



# **POINT LOMA OCEAN OUTFALL MONTHLY RECEIVING WATERS MONITORING REPORT**

## **POINT LOMA WASTEWATER TREATMENT PLANT**

NPDES Permit No. CA0107409  
SDRWQCB Order No. R9-2017-0007

## **OCTOBER 2020**

Environmental Monitoring and Technical Services  
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The City of  
**SAN DIEGO**  
Public Utilities Department

Environmental Monitoring & Technical Services Division

November 30, 2020

Mr. David W. Gibson, Executive Officer  
California Regional Water Quality Control Board  
San Diego Region  
2375 Northside Drive, Suite 100  
San Diego, CA 92108

Attention: POTW Compliance Unit

Dear Mr. Gibson:

Enclosed is the October 2020 Monthly Receiving Waters Monitoring Report for the Point Loma Ocean Outfall, Point Loma Wastewater Treatment Plant as required per Order No. R9-2017-0007, NPDES Permit No. CA0107409.

This report includes raw ocean monitoring data and summaries of water quality parameters and ocean conditions measured during the month for the Point Loma outfall region. Also included are summaries of compliance with the bacterial water-contact standards specified in the California Ocean Plan.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,



Peter S. Vroom, Ph.D.  
Deputy Director, Public Utilities Department

PV/rk

cc: U.S. Environmental Protection Agency, Region 9



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## INTRODUCTION

Monthly reports of water quality and ocean conditions for the San Diego coastal region surrounding the Point Loma Ocean Outfall are submitted to the San Diego Regional Water Quality Control Board and U.S. EPA Region 9 in accordance with Order No. R9-2017-0007, NPDES Permit No. CA0107409 for the Point Loma Wastewater Treatment Plant (PLWTP), Point Loma Ocean Outfall (PLOO). This report includes receiving waters monitoring data collected from all shore, kelp and offshore stations specified in the above order. Data for influent and effluent monitoring activities for the PLWTP are presented in separate reports.

## MATERIALS AND METHODS

### ***Shore Stations***

Water quality conditions are required to be monitored at eight shoreline stations, including D4, D5, D7, D8, D9, D10, D11 and D12, which range from the tip of the Point Loma Peninsula to west of Mission Bay (see station locations map). Over the past several years, due to increasing instability in several cliffside areas of Point Loma, City staff have been unable to safely access and sample several stations at various times. This has resulted in the following modifications:

- Station D8 was replaced by alternate station D8-A during July 2016. However, due to increasing instability, City staff have been unable to safely access and sample station D8-A since February 7, 2018. During March 2018, the City identified an alternate location for stations D8/D8-A. This new station, designated D8-B, is located about 150 feet north of D8-A.

Seawater samples are collected from the surf zone at each station on a weekly basis. These samples are subsequently transported to the City's Marine Microbiology Laboratory and analyzed for the presence of several types of fecal indicator bacteria (FIB), including total coliforms, fecal coliforms, and *Enterococcus*. Visual observations of water color and clarity, surf height, human or animal activity, and weather conditions are also recorded at the time of sample collection. Wind speed and direction are measured using a hand-held anemometer with a compass.

### ***Kelp Bed Stations***

The eight kelp stations are sampled weekly according to permit specifications to monitor water quality conditions within the Point Loma kelp forest. These stations include three sites located along the inshore edge of the kelp bed paralleling the 9-m depth contour (i.e., stations C4, C5 and C6), and five sites located near the offshore edge of the kelp bed along the 18-m depth contour (i.e., stations A1, A6, A7, C7 and C8).

Routine weekly monitoring at each of the kelp bed sites consists primarily of collecting seawater samples at discrete depths to determine concentrations of fecal indicator bacteria (i.e., total coliforms, fecal coliforms, and *Enterococcus*). Water column profiles of various physical/chemical parameters are also generated during each sampling event, and visual observations of weather and water conditions are recorded at each station.

Seawater samples at the kelp bed stations are collected using a CTD-integrated rosette sampler with Niskin bottles. Aliquots for bacteriological analyses are drawn from these bottles into sterile

sample bottles for processing at the City's Marine Microbiology Laboratory. Water column profiles of temperature, transmissivity, dissolved oxygen, pH, salinity, density, chlorophyll *a* are generated using a Sea-Bird conductivity, temperature and depth instrument (CTD), which collects these data at a rate of  $\geq 4$  scans per second. These scans are then internally averaged to create water column profiles with data readings at a rate of one per meter. Additionally, CTD profile data for each water sample depth are presented with the bacteriological data.

### ***Offshore Stations***

Offshore water quality sampling is conducted quarterly typically during the months of February, May, August and November. A total of 36 offshore stations (F01–F36) are sampled during each survey usually over a 3-day period. Three of the stations (F01–F03) are located along the 18 m depth contour, while 11 stations are located along each of the following contours: 60 m (stations F04–F14), 80 m (stations F15–F25), and 98 m (stations F26–F36). Of these 36 stations, 15 (F01–F03, F06–F14, F18–F20) are located within State jurisdictional waters (i.e., within 3 nautical miles of shore) and are subject to the California Ocean Plan's compliance standards. Monitoring at all offshore sites includes measurements of *Enterococcus* bacteria, water temperature, salinity, density, dissolved oxygen, pH, chlorophyll *a*, transmissivity, chromomorphic dissolved organic matter (CDOM), and visual observations of weather and water conditions.

Seawater samples for bacteriological analyses at the offshore stations are collected using a CTD-integrated rosette sampler with Niskin bottles. Profiles of the various physical/chemical parameters (listed above) are taken using a Sea-Bird CTD. Additionally, data for depths closest to those at which bacteriological samples were collected are extracted from the CTD profiles and presented with the bacteriological data.

### ***Bacteriological Reporting and Quality Assurance***

Estimated values for bacteriological analyses are denoted by greater than (>), less than (<), or estimated (e) qualifiers and result from plates with colony counts above or below the permissible counting limits established in Bordner et al. (1978)<sup>1</sup>. This document defines membrane filtration limits of 20–80 colonies per plate for total coliforms and 20–60 colonies per plate for fecal coliforms and *Enterococcus*. No Data (ND) is reported if plate counts from all dilutions have a total colony count of >200 per plate.

Results of the bacteriological analysis of seawater samples collected from each of the shore, kelp bed, and offshore stations located within State waters are assessed relative to the geometric mean and single sample maximum water-contact standards specified in the California Ocean Plan. The seven standards are defined as follows:

**30-day Geometric Mean:** The following standards are based on the geometric mean of the five most recent samples from each site.

- (1) Total coliform density shall not exceed 1000 CFU/100 mL;
- (2) Fecal coliform density shall not exceed 200 CFU/100 mL;
- (3) *Enterococcus* density shall not exceed 35 CFU/100 mL

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<sup>1</sup> Bordner, R., J. Winter, and P. Scarpino (eds.). (1978). Microbiological Methods for Monitoring the Environment: Water and Wastes, EPA Research and Development, EPA-600/8-78-017. 337 p.

### Single Sample Maximums:

- (1) Total coliform density shall not exceed 10,000 CFU/100 mL;
- (2) Fecal coliform density shall not exceed 400 CFU/100 mL;
- (3) *Enterococcus* density shall not exceed 104 CFU/100 mL;
- (4) Total coliform density shall not exceed 1,000 CFU/100 mL when the fecal coliform/total coliform ratio exceeds 0.1.

Quality controls of bacteriological data include laboratory and field duplicate analyses. Laboratory duplicates are performed on approximately 10% of the water quality samples, while field duplicates are performed six times a month (see Appendix A). Laboratory duplicates represent two aliquots of the original sample that are split in the laboratory and analyzed by the same analyst using identical procedures within the same analytical run. The results of these analyses provide a measure of intra-analyst precision. In contrast, field duplicates represent two separate samples collected at the same time from the same site, which are handled under identical circumstances and treated the same throughout field and lab procedures. The results of these analyses provide a measure of precision associated with sample collection, preservation, storage, and lab procedures. The sign test (see Gilbert, 1987<sup>2</sup>) is used to statistically compare both the results from the laboratory duplicates, as well as the results from the field duplicates. These data will be further analyzed in the City's 2020 Quality Assurance Report, which will be completed in March 2021.

## SUMMARY OF RESULTS

As of October 2020, new 2019 Ocean Plan Water Quality Objectives are included for a six-week rolling geometric mean of *Enterococcus* density, which shall not exceed 30 cfu/100 ml, and a Statistical Threshold Value (STV) for *Enterococcus*, which shall not exceed 110 cfu/100 ml for more than 10% of samples per month (see Appendix B).

### ***Shore Stations***

- The eight shore stations (D4, D5, D7, D8-B, D9, D10, D11, D12) were sampled on October 7, 14, 21, and 28.
- During October, one of the seven shore stations was out of compliance with the 2015 California Ocean Plan (Ocean Plan) water contact standards on one or more days as follows:
  - The SSM standard for *Enterococcus* was exceeded at station D12.
  - Per permit requirements, a resample was collected in response to this SSM exceedance (see Table 2.8 for details).
- Nothing of sewage origin was observed at any of the shore stations.
- Over the years, elevated bacteria levels at shore and kelp bed stations have tended to be associated with rainfall events, heavy recreational use, or the presence of seabirds or decaying kelp and surf grass. See the City of San Diego's most recent *Biennial Receiving Waters Monitoring and Assessment Report for the Point Loma and South Bay Ocean Outfalls* for details (<https://www.sandiego.gov/public-utilities/sustainability/ocean-monitoring/reports>).

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<sup>2</sup> Gilbert, R.O. (1987). Statistical Methods for Environmental Pollution Monitoring. Van Nostrand Reinhold Co., New York.

### ***Kelp Bed Stations***

- The eight kelp bed water quality stations (A1, A6, A7, C4, C5, C6, C7, C8) were sampled on October 5, 13, 20, and 28.
- During October, each of the kelp bed stations was in compliance with the various 2015 Ocean Plan water contact standards.
- Water column temperatures ranged from 13.17 to 22.39°C. The difference between surface and bottom waters ranged from 1.92 to 6.58°C.
- Chlorophyll *a* concentrations ranged from 0.41 to 5.47 µg/L.
- Nothing of sewage origin was observed at any of the kelp stations.

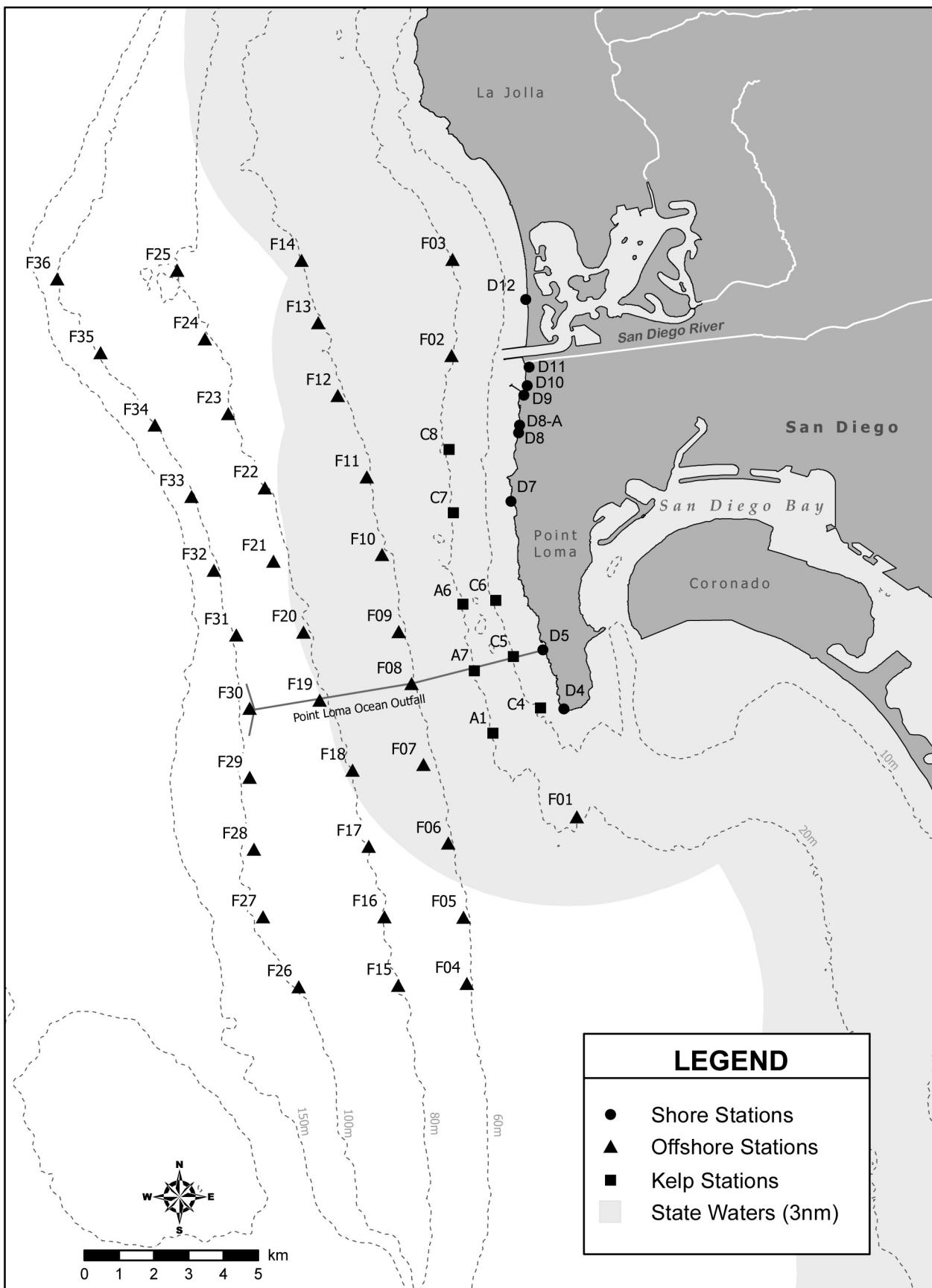
### ***Offshore Stations***

- Quarterly water quality sampling was not conducted during October at the offshore stations. The next quarterly sampling is scheduled for November 2020.



## TABLES AND FIGURES





**Figure 1.1** Station Map



# Shore Stations



**Table 2.1**

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for total coliform bacteria at the PLOO shore stations. Data are based on the geometric mean of the five most recent samples from each site over the previous 30 days unless otherwise noted (\*). Values >1,000 CFU/100 mL exceed the standard.

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
01 Oct 2020	16	22	33	26	28	38	31	23
02 Oct 2020	15*	20*	28*	28*	32*	37*	30*	24*
03 Oct 2020	15*	20*	28*	28*	32*	37*	30*	24*
04 Oct 2020	15*	20*	28*	28*	32*	37*	30*	24*
05 Oct 2020	15*	20*	28*	28*	32*	37*	30*	24*
06 Oct 2020	15*	20*	28*	28*	32*	37*	30*	24*
07 Oct 2020	16	20	26	26	29	33	27	26
08 Oct 2020	16	20	26	26	29	33	27	26
09 Oct 2020	20*	20*	28*	28*	25*	24*	25*	24*
10 Oct 2020	20*	20*	28*	28*	25*	24*	25*	24*
11 Oct 2020	20*	20*	28*	28*	25*	24*	25*	24*
12 Oct 2020	20*	20*	28*	28*	25*	24*	25*	24*
13 Oct 2020	20*	20*	28*	28*	25*	24*	25*	24*
14 Oct 2020	20	20	42	42	24	29	24	14
15 Oct 2020	20	20	42	42	24	29	24	14
16 Oct 2020	20*	20*	42*	42*	24*	26*	25*	13*
17 Oct 2020	20*	20*	42*	42*	24*	26*	25*	13*
18 Oct 2020	20*	20*	42*	42*	24*	26*	25*	13*
19 Oct 2020	20*	20*	42*	42*	24*	26*	25*	13*
20 Oct 2020	20*	20*	42*	42*	24*	26*	25*	13*
21 Oct 2020	20	20	36	42	23	31	24	14
22 Oct 2020	20	20	36	42	23	31	24	14
23 Oct 2020	20*	20*	42*	42*	20*	35*	24*	13*
24 Oct 2020	20*	20*	42*	42*	20*	35*	24*	13*
25 Oct 2020	20*	20*	42*	42*	20*	35*	24*	13*
26 Oct 2020	20*	20*	42*	42*	20*	35*	24*	13*
27 Oct 2020	20*	20*	42*	42*	20*	35*	24*	13*
28 Oct 2020	20	20	55	36	20	31	23	14
29 Oct 2020	20	20	55	36	20	31	23	14
30 Oct 2020	20*	20*	60*	42*	20*	35*	20*	13*
31 Oct 2020	20*	20*	60*	42*	20*	35*	20*	13*

\* Geometric mean calculated using n<5

ns = not sampled

**Table 2.2**

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for fecal coliform bacteria at the PLOO shore stations. Data are based on the geometric mean of the five most recent samples from each site over the previous 30 days unless otherwise noted (\*). Values >200 CFU/100 mL exceed the standard.

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
01 Oct 2020	3	3	7	4	3	8	5	6
02 Oct 2020	2*	2*	6*	4*	3*	8*	4*	5*
03 Oct 2020	2*	2*	6*	4*	3*	8*	4*	5*
04 Oct 2020	2*	2*	6*	4*	3*	8*	4*	5*
05 Oct 2020	2*	2*	6*	4*	3*	8*	4*	5*
06 Oct 2020	2*	2*	6*	4*	3*	8*	4*	5*
07 Oct 2020	2	2	6	4	3	8	7	7
08 Oct 2020	2	2	6	4	3	8	7	7
09 Oct 2020	2*	2*	8*	4*	2*	8*	6*	6*
10 Oct 2020	2*	2*	8*	4*	2*	8*	6*	6*
11 Oct 2020	2*	2*	8*	4*	2*	8*	6*	6*
12 Oct 2020	2*	2*	8*	4*	2*	8*	6*	6*
13 Oct 2020	2*	2*	8*	4*	2*	8*	6*	6*
14 Oct 2020	3	3	9	4	3	6	8	6
15 Oct 2020	3	3	9	4	3	6	8	6
16 Oct 2020	4*	4*	8*	3*	2*	6*	11*	8*
17 Oct 2020	4*	4*	8*	3*	2*	6*	11*	8*
18 Oct 2020	4*	4*	8*	3*	2*	6*	11*	8*
19 Oct 2020	4*	4*	8*	3*	2*	6*	11*	8*
20 Oct 2020	4*	4*	8*	3*	2*	6*	11*	8*
21 Oct 2020	3	5	9	3	2	8	8	12
22 Oct 2020	3	5	9	3	2	8	8	12
23 Oct 2020	4*	6*	13*	3*	2*	9*	11*	12*
24 Oct 2020	4*	6*	13*	3*	2*	9*	11*	12*
25 Oct 2020	4*	6*	13*	3*	2*	9*	11*	12*
26 Oct 2020	4*	6*	13*	3*	2*	9*	11*	12*
27 Oct 2020	4*	6*	13*	3*	2*	9*	11*	12*
28 Oct 2020	3	5	16	3	2	7	8	8
29 Oct 2020	3	5	16	3	2	7	8	8
30 Oct 2020	4*	6*	15*	2*	2*	5*	7*	12*
31 Oct 2020	4*	6*	15*	2*	2*	5*	7*	12*

\* Geometric mean calculated using n<5

ns = not sampled

**Table 2.3**

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for *Enterococcus* at the PLOO shore stations. Data are based on the geometric mean of the five most recent samples from each site over the previous 30 days unless otherwise noted (\*). Values >35 CFU/100 mL exceed the standard.

