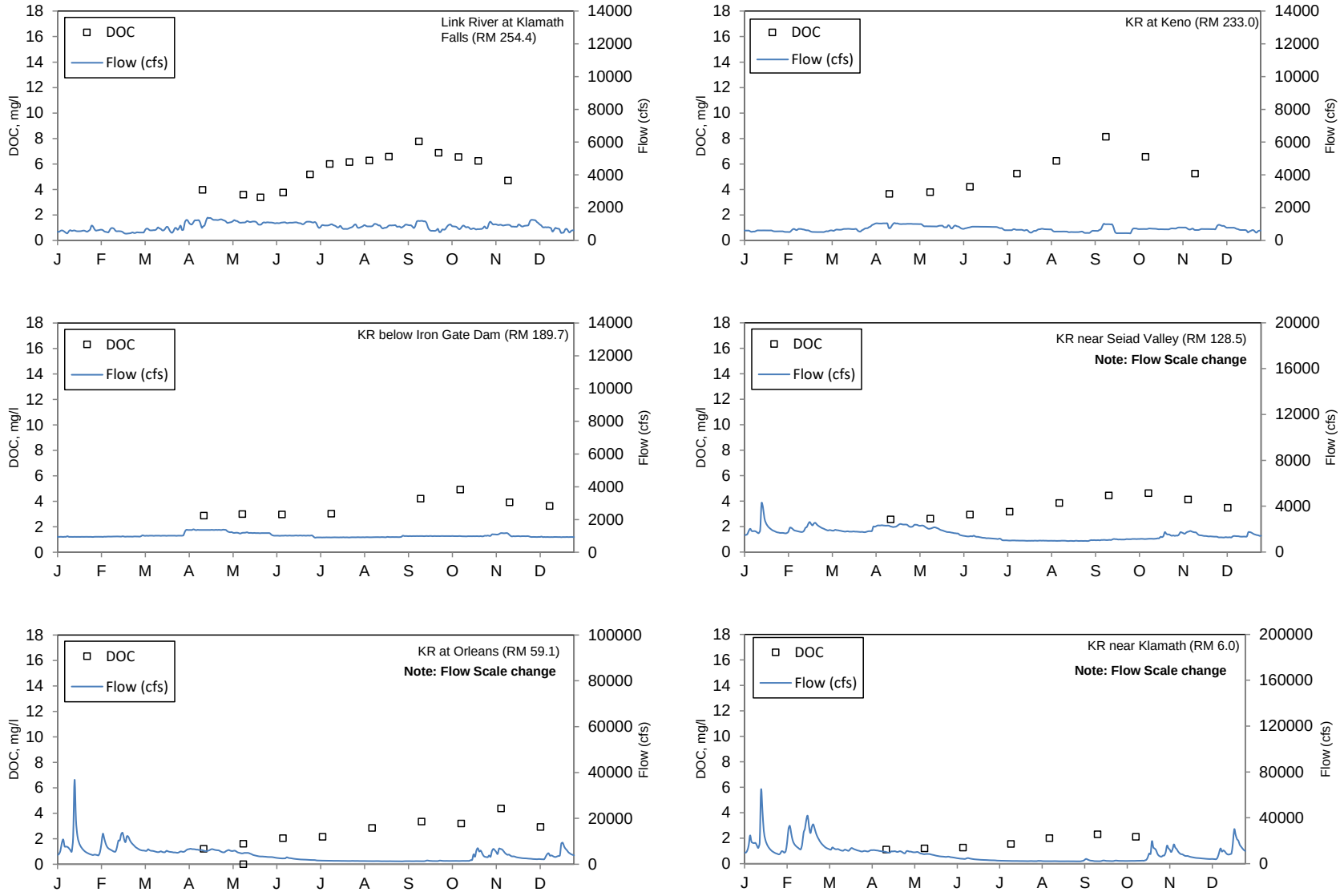

Figure 14. Discrete 2021 dissolved organic carbon (DOC) measured during grab sampling and mean daily flow at USGS flow gage locations for: Link River at Klamath Falls (USGS Gage 11507500), Klamath River at Keno (USGS Gage 11509500), Klamath River below Iron Gate Dam (USGS Gage 11516530), Klamath River 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).

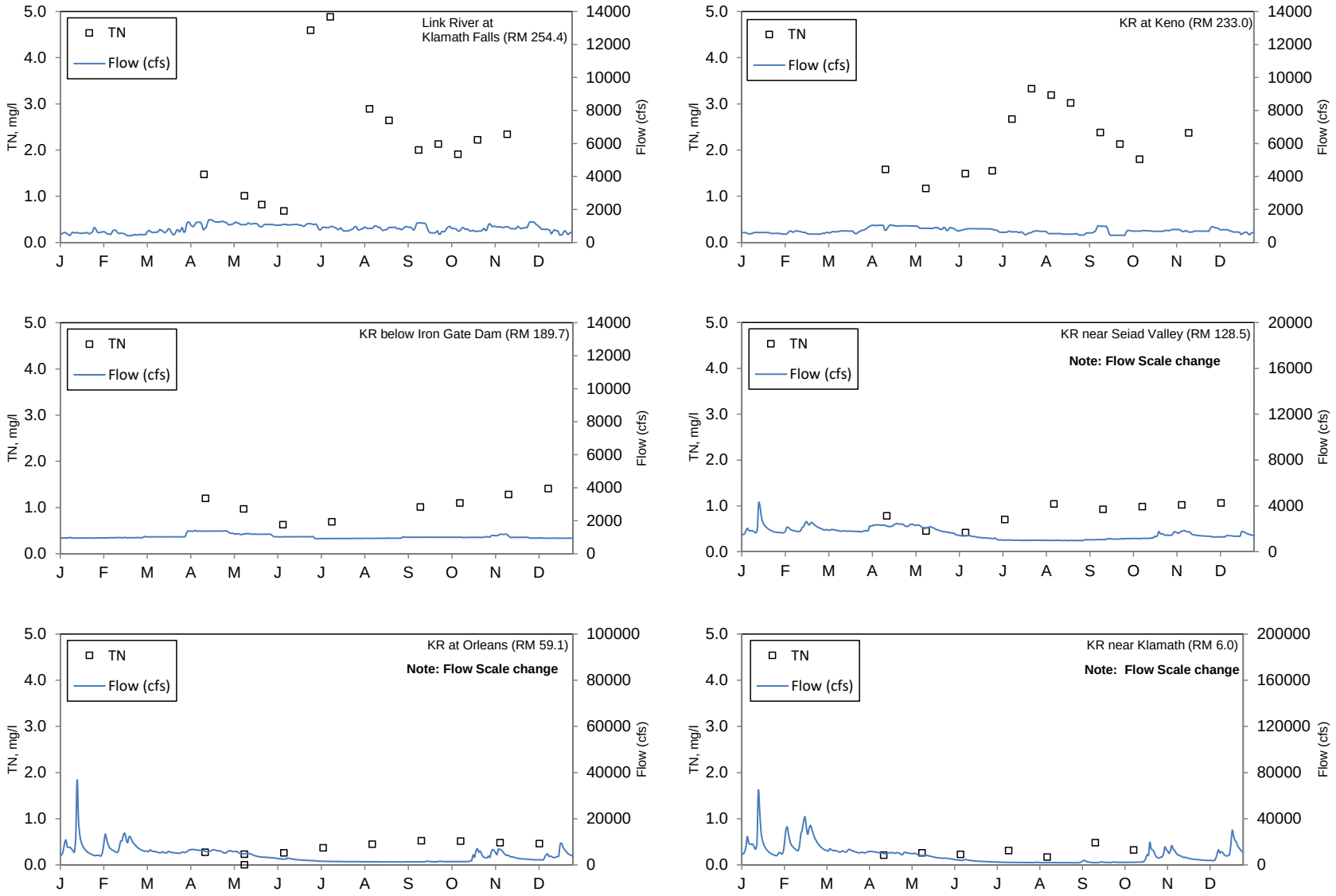

Figure 15. Discrete 2021 total nitrogen (TN) measured during grab sampling and mean daily flow at USGS flow gage locations for: Link River at Klamath Falls (USGS Gage 11507500), Klamath River at Keno (USGS Gage 11509500), Klamath River below Iron Gate Dam (USGS Gage 11516530), Klamath River near Seiad 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).

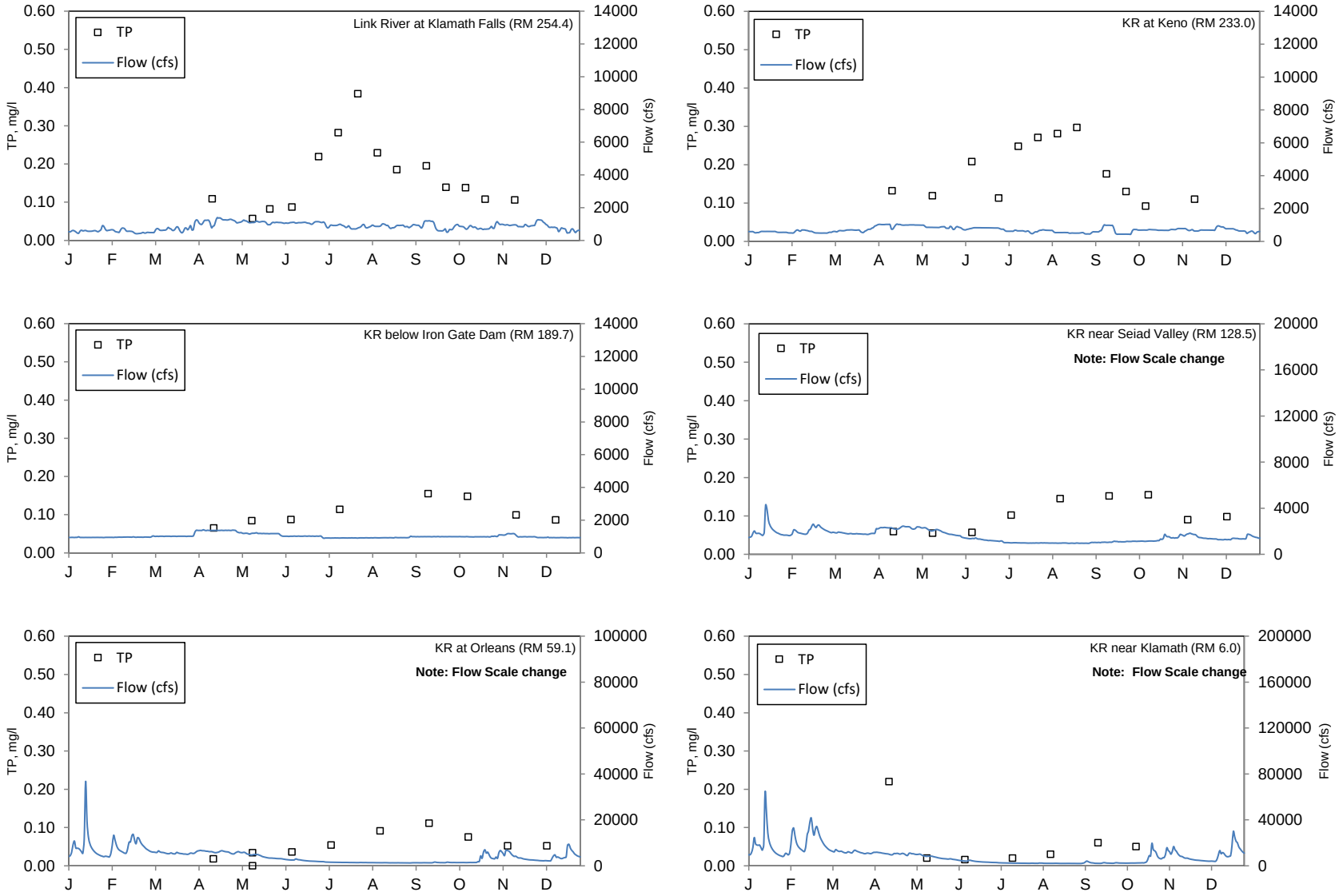

Figure 16. Discrete 2021 total phosphorus (TP) measured during grab sampling and mean daily flow at USGS flow gage locations for: Link River at Klamath Falls (USGS Gage 11507500), Klamath River at Keno (USGS Gage 11509500), Klamath River below Iron Gate Dam (USGS Gage 11516530), Klamath River near Seiad 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).

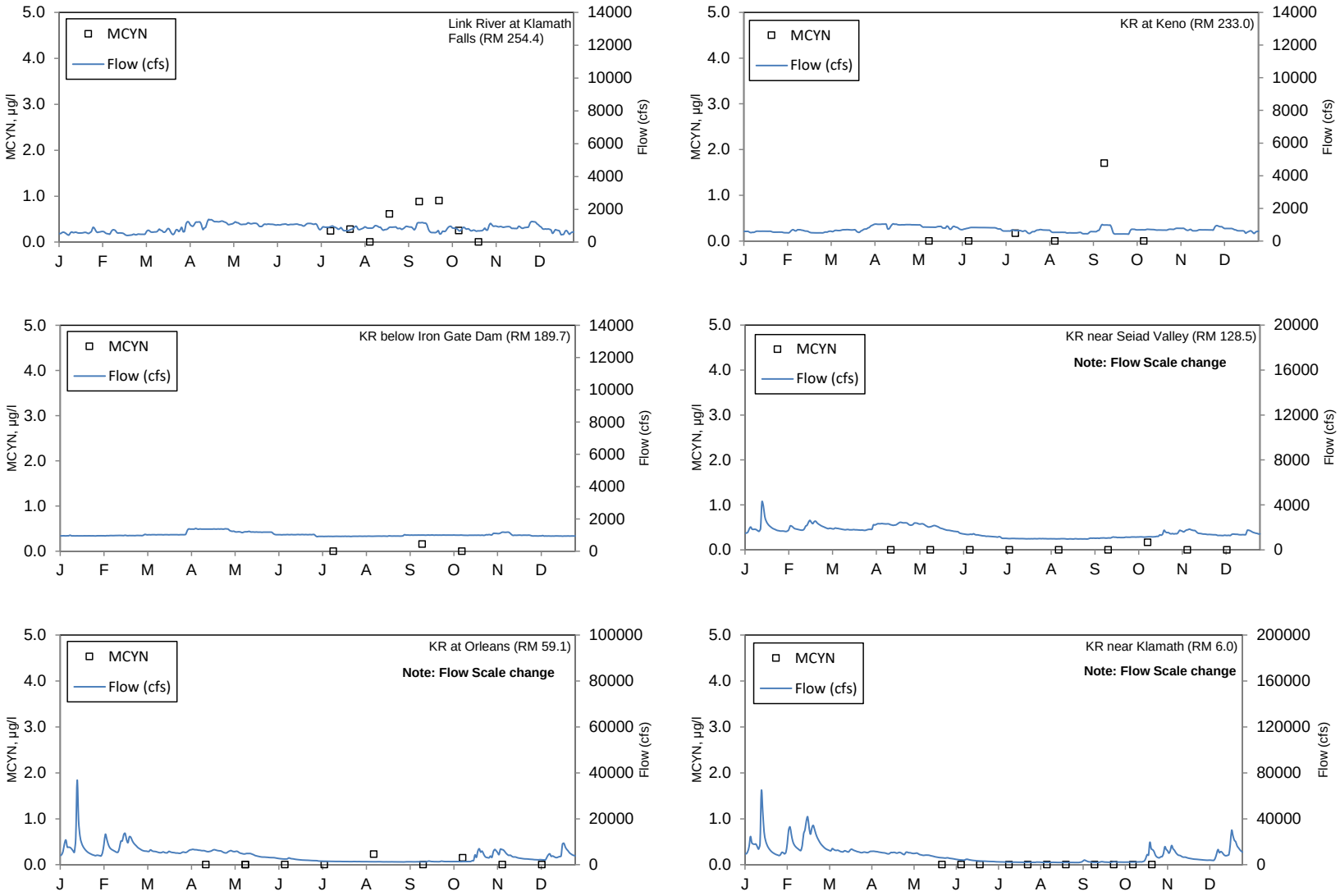

Figure 17. Discrete 2021 microcystin (MCYN) measured during grab sampling and mean daily flow at USGS flow gage locations for: Link River at Klamath Falls (USGS Gage 11507500), Klamath River at Keno (USGS Gage 11509500), Klamath River below Iron Gate Dam (USGS Gage 11516530), Klamath River near Seiad 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 2021 IM 15 public health monitoring program were collected from May 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 shipping constraints, travel considerations, conflicting obligations, and other factors. In most cases, all 18 sites were sampled each month. A wildfire in August 2021 created unsafe conditions for field staff and several planned samples were not collected. The full public health dataset is presented in Appendix D.

7.1. Public Health Advisories

In 2021, the Oregon Health Authority, working under the 2018 Oregon guideline values (OHA 2019) issued a health advisory for Eagle Ridge County Park area of Upper Klamath Lake on July 30, 2021[8]. An advisory for the entire Upper Klamath Lake was issued on August 30, 2021, and remained in place until it was lifted November 2, 2021. An advisory was issued for J.C. Boyle Reservoir on September 10, 2021, which was lifted on November 2, 2021.

Table 5. Oregon Health Authority health advisories actions in 2021.

Waterbody	Sub-area	Date	Action
Upper Klamath Lake	Eagle Ridge County Park	7/30/2021	Advisory
		11/2/2021	Lifted Advisory
	Entire Lake	8/30/2021	Advisory
		11/2/2021	Lifted Advisory
J.C. Boyle Reservoir	-	9/10/2021	Advisory
		11/2/2021	Lifted Advisory

In 2021, the North Coast Regional Water Quality Control Board (NCRWQCB), working under the posting guidelines defined in 2016[9], issued a health advisory at the Caution level for Copco Reservoir, Klamath River below Copco, and Iron Gate Reservoir on July 2, 2021.[10] The advisory level was raised to the Danger level for Copco Reservoir and Klamath River below Copco on July 20, 2021, and remained in place until the reservoir was de-posted on November 1, 2021. The health advisory level was raised to the Warning level for Iron Gate Reservoir on August 4, 2021, and remained in place until the reservoir was de-posted on November 1, 2021.

[8] Note that the dates in the posting discussion reference the date that the Oregon Health issued an advisory for a waterbody. They do not refer to the dates that water samples were collected.
[9] http://www.mywaterquality.ca.gov/habs/
[10] Note that the dates in the posting discussion reference the date that the North Coast Regional Water Quality Control Board issued direction to post or de-post a waterbody. They do not refer to the dates that water samples were collected.

The 2021 posting of public health advisories on the Klamath River downstream of Iron Gate Dam started in August with the initial postings; the final postings were removed in November (Table 6). The Klamath River downstream of Iron Gate Dam to Weitchpec (including the I-5 Bridge, Walker Road Bridge, Brown Bear, Seiad, Happy Camp, and Orleans sites) was posted at the Caution level on August 25, 2021, and the advisory remained in place until this section of river was de-posted on November 1, 2021. A health advisory was issued at the Caution level on August 16, 2021 for the Klamath River between Weitchpec and the mouth (including Turwar, Klamath, and Estuary sites) and remained in place until this section of the river was de-posted on November 1, 2021.

Table 6. North Coast Regional Water Quality Control Board (NCRWQCB) and Yurok Tribe health advisory actions for the Klamath River in 2021.

Waterbody	Sub-area	Date	Posting Level/Action
Copco Reservoir	-	7/2/2021	Caution
		7/20/2021	Danger
		11/1/2021	De-posted
Klamath River below Copco	-	7/2/2021	Caution
		7/20/2021	Danger
		11/1/2021	De-posted
Iron Gate Reservoir	-	7/2/2021	Caution
		8/4/2021	Warning
		11/1/2021	De-posted
Klamath River (downstream of Iron Gate Reservoir)	Iron Gate to I-5 Bridge	8/25/2021	Caution
	Iron Gate to I-5 Bridge	11/1/2021	De-Posted
	I-5 Bridge to Walker Rd Bridge	8/25/2021	Caution
	I-5 Bridge to Walker Rd Bridge	11/1/2021	De-Posted
	Walker Rd Bridge to Brown Bear	8/25/2021	Caution
	Walker Rd Bridge to Brown Bear	11/1/2021	De-Posted
	Brown Bear to below Seiad	8/25/2021	Caution
	Brown Bear to below Seiad	11/1/2021	De-Posted
	Seiad to below Happy Camp	8/25/2021	Caution
	Seiad to below Happy Camp	11/1/2021	De-Posted
	Happy Camp to Orleans	8/25/2021	Caution
	Happy Camp to Orleans	11/1/2021	De-Posted
	Orleans to Weitchpec	8/25/2021	Caution
	Orleans to Weitchpec	11/1/2021	De-Posted
	Weitchpec to Turwar	8/16/2021	Yurok Level 1
	Weitchpec to Turwar	11/1/2021	De-posted
	Near Klamath to Estuary	8/16/2021	Yurok Level 1
	Near Klamath to Estuary	11/1/2021	De-posted
	Estuary to Mouth	8/16/2021	Yurok Level 1
	Estuary to Mouth	11/1/2021	De-posted

7.2. Data Summary

The public health data is summarized below to illustrate general spatial and temporal patterns during the 2021 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, and (2) longitudinal graphs of river mile versus corresponding lab results for microcystin. There were no algae species samples collected for the public health program in 2021.

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 anatoxin-a method had an MDL of 0.05 µg/l and no anatoxin-a was detected in any samples collected at any location in 2021.

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 (using a 'ND' label). If a sample was not collected at a location on a specific date, a note was added to the graph for that site.