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
01 Oct 2020	3	2	8	4	2	7	5	8
02 Oct 2020	3*	2*	7*	4*	2*	7*	5*	5*
03 Oct 2020	3*	2*	7*	4*	2*	7*	5*	5*
04 Oct 2020	3*	2*	7*	4*	2*	7*	5*	5*
05 Oct 2020	3*	2*	7*	4*	2*	7*	5*	5*
06 Oct 2020	3*	2*	7*	4*	2*	7*	5*	5*
07 Oct 2020	3	2	7	5	2	5	5	10
08 Oct 2020	3	2	7	5	2	5	5	10
09 Oct 2020	3*	2*	6*	6*	2*	4*	4*	10*
10 Oct 2020	3*	2*	6*	6*	2*	4*	4*	10*
11 Oct 2020	3*	2*	6*	6*	2*	4*	4*	10*
12 Oct 2020	3*	2*	6*	6*	2*	4*	4*	10*
13 Oct 2020	3*	2*	6*	6*	2*	4*	4*	10*
14 Oct 2020	3	2	8	7	2	5	3	7
15 Oct 2020	3	2	8	7	2	5	3	7
16 Oct 2020	3*	2*	8*	6*	3*	4*	3*	8*
17 Oct 2020	3*	2*	8*	6*	3*	4*	3*	8*
18 Oct 2020	3*	2*	8*	6*	3*	4*	3*	8*
19 Oct 2020	3*	2*	8*	6*	3*	4*	3*	8*
20 Oct 2020	3*	2*	8*	6*	3*	4*	3*	8*
21 Oct 2020	3	2	6	5	2	4	3	6
22 Oct 2020	3	2	6	5	2	4	3	6
23 Oct 2020	3*	2*	6*	5*	3*	4*	3*	6*
24 Oct 2020	3*	2*	6*	5*	3*	4*	3*	6*
25 Oct 2020	3*	2*	6*	5*	3*	4*	3*	6*
26 Oct 2020	3*	2*	6*	5*	3*	4*	3*	6*
27 Oct 2020	3*	2*	6*	5*	3*	4*	3*	6*
28 Oct 2020	3	2	8	6	2	4	3	6
29 Oct 2020	3	2	8	6	2	4	3	6
30 Oct 2020	2*	2*	8*	8*	3*	3*	2*	9*
31 Oct 2020	2*	2*	8*	8*	3*	3*	2*	9*

\* Geometric mean calculated using n<5

ns = not sampled

**Table 2.4**

Summary of compliance at the PLOO shore stations with the Ocean Plan's Single Sample Maximum standard for total coliform bacteria, which states that total coliform density shall not exceed 10,000 CFU/100 mL.

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
07 Oct 2020	IC	IC	IC	IC	IC	IC	IC	IC
14 Oct 2020	IC	IC	IC	IC	IC	IC	IC	IC
21 Oct 2020	IC	IC	IC	IC	IC	IC	IC	IC
28 Oct 2020	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 2.5**

Summary of compliance at the PLOO shore stations with the Ocean Plan's Single Sample Maximum standard for fecal coliform bacteria, which states that fecal coliform density shall not exceed 400 CFU/100 mL.

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
07 Oct 2020	IC	IC	IC	IC	IC	IC	IC	IC
14 Oct 2020	IC	IC	IC	IC	IC	IC	IC	IC
21 Oct 2020	IC	IC	IC	IC	IC	IC	IC	IC
28 Oct 2020	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 2.6**

Summary of compliance at the PLOO shore stations with the Ocean Plan's Single Sample Maximum standard for *Enterococcus* bacteria, which states that *Enterococcus* density shall not exceed 104 CFU/100 mL.

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
07 Oct 2020	IC	IC	IC	IC	IC	IC	IC	E
14 Oct 2020	IC	IC	IC	IC	IC	IC	IC	IC
21 Oct 2020	IC	IC	IC	IC	IC	IC	IC	IC
28 Oct 2020	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 2.7**

Summary of compliance at the PLOO shore stations with the Ocean Plan's Single Sample Maximum standard for total coliform bacteria and the fecal/total coliform ratio (F:T), which states that total coliform density shall not exceed 1,000 CFU/100 mL when F:T > 0.1.

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
07 Oct 2020	IC	IC	IC	IC	IC	IC	IC	IC
14 Oct 2020	IC	IC	IC	IC	IC	IC	IC	IC
21 Oct 2020	IC	IC	IC	IC	IC	IC	IC	IC
28 Oct 2020	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 2.8**

Summary of water quality parameters at the PLOO shore stations for each sample date. Densities of total coliform (Total), fecal coliform (Fecal), and *Enterococcus* (Enter) are reported as CFU/100 mL. The fecal:total coliform ratio (F:T) is unitless. Comments follow the data summary.

<b>Station</b>	<b>Date</b>	<b>Time</b>	<b>Total</b>	<b>Fecal</b>	<b>Enter</b>	<b>F:T</b>
D4	07 Oct 2020	725	<20	<2	<2	0.10
D4	14 Oct 2020	756	20e	<20	<2	1.00
D4	21 Oct 2020	756	<20	<2	<2	0.10
D4	28 Oct 2020	842	<20	<2	4e	0.10
D5	07 Oct 2020	743	<20	<2	<2	0.10
D5	14 Oct 2020	809	<20	<20	2e	1.00
D5	21 Oct 2020	741	<20	<20	<2	1.00
D5	28 Oct 2020	856	<20	<2	<2	0.10
D7	07 Oct 2020	811	<20	6e	4e	0.30
D7	14 Oct 2020	834	<200	14e	22e	0.07
D7	21 Oct 2020	820	<20	16e	2e	0.80
D7	28 Oct 2020	923	160e	34e	22e	0.21
D8-B	07 Oct 2020	834	20e	<2	10e	0.10
D8-B	14 Oct 2020	853	<200	4e	20e	0.02
D8-B	21 Oct 2020	833	40e	<2	<2	0.05
D8-B	28 Oct 2020	939	20e	2e	8e	0.10
D9	07 Oct 2020	852	20e	<2	<2	0.10
D9	14 Oct 2020	904	20e	4e	6e	0.20
D9	21 Oct 2020	843	<20	<2	<2	0.10
D9	28 Oct 2020	953	<20	2e	<2	0.10
D10	07 Oct 2020	910	<20	8e	2e	0.40
D10	14 Oct 2020	918	60e	2e	8e	0.03
D10	21 Oct 2020	854	60e	<20	2e	0.33
D10	28 Oct 2020	1008	20e	2e	<2	0.10
D11	07 Oct 2020	959	20e	38e	4e	1.90
D11	14 Oct 2020	931	20e	<20	<2	1.00
D11	21 Oct 2020	909	<20	<2	<2	0.10
D11	28 Oct 2020	1027	20e	<2	2e	0.10
D12	07 Oct 2020	1024	40e	42	140e	1.05
D12	14 Oct 2020	1021	2e	6e	<2	3.00
D12	21 Oct 2020	1010	16e	40e	2e	2.50
D12	28 Oct 2020	1133	<20	<2	10e	0.10

ns = not sampled

ND = no data

### Comments

Station	Date	Depth	Parameter	Comments
D12	08 Oct 2020			Resample

**Table 2.9**

Summary of visual observations made during the month for each PLOO shore station by sample date.

Station	Date	Parameter	Value
D4	07 Oct 2020	Arrive Time	725
D4	07 Oct 2020	Weather	Cloudy
D4	07 Oct 2020	Wind Speed (kts)	0
D4	07 Oct 2020	Wind Dir	
D4	07 Oct 2020	Animal Life	2 Cormorants; 2 Pelicans; 1 Seagull
D4	07 Oct 2020	Floatables	None
D4	07 Oct 2020	Water Color	Green
D4	07 Oct 2020	Current Direction	N
D4	07 Oct 2020	Water Temp (C)	21.2
D4	07 Oct 2020	Wave Height Low (ft)	1
D4	07 Oct 2020	High Tide (ft)	4.8
D4	07 Oct 2020	High Tide Time	1156
D4	07 Oct 2020	Low Tide (ft)	2.6
D4	07 Oct 2020	Low Tide Time	518
D4	07 Oct 2020	Comments	Algae; 5 Surfers; Water clear
D4	14 Oct 2020	Arrive Time	756
D4	14 Oct 2020	Weather	Foggy
D4	14 Oct 2020	Wind Speed (kts)	3.8
D4	14 Oct 2020	Wind Dir	S
D4	14 Oct 2020	Animal Life	1 Shorebird; 3 Cormorants; 4 Seagulls
D4	14 Oct 2020	Floatables	None
D4	14 Oct 2020	Water Color	Grey
D4	14 Oct 2020	Current Direction	
D4	14 Oct 2020	Water Temp (C)	19.7
D4	14 Oct 2020	Wave Height Low (ft)	1
D4	14 Oct 2020	High Tide (ft)	5.3
D4	14 Oct 2020	High Tide Time	808
D4	14 Oct 2020	Low Tide (ft)	-0.3
D4	14 Oct 2020	Low Tide Time	154
D4	14 Oct 2020	Comments	Algae; Water clear; Too foggy to see current
D4	21 Oct 2020	Arrive Time	756
D4	21 Oct 2020	Weather	Cloudy
D4	21 Oct 2020	Wind Speed (kts)	3.3
D4	21 Oct 2020	Wind Dir	SW
D4	21 Oct 2020	Animal Life	6 Cormorants; 2 Pelicans; 5 Seagulls; 1 Seal
D4	21 Oct 2020	Floatables	Foam
D4	21 Oct 2020	Water Color	Green
D4	21 Oct 2020	Current Direction	N
D4	21 Oct 2020	Water Temp (C)	19.6
D4	21 Oct 2020	Wave Height Low (ft)	2
D4	21 Oct 2020	High Tide (ft)	5.5
D4	21 Oct 2020	High Tide Time	1239
D4	21 Oct 2020	Low Tide (ft)	2.6
D4	21 Oct 2020	Low Tide Time	620
D4	21 Oct 2020	Comments	Kelp; Seagrass; Algae; 2 Surfers; 6 Boats; Water clear
D4	28 Oct 2020	Arrive Time	842
D4	28 Oct 2020	Weather	Sunny
D4	28 Oct 2020	Wind Speed (kts)	8.7
D4	28 Oct 2020	Wind Dir	E
D4	28 Oct 2020	Animal Life	None
D4	28 Oct 2020	Floatables	None
D4	28 Oct 2020	Water Color	Green
D4	28 Oct 2020	Current Direction	N

Station	Date	Parameter	Value
D4	28 Oct 2020	Water Temp (C)	15
D4	28 Oct 2020	Wave Height Low (ft)	3
D4	28 Oct 2020	High Tide (ft)	5.2
D4	28 Oct 2020	High Tide Time	809
D4	28 Oct 2020	Low Tide (ft)	0.9
D4	28 Oct 2020	Low Tide Time	1427
D4	28 Oct 2020	Comments	Kelp; Algae; 1 Boat; Water clear
D5	07 Oct 2020	Arrive Time	743
D5	07 Oct 2020	Weather	Cloudy
D5	07 Oct 2020	Wind Speed (kts)	0
D5	07 Oct 2020	Wind Dir	
D5	07 Oct 2020	Animal Life	3 Cormorants; 3 Seagulls
D5	07 Oct 2020	Floatables	None
D5	07 Oct 2020	Water Color	Brown
D5	07 Oct 2020	Current Direction	N
D5	07 Oct 2020	Water Temp (C)	21.6
D5	07 Oct 2020	Wave Height Low (ft)	1
D5	07 Oct 2020	High Tide (ft)	4.8
D5	07 Oct 2020	High Tide Time	1156
D5	07 Oct 2020	Low Tide (ft)	2.6
D5	07 Oct 2020	Low Tide Time	518
D5	07 Oct 2020	Comments	Algae; Water turbid
D5	14 Oct 2020	Arrive Time	809
D5	14 Oct 2020	Weather	Foggy
D5	14 Oct 2020	Wind Speed (kts)	4
D5	14 Oct 2020	Wind Dir	S
D5	14 Oct 2020	Animal Life	1 Cormorant; 3 Seagulls
D5	14 Oct 2020	Floatables	None
D5	14 Oct 2020	Water Color	Grey
D5	14 Oct 2020	Current Direction	N
D5	14 Oct 2020	Water Temp (C)	20.3
D5	14 Oct 2020	Wave Height Low (ft)	1
D5	14 Oct 2020	High Tide (ft)	5.3
D5	14 Oct 2020	High Tide Time	808
D5	14 Oct 2020	Low Tide (ft)	0.7
D5	14 Oct 2020	Low Tide Time	1408
D5	14 Oct 2020	Comments	Kelp; Algae; Water clear
D5	21 Oct 2020	Arrive Time	741
D5	21 Oct 2020	Weather	Cloudy
D5	21 Oct 2020	Wind Speed (kts)	1.9
D5	21 Oct 2020	Wind Dir	SW
D5	21 Oct 2020	Animal Life	1 Cormorant; 1 Seagull
D5	21 Oct 2020	Floatables	Foam
D5	21 Oct 2020	Water Color	Green
D5	21 Oct 2020	Current Direction	N
D5	21 Oct 2020	Water Temp (C)	20.6
D5	21 Oct 2020	Wave Height Low (ft)	1
D5	21 Oct 2020	High Tide (ft)	5.5
D5	21 Oct 2020	High Tide Time	1239
D5	21 Oct 2020	Low Tide (ft)	2.6
D5	21 Oct 2020	Low Tide Time	620
D5	21 Oct 2020	Comments	Kelp; Water turbid
D5	28 Oct 2020	Arrive Time	856
D5	28 Oct 2020	Weather	Sunny
D5	28 Oct 2020	Wind Speed (kts)	3.4
D5	28 Oct 2020	Wind Dir	NW
D5	28 Oct 2020	Animal Life	1 Cormorant

Station	Date	Parameter	Value
D5	28 Oct 2020	Floatables	Foam
D5	28 Oct 2020	Water Color	Green
D5	28 Oct 2020	Current Direction	N
D5	28 Oct 2020	Water Temp (C)	16
D5	28 Oct 2020	Wave Height Low (ft)	3
D5	28 Oct 2020	High Tide (ft)	5.2
D5	28 Oct 2020	High Tide Time	809
D5	28 Oct 2020	Low Tide (ft)	0.9
D5	28 Oct 2020	Low Tide Time	1427
D5	28 Oct 2020	Comments	Kelp; 3 Boats; Water turbid
D7	07 Oct 2020	Arrive Time	811
D7	07 Oct 2020	Weather	Cloudy
D7	07 Oct 2020	Wind Speed (kts)	0
D7	07 Oct 2020	Wind Dir	
D7	07 Oct 2020	Animal Life	2 Seagulls
D7	07 Oct 2020	Floatables	None
D7	07 Oct 2020	Water Color	Green
D7	07 Oct 2020	Current Direction	
D7	07 Oct 2020	Water Temp (C)	21.4
D7	07 Oct 2020	Wave Height Low (ft)	2
D7	07 Oct 2020	High Tide (ft)	4.8
D7	07 Oct 2020	High Tide Time	1156
D7	07 Oct 2020	Low Tide (ft)	2.6
D7	07 Oct 2020	Low Tide Time	518
D7	07 Oct 2020	Comments	Kelp; Algae
D7	14 Oct 2020	Arrive Time	834
D7	14 Oct 2020	Weather	Foggy
D7	14 Oct 2020	Wind Speed (kts)	3.8
D7	14 Oct 2020	Wind Dir	S
D7	14 Oct 2020	Animal Life	5 Pelicans; 1 Seagull
D7	14 Oct 2020	Floatables	None
D7	14 Oct 2020	Water Color	Grey
D7	14 Oct 2020	Current Direction	N
D7	14 Oct 2020	Water Temp (C)	20.6
D7	14 Oct 2020	Wave Height Low (ft)	1
D7	14 Oct 2020	High Tide (ft)	5.3
D7	14 Oct 2020	High Tide Time	808
D7	14 Oct 2020	Low Tide (ft)	0.7
D7	14 Oct 2020	Low Tide Time	1408
D7	14 Oct 2020	Comments	Kelp; Seagrass; Algae; 1 Person; Water clear
D7	21 Oct 2020	Arrive Time	820
D7	21 Oct 2020	Weather	Cloudy
D7	21 Oct 2020	Wind Speed (kts)	1.7
D7	21 Oct 2020	Wind Dir	S
D7	21 Oct 2020	Animal Life	12 Pigeons
D7	21 Oct 2020	Floatables	Foam
D7	21 Oct 2020	Water Color	Green
D7	21 Oct 2020	Current Direction	N
D7	21 Oct 2020	Water Temp (C)	20.8
D7	21 Oct 2020	Wave Height Low (ft)	2
D7	21 Oct 2020	High Tide (ft)	5.5
D7	21 Oct 2020	High Tide Time	1239
D7	21 Oct 2020	Low Tide (ft)	2.6
D7	21 Oct 2020	Low Tide Time	620
D7	21 Oct 2020	Comments	Kelp; Algae; 1 Surfer; Water clear
D7	28 Oct 2020	Arrive Time	923
D7	28 Oct 2020	Weather	Sunny

Station	Date	Parameter	Value
D7	28 Oct 2020	Wind Speed (kts)	5.6
D7	28 Oct 2020	Wind Dir	SE
D7	28 Oct 2020	Animal Life	10 Pigeons; 1 Seagull; 2 Crow
D7	28 Oct 2020	Floatables	None
D7	28 Oct 2020	Water Color	Green
D7	28 Oct 2020	Current Direction	N
D7	28 Oct 2020	Water Temp (C)	16
D7	28 Oct 2020	Wave Height Low (ft)	4
D7	28 Oct 2020	High Tide (ft)	5.2
D7	28 Oct 2020	High Tide Time	809
D7	28 Oct 2020	Low Tide (ft)	0.9
D7	28 Oct 2020	Low Tide Time	1427
D7	28 Oct 2020	Comments	Kelp; Seagrass; Algae; 1 Person; Water clear
D8-B	07 Oct 2020	Arrive Time	834
D8-B	07 Oct 2020	Weather	Cloudy
D8-B	07 Oct 2020	Wind Speed (kts)	0
D8-B	07 Oct 2020	Wind Dir	
D8-B	07 Oct 2020	Animal Life	None
D8-B	07 Oct 2020	Floatables	None
D8-B	07 Oct 2020	Water Color	Brown
D8-B	07 Oct 2020	Current Direction	N
D8-B	07 Oct 2020	Water Temp (C)	21.5
D8-B	07 Oct 2020	Wave Height Low (ft)	1
D8-B	07 Oct 2020	High Tide (ft)	4.8
D8-B	07 Oct 2020	High Tide Time	1156
D8-B	07 Oct 2020	Low Tide (ft)	2.6
D8-B	07 Oct 2020	Low Tide Time	518
D8-B	07 Oct 2020	Comments	Kelp; Seagrass; 1 Boat; Water turbid
D8-B	14 Oct 2020	Arrive Time	853
D8-B	14 Oct 2020	Weather	Foggy
D8-B	14 Oct 2020	Wind Speed (kts)	2.5
D8-B	14 Oct 2020	Wind Dir	SW
D8-B	14 Oct 2020	Animal Life	None
D8-B	14 Oct 2020	Floatables	None
D8-B	14 Oct 2020	Water Color	Grey
D8-B	14 Oct 2020	Current Direction	N
D8-B	14 Oct 2020	Water Temp (C)	20.9
D8-B	14 Oct 2020	Wave Height Low (ft)	2
D8-B	14 Oct 2020	High Tide (ft)	5.3
D8-B	14 Oct 2020	High Tide Time	808
D8-B	14 Oct 2020	Low Tide (ft)	0.7
D8-B	14 Oct 2020	Low Tide Time	1408
D8-B	14 Oct 2020	Comments	Algae; Debris; 2 Persons; Water turbid
D8-B	21 Oct 2020	Arrive Time	833
D8-B	21 Oct 2020	Weather	Cloudy
D8-B	21 Oct 2020	Wind Speed (kts)	0.9
D8-B	21 Oct 2020	Wind Dir	NW
D8-B	21 Oct 2020	Animal Life	None
D8-B	21 Oct 2020	Floatables	Foam
D8-B	21 Oct 2020	Water Color	Green
D8-B	21 Oct 2020	Current Direction	N
D8-B	21 Oct 2020	Water Temp (C)	20.1
D8-B	21 Oct 2020	Wave Height Low (ft)	2
D8-B	21 Oct 2020	High Tide (ft)	5.5
D8-B	21 Oct 2020	High Tide Time	1239
D8-B	21 Oct 2020	Low Tide (ft)	2.6
D8-B	21 Oct 2020	Low Tide Time	620
D8-B	21 Oct 2020	Comments	Seagrass; Algae; 1 Person; Water clear