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

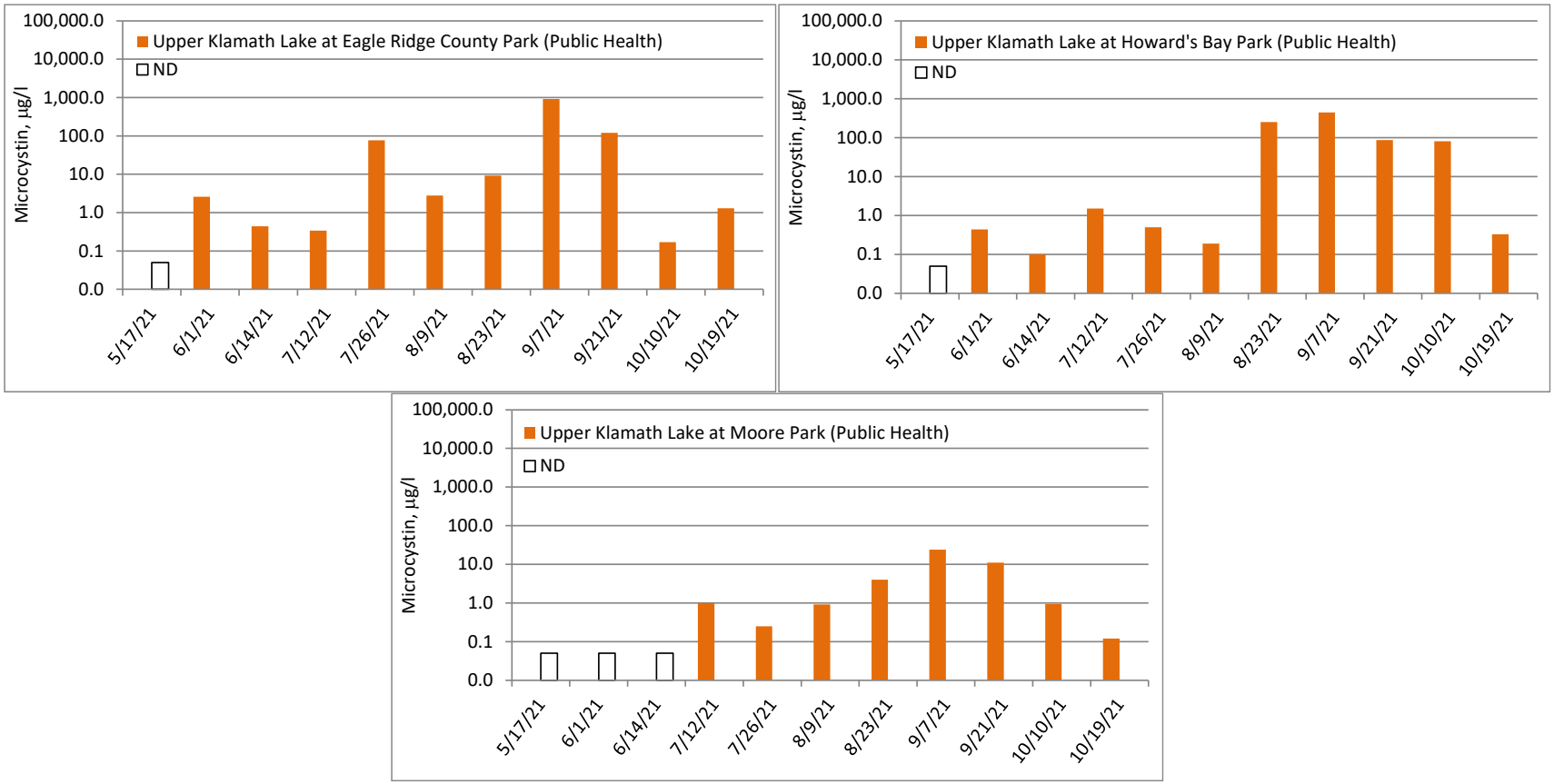

Figure 18. Microcystin concentrations from 2021 public health samples collected in Upper Klamath Lake at Eagle Ridge County Park (Public Health), Upper Klamath Lake at Howard's Bay Park (Public Health), and Upper Klamath Lake at Moore Park (Public Health) (ND indicates non-detect results).

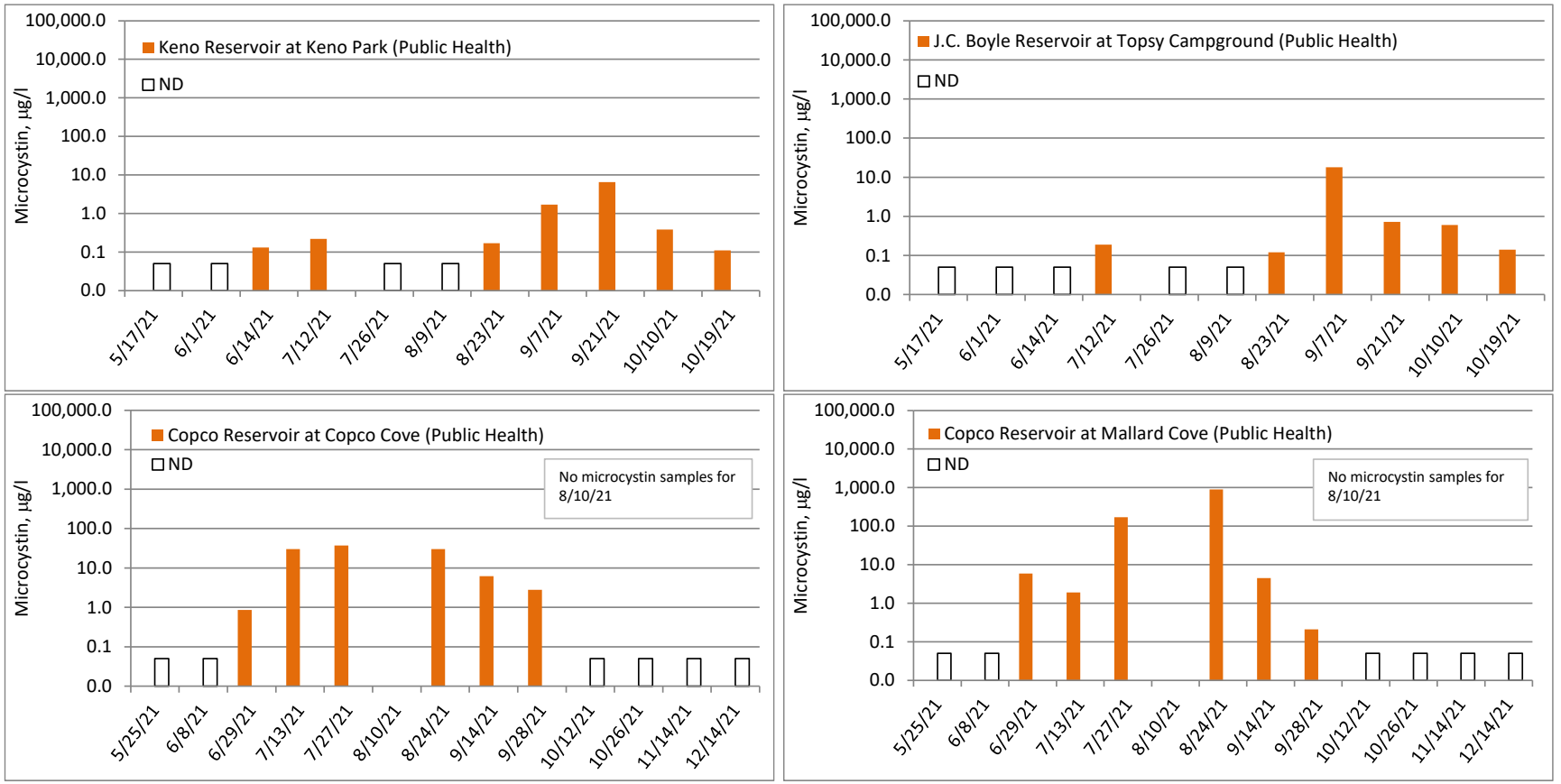

Figure 19. Microcystin concentrations from 2021 public health samples collected in Keno Reservoir at Keno Park (Public Health), J.C. Boyle Reservoir at Topsy Campground (Public Health), Copco Reservoir at Copco Cove (Public Health) and Copco Reservoir at Mallard Cove (Public Health) (ND indicates non-detect results).

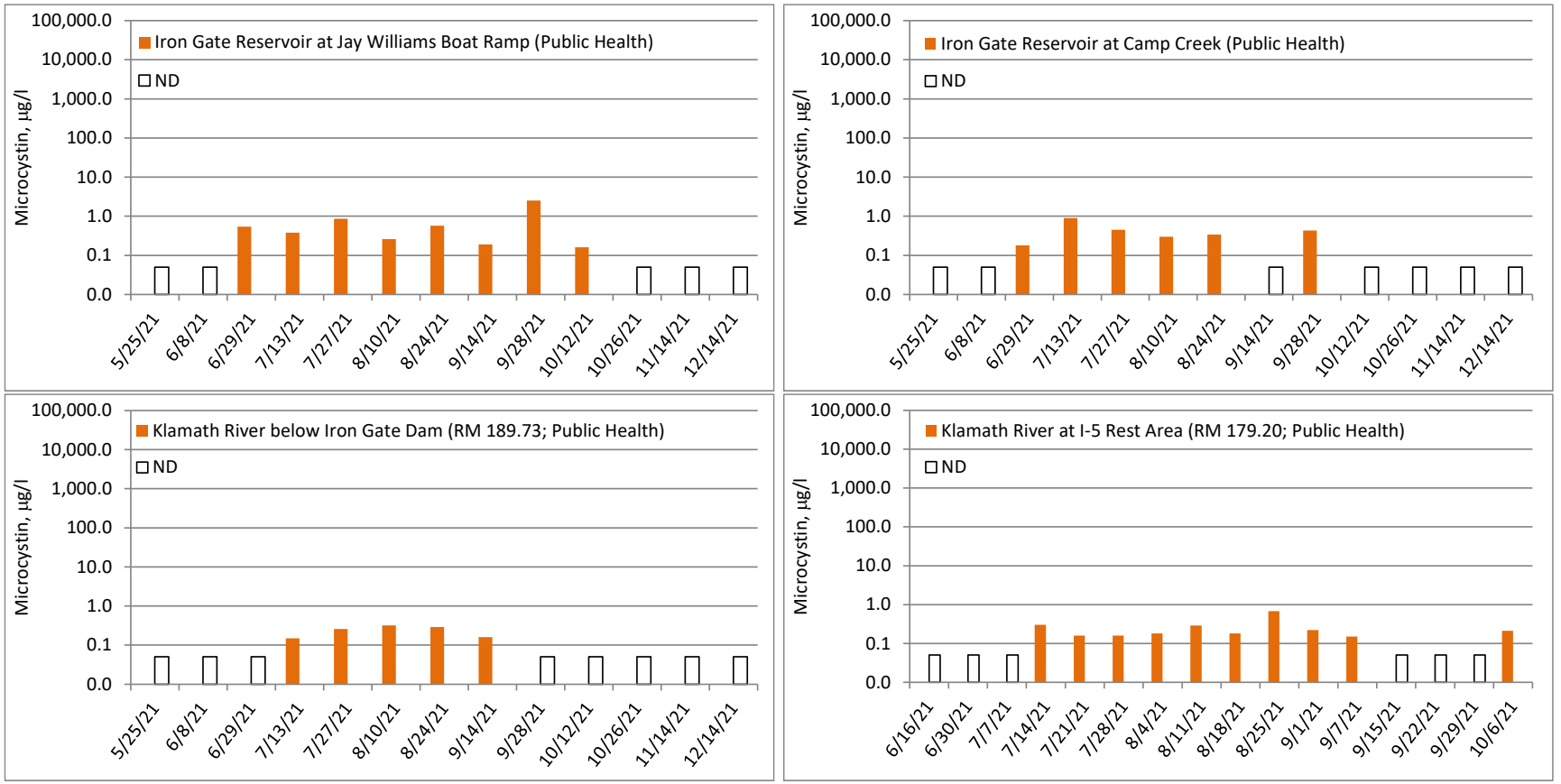

Figure 20. Microcystin concentrations from 2021 public health samples collected in Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health), Iron Gate Reservoir at Camp Creek (Public Health), Klamath River below Iron Gate Dam (RM 189.73; Public Health), and Klamath River at I-5 Rest Area (RM 179.20; Public Health) (ND indicates non-detect results).

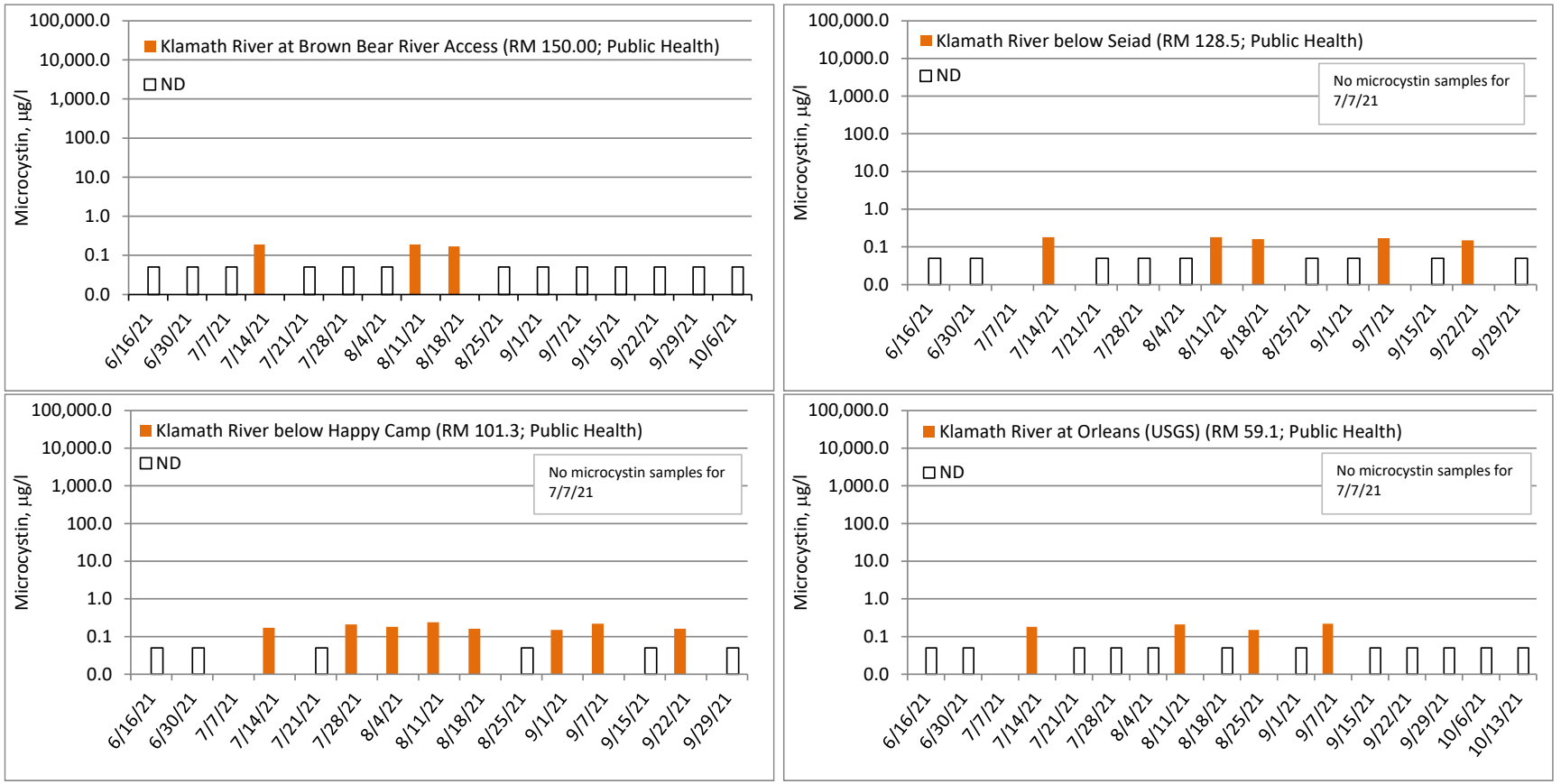

Figure 21. Microcystin concentrations from 2021 public health samples collected at Klamath River at Brown Bear River Access (RM 150.00; Public Health), Klamath River below Seiad (RM 128.5; Public Health), Klamath River below Happy Camp (RM 101.3; Public Health), and Klamath River at Orleans (USGS) (RM 59.1; Public Health) (ND indicates non-detect results).

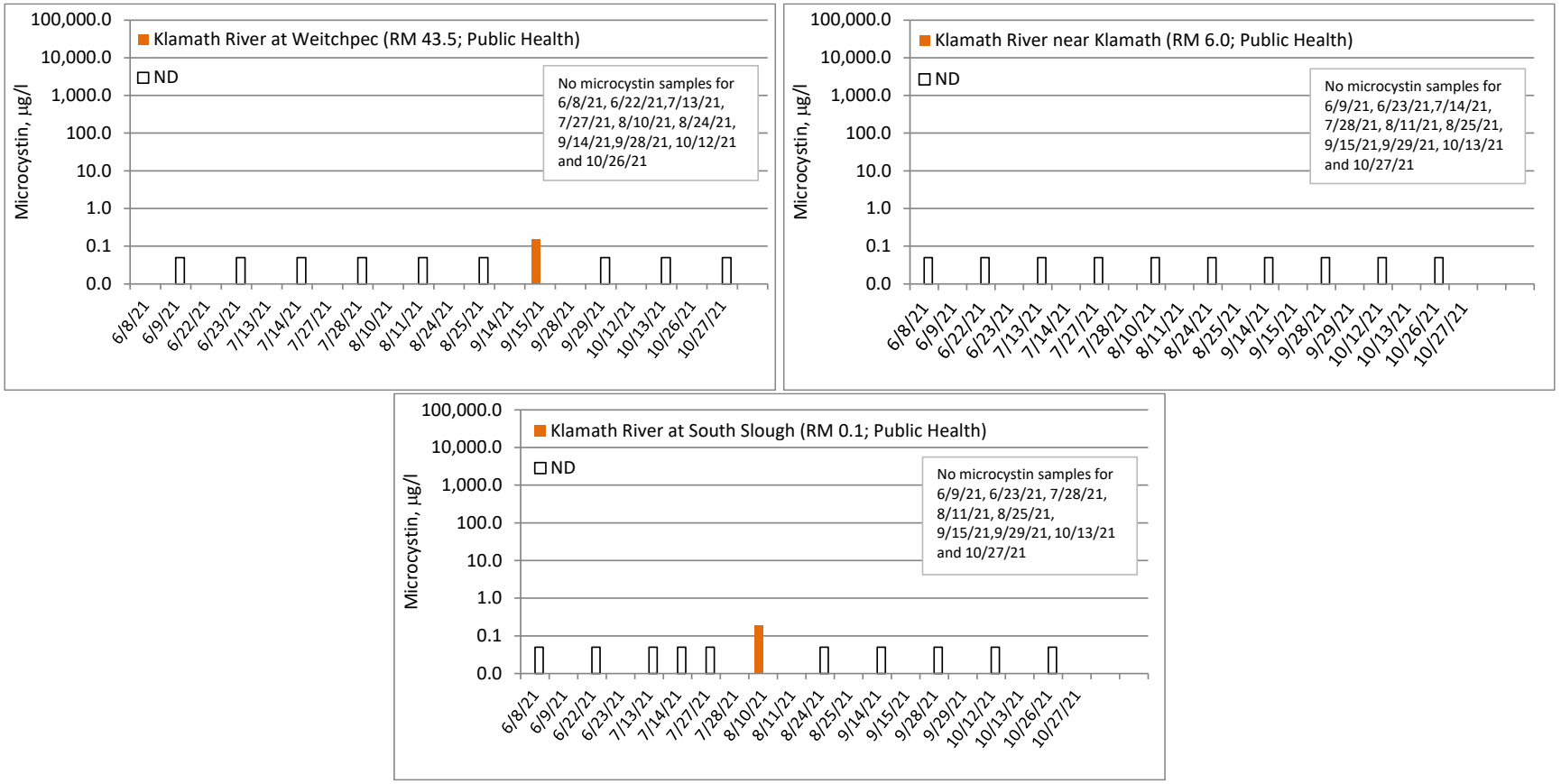

Figure 22. Microcystin concentrations from 2021 public health samples collected at Klamath River at Weitchpec (RM 43.5; Public Health), Klamath River near Klamath (RM 6.0; Public Health), and Klamath River at South Slough (RM 0.1; Public Health) (ND indicates non-detect results).