Station	Date	Parameter	Value
D8-B	28 Oct 2020	Arrive Time	939
D8-B	28 Oct 2020	Weather	Sunny
D8-B	28 Oct 2020	Wind Speed (kts)	2.7
D8-B	28 Oct 2020	Wind Dir	SW
D8-B	28 Oct 2020	Animal Life	None
D8-B	28 Oct 2020	Floatables	Foam
D8-B	28 Oct 2020	Water Color	Green
D8-B	28 Oct 2020	Current Direction	N
D8-B	28 Oct 2020	Water Temp (C)	16
D8-B	28 Oct 2020	Wave Height Low (ft)	3
D8-B	28 Oct 2020	High Tide (ft)	5.2
D8-B	28 Oct 2020	High Tide Time	809
D8-B	28 Oct 2020	Low Tide (ft)	0.9
D8-B	28 Oct 2020	Low Tide Time	1427
D8-B	28 Oct 2020	Comments	Kelp; Algae; 1 Person; Water clear
D9	07 Oct 2020	Arrive Time	852
D9	07 Oct 2020	Weather	Cloudy
D9	07 Oct 2020	Wind Speed (kts)	0
D9	07 Oct 2020	Wind Dir	
D9	07 Oct 2020	Animal Life	1 Shorebird; 1 Seagull; 1 Tern
D9	07 Oct 2020	Floatables	None
D9	07 Oct 2020	Water Color	Blue
D9	07 Oct 2020	Current Direction	S
D9	07 Oct 2020	Water Temp (C)	20.9
D9	07 Oct 2020	Wave Height Low (ft)	2
D9	07 Oct 2020	High Tide (ft)	4.8
D9	07 Oct 2020	High Tide Time	1156
D9	07 Oct 2020	Low Tide (ft)	2.6
D9	07 Oct 2020	Low Tide Time	518
D9	07 Oct 2020	Comments	Algae; 1 Surfer; Water clear
D9	14 Oct 2020	Arrive Time	904
D9	14 Oct 2020	Weather	Foggy
D9	14 Oct 2020	Wind Speed (kts)	0
D9	14 Oct 2020	Wind Dir	
D9	14 Oct 2020	Animal Life	2 Seagulls
D9	14 Oct 2020	Floatables	None
D9	14 Oct 2020	Water Color	Grey
D9	14 Oct 2020	Current Direction	N
D9	14 Oct 2020	Water Temp (C)	20.6
D9	14 Oct 2020	Wave Height Low (ft)	2
D9	14 Oct 2020	High Tide (ft)	5.3
D9	14 Oct 2020	High Tide Time	808
D9	14 Oct 2020	Low Tide (ft)	0.7
D9	14 Oct 2020	Low Tide Time	1408
D9	14 Oct 2020	Comments	Algae; 2 Persons; Water clear
D9	21 Oct 2020	Arrive Time	843
D9	21 Oct 2020	Weather	Cloudy
D9	21 Oct 2020	Wind Speed (kts)	1.1
D9	21 Oct 2020	Wind Dir	W
D9	21 Oct 2020	Animal Life	6 Cormorants; 1 Dog; 1 Pelican
D9	21 Oct 2020	Floatables	Foam
D9	21 Oct 2020	Water Color	Green
D9	21 Oct 2020	Current Direction	N
D9	21 Oct 2020	Water Temp (C)	19.8
D9	21 Oct 2020	Wave Height Low (ft)	3
D9	21 Oct 2020	High Tide (ft)	5.5
D9	21 Oct 2020	High Tide Time	1239

Station	Date	Parameter	Value
D9	21 Oct 2020	Low Tide (ft)	2.6
D9	21 Oct 2020	Low Tide Time	620
D9	21 Oct 2020	Comments	Algae; 1 Person; 4 Surfers; Water clear
D9	28 Oct 2020	Arrive Time	953
D9	28 Oct 2020	Weather	Sunny
D9	28 Oct 2020	Wind Speed (kts)	0.3
D9	28 Oct 2020	Wind Dir	W
D9	28 Oct 2020	Animal Life	None
D9	28 Oct 2020	Floatables	Foam
D9	28 Oct 2020	Water Color	Green
D9	28 Oct 2020	Current Direction	S
D9	28 Oct 2020	Water Temp (C)	16
D9	28 Oct 2020	Wave Height Low (ft)	4
D9	28 Oct 2020	High Tide (ft)	5.2
D9	28 Oct 2020	High Tide Time	809
D9	28 Oct 2020	Low Tide (ft)	0.9
D9	28 Oct 2020	Low Tide Time	1427
D9	28 Oct 2020	Comments	Kelp; Algae; 2 Persons; Water clear
D10	07 Oct 2020	Arrive Time	910
D10	07 Oct 2020	Weather	Cloudy
D10	07 Oct 2020	Wind Speed (kts)	0.5
D10	07 Oct 2020	Wind Dir	W
D10	07 Oct 2020	Animal Life	1 Cormorant; 1 Dog
D10	07 Oct 2020	Floatables	None
D10	07 Oct 2020	Water Color	Blue
D10	07 Oct 2020	Current Direction	S
D10	07 Oct 2020	Water Temp (C)	21.3
D10	07 Oct 2020	Wave Height Low (ft)	2
D10	07 Oct 2020	High Tide (ft)	4.8
D10	07 Oct 2020	High Tide Time	1156
D10	07 Oct 2020	Low Tide (ft)	2.6
D10	07 Oct 2020	Low Tide Time	518
D10	07 Oct 2020	Comments	Kelp; Seagrass; 11 Persons; 24 Surfers; Water clear
D10	14 Oct 2020	Arrive Time	918
D10	14 Oct 2020	Weather	Foggy
D10	14 Oct 2020	Wind Speed (kts)	4
D10	14 Oct 2020	Wind Dir	S
D10	14 Oct 2020	Animal Life	8 Seagulls
D10	14 Oct 2020	Floatables	None
D10	14 Oct 2020	Water Color	Grey
D10	14 Oct 2020	Current Direction	N
D10	14 Oct 2020	Water Temp (C)	20.7
D10	14 Oct 2020	Wave Height Low (ft)	2
D10	14 Oct 2020	High Tide (ft)	5.3
D10	14 Oct 2020	High Tide Time	808
D10	14 Oct 2020	Low Tide (ft)	0.7
D10	14 Oct 2020	Low Tide Time	1408
D10	14 Oct 2020	Comments	Kelp; Seagrass; 6 Persons; 3 Surfers; Water clear
D10	21 Oct 2020	Arrive Time	854
D10	21 Oct 2020	Weather	Cloudy
D10	21 Oct 2020	Wind Speed (kts)	0.3
D10	21 Oct 2020	Wind Dir	S
D10	21 Oct 2020	Animal Life	1 Dog; 4 Seagulls
D10	21 Oct 2020	Floatables	Foam
D10	21 Oct 2020	Water Color	Green
D10	21 Oct 2020	Current Direction	N
D10	21 Oct 2020	Water Temp (C)	19.4

Station	Date	Parameter	Value
D10	21 Oct 2020	Wave Height Low (ft)	3
D10	21 Oct 2020	High Tide (ft)	5.5
D10	21 Oct 2020	High Tide Time	1239
D10	21 Oct 2020	Low Tide (ft)	2.6
D10	21 Oct 2020	Low Tide Time	620
D10	21 Oct 2020	Comments	Kelp; Seagrass; 20 Persons; 29 Surfers; Water clear
D10	28 Oct 2020	Arrive Time	1008
D10	28 Oct 2020	Weather	Sunny
D10	28 Oct 2020	Wind Speed (kts)	2.1
D10	28 Oct 2020	Wind Dir	SW
D10	28 Oct 2020	Animal Life	11 Seagulls
D10	28 Oct 2020	Floatables	None
D10	28 Oct 2020	Water Color	Green
D10	28 Oct 2020	Current Direction	N
D10	28 Oct 2020	Water Temp (C)	16
D10	28 Oct 2020	Wave Height Low (ft)	3
D10	28 Oct 2020	High Tide (ft)	5.2
D10	28 Oct 2020	High Tide Time	809
D10	28 Oct 2020	Low Tide (ft)	0.9
D10	28 Oct 2020	Low Tide Time	1427
D10	28 Oct 2020	Comments	16 Persons; 32 Surfers; 2 Swimmers; Water clear
D11	07 Oct 2020	Arrive Time	959
D11	07 Oct 2020	Weather	Partly Cloudy
D11	07 Oct 2020	Wind Speed (kts)	1.7
D11	07 Oct 2020	Wind Dir	W
D11	07 Oct 2020	Animal Life	8 Shorebirds; 4 Dogs; 1 Godwit
D11	07 Oct 2020	Floatables	None
D11	07 Oct 2020	Water Color	Green
D11	07 Oct 2020	Current Direction	S
D11	07 Oct 2020	Water Temp (C)	22.2
D11	07 Oct 2020	Wave Height Low (ft)	2
D11	07 Oct 2020	High Tide (ft)	4.8
D11	07 Oct 2020	High Tide Time	1156
D11	07 Oct 2020	Low Tide (ft)	2.6
D11	07 Oct 2020	Low Tide Time	518
D11	07 Oct 2020	Comments	Kelp; Seagrass; 19 Persons; 29 Surfers; Water clear
D11	14 Oct 2020	Arrive Time	931
D11	14 Oct 2020	Weather	Foggy
D11	14 Oct 2020	Wind Speed (kts)	4.4
D11	14 Oct 2020	Wind Dir	SW
D11	14 Oct 2020	Animal Life	10 Shorebirds
D11	14 Oct 2020	Floatables	None
D11	14 Oct 2020	Water Color	Grey
D11	14 Oct 2020	Current Direction	N
D11	14 Oct 2020	Water Temp (C)	21.8
D11	14 Oct 2020	Wave Height Low (ft)	2
D11	14 Oct 2020	High Tide (ft)	5.3
D11	14 Oct 2020	High Tide Time	808
D11	14 Oct 2020	Low Tide (ft)	0.7
D11	14 Oct 2020	Low Tide Time	1408
D11	14 Oct 2020	Comments	Kelp; Seagrass; 6 Persons; 4 Surfers; Water clear
D11	21 Oct 2020	Arrive Time	909
D11	21 Oct 2020	Weather	Cloudy
D11	21 Oct 2020	Wind Speed (kts)	2.5
D11	21 Oct 2020	Wind Dir	SW
D11	21 Oct 2020	Animal Life	1 Dog; 1 Seagull
D11	21 Oct 2020	Floatables	Foam

Station	Date	Parameter	Value
D11	21 Oct 2020	Water Color	Green
D11	21 Oct 2020	Current Direction	N
D11	21 Oct 2020	Water Temp (C)	19.1
D11	21 Oct 2020	Wave Height Low (ft)	2
D11	21 Oct 2020	High Tide (ft)	5.5
D11	21 Oct 2020	High Tide Time	1239
D11	21 Oct 2020	Low Tide (ft)	2.6
D11	21 Oct 2020	Low Tide Time	620
D11	21 Oct 2020	Comments	Seagrass; Algae; 5 Persons; 18 Surfers; 1 Fisherman; Water clear
D11	28 Oct 2020	Arrive Time	1027
D11	28 Oct 2020	Weather	Sunny
D11	28 Oct 2020	Wind Speed (kts)	3.6
D11	28 Oct 2020	Wind Dir	W
D11	28 Oct 2020	Animal Life	None
D11	28 Oct 2020	Floatables	None
D11	28 Oct 2020	Water Color	Green
D11	28 Oct 2020	Current Direction	N
D11	28 Oct 2020	Water Temp (C)	18
D11	28 Oct 2020	Wave Height Low (ft)	3
D11	28 Oct 2020	High Tide (ft)	5.2
D11	28 Oct 2020	High Tide Time	809
D11	28 Oct 2020	Low Tide (ft)	0.9
D11	28 Oct 2020	Low Tide Time	1427
D11	28 Oct 2020	Comments	Kelp; 29 Persons; 53 Surfers; 1 Swimmer; Water clear
D12	07 Oct 2020	Arrive Time	1024
D12	07 Oct 2020	Weather	Sunny
D12	07 Oct 2020	Wind Speed (kts)	1.7
D12	07 Oct 2020	Wind Dir	W
D12	07 Oct 2020	Animal Life	9 Seagulls
D12	07 Oct 2020	Floatables	None
D12	07 Oct 2020	Water Color	Green
D12	07 Oct 2020	Current Direction	S
D12	07 Oct 2020	Water Temp (C)	24.7
D12	07 Oct 2020	Wave Height Low (ft)	2
D12	07 Oct 2020	High Tide (ft)	4.8
D12	07 Oct 2020	High Tide Time	1156
D12	07 Oct 2020	Low Tide (ft)	2.6
D12	07 Oct 2020	Low Tide Time	518
D12	07 Oct 2020	Comments	Kelp; Seagrass; 18 Persons; 1 Surfer; Water clear
D12	14 Oct 2020	Arrive Time	1021
D12	14 Oct 2020	Weather	Foggy
D12	14 Oct 2020	Wind Speed (kts)	1.7
D12	14 Oct 2020	Wind Dir	NW
D12	14 Oct 2020	Animal Life	6 Seagulls
D12	14 Oct 2020	Floatables	None
D12	14 Oct 2020	Water Color	Grey
D12	14 Oct 2020	Current Direction	
D12	14 Oct 2020	Water Temp (C)	22.8
D12	14 Oct 2020	Wave Height Low (ft)	1
D12	14 Oct 2020	High Tide (ft)	5.3
D12	14 Oct 2020	High Tide Time	808
D12	14 Oct 2020	Low Tide (ft)	0.7
D12	14 Oct 2020	Low Tide Time	1408
D12	14 Oct 2020	Comments	Kelp; Seagrass; 22 Persons; 1 Surfer; Water clear; Current-could not see through fog
D12	21 Oct 2020	Arrive Time	1010

Station	Date	Parameter	Value
D12	21 Oct 2020	Weather	Cloudy
D12	21 Oct 2020	Wind Speed (kts)	4.8
D12	21 Oct 2020	Wind Dir	SW
D12	21 Oct 2020	Animal Life	6 Pelicans; 22 Seagulls
D12	21 Oct 2020	Floatables	None
D12	21 Oct 2020	Water Color	Green
D12	21 Oct 2020	Current Direction	N
D12	21 Oct 2020	Water Temp (C)	20.9
D12	21 Oct 2020	Wave Height Low (ft)	3
D12	21 Oct 2020	High Tide (ft)	5.5
D12	21 Oct 2020	High Tide Time	1239
D12	21 Oct 2020	Low Tide (ft)	2.6
D12	21 Oct 2020	Low Tide Time	620
D12	21 Oct 2020	Comments	Kelp; Seagrass; 3 Joggers; 11 Persons; 2 Surfers; 1 Swimmer; Water clear
D12	28 Oct 2020	Arrive Time	1133
D12	28 Oct 2020	Weather	Sunny
D12	28 Oct 2020	Wind Speed (kts)	3.4
D12	28 Oct 2020	Wind Dir	W
D12	28 Oct 2020	Animal Life	63 Seagulls
D12	28 Oct 2020	Floatables	None
D12	28 Oct 2020	Water Color	Green
D12	28 Oct 2020	Current Direction	N
D12	28 Oct 2020	Water Temp (C)	15
D12	28 Oct 2020	Wave Height Low (ft)	1
D12	28 Oct 2020	High Tide (ft)	5.2
D12	28 Oct 2020	High Tide Time	809
D12	28 Oct 2020	Low Tide (ft)	0.9
D12	28 Oct 2020	Low Tide Time	1427
D12	28 Oct 2020	Comments	Kelp; Seagrass; 14 Persons; 2 Surfers; 4 Swimmers; Water clear

# Kelp Stations



**Table 3.1**

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for total coliform bacteria at the PLOO kelp stations. Data are based on the geometric mean of the five most recent samples from each site over the previous 30 days unless otherwise noted (\*). Values >1,000 CFU/100 mL exceed the standard.

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Oct 2020	6*	3*	3*	2*	2*	3*	2*	2*
02 Oct 2020	6*	3*	3*	2*	2*	3*	2*	2*
03 Oct 2020	6*	3*	3*	2*	2*	3*	2*	2*
04 Oct 2020	6*	3*	3*	2*	2*	3*	2*	2*
05 Oct 2020	7	3	5	3	3	3	2	2
06 Oct 2020	7	3	5	3	3	3	2	2
07 Oct 2020	7	3	5	3	3	3	2	2
08 Oct 2020	5*	4*	6*	4*	3*	3*	2*	2*
09 Oct 2020	5*	4*	6*	4*	3*	3*	2*	2*
10 Oct 2020	5*	4*	6*	4*	3*	3*	2*	2*
11 Oct 2020	5*	4*	6*	4*	3*	3*	2*	2*
12 Oct 2020	5*	4*	6*	4*	3*	3*	2*	2*
13 Oct 2020	5	4	7	5	3	4	3	3
14 Oct 2020	7*	4*	9*	6*	3*	5*	3*	3*
15 Oct 2020	7*	4*	9*	6*	3*	5*	3*	3*
16 Oct 2020	7*	4*	9*	6*	3*	5*	3*	3*
17 Oct 2020	7*	4*	9*	6*	3*	5*	3*	3*
18 Oct 2020	7*	4*	9*	6*	3*	5*	3*	3*
19 Oct 2020	7*	4*	9*	6*	3*	5*	3*	3*
20 Oct 2020	5	5	11	7	3	7	4	3
21 Oct 2020	5*	5*	12*	9*	4*	9*	5*	3*
22 Oct 2020	5*	5*	12*	9*	4*	9*	5*	3*
23 Oct 2020	5*	5*	12*	9*	4*	9*	5*	3*
24 Oct 2020	5*	5*	12*	9*	4*	9*	5*	3*
25 Oct 2020	5*	5*	12*	9*	4*	9*	5*	3*
26 Oct 2020	5*	5*	12*	9*	4*	9*	5*	3*
27 Oct 2020	5*	5*	12*	9*	4*	9*	5*	3*
28 Oct 2020	5*	8*	21*	13*	4*	15*	5*	3*
29 Oct 2020	5*	8*	21*	13*	4*	15*	5*	3*
30 Oct 2020	5*	8*	21*	13*	4*	15*	5*	3*
31 Oct 2020	5*	8*	21*	13*	4*	15*	5*	3*

\* Geometric mean calculated using n<5

**Table 3.2**

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for fecal coliform bacteria at the PLOO kelp stations. Data are based on the geometric mean of the five most recent samples from each site over the previous 30 days unless otherwise noted (\*). Values >200 CFU/100 mL exceed the standard.

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Oct 2020	3*	2*	2*	2*	2*	2*	2*	2*
02 Oct 2020	3*	2*	2*	2*	2*	2*	2*	2*
03 Oct 2020	3*	2*	2*	2*	2*	2*	2*	2*
04 Oct 2020	3*	2*	2*	2*	2*	2*	2*	2*
05 Oct 2020	3	2	3	2	2	2	2	2
06 Oct 2020	3	2	3	2	2	2	2	2
07 Oct 2020	3	2	3	2	2	2	2	2
08 Oct 2020	2*	2*	3*	2*	2*	2*	2*	2*
09 Oct 2020	2*	2*	3*	2*	2*	2*	2*	2*
10 Oct 2020	2*	2*	3*	2*	2*	2*	2*	2*
11 Oct 2020	2*	2*	3*	2*	2*	2*	2*	2*
12 Oct 2020	2*	2*	3*	2*	2*	2*	2*	2*
13 Oct 2020	2	2	3	2	2	2	2	2
14 Oct 2020	2*	2*	4*	2*	2*	2*	2*	2*
15 Oct 2020	2*	2*	4*	2*	2*	2*	2*	2*
16 Oct 2020	2*	2*	4*	2*	2*	2*	2*	2*
17 Oct 2020	2*	2*	4*	2*	2*	2*	2*	2*
18 Oct 2020	2*	2*	4*	2*	2*	2*	2*	2*
19 Oct 2020	2*	2*	4*	2*	2*	2*	2*	2*
20 Oct 2020	2	3	4	2	2	2	2	2
21 Oct 2020	2*	3*	4*	2*	2*	2*	2*	2*
22 Oct 2020	2*	3*	4*	2*	2*	2*	2*	2*
23 Oct 2020	2*	3*	4*	2*	2*	2*	2*	2*
24 Oct 2020	2*	3*	4*	2*	2*	2*	2*	2*
25 Oct 2020	2*	3*	4*	2*	2*	2*	2*	2*
26 Oct 2020	2*	3*	4*	2*	2*	2*	2*	2*
27 Oct 2020	2*	3*	4*	2*	2*	2*	2*	2*
28 Oct 2020	2*	3*	5*	2*	2*	2*	2*	2*
29 Oct 2020	2*	3*	5*	2*	2*	2*	2*	2*
30 Oct 2020	2*	3*	5*	2*	2*	2*	2*	2*
31 Oct 2020	2*	3*	5*	2*	2*	2*	2*	2*

\* Geometric mean calculated using n<5

**Table 3.3**

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for *Enterococcus* at the PLOO kelp stations. Data are based on the geometric mean of the five most recent samples from each site over the previous 30 days unless otherwise noted (\*). Values >35 CFU/100 mL exceed the standard.

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Oct 2020	2*	2*	2*	3*	2*	2*	2*	2*
02 Oct 2020	2*	2*	2*	3*	2*	2*	2*	2*
03 Oct 2020	2*	2*	2*	3*	2*	2*	2*	2*
04 Oct 2020	2*	2*	2*	3*	2*	2*	2*	2*
05 Oct 2020	2	2	2	3	2	2	2	2
06 Oct 2020	2	2	2	3	2	2	2	2
07 Oct 2020	2	2	2	3	2	2	2	2
08 Oct 2020	2*	2*	2*	3*	2*	2*	2*	2*
09 Oct 2020	2*	2*	2*	3*	2*	2*	2*	2*
10 Oct 2020	2*	2*	2*	3*	2*	2*	2*	2*
11 Oct 2020	2*	2*	2*	3*	2*	2*	2*	2*
12 Oct 2020	2*	2*	2*	3*	2*	2*	2*	2*
13 Oct 2020	2	2	2	3	2	2	2	2
14 Oct 2020	2*	2*	2*	3*	2*	2*	2*	2*
15 Oct 2020	2*	2*	2*	3*	2*	2*	2*	2*
16 Oct 2020	2*	2*	2*	3*	2*	2*	2*	2*
17 Oct 2020	2*	2*	2*	3*	2*	2*	2*	2*
18 Oct 2020	2*	2*	2*	3*	2*	2*	2*	2*
19 Oct 2020	2*	2*	2*	3*	2*	2*	2*	2*
20 Oct 2020	2	2	2	3	2	2	2	2
21 Oct 2020	2*	2*	2*	2*	2*	2*	2*	2*
22 Oct 2020	2*	2*	2*	2*	2*	2*	2*	2*
23 Oct 2020	2*	2*	2*	2*	2*	2*	2*	2*
24 Oct 2020	2*	2*	2*	2*	2*	2*	2*	2*
25 Oct 2020	2*	2*	2*	2*	2*	2*	2*	2*
26 Oct 2020	2*	2*	2*	2*	2*	2*	2*	2*
27 Oct 2020	2*	2*	2*	2*	2*	2*	2*	2*
28 Oct 2020	2*	2*	2*	2*	2*	2*	2*	2*
29 Oct 2020	2*	2*	2*	2*	2*	2*	2*	2*
30 Oct 2020	2*	2*	2*	2*	2*	2*	2*	2*
31 Oct 2020	2*	2*	2*	2*	2*	2*	2*	2*

\* Geometric mean calculated using n<5

**Table 3.4**

Summary of compliance at the PLOO kelp stations with the Ocean Plan's Single Sample Maximum standard for total coliform bacteria, which states that total coliform density shall not exceed 10,000 CFU/100 mL.

Date	A1	A6	A7	C4	C5	C6	C7	C8
05 Oct 2020	IC							
13 Oct 2020	IC							
20 Oct 2020	IC							
28 Oct 2020	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 3.5**

Summary of compliance at the PLOO kelp stations with the Ocean Plan's Single Sample Maximum standard for fecal coliform bacteria, which states that fecal coliform density shall not exceed 400 CFU/100 mL.

Date	A1	A6	A7	C4	C5	C6	C7	C8
05 Oct 2020	IC							
13 Oct 2020	IC							
20 Oct 2020	IC							
28 Oct 2020	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 3.6**

Summary of compliance at the PLOO kelp stations with the Ocean Plan's Single Sample Maximum standard for *Enterococcus* bacteria, which states that *Enterococcus* density shall not exceed 104 CFU/100 mL.

Date	A1	A6	A7	C4	C5	C6	C7	C8
05 Oct 2020	IC							
13 Oct 2020	IC							
20 Oct 2020	IC							
28 Oct 2020	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 3.7**

Summary of compliance at the PLOO kelp stations with the Ocean Plan's Single Sample Maximum standard for total coliform bacteria and the fecal/total coliform ratio (F:T), which states that total coliform density shall not exceed 1,000 CFU/100 mL when F:T > 0.1.

Date	A1	A6	A7	C4	C5	C6	C7	C8
05 Oct 2020	IC							
13 Oct 2020	IC							
20 Oct 2020	IC							
28 Oct 2020	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 3.8**

Summary of water quality parameters at the PLOO kelp stations for each sample date. Densities of total coliform (Total), fecal coliform (Fecal) and *Enterococcus* (Enter) bacteria are reported as CFU/100 mL; the fecal:total coliform ratio (F:T) is unitless; values for temperature (Temp, °C), transmissivity (XMS, %), dissolved oxygen (DO, mg/L), salinity (Sal, ppt) and pH were extracted from CTD profile data for depths closest to those at which the bacteriological samples were collected. Comments follow the data summary.

Station	Date	Time	Depth	Total	Fecal	Enter	F:T	Temp	XMS	DO	Sal	pH
A1	05 Oct 2020	830	1	<20	<2	<2	0.10	20.2	85.57	7.8	33.54	8.1
A1	05 Oct 2020	830	12	4e	2e	<2	0.50	17.4	79.80	7.3	33.50	8.0
A1	05 Oct 2020	830	18	<20	<2	<2	0.10	15.2	71.31	6.5	33.50	7.9
A1	13 Oct 2020	853	1	2e	<2	<2	1.00	18.3	77.04	7.9	33.50	8.0
A1	13 Oct 2020	853	12	4e	2e	<2	0.50	15.9	77.60	6.7	33.48	7.9
A1	13 Oct 2020	853	18	22e	<2	<2	0.09	13.2	89.26	5.7	33.52	7.8
A1	20 Oct 2020	823	1	<2	<2	<2	1.00	18.3	85.30	7.6	33.51	8.0
A1	20 Oct 2020	823	12	<2	<2	<2	1.00	14.3	86.66	6.2	33.46	7.9
A1	20 Oct 2020	823	18	2e	<2	<2	1.00	13.8	89.04	5.9	33.49	7.9
A1	28 Oct 2020	805	1	<2	2e	<2	1.00	17.0	82.46	7.4	33.55	8.0
A1	28 Oct 2020	805	12	<2	<2	<2	1.00	15.4	86.03	6.2	33.49	7.9
A1	28 Oct 2020	805	18	<2	<2	<2	1.00	14.9	87.40	6.1	33.47	7.9
A6	05 Oct 2020	856	1	<2	<2	<2	1.00	20.1	84.01	7.9	33.54	8.1
A6	05 Oct 2020	856	12	<2	<2	<2	1.00	16.4	83.46	7.0	33.49	8.0
A6	05 Oct 2020	856	18	12e	2e	<2	0.17	14.7	85.60	6.9	33.46	8.0
A6	13 Oct 2020	928	1	<2	<2	<2	1.00	19.2	84.18	8.4	33.53	8.1
A6	13 Oct 2020	928	12	4e	<2	<2	0.50	15.9	84.37	6.0	33.48	7.9
A6	13 Oct 2020	928	18	4e	4e	<2	1.00	14.3	87.29	5.9	33.48	7.9
A6	20 Oct 2020	858	1	4e	<2	<2	0.50	19.1	82.46	7.9	33.53	8.1
A6	20 Oct 2020	858	12	22e	8e	2e	0.36	14.3	86.55	6.1	33.47	7.9
A6	20 Oct 2020	858	18	20e	14e	2e	0.70	14.2	87.03	6.1	33.48	7.9
A6	28 Oct 2020	831	1	<2	<2	<2	1.00	17.8	81.15	7.4	33.61	8.1
A6	28 Oct 2020	831	12	8e	<2	<2	0.25	15.2	86.76	6.1	33.47	7.9
A6	28 Oct 2020	831	18	30e	2e	2e	0.07	14.1	89.28	5.6	33.49	7.9
A7	05 Oct 2020	844	1	<20	2e	<2	0.10	20.4	85.02	7.9	33.55	8.1
A7	05 Oct 2020	844	12	2e	<2	<2	1.00	17.3	80.60	7.2	33.48	8.0
A7	05 Oct 2020	844	18	160e	34e	2e	0.21	13.8	84.11	6.3	33.48	7.9
A7	13 Oct 2020	913	1	<20	4e	<2	0.20	19.0	83.85	7.9	33.54	8.1
A7	13 Oct 2020	913	12	2e	<2	<2	1.00	15.4	79.41	6.7	33.46	7.9
A7	13 Oct 2020	913	18	6e	4e	2e	0.67	13.6	89.73	5.7	33.50	7.8
A7	20 Oct 2020	841	1	2e	<2	<2	1.00	18.4	84.86	7.7	33.51	8.0
A7	20 Oct 2020	841	12	22e	4e	<2	0.18	14.1	87.04	6.0	33.48	7.9
A7	20 Oct 2020	841	18	40e	4e	<2	0.10	14.1	87.18	6.0	33.48	7.9
A7	28 Oct 2020	818	1	2e	<2	<2	1.00	17.5	82.49	7.3	33.57	8.0
A7	28 Oct 2020	818	12	6e	<2	<2	0.33	16.3	83.03	6.5	33.52	8.0
A7	28 Oct 2020	818	18	40e	10e	<2	0.25	14.6	86.95	5.8	33.51	7.9
C4	05 Oct 2020	955	1	<20	<2	<2	0.10	19.3	73.73	7.9	33.50	8.1
C4	05 Oct 2020	955	3	<20	<2	<2	0.10	19.3	73.24	7.9	33.50	8.1
C4	05 Oct 2020	955	9	<20	2e	<2	0.10	17.9	69.65	6.5	33.48	8.0

Station	Date	Time	Depth	Total	Fecal	Enteric	F:T	Temp	XMS	DO	Sal	pH
C4	13 Oct 2020	1048	1	<2	<2	<2	1.00	19.5	80.39	7.4	33.52	8.0
C4	13 Oct 2020	1048	3	<20	<2	<2	0.10	19.1	79.80	7.4	33.52	8.0
C4	13 Oct 2020	1048	9	<20	<2	<2	0.10	16.8	78.47	5.1	33.49	7.8
C4	20 Oct 2020	1015	1	2e	<2	<2	1.00	19.2	81.60	7.3	33.52	8.1
C4	20 Oct 2020	1015	3	<20	<2	<2	0.10	18.9	83.18	7.3	33.52	8.1
C4	20 Oct 2020	1015	9	<20	2e	<2	0.10	15.3	83.54	5.1	33.47	7.8
C4	28 Oct 2020	942	1	<2	<2	<2	1.00	17.6	80.87	6.6	33.59	8.0
C4	28 Oct 2020	942	3	<2	<2	<2	1.00	17.6	80.64	6.6	33.59	8.0
C4	28 Oct 2020	942	9	<20	<2	<2	0.10	15.6	83.37	3.8	33.49	7.7
C5	05 Oct 2020	947	1	<20	<2	<2	0.10	20.3	81.09	7.5	33.55	8.1
C5	05 Oct 2020	947	3	<2	<2	<2	1.00	20.2	83.05	7.6	33.55	8.1
C5	05 Oct 2020	947	9	<2	2e	<2	1.00	19.1	82.00	6.9	33.54	8.0
C5	13 Oct 2020	1036	1	<2	<2	<2	1.00	19.1	81.12	8.2	33.52	8.1
C5	13 Oct 2020	1036	3	2e	<2	<2	1.00	18.8	81.39	8.2	33.52	8.1
C5	13 Oct 2020	1036	9	<2	<2	<2	1.00	16.2	79.00	5.7	33.46	7.9
C5	20 Oct 2020	1004	1	2e	<2	<2	1.00	19.2	81.36	7.4	33.53	8.1
C5	20 Oct 2020	1004	3	<2	<2	<2	1.00	18.2	82.74	7.2	33.54	8.1
C5	20 Oct 2020	1004	9	<20	2e	<2	0.10	15.4	86.77	6.1	33.50	7.9
C5	28 Oct 2020	929	1	<2	<2	<2	1.00	17.6	79.10	6.7	33.59	8.0
C5	28 Oct 2020	929	3	<2	<2	<2	1.00	17.6	78.74	6.8	33.60	8.0
C5	28 Oct 2020	929	9	2e	<2	<2	1.00	15.1	85.39	5.6	33.48	7.9
C6	05 Oct 2020	939	1	<20	<2	<2	0.10	20.0	78.66	7.6	33.54	8.1
C6	05 Oct 2020	939	3	<2	<2	<2	1.00	19.9	78.91	7.8	33.54	8.1
C6	05 Oct 2020	939	9	<2	<2	<2	1.00	18.1	82.76	7.3	33.53	8.1
C6	13 Oct 2020	1025	1	<20	<2	<2	0.10	19.2	81.88	7.9	33.53	8.1
C6	13 Oct 2020	1025	3	40e	<2	<2	0.05	18.9	79.95	7.3	33.52	8.1
C6	13 Oct 2020	1025	9	<20	<2	<2	0.10	16.0	80.06	5.5	33.48	7.9
C6	20 Oct 2020	951	1	20e	2e	<2	0.10	19.2	80.53	7.7	33.53	8.1
C6	20 Oct 2020	951	3	<20	<2	<2	0.10	18.2	81.73	7.5	33.52	8.1
C6	20 Oct 2020	951	9	10e	4e	<2	0.40	15.4	86.84	6.3	33.48	7.9
C6	28 Oct 2020	918	1	<20	<2	<2	0.10	17.8	80.68	7.0	33.60	8.0
C6	28 Oct 2020	918	3	<20	<2	<2	0.10	17.8	80.68	7.0	33.60	8.0
C6	28 Oct 2020	918	9	4e	<2	<2	0.50	15.9	84.75	6.1	33.50	7.9
C7	05 Oct 2020	914	1	2e	<2	<2	1.00	19.8	85.96	8.1	33.53	8.1
C7	05 Oct 2020	914	12	6e	<2	<2	0.33	15.7	84.90	7.1	33.47	8.0
C7	05 Oct 2020	914	18	2e	2e	<2	1.00	15.1	85.08	7.0	33.46	8.0
C7	13 Oct 2020	946	1	<20	<2	<2	0.10	19.1	80.86	7.7	33.57	8.1
C7	13 Oct 2020	946	12	<2	<2	<2	1.00	15.0	80.69	6.7	33.47	8.0
C7	13 Oct 2020	946	18	6e	<2	<2	0.33	14.0	88.73	6.0	33.49	7.9
C7	20 Oct 2020	916	1	<2	<2	<2	1.00	18.6	78.27	7.6	33.53	8.1
C7	20 Oct 2020	916	12	8e	<2	<2	0.25	14.8	85.98	6.4	33.48	7.9
C7	20 Oct 2020	916	18	12e	2e	<2	0.17	14.6	88.18	6.1	33.48	7.9
C7	28 Oct 2020	845	1	<2	<2	<2	1.00	17.4	84.03	7.4	33.56	8.1
C7	28 Oct 2020	845	12	2e	<2	<2	1.00	15.9	84.44	6.3	33.50	7.9
C7	28 Oct 2020	845	18	2e	2e	<2	1.00	14.6	88.24	5.8	33.47	7.9
C8	05 Oct 2020	923	1	2e	<2	<2	1.00	20.3	87.84	8.0	33.56	8.1

Station	Date	Time	Depth	Total	Fecal	Enteric	F:T	Temp	XMS	DO	Sal	pH
C8	05 Oct 2020	923	12	<2	<2	<2	1.00	15.7	82.29	7.3	33.46	8.0
C8	05 Oct 2020	923	18	2e	<2	<2	1.00	15.3	83.46	7.0	33.47	8.0
C8	13 Oct 2020	959	1	<20	<2	<2	0.10	19.1	81.64	7.8	33.55	8.1
C8	13 Oct 2020	959	12	<2	<2	<2	1.00	15.7	81.17	7.5	33.46	8.0
C8	13 Oct 2020	959	18	<2	<2	<2	1.00	13.8	88.43	6.2	33.48	7.9
C8	20 Oct 2020	932	1	<2	<2	<2	1.00	18.9	81.05	7.6	33.54	8.1
C8	20 Oct 2020	932	12	<2	2e	<2	1.00	16.1	82.55	6.8	33.49	8.0
C8	20 Oct 2020	932	18	4e	<2	<2	0.50	14.6	87.74	6.1	33.48	7.9
C8	28 Oct 2020	857	1	2e	<2	<2	1.00	17.6	85.00	7.5	33.56	8.1
C8	28 Oct 2020	857	12	<2	<2	<2	1.00	15.9	84.39	6.6	33.48	8.0
C8	28 Oct 2020	857	18	<2	4e	<2	2.00	14.9	88.46	5.9	33.48	7.9

ns = not sampled

ND = no data

## **Comments**

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**Table 3.9**

Summary of visual observations made during the month for each PLOO kelp bed station by sample date.