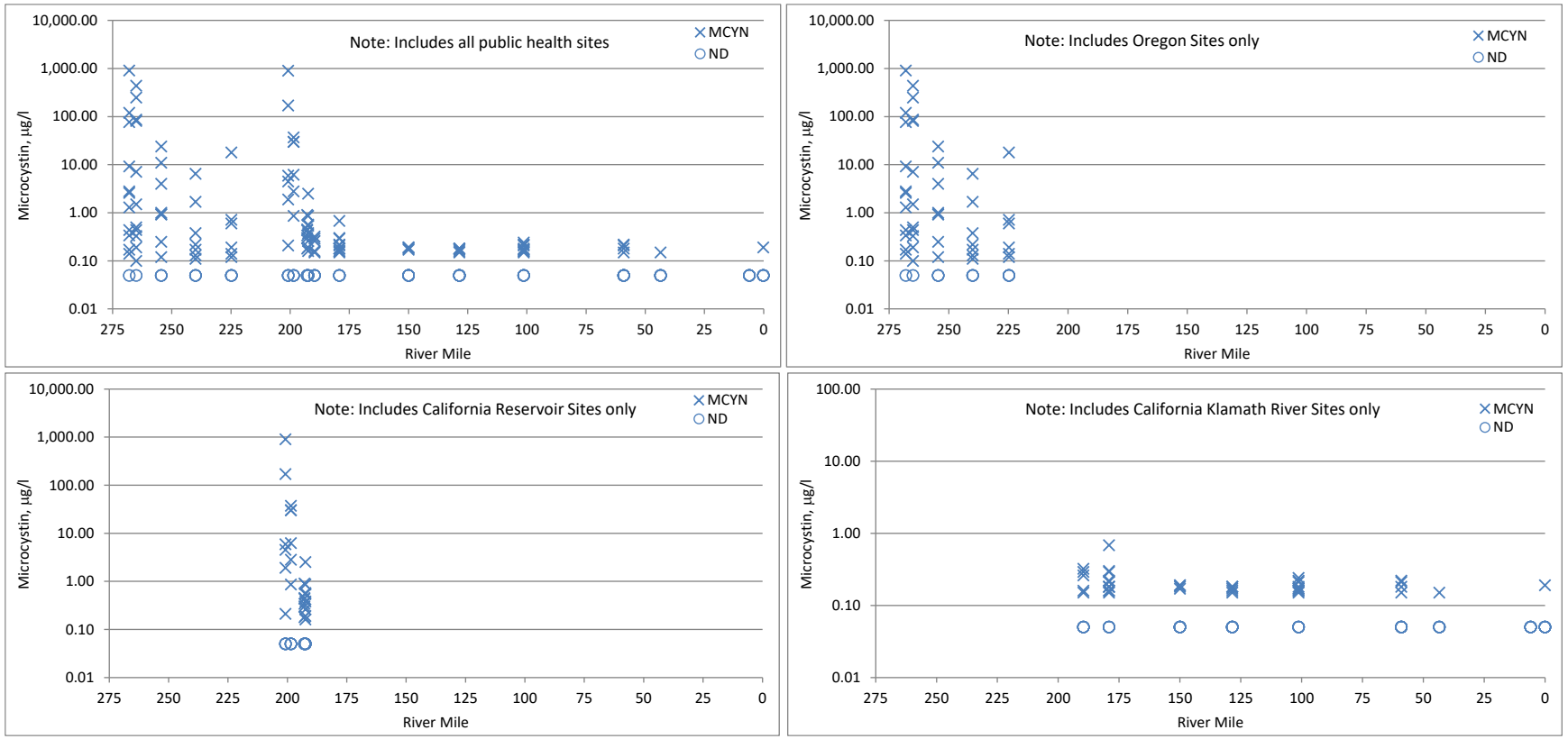

Figure 23. 2021 microcystin (MCYN) concentrations from public health program: at all public health sampling sites (top left), Oregon sites (top right), California reservoir sites (bottom let), and California Klamath River sites from Iron Gate Dam downstream (bottom right). ND (○) indicates non-detect results. Sites in Upper Klamath Lake and reservoirs were given approximate river miles to locate them appropriately on the graph.

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. 2021 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	PacifiCorp
KR24600	Keno Reservoir at Miller Island (RM 246.0; Baseline)	Mainstem	246.00	PacifiCorp
KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	Mainstem	233.40	PacifiCorp
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. 2021 Baseline Data Summary

This appendix presents the complete general water quality and nutrient data set for the 2021 KHSA baseline sampling (Table B-1). The three sampling entities are PacifiCorp, the Karuk Tribe, and the Yurok Tribe. CBOD, TKN, and VSS were not sampled in 2021 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 Yurok Tribe water quality monitoring programs and because VSS was still collected by that entity, the results are presented here.

Table B-1. 2021 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
KR21014	4/13/2021	13:25	KR25444	Link Dam (RM 254.44; Baseline)	PacifiCorp	0.5	R	9.98	7.73	112.857	9.38	14.56	7.94	48.40	3.96	3.15		0.06	0.42	0.48		1.47	0.01	0.11	0.05	0.02	47.00	70.0		
KR21036	5/12/2021	10:00	KR25444	Link Dam (RM 254.44; Baseline)	PacifiCorp	0.5	R	16.06	8.12	115.923	9.23			49.70	3.58	2.38		<0.01	0.12	0.29		1.01	0.04	0.06	0.03	0.02	17.90	19.0		
KR21044	5/24/2021	15:40	KR25444	Link Dam (RM 254.44; Baseline)	PacifiCorp	0.5	R	13.85	6.18	115.127	9.31	19.37	5.93	49.20	3.37	2.34		0.02	<0.01	0.29		0.82	<0.01	0.08	0.05	0.03	15.40	16.0		
KR21062	6/9/2021	13:10	KR25444	Link Dam (RM 254.44; Baseline)	PacifiCorp	0.5	R	15.98	8.16	120.726	7.35	8.86	4.53	48.80	3.76	0.91		0.02	<0.01	0.14		0.68	0.03	0.09	0.03	0.01	8.15	9.0		
KR21071	6/28/2021	13:50	KR25444	Link Dam (RM 254.44; Baseline)	PacifiCorp	0.5	R	26.94	9.57	130.58	10.21	367.92	22.34	57.60	5.18	11.50		0.04	<0.01	2.32		4.59	0.01	0.22	0.12	0.06	23.90	22.0		
KR21090	7/12/2021	13:35	KR25444	Link Dam (RM 254.44; Baseline)	PacifiCorp	0.5	R	24.35	9.58	125.268	10.07	247.26	13.47	59.80	5.99	10.40		0.06	<0.01	2.13		4.89	0.02	0.28	0.14	0.06	54.90	19.0		0.24
KR21099	7/26/2021	12:30	KR25444	Link Dam (RM 254.44; Baseline)	PacifiCorp	0.5	R	23.39	9.52	121.831	11.13	522.29	19.02	58.30	6.15	17.10		0.07	0.01	3.63		5.75	0.05	0.38	0.23	0.13	40.60	25.0		0.28
KR21118	8/9/2021	13:20	KR25444	Link Dam (RM 254.44; Baseline)	PacifiCorp	0.5	R	21.75	8.68	118.472	5.68	105.32	9.44	58.00	6.27	5.15		0.10	0.06	1.10		2.89	0.07	0.23	0.07	0.02	17.10	19.0		<0.15
KR21127	8/23/2021	10:35	KR25444	Link Dam (RM 254.44; Baseline)	PacifiCorp	0.5	R	18.47	8.68	123.399	6.20	49.10	12.15	59.00	6.57	4.32		0.09	0.02	0.86		2.64	0.02	0.19	0.09	0.04	18.40	18.0		0.61
KR21146	9/13/2021	13:20	KR25444	Link Dam (RM 254.44; Baseline)	PacifiCorp	0.5	R	19.34	8.46	126.591	7.74	56.15	8.12	62.00	7.76	3.97		0.12	0.03	0.79		2.00	0.04	0.20	0.04	0.02	10.70	12.0		0.88
KR21155	9/27/2021	13:40	KR25444	Link Dam (RM 254.44; Baseline)	PacifiCorp	0.5	R	16.31	8.78	128.048	8.71	117.74	9.58	65.80	6.88	3.86		0.14	0.04	0.81		2.13	0.02	0.14	0.07	0.04	10.10	13.0		0.90
KR21174	10/11/2021	13:45	KR25444	Link Dam (RM 254.44; Baseline)	PacifiCorp	0.5	R	9.94		120.008	9.64	62.83	8.08	64.20	6.54	7.20		0.04	0.04	1.32		1.91	0.01	0.14	0.06	0.02	19.70	38.0		0.25
KR21182	10/25/2021	13:30	KR25444	Link Dam (RM 254.44; Baseline)	PacifiCorp	0.5	R	7.45	6.49	122.03	8.84	22.14	6.63	59.60	6.24	3.47		0.47	0.22	0.62		2.22	<0.01	0.11	0.02	0.01		36.0		<0.15
KR21200	11/15/2021	16:05	KR25444	Link Dam (RM 254.44; Baseline)	PacifiCorp	0.5	R	7.91		124.213	8.47	7.03	5.17	62.30	4.69	1.89		0.87	0.26	0.31		2.34	<0.01	0.11	0.02	<0.0063	22.70	20.0		
KR21018	4/13/2021	12:30	KR24600	Keno Reservoir at Miller Island (RM 246.0; Baseline)	PacifiCorp	0.5	P	11.73	7.67	121.48	9.98	38.50	19.62	49.40	3.51	2.76		0.10	0.56	0.40		1.85	0.04	0.17			37.00	52.0		
KR21040	5/12/2021	9:25	KR24600	Keno Reservoir at Miller Island (RM 246.0; Baseline)	PacifiCorp	0.5	P	15.27	7.98	122.855	8.60	29.31	9.91	52.80	3.74	2.34		0.01	0.14	0.34		1.11	<0.01	0.10			14.30	8.0		<0.15
KR21066	6/9/2021	12:35	KR24600	Keno Reservoir at Miller Island (RM 246.0; Baseline)	PacifiCorp	0.5	P	18.72	8.55	133.267	9.57	63.13	8.30	49.90	3.92	2.72		0.02	<0.01	0.49		1.04	0.04	0.13			8.46	14.0		<0.15
KR21094	7/12/2021	15:00	KR24600	Keno Reservoir at Miller Island (RM 246.0; Baseline)	PacifiCorp	0.5	P	26.81	9.29	129.18	6.43	348.82	8.01	66.70	8.83	5.35		1.00	<0.01	1.21		6.45	0.04	0.46			103.00	39.0		0.25

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, Chlorophyl-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
KR21122	8/9/2021	14:40	KR24600	Keno Reservoir at Miller Island (RM 246.0; Baseline)	PacifiCorp	0.5	P	22.22	8.64	133.787	6.95	213.83	12.24	63.00	6.82	11.80		1.44	<0.01	2.66		4.86	0.12	0.42			9.12	23.0		<0.15
KR21150	9/13/2021	14:40	KR24600	Keno Reservoir at Miller Island (RM 246.0; Baseline)	PacifiCorp	0.5	P	21.81	7.94	141.643	4.22	82.09	6.38	69.00	8.17	4.33		0.85	0.03	0.93		2.86	0.06	0.22			10.70	9.0		1.20
KR21178	10/11/2021	15:20	KR24600	Keno Reservoir at Miller Island (RM 246.0; Baseline)	PacifiCorp	0.5	P	8.03		133.04	10.00	100.06	6.19	66.00	6.53	5.49		0.47	0.22	1.17		2.49	0.02	0.14			9.89	16.0		<0.15
KR21204	11/15/2021	15:35	KR24600	Keno Reservoir at Miller Island (RM 246.0; Baseline)	PacifiCorp	0.5	P	7.91		113.91	7.77	12.99	7.67	56.90	4.80	2.35		0.89	0.35	0.36		2.49	0.03	0.12			32.50	42.0		
KR21017	4/13/2021	11:40	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	PacifiCorp	0.5	P	11.76	7.42	128.012	9.78	9.03	6.67	53.20	3.65	1.40		0.19	0.48	0.22		1.58	0.05	0.13	0.03	0.02	24.40	9.0		
KR21039	5/12/2021	8:30	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	PacifiCorp	0.5	P	15.89	8.57	126.805	9.75	40.17	12.75	52.30	3.78	2.98		0.01	0.02	0.48		1.17	0.01	0.12	0.07	0.03	13.00	13.0		<0.15
KR21065	6/9/2021	11:50	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	PacifiCorp	0.5	P	17.33	7.62	132.147	7.20	8.19	3.37	53.90	4.20	1.06		0.09	<0.01	0.17		1.49	0.09	0.21	0.03	0.01	6.11	4.3		<0.15
KR21072	6/28/2021	15:25	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	PacifiCorp	0.5	P	26.01	8.81	133.187	6.40			61.20				0.26	0.03			1.55	0.08	0.11						
KR21093	7/12/2021	15:50	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	PacifiCorp	0.5	P	24.35	9.06	131.207	7.29	79.12	17.92	61.90	5.24	4.92		0.32	0.01	1.03		2.67	0.04	0.25	0.14	0.05	9.68	13.0		0.17
KR21100	7/26/2021	14:15	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	PacifiCorp	0.5	P	23.50	8.68	133.601	7.38			60.90				0.99	<0.01			3.33	0.05	0.27			6.75			
KR21121	8/9/2021	15:35	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	PacifiCorp	0.5	P	22.71	7.97	142.001	0.16	105.76	38.20	63.00	6.23	4.25		0.89	0.01	0.79		3.19	0.09	0.28	0.11	0.04	6.41	13.0		<0.15
KR21128	8/23/2021	12:10	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	PacifiCorp	0.5	P	19.36	8.00	133.63	7.93			62.00				0.63	0.02			3.02	0.10	0.30			9.03			
KR21149	9/13/2021	15:35	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	PacifiCorp	0.5	P	19.68	7.87	136.922	7.92	48.13	8.16	66.80	8.13	5.23		0.31	0.04	1.01		2.38	0.04	0.18	0.06	0.04	6.30	8.0		1.70
KR21156	9/27/2021	15:15	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	PacifiCorp	0.5	P	16.77	7.54	140.205	7.67			69.20				0.73	0.06			2.13	0.04	0.13			5.91			
KR21177	10/11/2021	16:25	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	PacifiCorp	0.5	P	11.97		134.728	8.69	14.20	11.15	66.40	6.55	2.21		0.42	0.20	0.37		1.80	0.02	0.09	0.03	0.01	8.98	11.0		<0.15
KR21203	11/15/2021	14:35	KR23340	Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline)	PacifiCorp	0.5	P	7.63		134.397	9.84	7.06	5.94	58.30	5.24	1.26		0.75	0.42	0.20		2.37	0.04	0.11	0.02	<0.0063	19.00	9.0		
KR21015	4/13/2021	10:00	KR22460	Klamath River below J.C. Boyle Dam (RM 224.60; Baseline)	PacifiCorp	0.5	P	11.46	6.28	123.104	9.94	9.45	7.10	50.80	4.18	1.34		0.10	0.66	0.26		1.59	0.06	0.13				22.0		
KR21037	5/12/2021	6:45	KR22460	Klamath River below J.C. Boyle Dam (RM 224.60; Baseline)	PacifiCorp	0.5	P	15.87	6.46	135.164	8.94	41.57	12.40	54.70	3.87	2.46		0.03	0.14	0.35		1.10	0.05	0.13				14.0		<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, Chlorophyl-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
KR21063	6/9/2021	10:00	KR22460	Klamath River below J.C. Boyle Dam (RM 224.60; Baseline)	PacifiCorp	0.5	P	18.41	6.65	135.354	7.12	9.41	5.64	53.40	4.09	0.80		0.06	0.15	0.11		0.78	0.11	0.16				6.5		<0.15
KR21091	7/12/2021	16:30	KR22460	Klamath River below J.C. Boyle Dam (RM 224.60; Baseline)	PacifiCorp	0.5	P	24.18	8.11	110.147	7.49	16.12	9.00	58.30	5.57	1.48		0.14	0.41	0.26		1.78	0.14	0.23				5.0		0.15
KR21119	8/9/2021	16:15	KR22460	Klamath River below J.C. Boyle Dam (RM 224.60; Baseline)	PacifiCorp	0.5	P	22.82	7.66	170.457	6.86	21.60	17.63	56.00	6.68	1.45		0.27	1.31	0.26		3.14	0.20	0.30				8.0		<0.15
KR21147	9/13/2021	16:15	KR22460	Klamath River below J.C. Boyle Dam (RM 224.60; Baseline)	PacifiCorp	0.5	P	19.20	7.47	144.798	7.98	4.70	4.52	63.80	8.11	1.06		0.31	0.75	0.14		2.39	0.16	0.23				5.0		0.96
KR21175	10/11/2021	17:15	KR22460	Klamath River below J.C. Boyle Dam (RM 224.60; Baseline)	PacifiCorp	0.5	P	11.50		134.433	10.25	8.78	9.76	65.00	6.85	1.20		0.13	0.57	0.18		1.69	0.05	0.09				7.0		<0.15
KR21201	11/15/2021	13:55	KR22460	Klamath River below J.C. Boyle Dam (RM 224.60; Baseline)	PacifiCorp	0.5	P	7.88	7.55	131.761	10.43	5.23	5.08	58.70	5.09	0.97		0.21	0.95	0.14		2.36	0.05	0.11				6.0		
KR21016	4/13/2021	10:40	KR21950	Klamath River below USGS Gage (RM 219.50; Baseline)	PacifiCorp	0.5	P	11.45	7.079	133.636	10.77	5.31	4.01	60.4	1.62	0.634		0.02	0.41	0.104		0.75	0.056	0.088			10.4	7		
KR21038	5/12/2021	7:25	KR21950	Klamath River below USGS Gage (RM 219.50; Baseline)	PacifiCorp	0.5	P	12.2	7.337	138.062	9.939	11.40	5.17	63.8	1.59	0.907		<0.01	0.17	0.111		0.58	0.057	0.083			5.62	6		<0.15
KR21064	6/9/2021	10:55	KR21950	Klamath River below USGS Gage (RM 219.50; Baseline)	PacifiCorp	0.5	P	14.44	7.812	136.945	8.384	10.26	4.72	60.5	1.6	0.752		0.01	0.14	0.106		0.41	0.073	0.084			6.28	6.6		<0.15
KR21092	7/12/2021	17:10	KR21950	Klamath River below USGS Gage (RM 219.50; Baseline)	PacifiCorp	0.5	P	22.59	8.109	133.768	7.677	13.78	7.59	60.7	4.49	1.39		0.09	0.38	0.241		1.53	0.123	0.187			3.56	5		<0.15
KR21120	8/9/2021	17:05	KR21950	Klamath River below USGS Gage (RM 219.50; Baseline)	PacifiCorp	0.5	P	19.75	7.816	135.969	7.398	14.41	11.00	60	3.98	0.714		0.08	0.98	0.13		1.96	0.145	0.213			2.59	8		<0.15
KR21148	9/13/2021	16:55	KR21950	Klamath River below USGS Gage (RM 219.50; Baseline)	PacifiCorp	0.5	P	18.34	7.605	141.145	8.015	4.69	4.73	64.2	6.84	0.862		0.25	0.73	0.121		1.95	0.146	0.21			3.12	<1		0.77
KR21176	10/11/2021	17:50	KR21950	Klamath River below USGS Gage (RM 219.50; Baseline)	PacifiCorp	0.5	P	11.2		134.449	10.14	7.81	7.84	66.7	5.77	0.967		0.1	0.52	0.131		1.43	0.051	0.084			4.61	6		<0.15
KR21202	11/15/2021	13:15	KR21950	Klamath River below USGS Gage (RM 219.50; Baseline)	PacifiCorp	0.5	P	8.195	7.364	132.342	10.56	4.64	4.52	57.8	4.48	0.852		0.18	0.85	0.124		1.97	0.047	0.095			13.6	3		
KR21010	4/14/2021	13:00	KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	PacifiCorp	0.5	P	12.22	8.216	124.333	11.35	8.65	6.24	53.3	3.56	0.983		0.02	0.65	0.1197		1.34	0.065	0.118	0.02276	0.00762	19	14		
KR21032	5/11/2021	16:20	KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	PacifiCorp	0.5	P	16.67	8.374	128.553	9.572	34.34	10.09	55.8	2.96	2.7		0.02	0.16	0.38		0.98	0.044	0.112	0.04851	0.01421	13.4	13		<0.15
KR21058	6/8/2021	16:55	KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	PacifiCorp	0.5	P	18	8.173	131.093	7.338	8.21	5.69	54.5	3.24	0.828		0.01	0.12	0.111		0.63	0.093	0.143	0.0138	0.00668	10.2	9.3		<0.15
KR21070	6/29/2021	8:10	KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	PacifiCorp	0.5	P	21.62	7.952	137.485	7.597							0.04	0.44			1.21	0.113	0.139						
KR21086	7/13/2021	13:40	KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	PacifiCorp	0.5	P	22.15	8.587	136.777	9.352	8.70	6.35	65.2	3.5	0.873		0.03	0.36	0.129		1.08	0.122	0.165	0.01546	<0.0063	3.73	7		<0.15
KR21098	7/27/2021	8:00	KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	PacifiCorp	0.5	P	21.1	7.795	135.223	8.061							0.05	1.24			2.42	0.13	0.192						

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, Chlorophyl-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
KR21126	8/24/2021	6:30	KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	PacifiCorp	0.5	P	16.92	7.476	137.726	8.42							0.05	1.01			2.13	0.166	0.223						
KR21142	9/14/2021	16:30	KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	PacifiCorp	0.5	P	19.09	8.07	137.247	8.647	9.99	6.03	62.9	6.51	1.28		0.03	0.7	0.167		1.68	0.112	0.165	0.0155	<0.0063	4.08	5		0.31
KR21154	9/28/2021	7:00	KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	PacifiCorp	0.5	P	13.52	6.684	140.285	9.373							0.03	0.95			1.72	0.126	0.163						
KR21170	10/12/2021	7:00	KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	PacifiCorp	0.5	P	9.617	5.607	133.998	10.79	6.73	6.72	67.3	5.29	0.956		0.01	0.62	0.122		1.45	0.054	0.080 8	<0.003	<0.0063	4.51	5		<0.15
KR21196	11/16/2021	7:50	KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	PacifiCorp	0.5	P	7.772	7.66	133.07	10.75	4.86	5.03	58.2	4	0.644		0.02	1.1	0.0927		2.11	0.049	0.089	0.00862	<0.0063	11.5	5		
KR21218	12/14/2021	9:30	KR20642	Klamath River above Shovel Creek (RM 206.42; Baseline)	PacifiCorp	0.5	P	3.932	7.013	126.626	11.85	7.84	5.16	54.2	3.82	1.03		0.05	1.02	0.124		1.87	0.039	0.079	0.01276	<0.0063	14.6	8		
KR21007	4/14/2021	9:40	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0-8	I					1.78	1.65																	
KR21029	5/11/2021	12:35	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0-8	I					20.77	5.88																	<0.15
KR21055	6/8/2021	12:20	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0-8	I					6.00	2.13																	<0.15
KR21083	7/13/2021	8:55	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0-8	I					35.05	2.38																	2.4
KR21139	9/14/2021	12:05	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0-8	I					134.25	7.72																	0.44
KR21167	10/12/2021	13:10	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0-8	I					5.11	2.02																	<0.15
KR21193	11/16/2021	16:05	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0-8	I					1.42	1.76																	
KR21215	12/14/2021	14:10	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0-8	I					2.88	2.77																	
KR21006	4/14/2021	9:25	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0.5	P	11.29	7.598	140.594	9.412	1.93	1.65		2.92	0.544		0.08	0.69	<0.0789		1.32	0.059	0.08				5.2		
KR21008	4/14/2021	10:00	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	15	P					1.69	1.65		3.02	0.639		0.08	0.69	0.0898		1.38	0.053	0.083				6		
KR21009	4/14/2021	9:50	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	27	P							65.2	2.75	0.553		0.06	0.77	<0.0789		1.31	0.057	0.103				6		
KR21028	5/11/2021	12:15	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0.5	P	19.02	7.993	142.705	12.77	20.42	4.43		2.96	1.84		0.01	0.16	0.271		0.88	0.016	0.084				6		<0.15
KR21030	5/11/2021	13:00	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	15	P					7.42	4.66		2.88	0.84		0.04	0.56	0.104		1.11	0.074	0.098				5		
KR21031	5/11/2021	12:45	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	28	P							62.5	2.73	0.775		0.06	0.76	0.0896		1.3	0.068	0.116				4		
KR21054	6/8/2021	11:55	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0.5	P	20.23	8.144	135.849	7.282	10.08	2.46		3.43	0.545		0.03	0.06	<0.0789		0.5	0.069	0.102				3		<0.15
KR21056	6/8/2021	12:40	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	8	P	18.13	7.225	136.559	5.628	4.08	1.86		3.29	0.335		0.07	0.08	<0.0789		0.5	0.084	0.111				2.8		
KR21057	6/8/2021	12:30	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	22	P	11.11	7.13	145.039	0.061			53.4	2.87	0.676		<0.01	0.6	<0.0789		1.02	0.107	0.143				8.5		
KR21082	7/13/2021	8:35	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0.5	P	23.66	8.716	139.107	9.512	46.37	3.22		3.32	2.4		0.03	0.04	0.5		0.92	0.071	0.137				5		3.3
KR21084	7/13/2021	9:20	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	12	P	18.93	7.285	139.928	1.168	2.46	1.76		3.14	0.512		0.03	0.27	<0.0789		0.71	0.125	0.169				1		

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
KR21085	7/13/2021	9:05	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	26	P	11.37	6.878	151.681	4E-05			65.6	2.74	0.476		0.19	0.37	<0.0789		0.92	0.144	0.188				4		
KR21138	9/14/2021	11:45	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0.5	P	20.2	9.229	57.1036	17.38	1284.37	13.27		5.24	26.1		0.02	0.01	5.35		6.05	0.078	0.519				60		2.7
KR21140	9/14/2021	12:30	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	17	P	15.78	6.911	151.432	0.063	3.00	1.63		4.64	0.503		0.37	0.37	<0.0789		1.31	0.175	0.203				<1		
KR21141	9/14/2021	12:15	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	29	P	12.25	6.843	169.921	0.052			76.9	3.58	0.628		1.07	0.02	0.0896		1.39	0.607	0.602				3		
KR21166	10/12/2021	12:50	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0.5	P	15.07		139.092	8.409	2.07	1.59		4.65	0.529		0.16	0.54	<0.0789		1.35	0.135	0.129				2		<0.15
KR21168	10/12/2021	13:35	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	16	P	14.01		139.417	4.129	1.65	1.99		4.59	0.934		0.17	0.52	0.148		1.35	0.113	0.14				4		
KR21169	10/12/2021	13:20	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	22	P	13.35		235.804	0.065			68.8	4.65	1.65		0.29	0.41	0.303		1.48	0.148	0.197				4		
KR21192	11/16/2021	15:55	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0.5	P	10.27		135.518	8.63	2.02	1.36		4.01	0.385		0.14	0.58	<0.0789		1.43	0.055	0.087				2		
KR21194	11/16/2021	16:30	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	12	P	9.504		136.104	8.604	1.55	2.12		3.92	0.496		0.12	0.65	<0.0789		1.52	0.052	0.091				3		
KR21195	11/16/2021	16:20	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	22	P	8.738		136.689	8.577			59.5	3.98	0.67		0.13	0.74	0.0927		1.71	0.052	0.097				5		
KR21214	12/14/2021	13:55	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	0.5	P	6.24	7.286	133.146	9.83	2.98	2.75		3.59	0.811		0.12	0.86	0.115		1.65	0.055	0.078				5		
KR21216	12/14/2021	14:40	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	1	P	6.239	7.321	133.19	9.732	2.83	2.56		3.61	0.745		0.13	0.85	0.0998		1.64	0.055	0.074				5		
KR21217	12/14/2021	14:30	KR19874	Copco Reservoir (RM 198.74; Baseline)	PacifiCorp	24	P	6.061	7.324	133.38	9.599			56.8	3.54	0.788		0.12	0.86	0.105		1.66	0.054	0.078				6		
KR21005	4/14/2021	8:35	KR19645	Klamath River below Copco Dam (RM 196.45; Baseline)	PacifiCorp	0.5	P	10.98	7.498	141.25	9.143	1.82	1.64	59.9	3.12	0.571		0.08	0.71	<0.0789		1.31	0.06	0.084				6		
KR21027	5/11/2021	11:25	KR19645	Klamath River below Copco Dam (RM 196.45; Baseline)	PacifiCorp	0.5	P	16.14	7.61	132.153	10.23	23.75	6.58	26.6	3.24	1.85		0.02	0.27	0.259		0.93	0.035	0.098				8		<0.15
KR21053	6/8/2021	13:55	KR19645	Klamath River below Copco Dam (RM 196.45; Baseline)	PacifiCorp	0.5	P	18.96	7.846	129.308	6.957	6.90	2.66	55.6	3.1	0.475		0.05	0.11	<0.0789		0.58	0.084	0.108				4.5		<0.15
KR21081	7/13/2021	10:35	KR19645	Klamath River below Copco Dam (RM 196.45; Baseline)	PacifiCorp	0.5	P	22.99	8.488	139.725	8.125	25.03	3.35	62	3.78	1.47		0.03	0.09	0.275		0.91	0.094	0.148				5		1.8
KR21137	9/14/2021	13:40	KR19645	Klamath River below Copco Dam (RM 196.45; Baseline)	PacifiCorp	0.5	P	18.73	8.578	140.07	8.939	68.27	5.24	70.5	5.04	2.46		0.1	0.25	0.484		1.51	0.111	0.186				10		0.46
KR21165	10/12/2021	14:40	KR19645	Klamath River below Copco Dam (RM 196.45; Baseline)	PacifiCorp	0.5	P	14.77		135.789	9.425	2.13	1.86	68.4	4.62	0.773		0.14	0.57	0.0947		1.4	0.136	0.178				14		<0.15
KR21191	11/16/2021	17:30	KR19645	Klamath River below Copco Dam (RM 196.45; Baseline)	PacifiCorp	0.5	P	9.651		135.99	8.552	3.64	3.44	61	4.06	1.92		0.13	0.7	0.249		1.74	0.064	0.12				8		
KR21213	12/14/2021	15:45	KR19645	Klamath River below Copco Dam (RM 196.45; Baseline)	PacifiCorp	0.5	P	6.249	7.348	133.678	10.64	2.98	2.65	57.8	3.54	0.873		0.09	0.88	0.102		1.62	0.057	0.084				6		
KR21002	4/14/2021	6:45	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0-8	I					1.95	1.03																	
KR21024	5/11/2021	9:30	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0-8	I					12.99	3.91																	<0.15
KR21050	6/8/2021	9:55	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0-8	I					3.28	1.55																	<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
KR21078	7/13/2021	6:40	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0-8	I					19.64	1.66																		0.41
KR21134	9/14/2021	9:20	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0-8	I					31.19	2.53																		0.22
KR21162	10/12/2021	10:00	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0-8	I					68.64	4.98																		<0.15
KR21188	11/16/2021	13:40	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0-8	I					6.32	1.18																		
KR21210	12/14/2021	12:00	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0-8	I					1.53	1.52																		
KR21001	4/14/2021	6:15	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0.5	P	11.01	7.625	142.725	9.775	1.69	1.31		2.66	0.424		0.05	0.67	<0.0789		1.22	0.044	0.063				2.75		
KR21003	4/14/2021	7:10	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	15	P					1.41	1.37		2.65	0.457		0.02	0.74	<0.0789		1.21	0.048	0.061				3.7		
KR21004	4/14/2021	7:00	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	41	P							66.6	2.69	0.524		<0.01	0.91	<0.0789		1.31	0.057	0.08				2		
KR21023	5/11/2021	9:15	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0.5	P	16.39	8.325	147.306	11.42	16.91	3.89		2.99	1.19		<0.01	0.36	0.182		0.88	0.037	0.07				3		<0.15
KR21025	5/11/2021	10:00	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	6	P					11.28	4.29		2.86	1.05		0.02	0.44	0.145		1.12	0.054	0.073				4		
KR21026	5/11/2021	9:45	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	39	P							25.8	2.52	0.368		<0.01	0.89	<0.0789		1.52	0.056	0.082				1		
KR21049	6/8/2021	9:30	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0.5	P	21.85	8.686	141.837	8.016	3.53	1.07		3.21	0.304		0.03	<0.01	<0.0789		0.35	0.012	0.038				<1		<0.15
KR21051	6/8/2021	10:20	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	13	P	14.35	6.988	139.958	4.914	2.80	1.63		2.97	0.324		0.02	0.27	<0.0789		0.62	0.068	0.086				2.5		
KR21052	6/8/2021	10:10	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	40	P	6.808	7.023	157.613	3.275			64.2	2.49	0.412		0.01	0.91	<0.0789		1.25	0.066	0.098				4		
KR21077	7/13/2021	6:15	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0.5	P	26.59	9.425	156.684	13.25	30.14	2.77		4.09	4.77		0.07	<0.01	0.955		4.84	<0.01	0.588				21		0.33
KR21079	7/13/2021	7:00	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	15	P	16.12	7.221	140.372	3.145	1.81	0.83		2.65	0.758		0.02	0.17	0.144		0.51	0.098	0.121				1		
KR21080	7/13/2021	6:50	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	38	P	6.988	6.897	157.999	1.74			69.6		0.607		0.02	0.84	<0.0789		1.33	0.071	0.102				2		
KR21133	9/14/2021	8:55	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0.5	P	20.97	9.189	171.968	17.09	67.91	3.79		4.02	4.81		0.03	<0.01	0.721		0.98	0.037	0.089				29		0.35
KR21135	9/14/2021	9:45	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	18	P	17.07	7.427	144.088	0.562	5.87	2.12		4.17	0.872		0.29	0.25	0.123		1.13	0.14	0.17				<1		
KR21136	9/14/2021	9:30	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	40	P	7.452	6.83	166.626	0.032			74.2	2.71	0.529		0.38	0.66	<0.0789		1.38	0.13	0.178				2		
KR21161	10/12/2021	9:35	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0.5	P	16.15	8.909	135.947	9.558	68.39	3.95		4.56	4.8		0.05	0.13	0.869		1.48	0.066	0.18				10		<0.15
KR21163	10/12/2021	10:30	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	22	P	14.15		143.243	1.657	2.88	1.46		4.1	0.606		0.27	0.31	<0.0789		1.1	0.13	0.16				<1		
KR21164	10/12/2021	10:15	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	41	P	7.561		165.262	0.034			73.4	2.6	0.471		0.33	0.64	<0.0789		1.22	0.122	0.139				4		
KR21187	11/16/2021	13:20	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0.5	P	11.92	7.669	169.638	8.195	7.18	1.17		4.04	0.694		0.13	0.38	0.117		1.22	0.066	0.098				2		
KR21189	11/16/2021	14:15	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	10	P	11.05		138.674	7.354	8.45	1.14		3.98	0.581		0.12	0.39	0.0927		1.28	0.058	0.093				<1		
KR21190	11/16/2021	13:55	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	38	P	8.627		270.907	0.355			62.7	3.98	0.691		0.18	0.51	0.105		1.45	0.062	0.099				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, Chlorophyl-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
KR21209	12/14/2021	11:35	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0.5	P	7.663	7.152	138.046	8.064	1.77	1.38		3.72	0.644		0.14	0.68	<0.0789		1.45	0.071	0.09				<1		
KR21211	12/14/2021	12:20	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	0.5	P	7.662	7.152	138.039	8.064	1.37	1.30		3.7	0.525		0.15	0.68	<0.0789		1.38	0.07	0.088				<1		
KR21212	12/14/2021	12:10	KR19019	Iron Gate Reservoir (RM 190.19; Baseline)	PacifiCorp	39	P	7.109	7.113	137.372	8.08			60.6	3.68	0.628		0.15	0.69	<0.0789		1.42	0.068	0.088				4		
KR21000	4/14/2021	11:30	KR18973	Klamath River below Iron Gate Dam (RM 189.73; Baseline)	PacifiCorp	0.5	R	11.21	7.655	150.138	10.9	2.09	1.46	64.6	2.87	0.675		0.05	0.69	0.0873		1.2	0.042	0.065	0.00559	<0.0063	7.49	2		
KR21022	5/11/2021	14:45	KR18973	Klamath River below Iron Gate Dam (RM 189.73; Baseline)	PacifiCorp	0.5	R	17.25	8.355	136.309	10.04	17.10	4.68	59.3	2.99	1.42		0.01	0.36	0.211		0.97	0.029	0.084	0.03084	0.00683	9.39	5		
KR21048	6/8/2021	15:15	KR18973	Klamath River below Iron Gate Dam (RM 189.73; Baseline)	PacifiCorp	0.5	R	17.77	7.729	138.632	7.73	4.46	1.97	58.6	2.96	0.321		0.04	0.18	<0.0789		0.63	0.064	0.087	0.00918	<0.0063	2.72	2.3		
KR21076	7/13/2021	12:00	KR18973	Klamath River below Iron Gate Dam (RM 189.73; Baseline)	PacifiCorp	0.5	R	22.56	7.878	142.426	7.97	2.66	1.44	64.4	3.02	0.423		0.04	0.22	<0.0789		0.69	0.09	0.114	0.0074	<0.0063	2	1		<0.15
KR21132	9/14/2021	14:50	KR18973	Klamath River below Iron Gate Dam (RM 189.73; Baseline)	PacifiCorp	0.5	R	18.71	8.511	143.771	8.006	10.33	2.16	68.3	4.2	0.975		0.15	0.24	0.137		1.01	0.123	0.155	0.02202	0.00833	2.78	2		0.16
KR21160	10/12/2021	15:50	KR18973	Klamath River below Iron Gate Dam (RM 189.73; Baseline)	PacifiCorp	0.5	R	15.62		138.727	9.328	27.74	3.12	69.6	4.91	2.03		0.1	0.22	0.364		1.1	0.087	0.148	0.02772	0.01957	6.7	6		<0.15
KR21186	11/16/2021	8:55	KR18973	Klamath River below Iron Gate Dam (RM 189.73; Baseline)	PacifiCorp	0.5	R	11.07	7.555	140.03	9.512	4.94	1.21	63.9	3.92	0.457		0.14	0.42	<0.0789		1.28	0.072	0.099	0.00768	<0.0063	2.92	<1		
KR21208	12/14/2021	16:55	KR18973	Klamath River below Iron Gate Dam (RM 189.73; Baseline)	PacifiCorp	0.5	R	7.343		138.064	9.953	1.87	1.88	60.7	3.63	0.574		0.13	0.71	<0.0789		1.41	0.068	0.086	0.0094	<0.0063	6.19	4		
IB091521-OC	9/15/2021	11:43	KR17920	Klamath River at I-5 Rest Area (RM 179.20; Baseline)	Karuk	0.5	P	19.37	9.13	144.3	10.64																			
IB092921-OC	9/29/2021	12:06	KR17920	Klamath River at I-5 Rest Area (RM 179.20; Baseline)	Karuk	0.5	P	17.26	8.96	145.4	10.11																			
IB101321-OC	10/13/2021	11:06	KR17920	Klamath River at I-5 Rest Area (RM 179.20; Baseline)	Karuk	0.5	P	15.01	8.54	147.2	10.09																			
WA041421-OC	4/14/2021	10:31	KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	Karuk	0.5	P	10.98	8.15	172.1	11.14	1.90	3.90		2.76	0.643		0.014	0.604			1.1	0.042	0.079				6		
WA051221-OC	5/12/2021	10:24	KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	Karuk	0.5	P	17.23	8.2	154.5	9.78	2.10	2.70		2.86	1.12		0.016	0.333			0.733	0.038	0.047				8		
WA060921-OC	6/9/2021	10:14	KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	Karuk	0.5	P	17.34	8.43	153.8	9.86	0.70	2.80		3.5	0.388		<0.01	<0.01			0.645	0.054	0.073				2.7		<0.15
WA070721-OC	7/7/2021	10:46	KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	Karuk	0.5	P	23.34	8.59	149.3	9.45	1.10	1.70		3.57	0.434		0.014	0.058			0.448	0.081	0.109				2.6		<0.15
WA081121-OC	8/11/2021	10:50	KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	Karuk	0.5	P	22.89	8.65	158.5	8.96	5.90	5.70		4.27	1.54		<0.01	0.19			1	0.106	0.154				7.3		
WA091521-OC	9/15/2021	10:36	KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	Karuk	0.5	P	19.37	8.56	164.8	9.41	1.50	5.00		4.38	1.13		0.087	0.31			1.05	0.119	0.163				5.2		<0.15
WA101321-OC	10/13/2021	10:21	KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	Karuk	0.5	P	14.35	8.67	178	10.13	23.00	2.90		4.71	2.4		0.011	0.207			1.1	0.097	0.156				6.8		0.34
WA111021-OC	11/10/2021	12:15	KR15626	Klamath River at Walker Bridge	Karuk	0.5	P	10.66	8.14	186.4	10.91	3.20	2.30		4.68	0.776		0.018	0.42			1.17	0.084	0.114				4		

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, Chlorophyl-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
				(RM 156.26; Baseline)																											
WA120821-OC	12/8/2021	12:16	KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	Karuk	0.5	P	8.169	8.15	188.3	11.66	1.30	2.80		4.07			0.02	0.56			0.904	0.075	0.114				3.7		
SV041421-OC	4/14/2021	9:04	KR12850	Klamath River below Seiad (RM 128.5; Baseline)	Karuk	0.5	P					2.90	3.60		2.56	0.732		<0.01	0.396	0.0905		0.782	0.024	0.059	0.0098	0.0064	3.4	5.4		
SV051221-OC	5/12/2021	9:03	KR12850	Klamath River below Seiad (RM 128.5; Baseline)	Karuk	0.5	P	16.06	8.27	159.2	9.94	2.10	2.70		2.62	0.967		0.014	0.227	0.11		0.451	0.025	0.055	0.0127	0.0066	2.8	6.6		
SV060921-OC	6/9/2021	9:05	KR12850	Klamath River below Seiad (RM 128.5; Baseline)	Karuk	0.5	P	16.66	8.32	166.1	9.84	0.90	1.70		2.94	0.589		0.023	0.038	<0.0789		0.419	0.037	0.057	0.0075	<0.0063	1.6	3.7		<0.15
SV070721-OC	7/7/2021	9:15	KR12850	Klamath River below Seiad (RM 128.5; Baseline)	Karuk	0.5	P	23.37	8.4	160.7	8.41	0.80	1.80		3.17	0.449		<0.01	<0.01	<0.0789		0.702	0.075	0.102	0.007	<0.0063	0.65	2.1		<0.15
SV081121-OC	8/11/2021	9:19	KR12850	Klamath River below Seiad (RM 128.5; Baseline)	Karuk	0.5	P	22.79	8.36	162.4	8.98	5.30	6.80		3.84	1.44		0.015	0.164	0.186		1.04	0.096	0.145	0.0238	0.0123	2.2	7.7		0.15
SV091521-OC	9/15/2021	9:19	KR12850	Klamath River below Seiad (RM 128.5; Baseline)	Karuk	0.5	P	18.92	8.38	172	9.35	5.20	5.10		4.43	1.16		0.074	0.23	0.176		0.925	0.113	0.152	0.021	0.0082	2.5	12		<0.15
SV101321-OC	10/13/2021	8:58	KR12850	Klamath River below Seiad (RM 128.5; Baseline)	Karuk	0.5	P	13.57	8.6	184.3	10.43	29.00	4.40		4.61	3.78		<0.01	0.081	0.609		0.984	0.077	0.155	0.0773	0.0438	5	7.8		0.17
SV111021-OC	11/10/2021	11:08	KR12850	Klamath River below Seiad (RM 128.5; Baseline)	Karuk	0.5	P	10.01	8.16	189.5	11.09	3.70	2.60		4.11	0.648		0.016	0.336	0.0862		1.02	0.069	0.09	0.0086	<0.0063	2.2	4		
SV120821-OC	12/8/2021	11:03	KR12850	Klamath River below Seiad (RM 128.5; Baseline)	Karuk	0.5	P	7.993	8.27	203.3	11.82	2.10	3.80		3.46			<0.01	0.501			1.063	0.064	0.098				3.7		
HC041421-OC	4/14/2021	8:14	KR10130	Klamath River below Happy Camp (RM 101.3; Baseline)	Karuk	0.5	P	10.71	7.93	156.2	10.73	2.90	3.80		1.8	0.715		0.011	0.26			0.49	0.015	0.04				4.4		
HC051221-OC	5/12/2021	8:07	KR10130	Klamath River below Happy Camp (RM 101.3; Baseline)	Karuk	0.5	P	15.75	7.97	146.8	9.56	1.90	3.20		2.17	0.887		0.014	0.152			0.338	0.018	0.046				6		
HC060921-OC	6/9/2021	8:04	KR10130	Klamath River below Happy Camp (RM 101.3; Baseline)	Karuk	0.5	P					0.90	2.00		2.72	0.511		0.018	0.016			0.335	0.027	0.046				3		<0.15
HC070721-OC	7/7/2021	8:34	KR10130	Klamath River below Happy Camp (RM 101.3; Baseline)	Karuk	0.5	P	23.1	8.07	162	8.16	0.80	0.50		2.58	0.436		<0.01	<0.01			0.575	0.06	0.084				2		<0.15
HC081121-OC	8/11/2021	8:12	KR10130	Klamath River below Happy Camp (RM 101.3; Baseline)	Karuk	0.5	P	22.51	8.13	165.4	8.41	8.50	13.00		3.45	1.86		0.02	0.042			0.882	0.073	0.145				24		0.26
HC091521-OC	9/15/2021	8:29	KR10130	Klamath River below Happy Camp (RM 101.3; Baseline)	Karuk	0.5	P	18.87	8.41	174.8	8.83	4.80	4.50		3.92	1.06		0.08	0.17			0.766	0.102	0.134				<0.5		<0.15
HC101321-OC	10/13/2021	8:03	KR10130	Klamath River below Happy Camp (RM 101.3; Baseline)	Karuk	0.5	P	13.43	8.28	181.2	9.94	7.50	3.70		4.11	1.08		0.016	0.126			0.752	0.073	0.107				4.4		<0.15
HC111021-OC	11/10/2021	10:11	KR10130	Klamath River below Happy Camp (RM 101.3; Baseline)	Karuk	0.5	P	9.484	7.93	162.4	11.2	2.30	2.00		3.5	0.825		<0.01	0.301			0.924	0.042	0.071				12		
HC120821-OC	12/8/2021	9:41	KR10130	Klamath River below Happy Camp (RM 101.3; Baseline)	Karuk	0.5	P	7.929	8.08	197.3	11.55	2.10	3.80		2.85			<0.01	0.4			0.845	0.051	0.079				3.2		
OR041421-OC	4/14/2021	6:33	KR05910	Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Karuk	0.5	P	10.73	7.88	122.4	11.26	1.90	1.70	60.2	1.21	1.05		<0.01	0.01			0.27	<0.001	0.018			0.81	4.2		
OR051221-OC	5/12/2021	6:42	KR05910	Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Karuk	0.5	P					1.90	1.90		1.61	0.921		0.014	0.082			0.229	0.009	0.034			1.5	7.7		
OR51221-OC	5/12/2021	6:42	KR05910	Klamath River at Orleans (USGS)	Karuk	0.5	P	15.35	7.93	116.3	10.09																			