Station	Date	Parameter	Value
A1	05 Oct 2020	Depth (m)	18
A1	05 Oct 2020	Arrive Time	830
A1	05 Oct 2020	Depart Time	836
A1	05 Oct 2020	Air Temp (C)	21
A1	05 Oct 2020	Weather	Haze
A1	05 Oct 2020	Visibility (mi)	7
A1	05 Oct 2020	Wind Speed (kts)	5
A1	05 Oct 2020	Wind Dir	NW
A1	05 Oct 2020	Water Color	Greenish-Blue
A1	05 Oct 2020	Wave Ht Low (ft)	2
A1	05 Oct 2020	Wave Period (sec)	11
A1	05 Oct 2020	Sea State	Calm
A1	05 Oct 2020	High Tide (ft)	5.16
A1	05 Oct 2020	High Tide Time	1101
A1	05 Oct 2020	Low Tide (ft)	1.77
A1	05 Oct 2020	Low Tide Time	453
A1	05 Oct 2020	Comments	Kelp; Kelp debris
A1	13 Oct 2020	Depth (m)	18
A1	13 Oct 2020	Arrive Time	853
A1	13 Oct 2020	Depart Time	902
A1	13 Oct 2020	Air Temp (C)	20
A1	13 Oct 2020	Weather	Clear
A1	13 Oct 2020	Visibility (mi)	11
A1	13 Oct 2020	Wind Speed (kts)	1
A1	13 Oct 2020	Wind Dir	W
A1	13 Oct 2020	Water Color	Greenish-Blue
A1	13 Oct 2020	Wave Ht Low (ft)	1
A1	13 Oct 2020	Wave Period (sec)	13
A1	13 Oct 2020	Sea State	Calm
A1	13 Oct 2020	High Tide (ft)	4.81
A1	13 Oct 2020	High Tide Time	740
A1	13 Oct 2020	Low Tide (ft)	1.46
A1	13 Oct 2020	Low Tide Time	1325
A1	13 Oct 2020	Comments	none
A1	20 Oct 2020	Depth (m)	18
A1	20 Oct 2020	Arrive Time	823
A1	20 Oct 2020	Depart Time	826
A1	20 Oct 2020	Air Temp (C)	19
A1	20 Oct 2020	Weather	Overcast
A1	20 Oct 2020	Visibility (mi)	7
A1	20 Oct 2020	Wind Speed (kts)	1.5
A1	20 Oct 2020	Wind Dir	N
A1	20 Oct 2020	Water Color	Green
A1	20 Oct 2020	Wave Ht Low (ft)	3
A1	20 Oct 2020	Wave Period (sec)	15
A1	20 Oct 2020	Sea State	Light Chop
A1	20 Oct 2020	High Tide (ft)	5.97
A1	20 Oct 2020	High Tide Time	1145
A1	20 Oct 2020	Low Tide (ft)	-0.24
A1	20 Oct 2020	Low Tide Time	1914
A1	20 Oct 2020	Comments	Kelp Debris; Lobster Floats
A1	28 Oct 2020	Depth (m)	19
A1	28 Oct 2020	Arrive Time	805

Station	Date	Parameter	Value
A1	28 Oct 2020	Depart Time	809
A1	28 Oct 2020	Air Temp (C)	16
A1	28 Oct 2020	Weather	Clear
A1	28 Oct 2020	Visibility (mi)	8
A1	28 Oct 2020	Wind Speed (kts)	8
A1	28 Oct 2020	Wind Dir	E
A1	28 Oct 2020	Water Color	Green
A1	28 Oct 2020	Wave Ht Low (ft)	3
A1	28 Oct 2020	Wave Period (sec)	13
A1	28 Oct 2020	Sea State	Calm
A1	28 Oct 2020	High Tide (ft)	6.33
A1	28 Oct 2020	High Tide Time	2106
A1	28 Oct 2020	Low Tide (ft)	-0.71
A1	28 Oct 2020	Low Tide Time	405
A1	28 Oct 2020	Comments	Kelp; Kelp debris
A6	05 Oct 2020	Depth (m)	18
A6	05 Oct 2020	Arrive Time	856
A6	05 Oct 2020	Depart Time	904
A6	05 Oct 2020	Air Temp (C)	21
A6	05 Oct 2020	Weather	Haze
A6	05 Oct 2020	Visibility (mi)	7
A6	05 Oct 2020	Wind Speed (kts)	0
A6	05 Oct 2020	Wind Dir	
A6	05 Oct 2020	Water Color	Green
A6	05 Oct 2020	Wave Ht Low (ft)	2
A6	05 Oct 2020	Wave Period (sec)	11
A6	05 Oct 2020	Sea State	Calm
A6	05 Oct 2020	High Tide (ft)	5.16
A6	05 Oct 2020	High Tide Time	1101
A6	05 Oct 2020	Low Tide (ft)	1.77
A6	05 Oct 2020	Low Tide Time	453
A6	05 Oct 2020	Comments	Kelp
A6	13 Oct 2020	Depth (m)	18
A6	13 Oct 2020	Arrive Time	928
A6	13 Oct 2020	Depart Time	932
A6	13 Oct 2020	Air Temp (C)	21
A6	13 Oct 2020	Weather	Clear
A6	13 Oct 2020	Visibility (mi)	13
A6	13 Oct 2020	Wind Speed (kts)	0
A6	13 Oct 2020	Wind Dir	
A6	13 Oct 2020	Water Color	Greenish-Blue
A6	13 Oct 2020	Wave Ht Low (ft)	1
A6	13 Oct 2020	Wave Period (sec)	13
A6	13 Oct 2020	Sea State	Calm
A6	13 Oct 2020	High Tide (ft)	4.81
A6	13 Oct 2020	High Tide Time	740
A6	13 Oct 2020	Low Tide (ft)	1.46
A6	13 Oct 2020	Low Tide Time	1325
A6	13 Oct 2020	Comments	Kelp
A6	20 Oct 2020	Depth (m)	17
A6	20 Oct 2020	Arrive Time	858
A6	20 Oct 2020	Depart Time	904
A6	20 Oct 2020	Air Temp (C)	19
A6	20 Oct 2020	Weather	Overcast
A6	20 Oct 2020	Visibility (mi)	7
A6	20 Oct 2020	Wind Speed (kts)	0
A6	20 Oct 2020	Wind Dir	
A6	20 Oct 2020	Water Color	Green

Station	Date	Parameter	Value
A6	20 Oct 2020	Wave Ht Low (ft)	3
A6	20 Oct 2020	Wave Period (sec)	15
A6	20 Oct 2020	Sea State	Light Chop
A6	20 Oct 2020	High Tide (ft)	5.97
A6	20 Oct 2020	High Tide Time	1145
A6	20 Oct 2020	Low Tide (ft)	-0.24
A6	20 Oct 2020	Low Tide Time	1914
A6	20 Oct 2020	Comments	none
A6	28 Oct 2020	Depth (m)	18
A6	28 Oct 2020	Arrive Time	831
A6	28 Oct 2020	Depart Time	836
A6	28 Oct 2020	Air Temp (C)	17
A6	28 Oct 2020	Weather	Clear
A6	28 Oct 2020	Visibility (mi)	8
A6	28 Oct 2020	Wind Speed (kts)	8
A6	28 Oct 2020	Wind Dir	E
A6	28 Oct 2020	Water Color	Green
A6	28 Oct 2020	Wave Ht Low (ft)	3
A6	28 Oct 2020	Wave Period (sec)	13
A6	28 Oct 2020	Sea State	Calm
A6	28 Oct 2020	High Tide (ft)	6.33
A6	28 Oct 2020	High Tide Time	2106
A6	28 Oct 2020	Low Tide (ft)	-0.71
A6	28 Oct 2020	Low Tide Time	405
A6	28 Oct 2020	Comments	Kelp
A7	05 Oct 2020	Depth (m)	19
A7	05 Oct 2020	Arrive Time	844
A7	05 Oct 2020	Depart Time	847
A7	05 Oct 2020	Air Temp (C)	21
A7	05 Oct 2020	Weather	Haze
A7	05 Oct 2020	Visibility (mi)	7
A7	05 Oct 2020	Wind Speed (kts)	1
A7	05 Oct 2020	Wind Dir	N
A7	05 Oct 2020	Water Color	Green
A7	05 Oct 2020	Wave Ht Low (ft)	2
A7	05 Oct 2020	Wave Period (sec)	11
A7	05 Oct 2020	Sea State	Calm
A7	05 Oct 2020	High Tide (ft)	5.16
A7	05 Oct 2020	High Tide Time	1101
A7	05 Oct 2020	Low Tide (ft)	1.77
A7	05 Oct 2020	Low Tide Time	453
A7	05 Oct 2020	Comments	none
A7	13 Oct 2020	Depth (m)	18
A7	13 Oct 2020	Arrive Time	913
A7	13 Oct 2020	Depart Time	917
A7	13 Oct 2020	Air Temp (C)	21
A7	13 Oct 2020	Weather	Clear
A7	13 Oct 2020	Visibility (mi)	11
A7	13 Oct 2020	Wind Speed (kts)	0
A7	13 Oct 2020	Wind Dir	
A7	13 Oct 2020	Water Color	Greenish-Blue
A7	13 Oct 2020	Wave Ht Low (ft)	1
A7	13 Oct 2020	Wave Period (sec)	13
A7	13 Oct 2020	Sea State	Calm
A7	13 Oct 2020	High Tide (ft)	4.81
A7	13 Oct 2020	High Tide Time	740
A7	13 Oct 2020	Low Tide (ft)	1.46
A7	13 Oct 2020	Low Tide Time	1325

Station	Date	Parameter	Value
A7	13 Oct 2020	Comments	none
A7	20 Oct 2020	Depth (m)	20
A7	20 Oct 2020	Arrive Time	841
A7	20 Oct 2020	Depart Time	849
A7	20 Oct 2020	Air Temp (C)	19
A7	20 Oct 2020	Weather	Overcast
A7	20 Oct 2020	Visibility (mi)	7
A7	20 Oct 2020	Wind Speed (kts)	0
A7	20 Oct 2020	Wind Dir	
A7	20 Oct 2020	Water Color	Green
A7	20 Oct 2020	Wave Ht Low (ft)	3
A7	20 Oct 2020	Wave Period (sec)	15
A7	20 Oct 2020	Sea State	Calm
A7	20 Oct 2020	High Tide (ft)	5.97
A7	20 Oct 2020	High Tide Time	1145
A7	20 Oct 2020	Low Tide (ft)	-0.24
A7	20 Oct 2020	Low Tide Time	1914
A7	20 Oct 2020	Comments	Kelp Debris; Lobster Floats
A7	28 Oct 2020	Depth (m)	18
A7	28 Oct 2020	Arrive Time	818
A7	28 Oct 2020	Depart Time	822
A7	28 Oct 2020	Air Temp (C)	16
A7	28 Oct 2020	Weather	Clear
A7	28 Oct 2020	Visibility (mi)	8
A7	28 Oct 2020	Wind Speed (kts)	4
A7	28 Oct 2020	Wind Dir	E
A7	28 Oct 2020	Water Color	Green
A7	28 Oct 2020	Wave Ht Low (ft)	3
A7	28 Oct 2020	Wave Period (sec)	13
A7	28 Oct 2020	Sea State	Calm
A7	28 Oct 2020	High Tide (ft)	6.33
A7	28 Oct 2020	High Tide Time	2106
A7	28 Oct 2020	Low Tide (ft)	-0.71
A7	28 Oct 2020	Low Tide Time	405
A7	28 Oct 2020	Comments	Kelp; Boats
C4	05 Oct 2020	Depth (m)	9
C4	05 Oct 2020	Arrive Time	955
C4	05 Oct 2020	Depart Time	958
C4	05 Oct 2020	Air Temp (C)	21
C4	05 Oct 2020	Weather	Haze
C4	05 Oct 2020	Visibility (mi)	11
C4	05 Oct 2020	Wind Speed (kts)	4
C4	05 Oct 2020	Wind Dir	NW
C4	05 Oct 2020	Water Color	Green
C4	05 Oct 2020	Wave Ht Low (ft)	2
C4	05 Oct 2020	Wave Period (sec)	13
C4	05 Oct 2020	Sea State	Calm
C4	05 Oct 2020	High Tide (ft)	5.16
C4	05 Oct 2020	High Tide Time	1101
C4	05 Oct 2020	Low Tide (ft)	1.77
C4	05 Oct 2020	Low Tide Time	453
C4	05 Oct 2020	Comments	Kelp debris
C4	13 Oct 2020	Depth (m)	9
C4	13 Oct 2020	Arrive Time	1048
C4	13 Oct 2020	Depart Time	1051
C4	13 Oct 2020	Air Temp (C)	22
C4	13 Oct 2020	Weather	Clear

Station	Date	Parameter	Value
C4	13 Oct 2020	Visibility (mi)	15
C4	13 Oct 2020	Wind Speed (kts)	3
C4	13 Oct 2020	Wind Dir	W
C4	13 Oct 2020	Water Color	Greenish-Brown
C4	13 Oct 2020	Wave Ht Low (ft)	1
C4	13 Oct 2020	Wave Period (sec)	13
C4	13 Oct 2020	Sea State	Calm
C4	13 Oct 2020	High Tide (ft)	4.81
C4	13 Oct 2020	High Tide Time	740
C4	13 Oct 2020	Low Tide (ft)	1.46
C4	13 Oct 2020	Low Tide Time	1325
C4	13 Oct 2020	Comments	Kelp debris
C4	20 Oct 2020	Depth (m)	9
C4	20 Oct 2020	Arrive Time	1015
C4	20 Oct 2020	Depart Time	1020
C4	20 Oct 2020	Air Temp (C)	19
C4	20 Oct 2020	Weather	Overcast
C4	20 Oct 2020	Visibility (mi)	9
C4	20 Oct 2020	Wind Speed (kts)	0.3
C4	20 Oct 2020	Wind Dir	SE
C4	20 Oct 2020	Water Color	Green
C4	20 Oct 2020	Wave Ht Low (ft)	3
C4	20 Oct 2020	Wave Period (sec)	15
C4	20 Oct 2020	Sea State	Light Chop
C4	20 Oct 2020	High Tide (ft)	5.97
C4	20 Oct 2020	High Tide Time	1145
C4	20 Oct 2020	Low Tide (ft)	-0.24
C4	20 Oct 2020	Low Tide Time	1914
C4	20 Oct 2020	Comments	Kelp; Lobster Floats
C4	28 Oct 2020	Depth (m)	11
C4	28 Oct 2020	Arrive Time	942
C4	28 Oct 2020	Depart Time	944
C4	28 Oct 2020	Air Temp (C)	18
C4	28 Oct 2020	Weather	Clear
C4	28 Oct 2020	Visibility (mi)	10
C4	28 Oct 2020	Wind Speed (kts)	8
C4	28 Oct 2020	Wind Dir	E
C4	28 Oct 2020	Water Color	Green
C4	28 Oct 2020	Wave Ht Low (ft)	3
C4	28 Oct 2020	Wave Period (sec)	13
C4	28 Oct 2020	Sea State	Calm
C4	28 Oct 2020	High Tide (ft)	6.33
C4	28 Oct 2020	High Tide Time	2106
C4	28 Oct 2020	Low Tide (ft)	-0.71
C4	28 Oct 2020	Low Tide Time	405
C4	28 Oct 2020	Comments	Kelp; Lobster floats
C5	05 Oct 2020	Depth (m)	9
C5	05 Oct 2020	Arrive Time	947
C5	05 Oct 2020	Depart Time	949
C5	05 Oct 2020	Air Temp (C)	21
C5	05 Oct 2020	Weather	Haze
C5	05 Oct 2020	Visibility (mi)	11
C5	05 Oct 2020	Wind Speed (kts)	1
C5	05 Oct 2020	Wind Dir	NW
C5	05 Oct 2020	Water Color	Green
C5	05 Oct 2020	Wave Ht Low (ft)	2
C5	05 Oct 2020	Wave Period (sec)	13
C5	05 Oct 2020	Sea State	Calm

Station	Date	Parameter	Value
C5	05 Oct 2020	High Tide (ft)	5.16
C5	05 Oct 2020	High Tide Time	1101
C5	05 Oct 2020	Low Tide (ft)	1.77
C5	05 Oct 2020	Low Tide Time	453
C5	05 Oct 2020	Comments	Kelp; Kelp debris
C5	13 Oct 2020	Depth (m)	9
C5	13 Oct 2020	Arrive Time	1036
C5	13 Oct 2020	Depart Time	1038
C5	13 Oct 2020	Air Temp (C)	22
C5	13 Oct 2020	Weather	Clear
C5	13 Oct 2020	Visibility (mi)	13
C5	13 Oct 2020	Wind Speed (kts)	2
C5	13 Oct 2020	Wind Dir	W
C5	13 Oct 2020	Water Color	Green
C5	13 Oct 2020	Wave Ht Low (ft)	1
C5	13 Oct 2020	Wave Period (sec)	13
C5	13 Oct 2020	Sea State	Calm
C5	13 Oct 2020	High Tide (ft)	4.81
C5	13 Oct 2020	High Tide Time	740
C5	13 Oct 2020	Low Tide (ft)	1.46
C5	13 Oct 2020	Low Tide Time	1325
C5	13 Oct 2020	Comments	Kelp debris
C5	20 Oct 2020	Depth (m)	10
C5	20 Oct 2020	Arrive Time	1004
C5	20 Oct 2020	Depart Time	1008
C5	20 Oct 2020	Air Temp (C)	19
C5	20 Oct 2020	Weather	Overcast
C5	20 Oct 2020	Visibility (mi)	9
C5	20 Oct 2020	Wind Speed (kts)	5
C5	20 Oct 2020	Wind Dir	SW
C5	20 Oct 2020	Water Color	Green
C5	20 Oct 2020	Wave Ht Low (ft)	3
C5	20 Oct 2020	Wave Period (sec)	15
C5	20 Oct 2020	Sea State	Light Chop
C5	20 Oct 2020	High Tide (ft)	5.97
C5	20 Oct 2020	High Tide Time	1145
C5	20 Oct 2020	Low Tide (ft)	-0.24
C5	20 Oct 2020	Low Tide Time	1914
C5	20 Oct 2020	Comments	none
C5	28 Oct 2020	Depth (m)	9
C5	28 Oct 2020	Arrive Time	929
C5	28 Oct 2020	Depart Time	933
C5	28 Oct 2020	Air Temp (C)	18
C5	28 Oct 2020	Weather	Clear
C5	28 Oct 2020	Visibility (mi)	10
C5	28 Oct 2020	Wind Speed (kts)	4
C5	28 Oct 2020	Wind Dir	NE
C5	28 Oct 2020	Water Color	Green
C5	28 Oct 2020	Wave Ht Low (ft)	3
C5	28 Oct 2020	Wave Period (sec)	13
C5	28 Oct 2020	Sea State	Calm
C5	28 Oct 2020	High Tide (ft)	6.33
C5	28 Oct 2020	High Tide Time	2106
C5	28 Oct 2020	Low Tide (ft)	-0.71
C5	28 Oct 2020	Low Tide Time	405
C5	28 Oct 2020	Comments	Kelp; Lobster floats
C6	05 Oct 2020	Depth (m)	9

Station	Date	Parameter	Value
C6	05 Oct 2020	Arrive Time	939
C6	05 Oct 2020	Depart Time	940
C6	05 Oct 2020	Air Temp (C)	21
C6	05 Oct 2020	Weather	Haze
C6	05 Oct 2020	Visibility (mi)	10
C6	05 Oct 2020	Wind Speed (kts)	4
C6	05 Oct 2020	Wind Dir	NW
C6	05 Oct 2020	Water Color	Green
C6	05 Oct 2020	Wave Ht Low (ft)	2
C6	05 Oct 2020	Wave Period (sec)	13
C6	05 Oct 2020	Sea State	Calm
C6	05 Oct 2020	High Tide (ft)	5.16
C6	05 Oct 2020	High Tide Time	1101
C6	05 Oct 2020	Low Tide (ft)	1.77
C6	05 Oct 2020	Low Tide Time	453
C6	05 Oct 2020	Comments	Kelp
C6	13 Oct 2020	Depth (m)	10
C6	13 Oct 2020	Arrive Time	1025
C6	13 Oct 2020	Depart Time	1027
C6	13 Oct 2020	Air Temp (C)	22
C6	13 Oct 2020	Weather	Clear
C6	13 Oct 2020	Visibility (mi)	13
C6	13 Oct 2020	Wind Speed (kts)	7
C6	13 Oct 2020	Wind Dir	NW
C6	13 Oct 2020	Water Color	Green
C6	13 Oct 2020	Wave Ht Low (ft)	1
C6	13 Oct 2020	Wave Period (sec)	13
C6	13 Oct 2020	Sea State	Calm
C6	13 Oct 2020	High Tide (ft)	4.81
C6	13 Oct 2020	High Tide Time	740
C6	13 Oct 2020	Low Tide (ft)	1.46
C6	13 Oct 2020	Low Tide Time	1325
C6	13 Oct 2020	Comments	Kelp
C6	20 Oct 2020	Depth (m)	9
C6	20 Oct 2020	Arrive Time	951
C6	20 Oct 2020	Depart Time	958
C6	20 Oct 2020	Air Temp (C)	19
C6	20 Oct 2020	Weather	Overcast
C6	20 Oct 2020	Visibility (mi)	9
C6	20 Oct 2020	Wind Speed (kts)	3.7
C6	20 Oct 2020	Wind Dir	S
C6	20 Oct 2020	Water Color	Green
C6	20 Oct 2020	Wave Ht Low (ft)	3
C6	20 Oct 2020	Wave Period (sec)	15
C6	20 Oct 2020	Sea State	Light Chop
C6	20 Oct 2020	High Tide (ft)	5.97
C6	20 Oct 2020	High Tide Time	1145
C6	20 Oct 2020	Low Tide (ft)	-0.24
C6	20 Oct 2020	Low Tide Time	1914
C6	20 Oct 2020	Comments	Kelp Debris; Lobster Floats
C6	28 Oct 2020	Depth (m)	10
C6	28 Oct 2020	Arrive Time	918
C6	28 Oct 2020	Depart Time	921
C6	28 Oct 2020	Air Temp (C)	18
C6	28 Oct 2020	Weather	Clear
C6	28 Oct 2020	Visibility (mi)	10
C6	28 Oct 2020	Wind Speed (kts)	6
C6	28 Oct 2020	Wind Dir	E