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, Chlorophyl-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
				(RM 59.1; Baseline)																										
OR060921-OC	6/9/2021	6:50	KR05910	Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Karuk	0.5	P	16.9	8.17	144.6	9.58	0.50	1.50	70.8	2.04	0.419		0.014	0.023			0.258	0.022	0.036			0.8	2.3		<0.15
OR070721-OC	7/7/2021	7:10	KR05910	Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Karuk	0.5	P	24.24	8.17	158.1	7.97	0.50	0.60	78.6	2.15	0.205		<0.01	<0.01			0.366	0.041	0.054			0.29	1.1		<0.15
OR081121-OC	8/11/2021	6:53	KR05910	Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Karuk	0.5	P	23.86	8.2	166.2	8.06	5.30	3.30	79.2	2.84	1.11		<0.01	<0.01			0.445	0.054	0.091			1.8	5		0.23
OR091521-OC	9/15/2021	7:11	KR05910	Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Karuk	0.5	P	19.6	8.14	170.7	8.64	4.80	3.30	80.8	3.35	0.583		0.067	0.092			0.521	0.072	0.111			2.3	3.6		<0.15
OR101321-OC	10/13/2021	6:45	KR05910	Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Karuk	0.5	P	13.48	8.34	181.8	9.99	3.70	2.80	87	3.2	0.4		0.015	0.049			0.513	0.052	0.075			0.81	2		0.15
OR111021-OC	11/10/2021	8:50	KR05910	Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Karuk	0.5	P	9.623	7.44	115.5	11.67	1.80	1.20	55.6	4.37	0.767		<0.01	0.179			0.479	0.023	0.052			3.9	14		
OR120821-OC	12/8/2021	8:05	KR05910	Klamath River at Orleans (USGS) (RM 59.1; Baseline)	Karuk	0.5	P	8.401	8.08	174.4	11.82	1.30	1.80	80.8	2.92			<0.01	0.252			0.46	0.035	0.052				1.6		
WE041421-OC	4/14/2021	10:47	KR04350	Klamath River at Weitchpec (RM 43.5; Baseline)	Yurok	0.5	P	10.86	8.03	120.6	11.41	3.31	2.73		1.39	0.5		0.01	0.12	<0.0789		0.27	0.01	0.02			2.02	3	<2	
WE051221-OC	5/12/2021	11:07	KR04350	Klamath River at Weitchpec (RM 43.5; Baseline)	Yurok	0.5	P	15.96	8.11	120.3	10.3	2.37	2.46		1.69	0.64		0.01	0.08	<0.0789		0.36	0.01	0.02			2.25	3.7	<2	
WE052621-OC	5/26/2021	10:41	KR04350	Klamath River at Weitchpec (RM 43.5; Baseline)	Yurok	0.5	P									0.54				<0.0789										<0.15
WE060921-OC	6/9/2021	11:03	KR04350	Klamath River at Weitchpec (RM 43.5; Baseline)	Yurok	0.5	P	17.54	8.21	146.2	10	<1	1.07		1.9				<0.02			0.245	0.019	0.031			6.47	<2	<2	<0.15
WE062321-OC	6/23/2021	10:26	KR04350	Klamath River at Weitchpec (RM 43.5; Baseline)	Yurok	0.5	P									0.354														<0.15
WE071421-OC	7/14/2021	11:12	KR04350	Klamath River at Weitchpec (RM 43.5; Baseline)	Yurok	0.5	P	24.49	8.3	164.2	8.92	<1	<1		2.45	0.367		0.02	0.02			0.36	0.04	0.04			1.25	<2	<2	0.18
WE072821-OC	7/28/2021	10:28	KR04350	Klamath River at Weitchpec (RM 43.5; Baseline)	Yurok	0.5	P									0.839														<0.15
WE081121-OC	8/11/2021	10:33	KR04350	Klamath River at Weitchpec (RM 43.5; Baseline)	Yurok	0.5	P	23.54	8.2	168.6	8.41	7.42	3.72		2.72	1.44		0.02	<0.02			0.25	0.05	0.08			6.82	5.7	3.6	0.16
WE082521-OC	8/25/2021	11:33	KR04350	Klamath River at Weitchpec (RM 43.5; Baseline)	Yurok	0.5	P									0.622														<0.15
WE091521-OC	9/15/2021	11:48	KR04350	Klamath River at Weitchpec (RM 43.5; Baseline)	Yurok	0.5	P	19.58	8.46	173.1	10.32	6.32	4.47		3.11	0.787		0.02	0.06			0.47	0.06	0.08			1.3	2.9	<2	<0.15
WE092921-OC	9/29/2021	10:59	KR04350	Klamath River at Weitchpec (RM 43.5; Baseline)	Yurok	0.5	P									0.633														<0.15
WE101321-OC	10/13/2021	10:36	KR04350	Klamath River at Weitchpec (RM 43.5; Baseline)	Yurok	0.5	P	13.11	8.17	184.9	10.87	3.36	5.93		3.05			0.01	0.06			0.49	0.05	0.08			1.11	2.2	<2	<0.15
WE102721-OC	10/27/2021	10:44	KR04350	Klamath River at Weitchpec (RM 43.5; Baseline)	Yurok	0.5	P																							<0.15
WE110921-OC	11/9/2021	11:43	KR04350	Klamath River at Weitchpec (RM 43.5; Baseline)	Yurok	0.5	P	9.21	7.85	136.3	11.09	1.73	2		2.5			<0.01	<0.02			0.281	0.021	0.044			3.91	7.4	2.2	
WE120821-OC	12/8/2021	11:04	KR04350	Klamath River at Weitchpec (RM 43.5; Baseline)	Yurok	0.5	P	8.302	8.09	170	11.81	2.22	2.74		2.11			<0.01	0.234			0.497	0.033	0.058			1.76	<2	<2	
TC041421-OC	4/14/2021	9:38	KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Yurok	0.5	P	11.25	7.97	126.2	10.98	2.68	2.02		1.21	0.41		0.01	0.08	<0.0789		0.19	<0.01	0.02			1.7	3.2	<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, Chlorophyl-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
TC051221-OC	5/12/2021	9:39	KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Yurok	0.5	P	15.69	7.9	123.3	9.84	<1	<1		1.44	0.56		0.01	0.05	<0.0789		0.26	<0.01	0.02			1.87	3.4	<2	
TC052621-OC	5/26/2021	9:21	KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Yurok	0.5	P									0.49				<0.0789										<0.15
TC060921-OC	6/9/2021	9:18	KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Yurok	0.5	P	16.93	8.02	144.1	9.55	<1	<1		1.43	0.26		0.015	<0.02	<0.0789		0.195	0.012	0.018			2.04	<2	<2	<0.15
TC062321-OC	6/23/2021	8:50	KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Yurok	0.5	P									0.364														<0.15
TC071421-OC	7/14/2021	9:57	KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Yurok	0.5	P	24.45	8.24	162.6	8.13	<1	<1		1.88	0.326		0.02	0.02			0.29	0.02	0.03			0.98	<2	<2	0.2
TC072821-OC	7/28/2021	9:04	KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Yurok	0.5	P									0.653														<0.15
TC081121-OC	8/11/2021	9:22	KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Yurok	0.5	P	23	8.1	163.9	7.94	5.58	2.89		2.14	1.05		0.01	<0.02			0.18	0.03	0.05			5.06	3.7	2.3	<0.15
TC082521-OC	8/25/2021	10:05	KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Yurok	0.5	P									0.562														<0.15
TC091521-OC	9/15/2021	10:20	KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Yurok	0.5	P	19.35	8.33	164.9	9.08	5.79	3.91		2.53	0.673		0.02	0.03			0.86	0.04	0.06			1.25	2.6	<2	
TC092921-OC	9/29/2021	9:48	KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Yurok	0.5	P									0.524														
TC101321-OC	10/13/2021	9:20	KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Yurok	0.5	P	13.39	8.18	177.7	10.38	9.89	13		2.53			<0.01	0.03			0.39	0.03	0.07			0.93	2.1	<2	<0.15
TC102721-OC	10/27/2021	9:30	KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Yurok	0.5	P																							<0.15
TC110921-OC	11/9/2021	10:33	KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Yurok	0.5	P	9.32	7.87	140	10.94	1	1.32		2.41			<0.01	<0.02			0.265	0.017	0.03			2.94	5.4	<2	
TC120821-OC	12/8/2021	10:21	KR03850	Klamath River below Trinity River (RM 38.5; Baseline)	Yurok	0.5	P	8.337	8.04	173.9	11.49	1.42	1.99		1.83			<0.01	0.168			1.42	0.02	0.027			1.28	<2	<2	
TG041421-OC	4/14/2021	7:18	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	11.54	7.73	128.3	10.24	3.38	2.23		1.11	0.4		0.01	0.08	<0.0789		0.21	<0.01	0.22	0.01	<0.0063	3.67	2.7	<2	
TG051221-OC	5/12/2021	7:05	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	15.42	7.7	127.3	9.1	1.37	1.4		1.2	0.53		0.01	0.08	<0.0789		0.26	<0.01	0.02	0.01	<0.0063	5.81	3.2	<2	
TG052521-OC	5/25/2021	12:44	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P																							<0.15
TG052621-OC	5/26/2021	6:59	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P									0.63				<0.0789					0.01	<0.0063				
TG060821-OC	6/8/2021	12:42	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	20.02	8.43	147.3	11.24																0.64			<0.15
TG060921-OC	6/9/2021	7:10	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	16.46	7.72	147.3	8.58	<1	1.09		1.25	0.22		0.018	0.065	<0.0789		0.228	<0.01	0.016	<0.003	<0.0063	2.03	<2	<2	
TG062221-OC	6/22/2021	6:40	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P																							<0.15
TG062321-OC	6/23/2021	6:40	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P									0.314				0.396					0.0071	<0.0063				

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, Chlorophyl-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
TG071321-OC	7/13/2021	13:33	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	24.01	9	159.1	11.87					0.297											<0.2			<0.15
TG071421-OC	7/14/2021	7:17	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	21.54	7.87	162.1	6.85	<1	1.59		1.54			0.01	0.03	<0.0789		0.31	0.01	0.02	0.0064	<0.0063	3.31	<2	<2	
TG072721-OC	7/27/2021	11:23	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P																							<0.15
TG072821-OC	7/28/2021	7:05	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P									0.376				<0.0789					0.0092	<0.0063				
TG081021-OC	8/10/2021	11:25	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	22.48	9.14	162.5	11.39																2.59			<0.15
TG081121-OC	8/11/2021	7:15	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	20.78	7.8	165.4	7	3.52	2.54		2	1.01		0.02	<0.02	0.134		0.17	0.02	0.03	0.0195	<0.0063	5.78	3.5	2.4	
TG082421-OC	8/24/2021	10:58	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P																							<0.15
TG082521-OC	8/25/2021	7:41	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P									0.751				0.108					0.0163	<0.0063				
TG091421-OC	9/14/2021	11:20	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	19.76	8.76	159.1	11.57																2.18			<0.15
TG091521-OC	9/15/2021	8:19	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	18.33	8.18	161.7	8.5	9.8	8.22		2.3	1.23		0.02	<0.02	0.172		0.48	0.02	0.06	0.0369	0.0135	7.42	8.9	3.12	
TG092821-OC	9/28/2021	11:12	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P																							<0.15
TG092921-OC	9/29/2021	7:48	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P									0.537				<0.0789					0.0124	<0.0063				
TG101221-OC	10/12/2021	11:52	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	14.91	8.9	171.3	14.01																0.59			<0.15
TG101321-OC	10/13/2021	7:04	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	13.77	7.83	175.2	8.58	11.8	12.8		2.11			0.01	0.02			0.32	0.02	0.05			2.01	2.1	<2	
TG102621-OC	10/26/2021	11:01	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P																							<0.15
TG110921-OC	11/9/2021	8:07	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	10.09	7.72	135.9	10.3	<1	<1		2.02			0.01	<0.02			0.315	0.046	0.046			8.18	12.2	12.2	
TG120821-OC	12/8/2021	8:21	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.5	P	9.252	7.67	171.9	9.95	2.89	3.12		1.54			0.01	0.17			0.387	0.018	0.024			7.16	<2	<2	
LES041421-OC	4/14/2021	6:36	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	11.48	7.94	126.5	10.34	2.89	1.99		1.21	0.38		0.01	0.07	<0.0789		0.17	<0.01	0.02			1.79	3.3	<2	
LES051221-OC	5/12/2021	6:23	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	15.73	7.82	124.5	9.16	<1	<1		1.34	0.61		0.01	0.05	0.08		0.27	<0.01	0.02			1.31	3.4	<2	
LES052521-OC	5/25/2021	13:20	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P																							<0.15
LES052621-OC	5/26/2021	6:23	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P									0.65				<0.0789										
LES060821-OC	6/8/2021	11:41	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	19.09	8.53	381.2	10.5																0.68			<0.15
LES060921-OC	6/9/2021	6:24	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	18.13	7.83	613	8.46	<1	1.33		1.38	0.37		0.019	<0.02	<0.0789		0.24	0.01	0.02			2.63	2.7	<2	
LES062221-OC	6/22/2021	5:57	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P																							<0.15
LES062321-OC	6/23/2021	5:57	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P									0.68				<0.0789										
LES071321-OC	7/13/2021	13:51	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	22.25	8.16	38.37	8.47					0.376											2.84			<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
LES071421-OC	7/14/2021	6:23	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	21.88	8.35	1702	8.32	<1	<1		1.63			0.02	0.02	<0.0789		0.28	0.01	0.02			2.66	<2	<2	
LES072721-OC	7/27/2021	10:13	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P																							<0.15
LES072821-OC	7/28/2021	6:21	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P									0.319				<0.0789										
LES081021-OC	8/10/2021	9:50	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	21.26	8.11	5154	8.14																4.72			<0.15
LES081121-OC	8/11/2021	10:43	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	20.77	8.09	2537	8.14	3.13	1.6		1.54	1.22		0.02	<0.02	0.161			0.02				6.86	4.4	2.5	
LES082421-OC	8/24/2021	12:25	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P																							<0.15
LES082521-OC	8/25/2021	7:04	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P									0.492				<0.0789										
LES091421-OC	9/14/2021	13:39	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	19.51	8.17	1596	8.96																0.75			<0.15
LES091521-OC	9/15/2021	7:45	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	18.58	7.94	2720	8.37	1.59	1.64		0.82	0.469		0.03	<0.02	<0.0789		0.68	0.03	0.04			3.96	2	<2	
LES092821-OC	9/28/2021	12:04	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P																							<0.15
LES092921-OC	9/29/2021	6:55	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P									0.442				<0.0789										
LES101221-OC	10/12/2021	11:15	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	14.2	8.32	467.7	10.12																0.69			<0.15
LES101321-OC	10/13/2021	6:25	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	14.23	8.52	487	10.93	4.39	6.7		1.54			<0.01	<0.02			0.32	0.03	0.05			0.82	<2	<2	
LES102621-OC	10/26/2021	10:43	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P																							<0.15
LES110921-OC	11/9/2021	7:41	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	10.74	7.59	138.4	10.07	<1	1.36		3.09			<0.01	0.237			0.496	0.021	0.039			3.2	4.8	<2	
LES120821-OC	12/8/2021	7:30	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	9.657	7.51	3656	10.71	1.94	2.65		0.56			<0.01	0.148			0.458	0.02	<0.01			1.39	2.5	<2	
LES122821-OC	12/28/2021	15:02	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.5	P	6.24	7.56	198.8	12.02																9.8			
SH051221-OC	5/12/2021	11:09	SH00000	Shasta River near mouth (Baseline)	Karuk	0.5	P	18.73	8.63	629	10.87	0.50	0.80		6.23	0.339		<0.01	<0.01			0.458	0.185	0.24			0.32	0.57		
SH060921-OC	6/9/2021	11:17	SH00000	Shasta River near mouth (Baseline)	Karuk	0.5	P	17.92	8.62	570	11.82	2.10	0.80		5.83	0.43		0.015	<0.01			0.639	0.212	0.234			0.49	1.4		
SH070721-OC	7/7/2021	11:45	SH00000	Shasta River near mouth (Baseline)	Karuk	0.5	P	24.38	8.7	571	10.37	1.60	1.20		7.82	0.663		0.041	<0.01			0.787	0.298	0.367			0.33	1.3		
SH081121-OC	8/11/2021	11:52	SH00000	Shasta River near mouth (Baseline)	Karuk	0.5	P	22.46	8.78	540	10.63	2.50	<0.10		5.24	0.375		0.01	<0.01			0.55	0.236	0.271			0.3	1.3		
SH091521-OC	9/15/2021	12:05	SH00000	Shasta River near mouth (Baseline)	Karuk	0.5	P	17.85	8.69	592	10.01	1.20	1.40		6.97	0.305		0.024	0.01			0.593	0.251	0.292			0.41	0.91		
SH101321-OC	10/13/2021	11:20	SH00000	Shasta River near mouth (Baseline)	Karuk	0.5	P	10.86	8.6	422.4	10.83	3.00	2.00		1.82	0.463		<0.01	0.038			0.407	0.213	0.255			0.86	5.4		
SH111021-OC	11/10/2021	13:00	SH00000	Shasta River near mouth (Baseline)	Karuk	0.5	P	8.887	8.44	438.1	11.23	2.30	2.00		3.75	0.714		0.01	0.13			0.503	0.202	0.208			1.9	4.8		
SH120821-OC	12/8/2021	1:20	SH00000	Shasta River near mouth (Baseline)	Karuk	0.5	P	8.201	8.47	423.5	11.46	2.70	2.50		2.52			<0.01	0.202			0.7	0.222	0.224				6.3		
SC041421-OC	4/14/2021	9:42	SC00000	Scott River near mouth (Baseline)	Karuk	0.5	P	9.51	8.16	158.4	11.22	1.60	1.00		1.44	0.269		0.011	0.217			0.292	0.002	0.01			0.48	1.4		