Station	Date	Parameter	Value
C6	28 Oct 2020	Water Color	Green
C6	28 Oct 2020	Wave Ht Low (ft)	3
C6	28 Oct 2020	Wave Period (sec)	13
C6	28 Oct 2020	Sea State	Calm
C6	28 Oct 2020	High Tide (ft)	6.33
C6	28 Oct 2020	High Tide Time	2106
C6	28 Oct 2020	Low Tide (ft)	-0.71
C6	28 Oct 2020	Low Tide Time	405
C6	28 Oct 2020	Comments	Kelp; Lobster floats
C7	05 Oct 2020	Depth (m)	18
C7	05 Oct 2020	Arrive Time	914
C7	05 Oct 2020	Depart Time	916
C7	05 Oct 2020	Air Temp (C)	21
C7	05 Oct 2020	Weather	Haze
C7	05 Oct 2020	Visibility (mi)	9
C7	05 Oct 2020	Wind Speed (kts)	0
C7	05 Oct 2020	Wind Dir	
C7	05 Oct 2020	Water Color	Green
C7	05 Oct 2020	Wave Ht Low (ft)	2
C7	05 Oct 2020	Wave Period (sec)	11
C7	05 Oct 2020	Sea State	Calm
C7	05 Oct 2020	High Tide (ft)	5.16
C7	05 Oct 2020	High Tide Time	1101
C7	05 Oct 2020	Low Tide (ft)	1.77
C7	05 Oct 2020	Low Tide Time	453
C7	05 Oct 2020	Comments	none
C7	13 Oct 2020	Depth (m)	18
C7	13 Oct 2020	Arrive Time	946
C7	13 Oct 2020	Depart Time	949
C7	13 Oct 2020	Air Temp (C)	22
C7	13 Oct 2020	Weather	Clear
C7	13 Oct 2020	Visibility (mi)	13
C7	13 Oct 2020	Wind Speed (kts)	2
C7	13 Oct 2020	Wind Dir	N
C7	13 Oct 2020	Water Color	Green
C7	13 Oct 2020	Wave Ht Low (ft)	1
C7	13 Oct 2020	Wave Period (sec)	13
C7	13 Oct 2020	Sea State	Calm
C7	13 Oct 2020	High Tide (ft)	4.81
C7	13 Oct 2020	High Tide Time	740
C7	13 Oct 2020	Low Tide (ft)	1.46
C7	13 Oct 2020	Low Tide Time	1325
C7	13 Oct 2020	Comments	Kelp
C7	20 Oct 2020	Depth (m)	19
C7	20 Oct 2020	Arrive Time	916
C7	20 Oct 2020	Depart Time	923
C7	20 Oct 2020	Air Temp (C)	19
C7	20 Oct 2020	Weather	Overcast
C7	20 Oct 2020	Visibility (mi)	7
C7	20 Oct 2020	Wind Speed (kts)	1
C7	20 Oct 2020	Wind Dir	W
C7	20 Oct 2020	Water Color	Green
C7	20 Oct 2020	Wave Ht Low (ft)	3
C7	20 Oct 2020	Wave Period (sec)	15
C7	20 Oct 2020	Sea State	Light Chop
C7	20 Oct 2020	High Tide (ft)	5.97
C7	20 Oct 2020	High Tide Time	1145
C7	20 Oct 2020	Low Tide (ft)	-0.24

Station	Date	Parameter	Value
C7	20 Oct 2020	Low Tide Time	1914
C7	20 Oct 2020	Comments	none
C7	28 Oct 2020	Depth (m)	18
C7	28 Oct 2020	Arrive Time	845
C7	28 Oct 2020	Depart Time	848
C7	28 Oct 2020	Air Temp (C)	17
C7	28 Oct 2020	Weather	Clear
C7	28 Oct 2020	Visibility (mi)	10
C7	28 Oct 2020	Wind Speed (kts)	9
C7	28 Oct 2020	Wind Dir	E
C7	28 Oct 2020	Water Color	Green
C7	28 Oct 2020	Wave Ht Low (ft)	3
C7	28 Oct 2020	Wave Period (sec)	13
C7	28 Oct 2020	Sea State	Calm
C7	28 Oct 2020	High Tide (ft)	6.33
C7	28 Oct 2020	High Tide Time	2106
C7	28 Oct 2020	Low Tide (ft)	-0.71
C7	28 Oct 2020	Low Tide Time	405
C7	28 Oct 2020	Comments	Kelp; Seagrass
C8	05 Oct 2020	Depth (m)	18
C8	05 Oct 2020	Arrive Time	923
C8	05 Oct 2020	Depart Time	925
C8	05 Oct 2020	Air Temp (C)	21
C8	05 Oct 2020	Weather	Haze
C8	05 Oct 2020	Visibility (mi)	10
C8	05 Oct 2020	Wind Speed (kts)	1
C8	05 Oct 2020	Wind Dir	SE
C8	05 Oct 2020	Water Color	Green
C8	05 Oct 2020	Wave Ht Low (ft)	2
C8	05 Oct 2020	Wave Period (sec)	13
C8	05 Oct 2020	Sea State	Calm
C8	05 Oct 2020	High Tide (ft)	5.16
C8	05 Oct 2020	High Tide Time	1101
C8	05 Oct 2020	Low Tide (ft)	1.77
C8	05 Oct 2020	Low Tide Time	453
C8	05 Oct 2020	Comments	none
C8	13 Oct 2020	Depth (m)	18
C8	13 Oct 2020	Arrive Time	959
C8	13 Oct 2020	Depart Time	1002
C8	13 Oct 2020	Air Temp (C)	22
C8	13 Oct 2020	Weather	Clear
C8	13 Oct 2020	Visibility (mi)	13
C8	13 Oct 2020	Wind Speed (kts)	2
C8	13 Oct 2020	Wind Dir	E
C8	13 Oct 2020	Water Color	Green
C8	13 Oct 2020	Wave Ht Low (ft)	1
C8	13 Oct 2020	Wave Period (sec)	13
C8	13 Oct 2020	Sea State	Calm
C8	13 Oct 2020	High Tide (ft)	4.81
C8	13 Oct 2020	High Tide Time	740
C8	13 Oct 2020	Low Tide (ft)	1.46
C8	13 Oct 2020	Low Tide Time	1325
C8	13 Oct 2020	Comments	Kelp
C8	20 Oct 2020	Depth (m)	20
C8	20 Oct 2020	Arrive Time	932
C8	20 Oct 2020	Depart Time	1002
C8	20 Oct 2020	Air Temp (C)	20

Station	Date	Parameter	Value
C8	20 Oct 2020	Weather	Overcast
C8	20 Oct 2020	Visibility (mi)	7
C8	20 Oct 2020	Wind Speed (kts)	0
C8	20 Oct 2020	Wind Dir	
C8	20 Oct 2020	Water Color	Green
C8	20 Oct 2020	Wave Ht Low (ft)	3
C8	20 Oct 2020	Wave Period (sec)	15
C8	20 Oct 2020	Sea State	Light Chop
C8	20 Oct 2020	High Tide (ft)	5.97
C8	20 Oct 2020	High Tide Time	1145
C8	20 Oct 2020	Low Tide (ft)	-0.24
C8	20 Oct 2020	Low Tide Time	1914
C8	20 Oct 2020	Comments	none
C8	28 Oct 2020	Depth (m)	20
C8	28 Oct 2020	Arrive Time	857
C8	28 Oct 2020	Depart Time	901
C8	28 Oct 2020	Air Temp (C)	17
C8	28 Oct 2020	Weather	Clear
C8	28 Oct 2020	Visibility (mi)	10
C8	28 Oct 2020	Wind Speed (kts)	4
C8	28 Oct 2020	Wind Dir	E
C8	28 Oct 2020	Water Color	Green
C8	28 Oct 2020	Wave Ht Low (ft)	3
C8	28 Oct 2020	Wave Period (sec)	13
C8	28 Oct 2020	Sea State	Calm
C8	28 Oct 2020	High Tide (ft)	6.33
C8	28 Oct 2020	High Tide Time	2106
C8	28 Oct 2020	Low Tide (ft)	-0.71
C8	28 Oct 2020	Low Tide Time	405
C8	28 Oct 2020	Comments	Kelp; Seagrass

**Table 3.10**

Summary of CTD profile data from the PLOO kelp stations for each sample date.

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma-t$ )	Chlor ( $\mu\text{g/L}$ )
A1	05 Oct 2020	1	20.20	85.57	7.8	33.54	8.1	23.6	1.24
A1	05 Oct 2020	2	19.99	85.29	7.8	33.56	8.1	23.7	1.31
A1	05 Oct 2020	3	19.65	83.42	7.9	33.53	8.1	23.7	1.68
A1	05 Oct 2020	4	19.58	82.27	7.8	33.53	8.1	23.7	2.06
A1	05 Oct 2020	5	19.46	82.22	7.8	33.53	8.1	23.8	2.28
A1	05 Oct 2020	6	19.29	81.96	7.7	33.52	8.0	23.8	2.54
A1	05 Oct 2020	7	19.07	80.97	7.6	33.52	8.0	23.9	2.85
A1	05 Oct 2020	8	18.70	79.54	7.5	33.51	8.0	24.0	3.23
A1	05 Oct 2020	9	18.37	78.33	7.5	33.51	8.0	24.0	3.53
A1	05 Oct 2020	10	17.98	78.18	7.5	33.50	8.0	24.1	3.57
A1	05 Oct 2020	11	17.77	79.05	7.4	33.49	8.0	24.2	3.37
A1	05 Oct 2020	12	17.41	79.80	7.3	33.50	8.0	24.3	3.29
A1	05 Oct 2020	13	16.90	80.24	7.2	33.49	8.0	24.4	3.15
A1	05 Oct 2020	14	16.48	79.99	7.1	33.48	8.0	24.5	2.89
A1	05 Oct 2020	15	16.19	77.39	6.9	33.47	8.0	24.5	2.26
A1	05 Oct 2020	16	16.14	74.84	6.8	33.46	7.9	24.5	1.71
A1	05 Oct 2020	17	15.87	72.66	6.6	33.48	7.9	24.6	1.37
A1	05 Oct 2020	18	15.22	71.31	6.5	33.50	7.9	24.8	1.35
A1	13 Oct 2020	1	18.30	77.04	7.9	33.50	8.0	24.1	2.27
A1	13 Oct 2020	2	18.32	78.78	7.9	33.51	8.0	24.1	2.28
A1	13 Oct 2020	3	18.24	78.56	7.7	33.51	8.0	24.1	2.77
A1	13 Oct 2020	4	17.94	78.28	7.6	33.51	8.0	24.1	3.49
A1	13 Oct 2020	5	17.83	76.51	7.6	33.50	8.0	24.2	4.08
A1	13 Oct 2020	6	17.83	75.75	7.6	33.50	8.0	24.2	4.34
A1	13 Oct 2020	7	17.80	75.44	7.6	33.50	8.0	24.2	4.46
A1	13 Oct 2020	8	17.78	75.50	7.5	33.49	8.0	24.2	4.57
A1	13 Oct 2020	9	17.50	75.54	7.4	33.49	8.0	24.2	4.90
A1	13 Oct 2020	10	16.93	75.59	7.2	33.48	8.0	24.4	5.32
A1	13 Oct 2020	11	16.97	75.75	7.0	33.48	7.9	24.4	5.12
A1	13 Oct 2020	12	15.86	77.60	6.7	33.48	7.9	24.6	4.46
A1	13 Oct 2020	13	15.64	79.88	6.4	33.47	7.9	24.6	3.58
A1	13 Oct 2020	14	15.30	82.92	6.3	33.47	7.9	24.7	2.41
A1	13 Oct 2020	15	14.92	85.51	6.1	33.47	7.9	24.8	1.58
A1	13 Oct 2020	16	14.34	87.30	5.9	33.49	7.8	24.9	1.02
A1	13 Oct 2020	17	13.41	88.33	5.7	33.53	7.8	25.2	0.64
A1	13 Oct 2020	18	13.17	89.26	5.7	33.52	7.8	25.2	0.41
A1	13 Oct 2020	19	13.56	89.53	5.7	33.48	7.8	25.1	0.45
A1	20 Oct 2020	1	18.27	85.30	7.6	33.51	8.0	24.1	1.81
A1	20 Oct 2020	2	18.20	85.50	7.6	33.51	8.0	24.1	1.95
A1	20 Oct 2020	3	18.19	85.42	7.6	33.51	8.0	24.1	2.06
A1	20 Oct 2020	4	18.09	85.38	7.5	33.51	8.0	24.1	2.16
A1	20 Oct 2020	5	18.08	85.27	7.5	33.50	8.0	24.1	2.18
A1	20 Oct 2020	6	17.95	85.17	7.5	33.51	8.0	24.1	2.25
A1	20 Oct 2020	7	17.72	84.84	7.4	33.50	8.0	24.2	2.42
A1	20 Oct 2020	8	17.39	84.66	7.3	33.51	8.0	24.3	2.48
A1	20 Oct 2020	9	16.95	84.54	7.1	33.50	8.0	24.4	2.55
A1	20 Oct 2020	10	16.17	84.74	6.6	33.51	8.0	24.6	2.45
A1	20 Oct 2020	11	14.41	85.84	6.3	33.51	7.9	24.9	2.40
A1	20 Oct 2020	12	14.32	86.66	6.2	33.46	7.9	24.9	2.44
A1	20 Oct 2020	13	14.17	86.93	6.1	33.47	7.9	25.0	2.32
A1	20 Oct 2020	14	14.05	87.50	6.1	33.47	7.9	25.0	2.12
A1	20 Oct 2020	15	13.98	87.92	6.0	33.48	7.9	25.0	1.87
A1	20 Oct 2020	16	13.87	88.60	6.0	33.49	7.9	25.0	1.58
A1	20 Oct 2020	17	13.87	89.14	6.0	33.49	7.9	25.0	1.52

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
A1	20 Oct 2020	18	13.83	89.04	5.9	33.49	7.9	25.1	1.41
A1	28 Oct 2020	1	17.02	82.46	7.4	33.55	8.0	24.4	2.88
A1	28 Oct 2020	2	17.01	82.45	7.4	33.55	8.0	24.4	2.96
A1	28 Oct 2020	3	16.94	82.39	7.2	33.55	8.0	24.4	3.24
A1	28 Oct 2020	4	16.90	82.54	7.1	33.54	8.0	24.4	3.40
A1	28 Oct 2020	5	16.69	82.78	7.0	33.54	8.0	24.5	3.48
A1	28 Oct 2020	6	16.65	83.02	6.9	33.53	8.0	24.5	3.55
A1	28 Oct 2020	7	16.30	83.21	6.8	33.53	8.0	24.6	3.62
A1	28 Oct 2020	8	16.03	83.57	6.6	33.52	8.0	24.6	3.58
A1	28 Oct 2020	9	15.81	84.47	6.4	33.51	7.9	24.6	3.30
A1	28 Oct 2020	10	15.43	85.53	6.3	33.50	7.9	24.7	2.87
A1	28 Oct 2020	11	15.39	86.06	6.3	33.49	7.9	24.7	2.57
A1	28 Oct 2020	12	15.38	86.03	6.2	33.49	7.9	24.7	2.50
A1	28 Oct 2020	13	15.31	86.14	6.2	33.49	7.9	24.7	2.42
A1	28 Oct 2020	14	15.32	86.23	6.2	33.49	7.9	24.7	2.40
A1	28 Oct 2020	15	15.28	86.30	6.2	33.49	7.9	24.7	2.39
A1	28 Oct 2020	16	15.25	86.52	6.2	33.49	7.9	24.8	2.25
A1	28 Oct 2020	17	14.87	86.81	6.2	33.50	7.9	24.8	2.13
A1	28 Oct 2020	18	14.87	87.40	6.1	33.47	7.9	24.8	1.96
A1	28 Oct 2020	19	14.15	88.47	5.9	33.51	7.9	25.0	1.45
A1	28 Oct 2020	20	14.02	89.12	5.8	33.49	7.9	25.0	1.12
A6	05 Oct 2020	1	20.07	84.01	7.9	33.54	8.1	23.6	1.31
A6	05 Oct 2020	2	20.05	84.17	7.9	33.54	8.1	23.6	1.28
A6	05 Oct 2020	3	19.98	84.86	7.9	33.55	8.1	23.7	1.31
A6	05 Oct 2020	4	19.90	85.35	7.9	33.54	8.1	23.7	1.51
A6	05 Oct 2020	5	19.70	84.73	7.9	33.55	8.1	23.7	1.66
A6	05 Oct 2020	6	19.14	83.62	7.8	33.55	8.1	23.9	2.01
A6	05 Oct 2020	7	18.69	82.06	7.8	33.52	8.1	24.0	2.50
A6	05 Oct 2020	8	18.05	81.74	7.5	33.53	8.1	24.1	2.41
A6	05 Oct 2020	9	17.42	82.58	7.3	33.53	8.0	24.3	2.12
A6	05 Oct 2020	10	16.85	83.00	7.2	33.50	8.0	24.4	1.96
A6	05 Oct 2020	11	16.52	83.38	7.1	33.49	8.0	24.5	1.86
A6	05 Oct 2020	12	16.39	83.46	7.0	33.49	8.0	24.5	1.79
A6	05 Oct 2020	13	15.32	83.40	6.9	33.51	8.0	24.8	1.88
A6	05 Oct 2020	14	14.82	83.94	7.0	33.47	8.0	24.8	2.10
A6	05 Oct 2020	15	14.72	85.12	7.0	33.45	8.0	24.8	2.06
A6	05 Oct 2020	16	14.70	85.62	7.0	33.45	8.0	24.8	1.94
A6	05 Oct 2020	17	14.74	85.58	7.0	33.45	8.0	24.8	1.93
A6	05 Oct 2020	18	14.69	85.60	6.9	33.46	8.0	24.9	1.96
A6	13 Oct 2020	1	19.16	84.18	8.4	33.53	8.1	23.9	1.11
A6	13 Oct 2020	2	19.06	83.90	8.2	33.53	8.1	23.9	1.12
A6	13 Oct 2020	3	19.00	83.42	8.2	33.53	8.1	23.9	1.36
A6	13 Oct 2020	4	18.88	82.47	8.1	33.53	8.1	23.9	1.71
A6	13 Oct 2020	5	18.82	81.92	8.1	33.52	8.1	23.9	2.18
A6	13 Oct 2020	6	18.58	81.76	8.0	33.54	8.1	24.0	2.40
A6	13 Oct 2020	7	18.33	81.37	7.8	33.53	8.1	24.1	2.71
A6	13 Oct 2020	8	17.55	80.80	7.5	33.55	8.0	24.3	3.08
A6	13 Oct 2020	9	17.26	80.27	7.3	33.49	8.0	24.3	3.64
A6	13 Oct 2020	10	16.94	80.53	7.0	33.55	8.0	24.4	3.91
A6	13 Oct 2020	11	16.16	81.74	6.3	33.50	7.9	24.6	3.42
A6	13 Oct 2020	12	15.94	84.37	6.0	33.48	7.9	24.6	2.49
A6	13 Oct 2020	13	15.62	86.22	5.8	33.49	7.9	24.7	1.79
A6	13 Oct 2020	14	15.25	87.34	5.7	33.49	7.9	24.8	1.26
A6	13 Oct 2020	15	14.81	88.09	5.6	33.50	7.9	24.9	0.87
A6	13 Oct 2020	16	14.59	88.67	5.7	33.48	7.9	24.9	0.76
A6	13 Oct 2020	17	14.42	87.96	5.9	33.48	7.9	24.9	0.85
A6	13 Oct 2020	18	14.35	87.29	5.9	33.48	7.9	24.9	0.98
A6	13 Oct 2020	19	14.23	88.12	6.0	33.49	7.9	25.0	0.70

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
A6	13 Oct 2020	20	14.16	89.06	5.8	33.50	7.8	25.0	0.62
A6	20 Oct 2020	1	19.07	82.46	7.9	33.53	8.1	23.9	1.67
A6	20 Oct 2020	2	19.02	80.83	7.7	33.53	8.1	23.9	1.78
A6	20 Oct 2020	3	18.31	79.65	7.4	33.55	8.1	24.1	2.35
A6	20 Oct 2020	4	17.08	82.20	7.1	33.50	8.0	24.3	2.98
A6	20 Oct 2020	5	15.76	82.51	6.8	33.49	8.0	24.6	2.92
A6	20 Oct 2020	6	14.86	83.99	6.5	33.48	7.9	24.8	2.50
A6	20 Oct 2020	7	14.62	85.72	6.3	33.47	7.9	24.9	2.23
A6	20 Oct 2020	8	14.40	86.60	6.3	33.46	7.9	24.9	2.33
A6	20 Oct 2020	9	14.30	86.67	6.2	33.46	7.9	24.9	2.52
A6	20 Oct 2020	10	14.27	86.57	6.2	33.46	7.9	24.9	2.56
A6	20 Oct 2020	11	14.30	86.52	6.2	33.46	7.9	24.9	2.62
A6	20 Oct 2020	12	14.26	86.55	6.1	33.47	7.9	25.0	2.56
A6	20 Oct 2020	13	14.24	86.91	6.1	33.47	7.9	25.0	2.49
A6	20 Oct 2020	14	14.25	86.98	6.1	33.48	7.9	25.0	2.40
A6	20 Oct 2020	15	14.20	87.02	6.1	33.48	7.9	25.0	2.29
A6	20 Oct 2020	16	14.20	87.02	6.1	33.48	7.9	25.0	2.29
A6	20 Oct 2020	17	14.17	87.06	6.1	33.48	7.9	25.0	2.34
A6	20 Oct 2020	18	14.16	87.03	6.1	33.48	7.9	25.0	2.31
A6	20 Oct 2020	19	14.17	87.14	6.1	33.48	7.9	25.0	2.30
A6	20 Oct 2020	20	14.17	87.24	6.1	33.48	7.9	25.0	2.23
A6	20 Oct 2020	21	14.17	87.31	6.1	33.48	7.9	25.0	2.21
A6	28 Oct 2020	1	17.76	81.15	7.4	33.61	8.1	24.3	2.07
A6	28 Oct 2020	2	17.76	81.36	7.4	33.60	8.1	24.3	2.20
A6	28 Oct 2020	3	17.75	81.48	7.4	33.60	8.1	24.3	2.46
A6	28 Oct 2020	4	17.66	81.81	7.4	33.60	8.1	24.3	2.69
A6	28 Oct 2020	5	17.53	81.85	7.4	33.58	8.1	24.3	3.07
A6	28 Oct 2020	6	17.39	82.49	7.4	33.56	8.1	24.3	3.45
A6	28 Oct 2020	7	17.10	83.02	7.2	33.55	8.0	24.4	3.82
A6	28 Oct 2020	8	16.88	83.05	7.0	33.53	8.0	24.4	3.91
A6	28 Oct 2020	9	16.46	82.88	6.7	33.52	8.0	24.5	3.54
A6	28 Oct 2020	10	15.80	83.26	6.4	33.50	8.0	24.6	2.70
A6	28 Oct 2020	11	15.29	84.63	6.2	33.48	7.9	24.7	1.96
A6	28 Oct 2020	12	15.17	86.76	6.1	33.47	7.9	24.8	1.60
A6	28 Oct 2020	13	15.03	87.87	6.0	33.48	7.9	24.8	1.42
A6	28 Oct 2020	14	14.90	88.25	6.0	33.49	7.9	24.8	1.30
A6	28 Oct 2020	15	14.78	88.61	5.9	33.48	7.9	24.9	1.21
A6	28 Oct 2020	16	14.62	88.78	5.8	33.48	7.9	24.9	1.07
A6	28 Oct 2020	17	14.27	88.97	5.7	33.49	7.9	25.0	0.92
A6	28 Oct 2020	18	14.09	89.28	5.6	33.49	7.9	25.0	0.85
A6	28 Oct 2020	19	14.02	89.33	5.5	33.48	7.9	25.0	0.76
A6	28 Oct 2020	20	13.98	89.68	5.5	33.48	7.8	25.0	0.73
A6	28 Oct 2020	21	13.97	89.76	5.5	33.49	7.8	25.0	0.70
A7	05 Oct 2020	1	20.39	85.02	7.9	33.55	8.1	23.6	1.25
A7	05 Oct 2020	2	20.38	85.22	7.9	33.55	8.1	23.6	1.26
A7	05 Oct 2020	3	20.32	85.01	7.9	33.55	8.1	23.6	1.43
A7	05 Oct 2020	4	20.16	85.02	7.9	33.55	8.1	23.6	1.70
A7	05 Oct 2020	5	19.57	84.56	7.8	33.55	8.1	23.8	2.46
A7	05 Oct 2020	6	18.80	82.21	7.8	33.53	8.1	24.0	3.28
A7	05 Oct 2020	7	18.36	80.02	7.8	33.51	8.1	24.0	3.80
A7	05 Oct 2020	8	17.90	79.00	7.7	33.49	8.1	24.1	4.02
A7	05 Oct 2020	9	17.67	78.68	7.7	33.48	8.0	24.2	4.02
A7	05 Oct 2020	10	17.54	78.31	7.6	33.48	8.0	24.2	3.89
A7	05 Oct 2020	11	17.30	78.82	7.4	33.48	8.0	24.3	3.13
A7	05 Oct 2020	12	17.26	80.60	7.2	33.48	8.0	24.3	2.66
A7	05 Oct 2020	13	16.00	81.16	6.9	33.52	8.0	24.6	2.05
A7	05 Oct 2020	14	15.04	81.28	6.7	33.48	8.0	24.8	1.65
A7	05 Oct 2020	15	14.71	81.91	6.6	33.48	8.0	24.9	1.46

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
A7	05 Oct 2020	16	14.11	83.04	6.5	33.48	7.9	25.0	1.32
A7	05 Oct 2020	17	13.93	83.93	6.4	33.47	7.9	25.0	1.19
A7	05 Oct 2020	18	13.85	84.11	6.3	33.48	7.9	25.0	1.15
A7	05 Oct 2020	19	13.81	83.76	6.2	33.48	7.9	25.1	1.09
A7	13 Oct 2020	1	18.96	83.85	7.9	33.54	8.1	23.9	1.23
A7	13 Oct 2020	2	18.81	83.40	7.9	33.54	8.1	24.0	1.50
A7	13 Oct 2020	3	18.62	81.97	8.0	33.53	8.1	24.0	2.07
A7	13 Oct 2020	4	18.53	80.24	8.0	33.52	8.1	24.0	2.37
A7	13 Oct 2020	5	18.46	79.84	7.9	33.52	8.1	24.0	2.56
A7	13 Oct 2020	6	17.96	79.44	7.6	33.52	8.0	24.1	3.48
A7	13 Oct 2020	7	16.92	78.71	7.3	33.51	8.0	24.4	4.59
A7	13 Oct 2020	8	16.38	78.43	7.3	33.48	8.0	24.5	5.01
A7	13 Oct 2020	9	16.28	78.83	7.2	33.47	8.0	24.5	5.26
A7	13 Oct 2020	10	16.07	78.74	7.1	33.47	8.0	24.6	5.47
A7	13 Oct 2020	11	15.56	78.71	6.9	33.47	8.0	24.7	5.47
A7	13 Oct 2020	12	15.37	79.41	6.7	33.46	7.9	24.7	5.04
A7	13 Oct 2020	13	15.25	81.21	6.6	33.46	7.9	24.7	3.51
A7	13 Oct 2020	14	14.96	85.71	6.2	33.47	7.9	24.8	1.88
A7	13 Oct 2020	15	14.09	88.21	6.0	33.50	7.9	25.0	1.05
A7	13 Oct 2020	16	13.86	89.26	5.9	33.49	7.9	25.1	0.77
A7	13 Oct 2020	17	13.63	89.49	5.8	33.49	7.9	25.1	0.58
A7	13 Oct 2020	18	13.59	89.73	5.7	33.50	7.8	25.1	0.52
A7	13 Oct 2020	19	13.59	89.91	5.7	33.50	7.8	25.1	0.48
A7	13 Oct 2020	20	13.59	89.82	5.7	33.50	7.8	25.1	0.44
A7	20 Oct 2020	1	18.39	84.86	7.7	33.51	8.0	24.0	1.78
A7	20 Oct 2020	2	18.36	84.96	7.5	33.51	8.0	24.0	1.87
A7	20 Oct 2020	3	16.84	84.69	7.0	33.54	8.0	24.4	2.26
A7	20 Oct 2020	4	15.54	84.70	6.6	33.46	7.9	24.7	2.49
A7	20 Oct 2020	5	14.58	85.81	6.4	33.51	7.9	24.9	2.68
A7	20 Oct 2020	6	14.29	86.11	6.2	33.46	7.9	24.9	2.69
A7	20 Oct 2020	7	14.25	86.34	6.2	33.46	7.9	24.9	2.63
A7	20 Oct 2020	8	14.30	86.51	6.1	33.46	7.9	24.9	2.68
A7	20 Oct 2020	9	14.19	86.61	6.1	33.47	7.9	25.0	2.49
A7	20 Oct 2020	10	14.17	86.72	6.1	33.47	7.9	25.0	2.45
A7	20 Oct 2020	11	14.15	86.91	6.1	33.48	7.9	25.0	2.38
A7	20 Oct 2020	12	14.14	87.04	6.0	33.48	7.9	25.0	2.29
A7	20 Oct 2020	13	14.14	87.24	6.0	33.48	7.9	25.0	2.30
A7	20 Oct 2020	14	14.14	87.30	6.0	33.48	7.9	25.0	2.32
A7	20 Oct 2020	15	14.14	87.35	6.0	33.48	7.9	25.0	2.21
A7	20 Oct 2020	16	14.14	87.36	6.0	33.48	7.9	25.0	2.20
A7	20 Oct 2020	17	14.14	87.38	6.0	33.48	7.9	25.0	2.23
A7	20 Oct 2020	18	14.14	87.18	6.0	33.48	7.9	25.0	2.22
A7	20 Oct 2020	19	14.15	87.42	6.0	33.48	7.9	25.0	2.17
A7	28 Oct 2020	1	17.47	82.49	7.3	33.57	8.0	24.3	2.80
A7	28 Oct 2020	2	17.47	82.51	7.3	33.58	8.0	24.3	2.86
A7	28 Oct 2020	3	17.36	82.54	7.2	33.57	8.0	24.3	3.04
A7	28 Oct 2020	4	17.30	82.67	7.2	33.57	8.0	24.3	3.33
A7	28 Oct 2020	5	17.17	82.27	7.1	33.56	8.0	24.4	3.53
A7	28 Oct 2020	6	16.95	82.53	7.0	33.55	8.0	24.4	3.71
A7	28 Oct 2020	7	16.89	82.50	6.9	33.54	8.0	24.4	3.92
A7	28 Oct 2020	8	16.73	82.63	6.8	33.54	8.0	24.5	3.88
A7	28 Oct 2020	9	16.61	82.68	6.7	33.53	8.0	24.5	3.94
A7	28 Oct 2020	10	16.57	82.85	6.7	33.52	8.0	24.5	3.94
A7	28 Oct 2020	11	16.50	83.02	6.6	33.52	8.0	24.5	3.78
A7	28 Oct 2020	12	16.30	83.03	6.5	33.52	8.0	24.5	3.59
A7	28 Oct 2020	13	16.22	83.44	6.4	33.51	8.0	24.6	3.42
A7	28 Oct 2020	14	16.14	83.96	6.4	33.51	8.0	24.6	3.23
A7	28 Oct 2020	15	15.99	84.34	6.3	33.51	8.0	24.6	2.90

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
A7	28 Oct 2020	16	15.64	84.91	6.2	33.51	7.9	24.7	2.50
A7	28 Oct 2020	17	15.32	85.93	6.0	33.50	7.9	24.7	1.97
A7	28 Oct 2020	18	14.62	86.95	5.8	33.51	7.9	24.9	1.49
A7	28 Oct 2020	19	14.12	87.96	5.7	33.50	7.9	25.0	1.07
C4	05 Oct 2020	1	19.33	73.73	7.9	33.50	8.1	23.8	2.08
C4	05 Oct 2020	2	19.32	73.63	7.9	33.50	8.1	23.8	2.23
C4	05 Oct 2020	3	19.30	73.24	7.9	33.50	8.1	23.8	2.73
C4	05 Oct 2020	4	19.26	73.25	7.8	33.50	8.1	23.8	3.21
C4	05 Oct 2020	5	19.24	73.41	7.8	33.50	8.1	23.8	3.45
C4	05 Oct 2020	6	19.18	73.80	7.7	33.50	8.1	23.8	3.41
C4	05 Oct 2020	7	18.82	73.53	7.4	33.50	8.0	23.9	3.00
C4	05 Oct 2020	8	18.41	71.78	7.1	33.50	8.0	24.0	2.64
C4	05 Oct 2020	9	17.85	69.65	6.5	33.48	8.0	24.1	2.04
C4	05 Oct 2020	10	17.27	56.86	5.7	33.48	7.9	24.3	1.39
C4	05 Oct 2020	11	17.21	39.64	5.5	33.48	7.9	24.3	1.29
C4	13 Oct 2020	1	19.46	80.39	7.4	33.52	8.0	23.8	0.95
C4	13 Oct 2020	2	19.22	80.25	7.4	33.53	8.0	23.8	1.17
C4	13 Oct 2020	3	19.07	79.80	7.4	33.52	8.0	23.9	1.67
C4	13 Oct 2020	4	18.87	79.43	7.5	33.52	8.0	23.9	2.35
C4	13 Oct 2020	5	18.61	78.91	7.5	33.52	8.0	24.0	2.89
C4	13 Oct 2020	6	18.22	79.03	7.5	33.52	8.0	24.1	3.36
C4	13 Oct 2020	7	17.90	78.88	7.0	33.51	8.0	24.2	3.79
C4	13 Oct 2020	8	17.47	79.14	6.0	33.50	7.9	24.3	3.84
C4	13 Oct 2020	9	16.75	78.47	5.1	33.49	7.8	24.4	3.01
C4	13 Oct 2020	10	16.32	77.87	4.4	33.48	7.8	24.5	1.77
C4	13 Oct 2020	11	15.67	73.44	4.0	33.47	7.7	24.6	0.94
C4	20 Oct 2020	1	19.17	81.60	7.3	33.52	8.1	23.9	1.13
C4	20 Oct 2020	2	19.01	81.97	7.4	33.53	8.1	23.9	1.44
C4	20 Oct 2020	3	18.92	83.18	7.3	33.52	8.1	23.9	1.66
C4	20 Oct 2020	4	18.13	85.25	7.1	33.54	8.1	24.1	1.57
C4	20 Oct 2020	5	17.33	85.54	6.6	33.51	8.0	24.3	1.56
C4	20 Oct 2020	6	16.42	85.02	5.9	33.52	8.0	24.5	1.14
C4	20 Oct 2020	7	15.47	83.92	5.3	33.48	7.9	24.7	0.70
C4	20 Oct 2020	8	15.32	83.19	5.2	33.48	7.8	24.7	0.52
C4	20 Oct 2020	9	15.28	83.54	5.1	33.47	7.8	24.7	0.49
C4	20 Oct 2020	10	15.22	83.24	5.0	33.48	7.8	24.7	0.48
C4	20 Oct 2020	11	15.22	82.06	5.0	33.48	7.8	24.7	0.47
C4	28 Oct 2020	1	17.63	80.87	6.6	33.59	8.0	24.3	1.28
C4	28 Oct 2020	2	17.64	80.73	6.6	33.59	8.0	24.3	1.37
C4	28 Oct 2020	3	17.63	80.64	6.6	33.59	8.0	24.3	1.65
C4	28 Oct 2020	4	17.61	80.96	6.5	33.59	8.0	24.3	1.85
C4	28 Oct 2020	5	17.31	81.07	6.2	33.57	8.0	24.3	2.51
C4	28 Oct 2020	6	16.59	80.72	5.4	33.55	7.9	24.5	2.22
C4	28 Oct 2020	7	15.99	81.31	4.5	33.51	7.8	24.6	1.32
C4	28 Oct 2020	8	15.71	82.72	4.0	33.50	7.8	24.7	0.82
C4	28 Oct 2020	9	15.61	83.37	3.8	33.49	7.7	24.7	0.63
C4	28 Oct 2020	10	15.59	83.01	3.6	33.49	7.7	24.7	0.51
C4	28 Oct 2020	11	15.58	81.92	3.5	33.49	7.7	24.7	0.47
C5	05 Oct 2020	1	20.30	81.09	7.5	33.55	8.1	23.6	0.93
C5	05 Oct 2020	2	20.27	82.01	7.6	33.55	8.1	23.6	1.01
C5	05 Oct 2020	3	20.22	83.05	7.6	33.55	8.1	23.6	1.21
C5	05 Oct 2020	4	20.19	83.11	7.7	33.55	8.1	23.6	1.34
C5	05 Oct 2020	5	20.09	83.51	7.6	33.55	8.1	23.6	1.45
C5	05 Oct 2020	6	20.00	83.52	7.6	33.55	8.1	23.7	1.57
C5	05 Oct 2020	7	19.81	83.46	7.4	33.55	8.1	23.7	1.50
C5	05 Oct 2020	8	19.60	83.19	7.2	33.54	8.1	23.8	1.28