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, Chlorophyl-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
SC051221-OC	5/12/2021	9:33	SC00000	Scott River near mouth (Baseline)	Karuk	0.5	P	14.03	8.33	147.5	10.32	1.10	1.20		1.48	0.581		<0.01	0.116			0.169	0.001	0.046			0.49	3.4		
SC060921-OC	6/9/2021	9:42	SC00000	Scott River near mouth (Baseline)	Karuk	0.5	P	14.45	8.44	199.4	10.08	0.70	1.80		1.13	0.384		0.012	0.198			0.3	0.002	0.005			1.7	2.3		
SC070721-OC	7/7/2021	9:59	SC00000	Scott River near mouth (Baseline)	Karuk	0.5	P	22.81	8.51	220.3	9.11	0.80	0.10		1.24	0.215		<0.01	<0.01			0.255	0.003	0.009			0.24	<0.5		
SC081121-OC	8/11/2021	10:06	SC00000	Scott River near mouth (Baseline)	Karuk	0.5	P	22.35	8.49	250.7	9.25	0.90	0.60		1.13	0.338		0.018	0.01			0.152	0.002	0.009			0.32	1.2		
SC091521-OC	9/15/2021	10:10	SC00000	Scott River near mouth (Baseline)	Karuk	0.5	P	17.82	8.47	260.8	9.63	0.70	0.70		1.29	<0.1899		0.028	<0.01			0.111	0.002	0.01			0.25	<0.5		
SC101321-OC	10/13/2021	9:41	SC00000	Scott River near mouth (Baseline)	Karuk	0.5	P	11.13	8.42	261.7	10.71	1.40	0.30		0.813	<0.1899		<0.01	<0.01			0.12	0.004	0.012			0.22	<0.5		
SC111021-OC	11/10/2021	11:43	SC00000	Scott River near mouth (Baseline)	Karuk	0.5	P	8.292	8.63	170.1	12.25	3.70	0.90		2.75	<0.1899		<0.01	0.04			0.402	0.006	0.007				1		
SC120821-OC	12/8/2021	11:38	SC00000	Scott River near mouth (Baseline)	Karuk	0.5	P	7.982	8.55	221.1	12.21	1.80	2.10		1.52			<0.01	0.168			0.227	<0.001	0.003				0.8		
SA041421-OC	4/14/2021	7:00	SA00000	Salmon River near mouth (Baseline)	Karuk	0.5	P	8.501	7.63	76.2	11.68	1.60	0.50		0.904	0.248		<0.01	0.072			0.072	<0.001	0.007			0.3	0.8		
SA051221-OC	5/12/2021	7:09	SA00000	Salmon River near mouth (Baseline)	Karuk	0.5	P	13.18	7.7	67.5	10.41	1.90	0.90		1.16	0.569		<0.01	0.017			0.077	<0.001	0.007			0.29	2.7		
SA060921-OC	6/9/2021	7:15	SA00000	Salmon River near mouth (Baseline)	Karuk	0.5	P	14.66	7.91	93.4	9.89	0.70	0.80		1.15	0.346		<0.01	0.01			0.083	0.002	0.005			0.3	0.71		
SA070721-OC	7/7/2021	7:44	SA00000	Salmon River near mouth (Baseline)	Karuk	0.5	P	21.12	7.96	123.3	8.56	0.50	0.20		0.634	<0.1899		0.01	<0.01			0.174	0.003	0.005			<0.1	<0.5		
SA081121-OC	8/11/2021	7:23	SA00000	Salmon River near mouth (Baseline)	Karuk	0.5	P	21.06	7.89	141.7	8.37	2.10	1.20		0.679	0.417		0.013	0.011			0.071	0.002	0.007			0.2	1.2		
SA091521-OC	9/15/2021	7:38	SA00000	Salmon River near mouth (Baseline)	Karuk	0.5	P	16.29	7.89	151.5	9.16	0.70	0.80		1.57	0.296		0.022	0.011			0.082	0.002	0.005			0.2	0.6		
SA101321-OC	10/13/2021	7:07	SA00000	Salmon River near mouth (Baseline)	Karuk	0.5	P	11.42	8	149.7	10.4	2.50	1.00		0.662	0.529		<0.01	<0.01			0.532	0.004	0.012			0.38	3.6		
SA111021-OC	11/10/2021	9:20	SA00000	Salmon River near mouth (Baseline)	Karuk	0.5	P	8.838	7.73	92.6	11.63	0.9	0.2		2.99	0.357		<0.01	0.097			0.298	0.007	0.01			1.3	3		
SA120821-OC	12/8/2021	8:37	SA00000	Salmon River near mouth (Baseline)	Karuk	0.5	P	7.248	7.85	120.8	11.85	2.4	0.8		1.47			<0.01	0.011			<0.05	0.005	0.006				1.3		
TR041421-OC	4/14/2021	10:30	TR00000	Trinity River near mouth (Baseline)	Yurok	0.5	P	11.84	8.03	140.4	10.83	<1	<1		0.79	0.34		0.01	<0.02	<0.0789		0.07	<0.01	0.01			1.99	2.1	<2	
TR051221-OC	5/12/2021	10:49	TR00000	Trinity River near mouth (Baseline)	Yurok	0.5	P	15.88	8.01	126.9	9.93	<1	<1		1.08	0.36		<0.01	0.020	<0.0789		0.120	<0.01	0.010			3.050	2.800	<2	
TR052621-OC	5/26/2021	10:28	TR00000	Trinity River near mouth (Baseline)	Yurok	0.5	P									0.3				<0.0789										<0.15
TR060921-OC	6/9/2021	10:45	TR00000	Trinity River near mouth (Baseline)	Yurok	0.5	P	17.35	8.04	140.6	9.67	<1	<1		1.02			0.024	<0.02			0.113	<0.01	<0.01			1.369	<2	<2	
TR062321-OC	6/23/2021	10:01	TR00000	Trinity River near mouth (Baseline)	Yurok	0.5	P									<0.1899														<0.15
TR071421-OC	7/14/2021	10:52	TR00000	Trinity River near mouth (Baseline)	Yurok	0.5	P	24.28	8.18	156.7	8.35	<1	<1		1.17	0.354		0.020	0.020			0.120	<0.01	0.020			0.970	2.000	<2	
TR072821-OC	7/28/2021	10:02	TR00000	Trinity River near mouth (Baseline)	Yurok	0.5	P									0.264														<0.15
TR081121-OC	8/11/2021	10:15	TR00000	Trinity River near mouth (Baseline)	Yurok	0.5	P	21.19	8.15	153.2	8.71	<1	<1		1.06	0.248		0.020	<0.02			<0.06	<0.01	0.010			1.330	<2	<2	
TR082521-OC	8/25/2021	11:11	TR00000	Trinity River near mouth (Baseline)	Yurok	0.5	P									0.268														<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, Chlorophyl-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
TR091521-OC	9/15/2021	11:28	TR00000	Trinity River near mouth (Baseline)	Yurok	0.5	P	18.58	8.33	148.6	10.03	6.32	4.47		1.4	<0.1899		0.010	<0.02			0.270	<0.01	<0.01			0.700	<2	<2	
TR092921-OC	9/29/2021	10:39	TR00000	Trinity River near mouth (Baseline)	Yurok	0.5	P									<0.1899														<0.15
TR101321-OC	10/13/2021	10:14	TR00000	Trinity River near mouth (Baseline)	Yurok	0.5	P	13.26	8.08	159.7	10.68	2.03	1.8					<0.01	<0.02			0.230	0.010	0.010			4.580	<2	<2	
TR102721-OC	10/27/2021	10:28	TR00000	Trinity River near mouth (Baseline)	Yurok	0.5	P																							<0.15
TR110921-OC	11/9/2021	11:25	TR00000	Trinity River near mouth (Baseline)	Yurok	0.5	P	9.46	7.92	157.6	10.94	<1	<1		2.04			<0.01	<0.02			0.148	<0.01	<0.01			5.310	2.700	<2	
TR120821-OC	12/8/2021	11:18	TR00000	Trinity River near mouth (Baseline)	Yurok	0.5	P	9.13	8.08	184	11.56	1.42	<1		2.11			<0.01	<0.02			0.497	<0.01	<0.01			4.290	<2	<2	

Appendix C. Selected Results of 2021 Baseline Phytoplankton Analysis

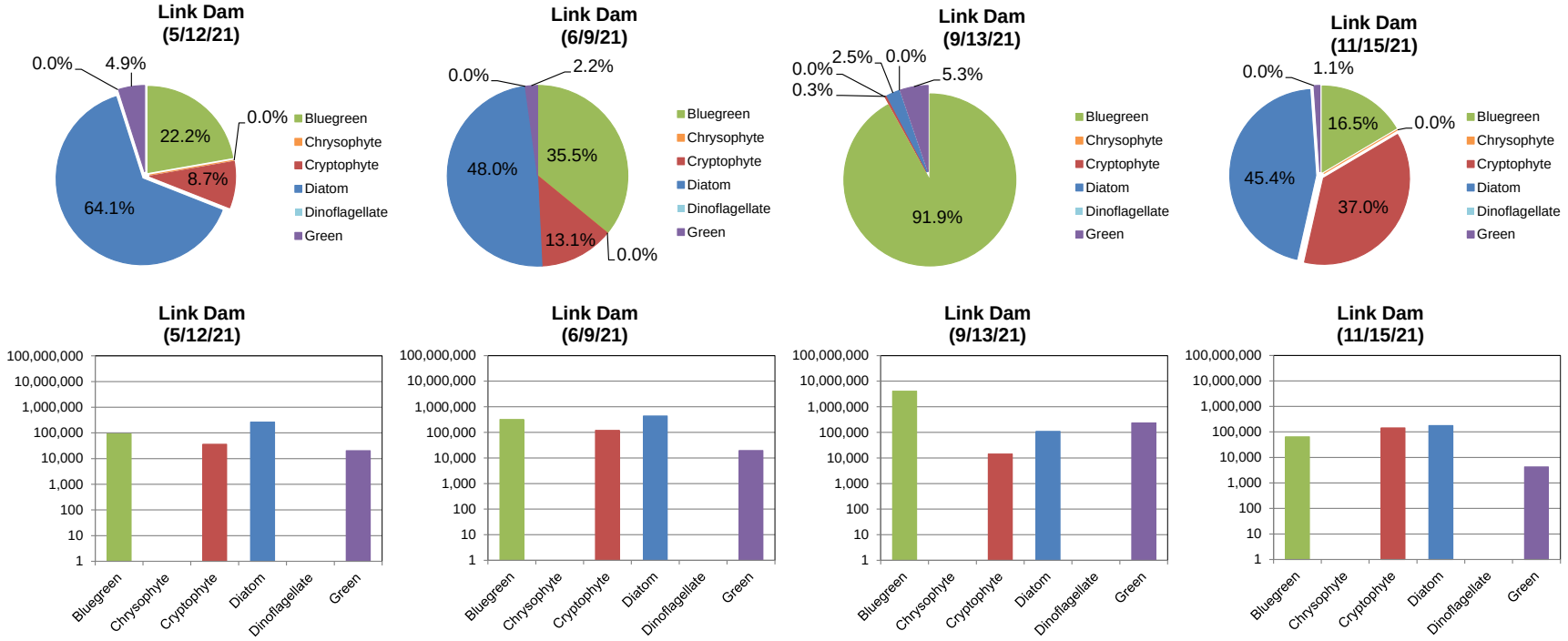

Figure C-1. Phytoplankton species percent biovolume (top) and biovolume by taxa (bottom) at Link Dam (RM 254.44; Baseline) for samples collected as part of Baseline sampling on May 12, 2021, June 9, 2021, September 13, 2021, and November 15, 2021. Note: y-axis in logarithmic scale.

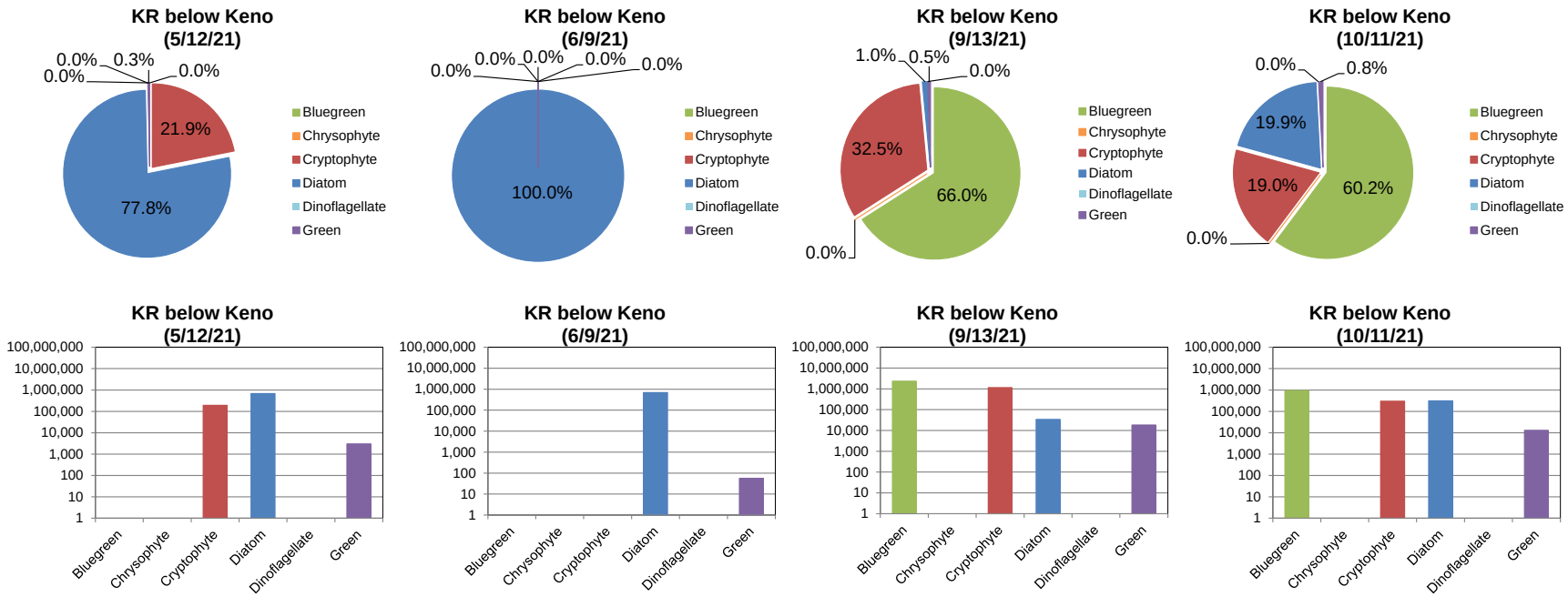

Figure C-2. Phytoplankton species percent biovolume (top) and biovolume by taxa (bottom) at Klamath River below Keno Dam near a USGS gage (RM 233.4; Baseline) for samples collected as part of Baseline sampling on May 12, 2021, June 9, 2021, September 13, 2021, and October 11, 2021. Note: y-axis in logarithmic scale.

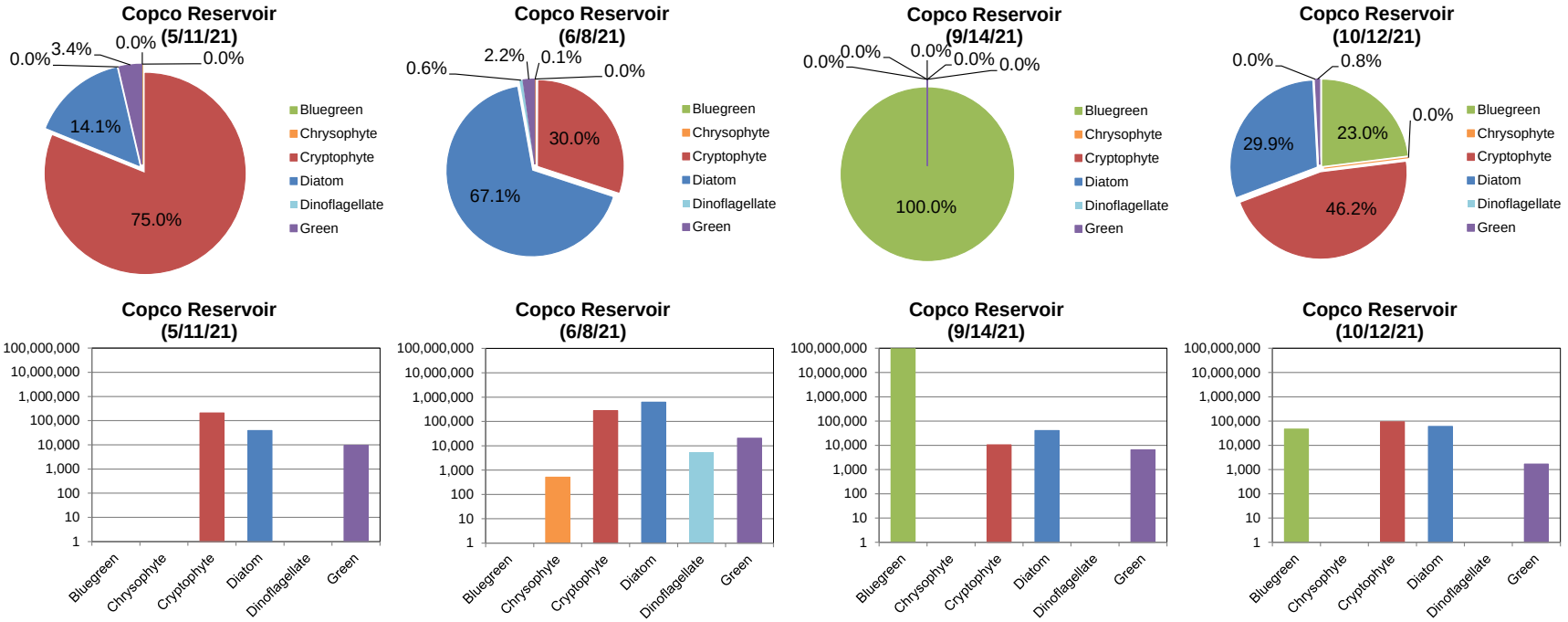

Figure C-3. Phytoplankton species percent biovolume (top) and biovolume by taxa (bottom) at Copco Reservoir (RM 198.74; Baseline) near dam for samples collected as part of Baseline sampling on May 11, 2021, June 8, 2021, September 14, 2021, and October 12, 2021. Note: y-axis in logarithmic scale.

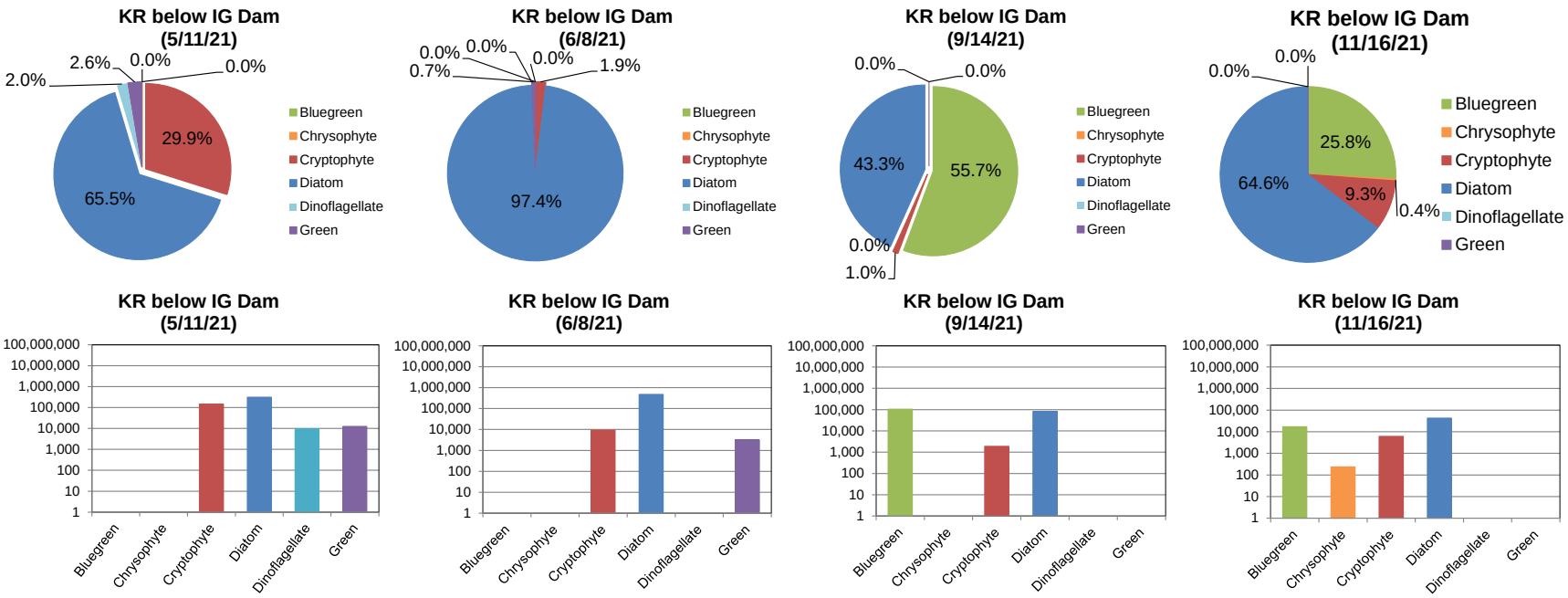

Figure C-4. Phytoplankton species percent biovolume (top) and biovolume by taxa (bottom) at Klamath River below Iron Gate Dam (RM 189.73; Baseline) for samples collected as part of Baseline sampling on May 11, 2021, June 8, 2021, September 14, 2021, and November 16, 2021. Note: y-axis in logarithmic scale.

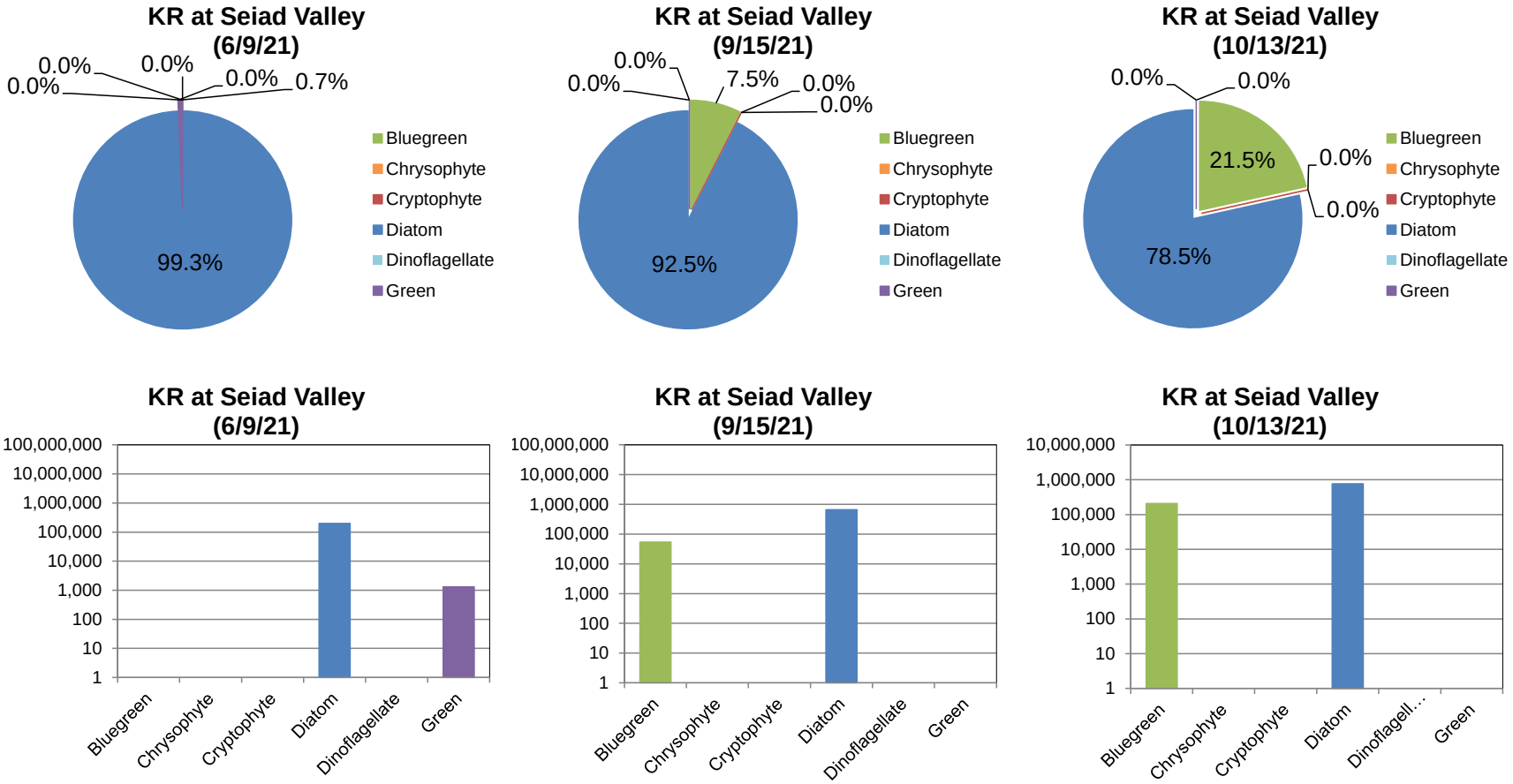

Figure C-5. Phytoplankton species percent biovolume (top) and biovolume by taxa (bottom) at Klamath River below Seiad (RM 128.5; Baseline) for samples collected as part of Baseline sampling on June 9, 2021, September 15, 2021, and October 13, 2021. Note: y-axis in logarithmic scale.

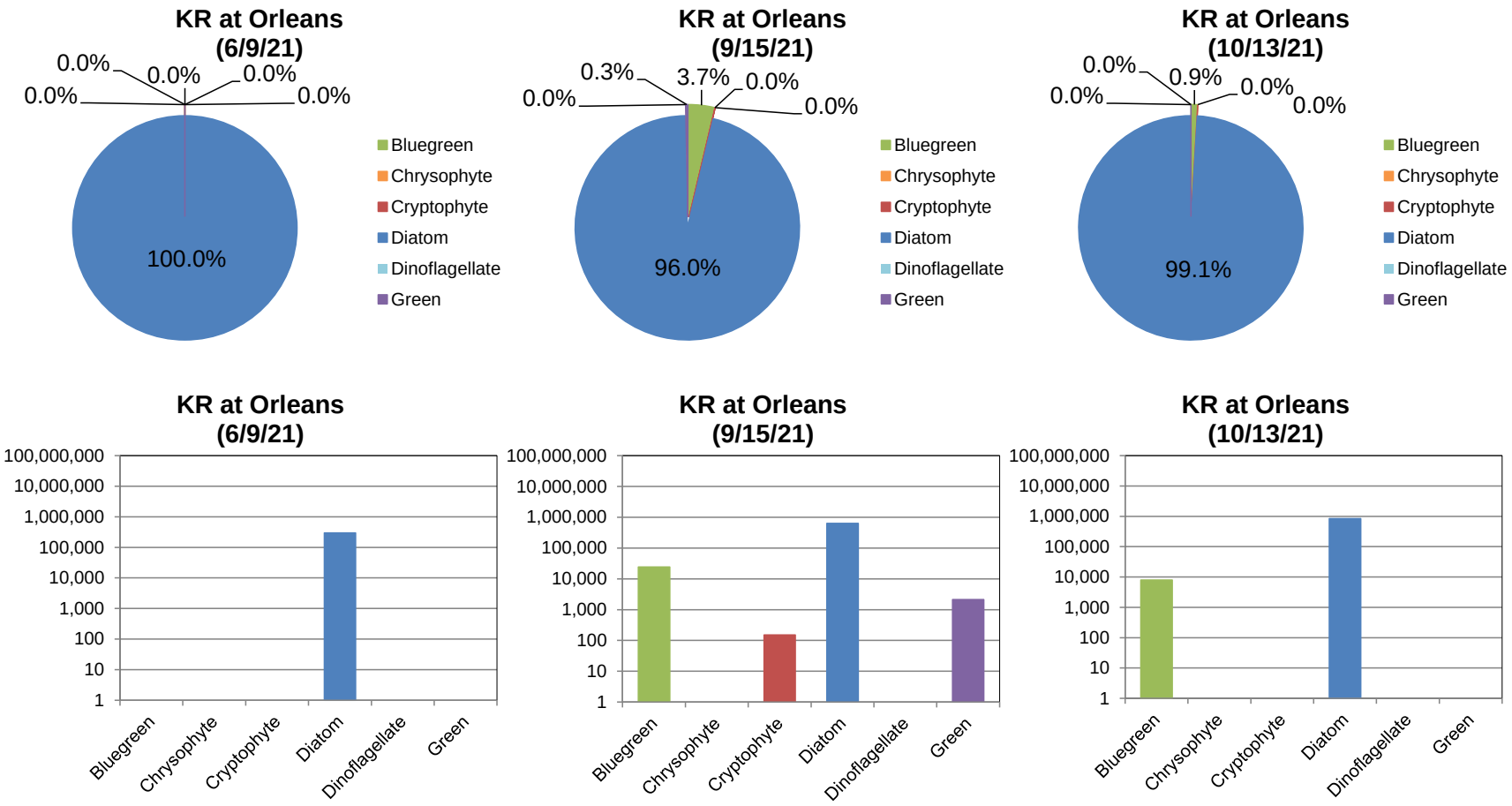

Figure C-6. Phytoplankton species percent biovolume (top) and biovolume by taxa (bottom) at Klamath River at Orleans (USGS) (RM 59.1; Baseline) for samples collected as part of Baseline sampling on June 9, 2021, September 15, 2021, and October 13, 2021. Note: y-axis in logarithmic scale.

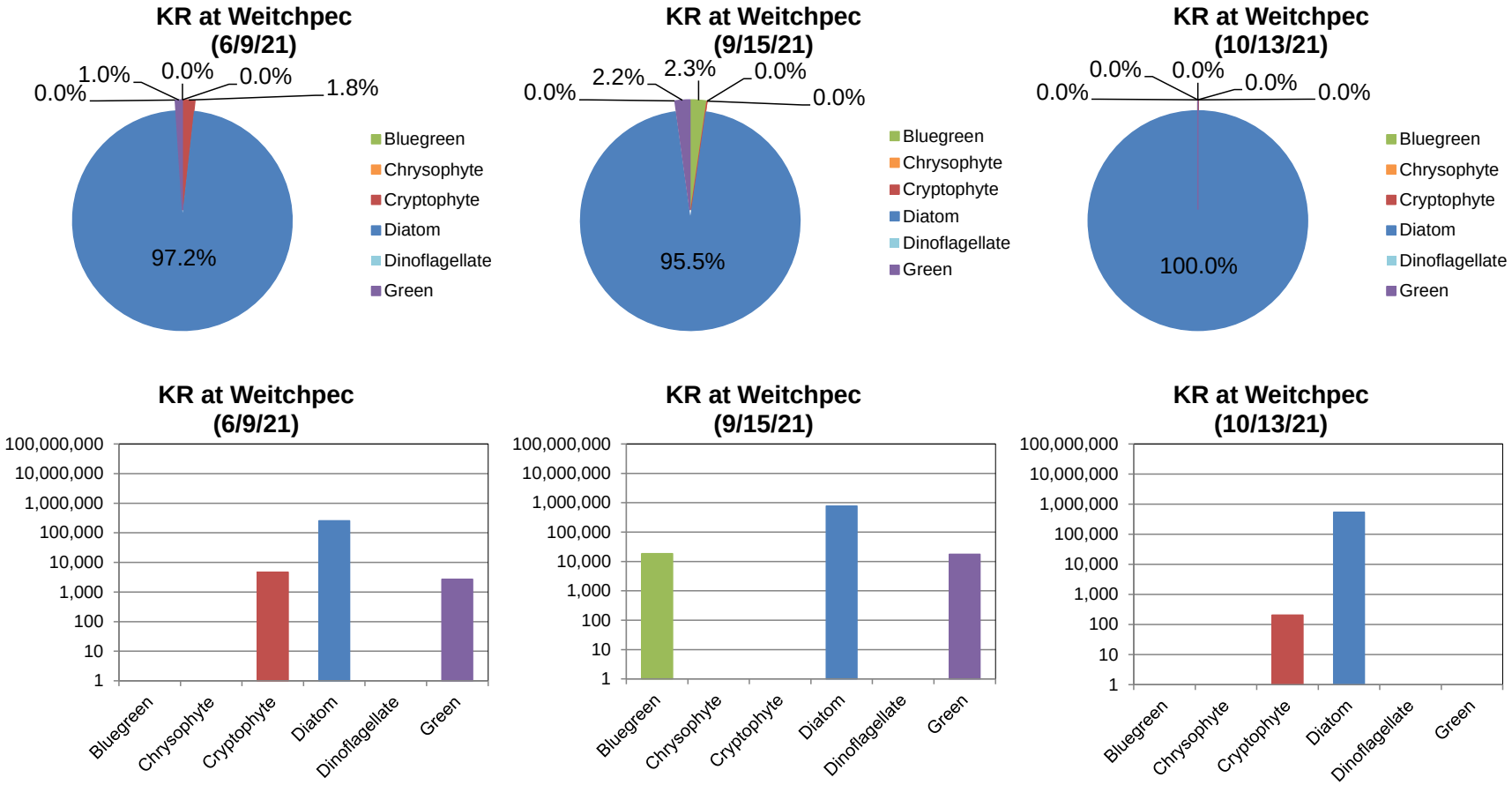

Figure C-7. Phytoplankton species percent biovolume (top) and biovolume by taxa (bottom) at Klamath River at Weitchpec (RM 43.5; Baseline) for samples collected as part of Baseline sampling on June 9, 2021, September 15, 2021, and October 13, 2021. Note: y-axis in logarithmic scale.

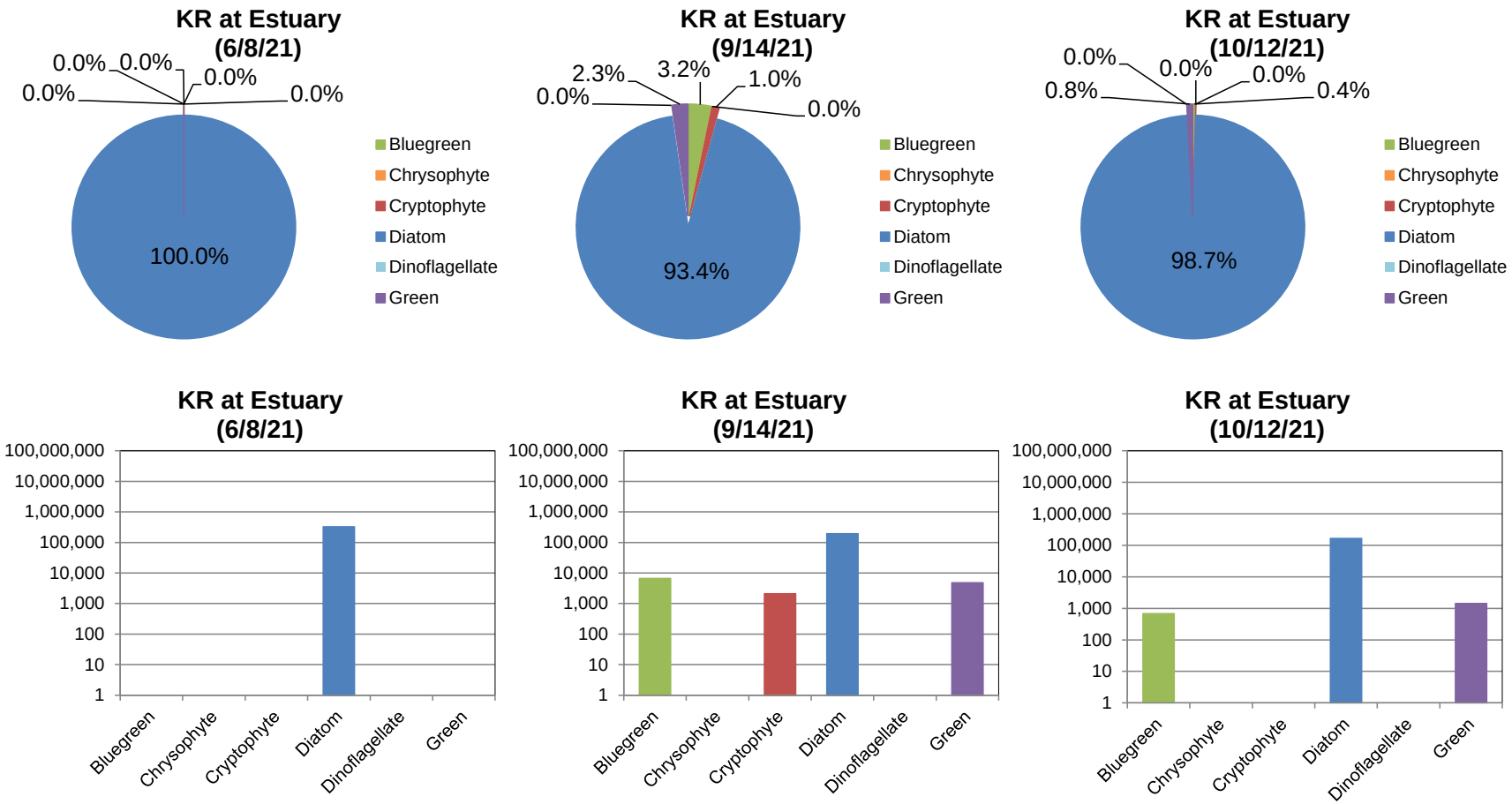

Figure C-8. Phytoplankton species percent biovolume (top) and biovolume by taxa (bottom) at Klamath River Estuary (RM 0.5; Baseline) for samples collected as part of Baseline sampling on June 8, 2021, September 14, 2021, and October 12, 2021. Note: y-axis in logarithmic scale.

Appendix D. 2021 Public Health Data

Table D-1. 2021 Public Health Dataset. 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. Phytoplankton (algae) species data was not collected for public health in 2021.

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Microcystin µg/l
UKEP2101	5/17/2021	10:27	UKEP	Upper Klamath Lake at Eagle Ridge County Park (Public Health)	ODEQ	0.1	<0.15
UKEP2102	6/1/2021	10:00	UKEP	Upper Klamath Lake at Eagle Ridge County Park (Public Health)	ODEQ	0.1	2.6
UKEP2103	6/14/2021	10:35	UKEP	Upper Klamath Lake at Eagle Ridge County Park (Public Health)	ODEQ	0.1	0.44
UKEP2104	7/12/2021	10:19	UKEP	Upper Klamath Lake at Eagle Ridge County Park (Public Health)	ODEQ	0.1	0.34
UKEP2105	7/26/2021	10:10	UKEP	Upper Klamath Lake at Eagle Ridge County Park (Public Health)	ODEQ	0.1	77
UKEP2106	8/9/2021	10:32	UKEP	Upper Klamath Lake at Eagle Ridge County Park (Public Health)	ODEQ	0.1	2.8
UKEP2107	8/23/2021	10:14	UKEP	Upper Klamath Lake at Eagle Ridge County Park (Public Health)	ODEQ	0.1	9.2
UKEP2108	9/7/2021	10:27	UKEP	Upper Klamath Lake at Eagle Ridge County Park (Public Health)	ODEQ	0.1	910
UKEP2109	9/21/2021	10:10	UKEP	Upper Klamath Lake at Eagle Ridge County Park (Public Health)	ODEQ	0.1	120
UKEP21010	10/10/2021	9:44	UKEP	Upper Klamath Lake at Eagle Ridge County Park (Public Health)	ODEQ	0.1	0.17
UKEP21011	10/19/2021	10:30	UKEP	Upper Klamath Lake at Eagle Ridge County Park (Public Health)	ODEQ	0.1	1.3
UKEP21012	11/8/2021	11:12	UKEP	Upper Klamath Lake at Eagle Ridge County Park (Public Health)	ODEQ	0.1	0.14
UKEP21013	11/15/2021	10:46	UKEP	Upper Klamath Lake at Eagle Ridge County Park (Public Health)	ODEQ	0.1	<0.15
UKHP2101	5/17/2021	10:52	UKHP	Upper Klamath Lake at Howard's Bay Park (Public Health)	ODEQ	0.1	<0.15
UKHP2102	6/1/2021	10:37	UKHP	Upper Klamath Lake at Howard's Bay Park (Public Health)	ODEQ	0.1	0.44
UKHP2103	6/14/2021	11:10	UKHP	Upper Klamath Lake at Howard's Bay Park (Public Health)	ODEQ	0.1	0.1
UKHP2104	7/12/2021	10:46	UKHP	Upper Klamath Lake at Howard's Bay Park (Public Health)	ODEQ	0.1	1.5
UKHP2105	7/26/2021	10:44	UKHP	Upper Klamath Lake at Howard's Bay Park (Public Health)	ODEQ	0.1	0.5
UKHP2106	8/9/2021	11:21	UKHP	Upper Klamath Lake at Howard's Bay Park (Public Health)	ODEQ	0.1	0.19
UKHP2107	8/23/2021	10:41	UKHP	Upper Klamath Lake at Howard's Bay Park (Public Health)	ODEQ	0.1	250
UKHP2108	9/7/2021	11:01	UKHP	Upper Klamath Lake at Howard's Bay Park (Public Health)	ODEQ	0.1	440
UKHP2109	9/21/2021	10:37	UKHP	Upper Klamath Lake at Howard's Bay Park (Public Health)	ODEQ	0.1	87
UKHP21010	10/10/2021	10:04	UKHP	Upper Klamath Lake at Howard's Bay Park (Public Health)	ODEQ	0.1	81
UKHP21011	10/19/2021	10:53	UKHP	Upper Klamath Lake at Howard's Bay Park (Public Health)	ODEQ	0.1	0.33
UKHP21012	11/8/2021	11:35	UKHP	Upper Klamath Lake at Howard's Bay Park (Public Health)	ODEQ	0.1	7.1
UKHP21013	11/15/2021	11:11	UKHP	Upper Klamath Lake at Howard's Bay Park (Public Health)	ODEQ	0.1	<0.15
UKMP2101	5/17/2021	11:09	UKMP	Upper Klamath Lake at Moore Park (Public Health)	ODEQ	0.1	<0.15
UKMP2102	6/1/2021	10:53	UKMP	Upper Klamath Lake at Moore Park (Public Health)	ODEQ	0.1	<0.15

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Microcystin µg/l
UKMP2103	6/14/2021	11:28	UKMP	Upper Klamath Lake at Moore Park (Public Health)	ODEQ	0.1	<0.15
UKMP2104	7/12/2021	11:04	UKMP	Upper Klamath Lake at Moore Park (Public Health)	ODEQ	0.1	1
UKMP2105	7/26/2021	11:02	UKMP	Upper Klamath Lake at Moore Park (Public Health)	ODEQ	0.1	0.25
UKMP2106	8/9/2021	11:38	UKMP	Upper Klamath Lake at Moore Park (Public Health)	ODEQ	0.1	0.92
UKMP2107	8/23/2021	10:58	UKMP	Upper Klamath Lake at Moore Park (Public Health)	ODEQ	0.1	4
UKMP2108	9/7/2021	11:18	UKMP	Upper Klamath Lake at Moore Park (Public Health)	ODEQ	0.1	24
UKMP2109	9/21/2021	10:54	UKMP	Upper Klamath Lake at Moore Park (Public Health)	ODEQ	0.1	11
UKMP21010	10/10/2021	10:26	UKMP	Upper Klamath Lake at Moore Park (Public Health)	ODEQ	0.1	0.94
UKMP21011	10/19/2021	11:10	UKMP	Upper Klamath Lake at Moore Park (Public Health)	ODEQ	0.1	0.12
UKMP21012	11/8/2021	11:53	UKMP	Upper Klamath Lake at Moore Park (Public Health)	ODEQ	0.1	<0.15
UKMP21013	11/15/2021	11:30	UKMP	Upper Klamath Lake at Moore Park (Public Health)	ODEQ	0.1	<0.15
KEKP2101	5/17/2021	9:25	KEKP	Keno Reservoir at Keno Park (Public Health)	ODEQ	0.1	<0.15
KEKP2102	6/1/2021	9:11	KEKP	Keno Reservoir at Keno Park (Public Health)	ODEQ	0.1	<0.15
KEKP2103	6/14/2021	9:46	KEKP	Keno Reservoir at Keno Park (Public Health)	ODEQ	0.1	0.13
KEKP2104	7/12/2021	9:26	KEKP	Keno Reservoir at Keno Park (Public Health)	ODEQ	0.1	0.22
KEKP2105	7/26/2021	9:19	KEKP	Keno Reservoir at Keno Park (Public Health)	ODEQ	0.1	<0.15
KEKP2106	8/9/2021	9:38	KEKP	Keno Reservoir at Keno Park (Public Health)	ODEQ	0.1	<0.15
KEKP2107	8/23/2021	9:15	KEKP	Keno Reservoir at Keno Park (Public Health)	ODEQ	0.1	0.17
KEKP2108	9/7/2021	9:34	KEKP	Keno Reservoir at Keno Park (Public Health)	ODEQ	0.1	1.7
KEKP2109	9/21/2021	9:14	KEKP	Keno Reservoir at Keno Park (Public Health)	ODEQ	0.1	6.5
KEKP21010	10/10/2021	9:00	KEKP	Keno Reservoir at Keno Park (Public Health)	ODEQ	0.1	0.38
KEKP21011	10/19/2021	9:18	KEKP	Keno Reservoir at Keno Park (Public Health)	ODEQ	0.1	0.11
KEKP21012	11/8/2021	10:03	KEKP	Keno Reservoir at Keno Park (Public Health)	ODEQ	0.1	<0.15
KEKP21013	11/15/2021	9:36	KEKP	Keno Reservoir at Keno Park (Public Health)	ODEQ	0.1	<0.15
BRTC2101	5/17/2021	8:45	BRTC	J.C. Boyle Reservoir at Topsy Campground (Public Health)	ODEQ	0.1	<0.15
BRTC2102	6/1/2021	8:51	BRTC	J.C. Boyle Reservoir at Topsy Campground (Public Health)	ODEQ	0.1	<0.15
BRTC2103	6/14/2021	9:27	BRTC	J.C. Boyle Reservoir at Topsy Campground (Public Health)	ODEQ	0.1	<0.15
BRTC2104	7/12/2021	9:08	BRTC	J.C. Boyle Reservoir at Topsy Campground (Public Health)	ODEQ	0.1	0.19
BRTC2105	7/26/2021	9:00	BRTC	J.C. Boyle Reservoir at Topsy Campground (Public Health)	ODEQ	0.1	<0.15
BRTC2106	8/9/2021	9:13	BRTC	J.C. Boyle Reservoir at Topsy Campground (Public Health)	ODEQ	0.1	<0.15
BRTC2107	8/23/2021	8:55	BRTC	J.C. Boyle Reservoir at Topsy Campground (Public Health)	ODEQ	0.1	0.12

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Microcystin µg/l
BRTC2108	9/7/2021	9:13	BRTC	J.C. Boyle Reservoir at Topsy Campground (Public Health)	ODEQ	0.1	18
BRTC2109	9/21/2021	8:55	BRTC	J.C. Boyle Reservoir at Topsy Campground (Public Health)	ODEQ	0.1	0.72
BRTC21010	10/10/2021	8:42	BRTC	J.C. Boyle Reservoir at Topsy Campground (Public Health)	ODEQ	0.1	0.6
BRTC21011	10/19/2021	8:44	BRTC	J.C. Boyle Reservoir at Topsy Campground (Public Health)	ODEQ	0.1	0.14
BRTC21012	11/8/2021	9:25	BRTC	J.C. Boyle Reservoir at Topsy Campground (Public Health)	ODEQ	0.1	<0.15
BRTC21013	11/15/2021	9:00	BRTC	J.C. Boyle Reservoir at Topsy Campground (Public Health)	ODEQ	0.1	<0.15
KR21801	5/25/2021	9:05	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	<0.15
KR21806	6/8/2021	13:15	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	<0.15
KR21811	6/29/2021	7:05	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	0.86
KR21816	7/13/2021	9:50	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	30
KR21821	7/27/2021	7:00	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	37
KR21831	8/24/2021	8:50	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	30
KR21836	9/14/2021	13:00	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	6.2
KR21841	9/28/2021	8:15	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	2.8
KR21846	10/12/2021	14:05	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	<0.15
KR21851	10/26/2021	7:55	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	<0.15
KR21856	11/14/2021	15:40	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	<0.15
KR21861	12/14/2021	15:15	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	<0.15
KR21800	5/25/2021	9:55	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	<0.15
KR21805	6/8/2021	17:25	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	<0.15
KR21810	6/29/2021	8:40	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	5.9
KR21815	7/13/2021	14:10	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	1.9
KR21820	7/27/2021	8:25	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	170
KR21830	8/24/2021	7:10	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	900
KR21835	9/14/2021	17:00	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	4.5
KR21840	9/28/2021	7:30	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	0.21
KR21845	10/12/2021	7:40	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	<0.15
KR21850	10/26/2021	9:00	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	<0.15
KR21855	11/14/2021	14:30	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	<0.15
KR21860	12/14/2021	8:55	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	<0.15
KR21803	5/25/2021	7:45	IGJW	Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	PacifiCorp	0.1	<0.15

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Microcystin µg/l
KR21808	6/8/2021	14:45	IGJW	Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	PacifiCorp	0.1	<0.15
KR21813	6/29/2021	6:15	IGJW	Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	PacifiCorp	0.1	0.54
KR21818	7/13/2021	11:30	IGJW	Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	PacifiCorp	0.1	0.38
KR21823	7/27/2021	6:10	IGJW	Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	PacifiCorp	0.1	0.86
KR21828	8/10/2021	6:50	IGJW	Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	PacifiCorp	0.1	0.26
KR21833	8/24/2021	8:10	IGJW	Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	PacifiCorp	0.1	0.57
KR21838	9/14/2021	14:25	IGJW	Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	PacifiCorp	0.1	0.19
KR21843	9/28/2021	9:00	IGJW	Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	PacifiCorp	0.1	2.5
KR21848	10/12/2021	11:45	IGJW	Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	PacifiCorp	0.1	0.16
KR21853	10/26/2021	6:55	IGJW	Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	PacifiCorp	0.1	<0.15
KR21858	11/14/2021	16:40	IGJW	Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	PacifiCorp	0.1	<0.15
KR21863	12/14/2021	16:30	IGJW	Iron Gate Reservoir at Jay Williams Boat Ramp (Public Health)	PacifiCorp	0.1	<0.15
KR21802	5/25/2021	8:25	IGCC	Iron Gate Reservoir at Camp Creek (Public Health)	PacifiCorp	0.1	<0.15
KR21807	6/8/2021	14:30	IGCC	Iron Gate Reservoir at Camp Creek (Public Health)	PacifiCorp	0.1	<0.15
KR21812	6/29/2021	6:30	IGCC	Iron Gate Reservoir at Camp Creek (Public Health)	PacifiCorp	0.1	0.18
KR21817	7/13/2021	11:20	IGCC	Iron Gate Reservoir at Camp Creek (Public Health)	PacifiCorp	0.1	0.9
KR21822	7/27/2021	6:30	IGCC	Iron Gate Reservoir at Camp Creek (Public Health)	PacifiCorp	0.1	0.45
KR21827	8/10/2021	6:35	IGCC	Iron Gate Reservoir at Camp Creek (Public Health)	PacifiCorp	0.1	0.3
KR21832	8/24/2021	8:20	IGCC	Iron Gate Reservoir at Camp Creek (Public Health)	PacifiCorp	0.1	0.34
KR21837	9/14/2021	14:10	IGCC	Iron Gate Reservoir at Camp Creek (Public Health)	PacifiCorp	0.1	<0.15
KR21842	9/28/2021	8:40	IGCC	Iron Gate Reservoir at Camp Creek (Public Health)	PacifiCorp	0.1	0.43
KR21847	10/12/2021	15:15	IGCC	Iron Gate Reservoir at Camp Creek (Public Health)	PacifiCorp	0.1	<0.15
KR21852	10/26/2021	7:15	IGCC	Iron Gate Reservoir at Camp Creek (Public Health)	PacifiCorp	0.1	<0.15
KR21857	11/14/2021	16:15	IGCC	Iron Gate Reservoir at Camp Creek (Public Health)	PacifiCorp	0.1	<0.15
KR21862	12/14/2021	16:15	IGCC	Iron Gate Reservoir at Camp Creek (Public Health)	PacifiCorp	0.1	<0.15
KR21804	5/25/2021	10:35	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	PacifiCorp	0.1	<0.15
KR21809	6/8/2021	15:10	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	PacifiCorp	0.1	<0.15
KR21814	6/29/2021	9:25	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	PacifiCorp	0.1	<0.15
KR21819	7/13/2021	11:55	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	PacifiCorp	0.1	0.15
KR21824	7/27/2021	9:05	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	PacifiCorp	0.1	0.26
KR21829	8/10/2021	7:05	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	PacifiCorp	0.1	0.32

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Microcystin µg/l
KR21834	8/24/2021	7:50	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	PacifiCorp	0.1	0.29
KR21839	9/14/2021	14:45	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	PacifiCorp	0.1	0.16
KR21844	9/28/2021	9:15	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	PacifiCorp	0.1	<0.15
KR21849	10/12/2021	15:40	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	PacifiCorp	0.1	<0.15
KR21854	10/26/2021	9:45	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	PacifiCorp	0.1	<0.15
KR21859	11/14/2021	17:15	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	PacifiCorp	0.1	<0.15
KR21864	12/14/2021	16:50	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	PacifiCorp	0.1	<0.15
IB061621-SG	6/16/2021	12:25	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	<0.15
IB063021-SG	6/30/2021	10:52	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	<0.15
IB070721-SG	7/7/2021	10:24	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	<0.15
IB071421-SG	7/14/2021	10:22	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	0.3
IB072121-SG	7/21/2021	10:16	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	0.16
IB072821-SG	7/28/2021	11:38	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	0.16
IB080421-SG	8/4/2021	10:42	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	0.18
IB081121-SG	8/11/2021	11:33	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	0.29
IB081821-SG	8/18/2021	10:42	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	0.18
IB082521-SG	8/25/2021	12:29	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	0.68
IB090121-SG	9/1/2021	10:48	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	0.22
IB090721-SG	9/7/2021	9:55	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	0.15
IB091521-SG	9/15/2021	11:43	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	<0.15
IB092221-SG	9/22/2021	10:16	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	<0.15
IB092921-SG	9/29/2021	12:06	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	<0.15
IB100621-SG	10/6/2021	10:47	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	0.21
IB101321-SG	10/13/2021	11:06	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	0.18
IB102021-SG	10/20/2021	9:24	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	<0.15
BB061621-SG	6/16/2021	11:24	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	<0.15
BB063021-SG	6/30/2021	10:09	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	<0.15
BB070721-SG	7/7/2021	10:25	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	<0.15
BB071421-SG	7/14/2021	9:38	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	0.19
BB072121-SG	7/21/2021	9:24	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	<0.15
BB072821-SG	7/28/2021	10:16	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	<0.15

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Microcystin µg/l
BB080421-SG	8/4/2021	10:00	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	<0.15
BB081121-SG	8/11/2021	10:32	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	0.19
BB081821-SG	8/18/2021	9:42	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	0.17
BB082521-SG	8/25/2021	11:03	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	<0.15
BB090121-SG	9/1/2021	10:02	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	<0.15
BB090721-SG	9/7/2021	9:11	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	<0.15
BB091521-SG	9/15/2021	10:36	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	<0.15
BB092221-SG	9/22/2021	9:39	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	<0.15
BB092921-SG	9/29/2021	10:43	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	<0.15
BB100621-SG	10/6/2021	10:00	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	<0.15
BB101321-SG	10/13/2021	10:05	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	0.18
BB102021-SG	10/20/2021	9:36	KRBB	Klamath River at Brown Bear River Access (RM 150.00; Public Health)	Karuk	0.1	<0.15
SV061621-SG	6/16/2021	10:43	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	<0.15
SV063021-SG	6/30/2021	9:38	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	<0.15
SV071421-SG	7/14/2021	9:07	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	0.18
SV072121-SG	7/21/2021	8:52	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	<0.15
SV072821-SG	7/28/2021	9:05	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	<0.15
SV080421-SG	8/4/2021	9:22	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	<0.15
SV081121-SG	8/11/2021	9:19	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	0.18
SV081821-SG	8/18/2021	8:58	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	0.16
SV082521-SG	8/25/2021	9:55	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	<0.15
SV090121-SG	9/1/2021	9:20	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	<0.15
SV090721-SG	9/7/2021	8:39	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	0.17
SV091521-SG	9/15/2021	9:19	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	<0.15
SV092221-SG	9/22/2021	9:08	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	0.15
SV092921-SG	9/29/2021	9:33	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	<0.15
SV100621-SG	10/6/2021	9:21	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	<0.15
SV101321-SG	10/13/2021	8:58	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	0.18
SV102021-SG	10/20/2021	9:02	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	<0.15
SV070721-SG	7/7/2021	9:15	KRSV	Klamath River below Seiad (RM 128.5; Public Health)	Karuk	0.1	<0.15
HC061621-SG	6/16/2021	9:05	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	<0.15

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Microcystin µg/l
HC063021-SG	6/30/2021	8:56	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	<0.15
HC071421-SG	7/14/2021	8:16	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	0.17
HC072121-SG	7/21/2021	7:52	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	<0.15
HC072821-SG	7/28/2021	8:06	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	0.21
HC080421-SG	8/4/2021	8:03	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	0.18
HC081121-SG	8/11/2021	8:17	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	0.24
HC081821-SG	8/18/2021	8:04	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	0.16
HC082521-SG	8/25/2021	9:11	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	<0.15
HC090121-SG	9/1/2021	8:16	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	0.15
HC090721-SG	9/7/2021	8:03	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	0.22
HC091521-SG	9/15/2021	8:29	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	<0.15
HC092221-SG	9/22/2021	8:20	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	0.16
HC092921-SG	9/29/2021	8:52	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	<0.15
HC100621-SG	10/6/2021	8:35	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	0.17
HC101321-SG	10/13/2021	8:03	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	<0.15
HC102021-SG	10/20/2021	8:12	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	<0.15
HC070721-SG	7/7/2021	8:34	KRHC	Klamath River below Happy Camp (RM 101.3; Public Health)	Karuk	0.1	<0.15
OR061621-SG	6/16/2021	7:45	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	<0.15
OR063021-SG	6/30/2021	8:05	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	<0.15
OR071421-SG	7/14/2021	7:20	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	0.18
OR072121-SG	7/21/2021	6:49	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	<0.15
OR072821-SG	7/28/2021	6:38	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	<0.15
OR080421-SG	8/4/2021	7:00	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	<0.15
OR081121-SG	8/11/2021	6:53	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	0.21
OR081821-SG	8/18/2021	7:08	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	<0.15
OR082521-SG	8/25/2021	7:42	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	0.15
OR090121-SG	9/1/2021	7:03	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	<0.15
OR090721-SG	9/7/2021	6:55	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	0.22
OR091521-SG	9/15/2021	7:11	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	<0.15
OR092221-SG	9/22/2021	7:23	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	<0.15
OR092921-SG	9/29/2021	7:27	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	<0.15

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Microcystin µg/l
OR100621-SG	10/6/2021	7:45	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	<0.15
OR101321-SG	10/13/2021	6:45	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	<0.15
OR102021-SG	10/20/2021	7:21	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	<0.15
OR070721-SG	7/7/2021	7:10	KROR	Klamath River at Orleans (USGS) (RM 59.1; Public Health)	Karuk	0.1	<0.15
WE060921-SG	6/9/2021	11:03	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	<0.15
WE062321-SG	6/23/2021	10:26	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	<0.15
WE071421-SG	7/14/2021	11:12	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	<0.15
WE072821-SG	7/28/2021	10:28	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	<0.15
WE081121-SG	8/11/2021	10:34	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	<0.15
WE082521-SG	8/25/2021	11:33	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	<0.15
WE091521-SG	9/15/2021	11:48	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	0.15
WE092921-SG	9/29/2021	10:59	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	<0.15
WE101321-SG	10/13/2021	10:36	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	<0.15
WE102721-SG	10/27/2021	10:44	KRWE	Klamath River at Weitchpec (RM 43.5; Public Health)	Yurok	0.1	<0.15
TG060821-SG	6/8/2021	12:42	KRTG	Klamath River near Klamath (RM 6.0; Public Health)	Yurok	0.1	<0.15
TG062221-SG	6/22/2021	12:24	KRTG	Klamath River near Klamath (RM 6.0; Public Health)	Yurok	0.1	<0.15
TG071321-SG	7/13/2021	13:36	KRTG	Klamath River near Klamath (RM 6.0; Public Health)	Yurok	0.1	<0.15
TG072721-SG	7/27/2021	11:23	KRTG	Klamath River near Klamath (RM 6.0; Public Health)	Yurok	0.1	<0.15
TG081021-SG	8/10/2021	11:25	KRTG	Klamath River near Klamath (RM 6.0; Public Health)	Yurok	0.1	<0.15
TG082421-SG	8/24/2021	10:58	KRTG	Klamath River near Klamath (RM 6.0; Public Health)	Yurok	0.1	<0.15
TG091421-SG	9/14/2021	11:20	KRTG	Klamath River near Klamath (RM 6.0; Public Health)	Yurok	0.1	<0.15
TG092821-SG	9/28/2021	11:12	KRTG	Klamath River near Klamath (RM 6.0; Public Health)	Yurok	0.1	<0.15
TG101221-SG	10/12/2021	11:52	KRTG	Klamath River near Klamath (RM 6.0; Public Health)	Yurok	0.1	<0.15
TG102621-SG	10/26/2021	11:01	KRTG	Klamath River near Klamath (RM 6.0; Public Health)	Yurok	0.1	<0.15
SS060821-SG	6/8/2021	13:17	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	<0.15
SS062221-SG	6/22/2021	12:01	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	<0.15
SS071321-SG	7/13/2021	13:08	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	<0.15
SS071421-OC	7/14/2021	13:08	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.5	<0.15
SS072721-SG	7/27/2021	11:53	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	<0.15
SS081021-SG	8/10/2021	10:48	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	0.19
SS082421-SG	8/24/2021	10:29	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	<0.15

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Microcystin µg/l
SS091421-SG	9/14/2021	12:08	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	<0.15
SS092821-SG	9/28/2021	10:33	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	<0.15
SS101221-SG	10/12/2021	12:41	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	<0.15
SS102621-SG	10/26/2021	10:20	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	<0.15

Table D-2. Mass spectroscopy data for the 2021 samples collected by the Karuk Tribe and Yurok Tribe. Results are presented in micrograms per liter (µg/l). NS = Samples not analyzed for these constituents during 2021.

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
IG062321-SG	6/23/2021	12:30	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	Karuk	0.1	GreenWater	<0.02	<0.02	<0.03	<0.09	<0.05	0.02	<0.09	<0.05	<0.02	NS	NS	<0.02
TG092821-SG	9/28/2021	11:12	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.1	GreenWater	<0.01	<0.01	<0.02	<0.03	<0.02	<0.01	<0.01	<0.005	<0.01	NS	NS	<0.09
TG092821-SG	9/28/2021	11:12	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.1	GreenWater	<0.01	<0.01	<0.02	<0.03	<0.02	<0.01	<0.01	<0.005	<0.01	NS	NS	<0.09
TG101221-SG	10/12/2021	11:52	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.1	GreenWater	<0.01	<0.01	<0.02	<0.03	<0.02	<0.01	<0.01	<0.005	<0.01	NS	NS	<0.09
LES092821-SG	9/28/2021	14:02	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.1	GreenWater	<0.01	<0.01	<0.02	<0.03	<0.02	<0.01	<0.01	<0.005	<0.01	NS	NS	<0.09
LES101221-SG	10/12/2021	11:15	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.1	GreenWater	<0.01	<0.01	<0.02	<0.03	<0.02	<0.01	<0.01	<0.005	<0.01	NS	NS	<0.09
SS082421-SG	8/24/2021	10:29	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	GreenWater	<0.01	<0.01	<0.02	<0.03	<0.02	<0.01	<0.01	<0.005	<0.01	NS	NS	<0.09

Table D-3. Results for anatoxin-a analysis for 2021 samples collected by PacifiCorp, the Karuk Tribe, and the Yurok Tribe.

Sample ID	Date	Standard Time	Site ID	Site Name	Agency	Depth, m	Lab	Total Anatoxin-a µg/l
KR21831	8/24/2021	9:50	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	GreenWater	<0.05
KR21861	12/14/2021	15:15	CRCC	Copco Reservoir at Copco Cove (Public Health)	PacifiCorp	0.1	GreenWater	<0.05
KR21830	8/24/2021	8:10	CRMC	Copco Reservoir at Mallard Cove (Public Health)	PacifiCorp	0.1	GreenWater	<0.05
IG072821-SG	7/28/2021	12:33	KRBI	Klamath River below Iron Gate Dam (RM 189.73; Public Health)	Karuk	0.1	GreenWater	<0.05
IB060921-SG	6/9/2021	12:00	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	GreenWater	<0.05
IB062321-SG	6/23/2021	12:05	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	GreenWater	<0.05
IB070721-SG	7/7/2021	11:24	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	GreenWater	<0.05
IB071321-SG	7/13/2021	12:26	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	GreenWater	<0.05
IB081121-SG	8/11/2021	12:35	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	GreenWater	<0.05
IB082521-SG	8/25/2021	13:29	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	GreenWater	<0.05
IB091521-SG	9/15/2021	12:43	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	GreenWater	<0.05
IB092921-SG	9/29/2021	13:06	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	GreenWater	<0.05
IB101321-SG	10/13/2021	12:06	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	GreenWater	<0.05
IB102021-SG	10/20/2021	11:24	KRIB	Klamath River at I-5 Rest Area (RM 179.20; Public Health)	Karuk	0.1	GreenWater	<0.05
WA070721-OC	7/7/2021	11:46	KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	Karuk	0.5	GreenWater	<0.05
WA081121-OC	8/11/2021	11:50	KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	Karuk	0.5	GreenWater	<0.05
WA091521-OC	9/21/2021	11:52	KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	Karuk	0.5	GreenWater	<0.05
WA101321-OC	10/13/2021	11:21	KR15626	Klamath River at Walker Bridge (RM 156.26; Baseline)	Karuk	0.5	GreenWater	<0.05
TG082421-SG	8/24/2021	10:58	KR00600	Klamath River near Klamath (RM 6.0; Baseline)	Yurok	0.1	GreenWater	<0.05
LES082421-SG	8/24/2021	10:43	KR00050	Klamath River Estuary (RM 0.5; Baseline)	Yurok	0.1	GreenWater	<0.05
SS092821-SG	9/28/2021	10:33	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	GreenWater	<0.05
SS101221-SG	10/12/2021	12:41	KRSS	Klamath River at South Slough (RM 0.1; Public Health)	Yurok	0.1	GreenWater	<0.05