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
C5	05 Oct 2020	9	19.14	82.00	6.9	33.54	8.0	23.9	1.04
C5	05 Oct 2020	10	18.63	76.42	6.4	33.53	8.0	24.0	0.94
C5	05 Oct 2020	11	17.48	60.65	6.1	33.51	7.9	24.3	1.00
C5	13 Oct 2020	1	19.12	81.12	8.2	33.52	8.1	23.9	1.08
C5	13 Oct 2020	2	18.93	81.71	8.2	33.53	8.1	23.9	1.26
C5	13 Oct 2020	3	18.83	81.39	8.2	33.52	8.1	23.9	1.62
C5	13 Oct 2020	4	18.71	80.87	8.1	33.52	8.1	24.0	2.06
C5	13 Oct 2020	5	18.48	80.48	7.9	33.52	8.1	24.0	2.54
C5	13 Oct 2020	6	17.20	80.33	7.0	33.52	8.0	24.3	2.66
C5	13 Oct 2020	7	16.48	80.62	6.0	33.49	7.9	24.5	1.70
C5	13 Oct 2020	8	16.20	80.16	5.8	33.47	7.9	24.5	1.10
C5	13 Oct 2020	9	16.18	79.00	5.7	33.46	7.9	24.5	0.89
C5	13 Oct 2020	10	15.83	78.81	5.7	33.47	7.9	24.6	0.73
C5	20 Oct 2020	1	19.23	81.36	7.4	33.53	8.1	23.8	1.44
C5	20 Oct 2020	2	19.19	81.90	7.3	33.53	8.1	23.8	1.57
C5	20 Oct 2020	3	18.19	82.74	7.2	33.54	8.1	24.1	1.94
C5	20 Oct 2020	4	17.11	83.42	7.2	33.52	8.0	24.4	2.17
C5	20 Oct 2020	5	17.27	84.52	7.0	33.47	8.0	24.3	2.25
C5	20 Oct 2020	6	16.56	87.14	6.7	33.52	8.0	24.5	1.93
C5	20 Oct 2020	7	15.88	87.23	6.5	33.50	8.0	24.6	1.67
C5	20 Oct 2020	8	15.88	86.56	6.3	33.47	8.0	24.6	1.40
C5	20 Oct 2020	9	15.36	86.77	6.1	33.50	7.9	24.7	1.16
C5	20 Oct 2020	10	14.83	87.00	6.0	33.49	7.9	24.8	0.92
C5	20 Oct 2020	11	15.00	84.90	5.9	33.46	7.9	24.8	0.82
C5	28 Oct 2020	1	17.64	79.10	6.7	33.59	8.0	24.3	1.41
C5	28 Oct 2020	2	17.66	78.99	6.8	33.60	8.0	24.3	1.60
C5	28 Oct 2020	3	17.65	78.74	6.8	33.60	8.0	24.3	2.02
C5	28 Oct 2020	4	17.62	78.59	6.8	33.60	8.0	24.3	2.31
C5	28 Oct 2020	5	17.36	78.90	6.6	33.58	8.0	24.3	2.84
C5	28 Oct 2020	6	16.64	79.76	6.3	33.54	8.0	24.5	3.01
C5	28 Oct 2020	7	16.19	80.93	5.9	33.51	7.9	24.6	2.37
C5	28 Oct 2020	8	15.35	83.07	5.7	33.50	7.9	24.7	1.43
C5	28 Oct 2020	9	15.08	85.39	5.6	33.48	7.9	24.8	0.99
C5	28 Oct 2020	10	15.45	85.85	5.6	33.46	7.9	24.7	1.01
C5	28 Oct 2020	11	14.85	86.49	5.7	33.49	7.9	24.8	0.90
C6	05 Oct 2020	1	20.02	78.66	7.6	33.54	8.1	23.6	1.16
C6	05 Oct 2020	2	20.00	78.60	7.6	33.54	8.1	23.6	1.21
C6	05 Oct 2020	3	19.86	78.91	7.8	33.54	8.1	23.7	1.42
C6	05 Oct 2020	4	19.60	80.07	7.9	33.54	8.1	23.8	1.78
C6	05 Oct 2020	5	19.48	82.37	7.8	33.53	8.1	23.8	1.97
C6	05 Oct 2020	6	19.24	83.01	7.8	33.53	8.1	23.8	2.09
C6	05 Oct 2020	7	18.97	83.41	7.8	33.53	8.1	23.9	2.18
C6	05 Oct 2020	8	18.66	83.19	7.6	33.53	8.1	24.0	2.18
C6	05 Oct 2020	9	18.13	82.76	7.3	33.53	8.1	24.1	1.82
C6	05 Oct 2020	10	17.39	76.86	7.0	33.53	8.0	24.3	1.35
C6	13 Oct 2020	1	19.19	81.88	7.9	33.53	8.1	23.8	0.93
C6	13 Oct 2020	2	19.05	82.03	7.7	33.53	8.1	23.9	1.01
C6	13 Oct 2020	3	18.93	79.95	7.3	33.52	8.1	23.9	1.43
C6	13 Oct 2020	4	18.82	75.36	7.0	33.52	8.0	23.9	2.19
C6	13 Oct 2020	5	18.64	71.87	6.6	33.52	8.0	24.0	2.80
C6	13 Oct 2020	6	18.13	69.97	6.1	33.52	8.0	24.1	1.76
C6	13 Oct 2020	7	17.38	73.97	5.6	33.52	7.9	24.3	0.92
C6	13 Oct 2020	8	16.54	78.48	5.6	33.50	7.9	24.5	0.96
C6	13 Oct 2020	9	15.97	80.06	5.5	33.48	7.9	24.6	0.86
C6	13 Oct 2020	10	15.85	78.10	5.4	33.46	7.9	24.6	0.67

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
C6	20 Oct 2020	1	19.18	80.53	7.7	33.53	8.1	23.9	1.80
C6	20 Oct 2020	2	18.84	81.44	7.8	33.53	8.1	23.9	2.11
C6	20 Oct 2020	3	18.20	81.73	7.5	33.52	8.1	24.1	2.45
C6	20 Oct 2020	4	17.70	81.75	7.1	33.52	8.0	24.2	2.55
C6	20 Oct 2020	5	16.52	81.59	6.9	33.53	8.0	24.5	2.80
C6	20 Oct 2020	6	16.16	82.81	6.9	33.48	8.0	24.5	2.96
C6	20 Oct 2020	7	16.07	83.46	6.8	33.48	8.0	24.6	2.90
C6	20 Oct 2020	8	15.54	85.01	6.5	33.48	8.0	24.7	2.00
C6	20 Oct 2020	9	15.42	86.84	6.3	33.48	7.9	24.7	1.30
C6	28 Oct 2020	1	17.75	80.68	7.0	33.60	8.0	24.3	1.61
C6	28 Oct 2020	2	17.76	80.71	7.1	33.60	8.0	24.3	1.65
C6	28 Oct 2020	3	17.76	80.68	7.0	33.60	8.0	24.3	1.97
C6	28 Oct 2020	4	17.73	80.61	7.0	33.60	8.0	24.3	2.37
C6	28 Oct 2020	5	17.38	80.51	6.8	33.57	8.0	24.3	3.26
C6	28 Oct 2020	6	16.62	80.05	6.7	33.54	8.0	24.5	3.46
C6	28 Oct 2020	7	16.31	81.34	6.5	33.51	8.0	24.5	3.16
C6	28 Oct 2020	8	16.19	83.20	6.3	33.50	8.0	24.6	2.52
C6	28 Oct 2020	9	15.93	84.75	6.1	33.50	7.9	24.6	1.66
C6	28 Oct 2020	10	15.84	85.84	6.0	33.49	7.9	24.6	1.22
C7	05 Oct 2020	1	19.83	85.96	8.1	33.53	8.1	23.7	0.91
C7	05 Oct 2020	2	19.69	85.83	8.1	33.53	8.1	23.7	1.01
C7	05 Oct 2020	3	19.52	85.28	8.1	33.53	8.1	23.8	1.18
C7	05 Oct 2020	4	19.16	85.24	8.1	33.52	8.1	23.9	1.38
C7	05 Oct 2020	5	18.09	85.27	8.0	33.52	8.1	24.1	1.91
C7	05 Oct 2020	6	17.56	83.62	7.7	33.49	8.1	24.2	2.52
C7	05 Oct 2020	7	17.02	82.52	7.6	33.49	8.0	24.4	2.82
C7	05 Oct 2020	8	16.60	83.31	7.4	33.49	8.0	24.4	2.62
C7	05 Oct 2020	9	16.22	84.26	7.2	33.48	8.0	24.5	2.19
C7	05 Oct 2020	10	16.07	84.64	7.1	33.47	8.0	24.6	1.94
C7	05 Oct 2020	11	15.89	84.74	7.0	33.47	8.0	24.6	1.90
C7	05 Oct 2020	12	15.73	84.90	7.1	33.47	8.0	24.6	1.96
C7	05 Oct 2020	13	15.55	84.82	7.0	33.47	8.0	24.7	2.20
C7	05 Oct 2020	14	15.41	84.88	7.0	33.47	8.0	24.7	2.31
C7	05 Oct 2020	15	15.36	84.91	7.0	33.46	8.0	24.7	2.44
C7	05 Oct 2020	16	15.28	84.65	7.0	33.47	8.0	24.7	2.30
C7	05 Oct 2020	17	15.16	84.95	7.0	33.47	8.0	24.8	2.22
C7	05 Oct 2020	18	15.11	85.08	7.0	33.46	8.0	24.8	2.00
C7	13 Oct 2020	1	19.07	80.86	7.7	33.57	8.1	23.9	1.69
C7	13 Oct 2020	2	18.97	80.49	7.7	33.57	8.1	23.9	1.81
C7	13 Oct 2020	3	18.58	80.13	7.6	33.55	8.1	24.0	2.20
C7	13 Oct 2020	4	18.08	79.73	7.6	33.53	8.1	24.1	2.75
C7	13 Oct 2020	5	17.95	78.50	7.7	33.52	8.0	24.1	3.08
C7	13 Oct 2020	6	17.86	78.07	7.7	33.51	8.0	24.2	3.38
C7	13 Oct 2020	7	17.62	78.22	7.7	33.51	8.0	24.2	3.44
C7	13 Oct 2020	8	16.97	79.39	7.8	33.50	8.1	24.4	3.40
C7	13 Oct 2020	9	16.20	80.59	7.7	33.48	8.0	24.5	3.95
C7	13 Oct 2020	10	15.63	79.90	7.3	33.47	8.0	24.6	4.67
C7	13 Oct 2020	11	15.49	79.86	7.0	33.46	8.0	24.7	4.94
C7	13 Oct 2020	12	15.03	80.69	6.7	33.47	8.0	24.8	4.38
C7	13 Oct 2020	13	14.80	83.39	6.5	33.46	7.9	24.8	3.35
C7	13 Oct 2020	14	14.71	85.58	6.4	33.47	7.9	24.9	2.83
C7	13 Oct 2020	15	14.36	86.16	6.3	33.48	7.9	24.9	2.09
C7	13 Oct 2020	16	14.13	87.88	6.1	33.49	7.9	25.0	1.39
C7	13 Oct 2020	17	14.14	88.60	6.0	33.48	7.9	25.0	1.08
C7	13 Oct 2020	18	14.04	88.73	6.0	33.49	7.9	25.0	0.93
C7	20 Oct 2020	1	18.57	78.27	7.6	33.53	8.1	24.0	3.55
C7	20 Oct 2020	2	18.18	75.07	7.4	33.44	8.0	24.0	3.68

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
C7	20 Oct 2020	3	17.51	77.97	7.3	33.51	8.0	24.2	3.84
C7	20 Oct 2020	4	17.34	79.83	7.2	33.51	8.0	24.3	4.01
C7	20 Oct 2020	5	16.50	80.30	6.9	33.51	8.0	24.5	3.92
C7	20 Oct 2020	6	16.04	82.27	6.8	33.48	8.0	24.6	3.73
C7	20 Oct 2020	7	15.57	84.06	6.6	33.49	8.0	24.7	3.37
C7	20 Oct 2020	8	15.36	84.54	6.5	33.47	7.9	24.7	3.20
C7	20 Oct 2020	9	15.20	84.67	6.5	33.47	7.9	24.7	3.05
C7	20 Oct 2020	10	15.05	85.17	6.5	33.47	7.9	24.8	2.76
C7	20 Oct 2020	11	15.14	85.66	6.5	33.47	7.9	24.8	2.76
C7	20 Oct 2020	12	14.80	85.98	6.4	33.48	7.9	24.8	2.41
C7	20 Oct 2020	13	14.74	86.50	6.3	33.47	7.9	24.9	2.26
C7	20 Oct 2020	14	14.64	87.05	6.2	33.48	7.9	24.9	1.92
C7	20 Oct 2020	15	14.60	87.89	6.1	33.48	7.9	24.9	1.58
C7	20 Oct 2020	16	14.60	88.40	6.1	33.48	7.9	24.9	1.48
C7	20 Oct 2020	17	14.58	88.22	6.1	33.48	7.9	24.9	1.47
C7	20 Oct 2020	18	14.57	88.18	6.1	33.48	7.9	24.9	1.47
C7	28 Oct 2020	1	17.40	84.03	7.4	33.56	8.1	24.3	2.33
C7	28 Oct 2020	2	17.41	84.05	7.4	33.56	8.1	24.3	2.42
C7	28 Oct 2020	3	17.40	84.04	7.4	33.56	8.1	24.3	2.76
C7	28 Oct 2020	4	17.37	83.69	7.4	33.56	8.1	24.3	3.26
C7	28 Oct 2020	5	17.35	83.42	7.3	33.55	8.1	24.3	3.44
C7	28 Oct 2020	6	17.14	83.38	7.2	33.54	8.0	24.4	3.63
C7	28 Oct 2020	7	16.78	83.19	7.1	33.51	8.0	24.4	4.17
C7	28 Oct 2020	8	16.71	82.99	7.0	33.50	8.0	24.4	4.40
C7	28 Oct 2020	9	16.61	82.98	6.8	33.51	8.0	24.5	4.49
C7	28 Oct 2020	10	16.36	82.83	6.6	33.51	8.0	24.5	4.17
C7	28 Oct 2020	11	16.13	82.99	6.4	33.51	8.0	24.6	3.44
C7	28 Oct 2020	12	15.89	84.44	6.3	33.50	7.9	24.6	3.00
C7	28 Oct 2020	13	15.57	85.28	6.3	33.49	7.9	24.7	2.50
C7	28 Oct 2020	14	15.36	85.82	6.2	33.48	7.9	24.7	2.08
C7	28 Oct 2020	15	14.98	87.13	6.0	33.49	7.9	24.8	1.62
C7	28 Oct 2020	16	14.71	88.44	5.9	33.48	7.9	24.9	1.19
C7	28 Oct 2020	17	14.63	88.98	5.8	33.48	7.9	24.9	0.97
C7	28 Oct 2020	18	14.64	88.24	5.8	33.47	7.9	24.9	0.92
C8	05 Oct 2020	1	20.27	87.84	8.0	33.56	8.1	23.6	0.82
C8	05 Oct 2020	2	20.08	87.50	8.0	33.55	8.1	23.6	0.99
C8	05 Oct 2020	3	19.71	86.76	8.0	33.54	8.1	23.7	1.23
C8	05 Oct 2020	4	19.23	85.97	8.0	33.52	8.1	23.8	1.58
C8	05 Oct 2020	5	18.48	84.92	7.8	33.53	8.1	24.0	2.02
C8	05 Oct 2020	6	17.97	82.81	7.8	33.50	8.1	24.1	2.71
C8	05 Oct 2020	7	17.53	82.06	7.8	33.50	8.1	24.2	3.07
C8	05 Oct 2020	8	17.25	82.06	7.6	33.49	8.0	24.3	3.12
C8	05 Oct 2020	9	17.00	82.18	7.6	33.48	8.0	24.4	3.21
C8	05 Oct 2020	10	16.66	81.98	7.5	33.48	8.0	24.4	3.21
C8	05 Oct 2020	11	16.01	82.29	7.3	33.48	8.0	24.6	3.20
C8	05 Oct 2020	12	15.68	82.29	7.3	33.46	8.0	24.6	3.60
C8	05 Oct 2020	13	15.44	82.30	7.3	33.46	8.0	24.7	3.57
C8	05 Oct 2020	14	15.41	83.01	7.2	33.46	8.0	24.7	3.14
C8	05 Oct 2020	15	15.39	83.60	7.2	33.46	8.0	24.7	2.83
C8	05 Oct 2020	16	15.37	83.84	7.1	33.47	8.0	24.7	2.45
C8	05 Oct 2020	17	15.35	83.63	7.0	33.47	8.0	24.7	2.18
C8	05 Oct 2020	18	15.32	83.46	7.0	33.47	8.0	24.7	2.07
C8	05 Oct 2020	19	15.32	83.11	7.0	33.47	8.0	24.7	1.98
C8	05 Oct 2020	20	15.32	82.77	6.9	33.47	8.0	24.7	1.84
C8	13 Oct 2020	1	19.10	81.64	7.8	33.55	8.1	23.9	1.12
C8	13 Oct 2020	2	19.08	81.30	7.8	33.56	8.1	23.9	1.11
C8	13 Oct 2020	3	18.86	80.37	7.8	33.55	8.1	23.9	1.44
C8	13 Oct 2020	4	18.79	80.18	7.8	33.55	8.1	24.0	1.76

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
C8	13 Oct 2020	5	18.66	79.88	7.9	33.54	8.1	24.0	2.18
C8	13 Oct 2020	6	18.55	79.12	7.8	33.53	8.1	24.0	2.73
C8	13 Oct 2020	7	18.06	77.60	7.8	33.54	8.1	24.1	3.03
C8	13 Oct 2020	8	17.45	77.54	7.9	33.52	8.1	24.3	2.94
C8	13 Oct 2020	9	16.97	81.61	8.0	33.50	8.1	24.4	2.65
C8	13 Oct 2020	10	16.66	83.35	7.8	33.48	8.0	24.4	3.10
C8	13 Oct 2020	11	15.98	80.78	7.6	33.48	8.0	24.6	3.49
C8	13 Oct 2020	12	15.72	81.17	7.5	33.46	8.0	24.6	3.79
C8	13 Oct 2020	13	15.65	81.44	7.4	33.46	8.0	24.6	4.11
C8	13 Oct 2020	14	15.08	81.21	7.1	33.47	8.0	24.8	4.44
C8	13 Oct 2020	15	14.49	81.86	6.6	33.48	7.9	24.9	3.62
C8	13 Oct 2020	16	14.00	85.66	6.4	33.48	7.9	25.0	2.26
C8	13 Oct 2020	17	13.88	87.09	6.3	33.48	7.9	25.0	1.56
C8	13 Oct 2020	18	13.82	88.43	6.2	33.48	7.9	25.1	1.23
C8	13 Oct 2020	19	13.84	89.14	6.2	33.48	7.9	25.0	1.13
C8	20 Oct 2020	1	18.85	81.05	7.6	33.54	8.1	23.9	2.51
C8	20 Oct 2020	2	18.83	80.93	7.6	33.54	8.1	23.9	2.64
C8	20 Oct 2020	3	18.31	80.66	7.5	33.54	8.1	24.1	2.88
C8	20 Oct 2020	4	18.03	80.73	7.5	33.52	8.1	24.1	2.90
C8	20 Oct 2020	5	17.76	81.43	7.6	33.51	8.1	24.2	2.90
C8	20 Oct 2020	6	17.38	81.50	7.6	33.50	8.1	24.3	3.07
C8	20 Oct 2020	7	17.27	80.74	7.7	33.48	8.1	24.3	3.26
C8	20 Oct 2020	8	17.17	81.05	7.5	33.50	8.1	24.3	3.39
C8	20 Oct 2020	9	16.94	81.08	7.4	33.50	8.0	24.4	3.50
C8	20 Oct 2020	10	16.82	80.98	7.2	33.49	8.0	24.4	3.45
C8	20 Oct 2020	11	16.61	81.57	7.0	33.50	8.0	24.5	3.14
C8	20 Oct 2020	12	16.15	82.55	6.8	33.49	8.0	24.6	2.96
C8	20 Oct 2020	13	15.80	83.55	6.8	33.49	8.0	24.6	2.88
C8	20 Oct 2020	14	15.78	83.73	6.6	33.47	8.0	24.6	2.75
C8	20 Oct 2020	15	15.04	83.89	6.4	33.50	8.0	24.8	2.39
C8	20 Oct 2020	16	14.71	86.46	6.3	33.48	7.9	24.9	1.95
C8	20 Oct 2020	17	14.73	87.29	6.2	33.48	7.9	24.9	1.75
C8	20 Oct 2020	18	14.63	87.74	6.1	33.48	7.9	24.9	1.53
C8	20 Oct 2020	19	14.55	88.05	6.1	33.48	7.9	24.9	1.30
C8	20 Oct 2020	20	14.58	88.64	6.1	33.49	7.9	24.9	1.28
C8	28 Oct 2020	1	17.56	85.00	7.5	33.56	8.1	24.3	1.81
C8	28 Oct 2020	2	17.56	85.08	7.5	33.56	8.1	24.3	1.94
C8	28 Oct 2020	3	17.56	85.13	7.5	33.56	8.1	24.3	2.14
C8	28 Oct 2020	4	17.55	85.07	7.5	33.56	8.1	24.3	2.37
C8	28 Oct 2020	5	17.53	85.02	7.5	33.56	8.1	24.3	2.52
C8	28 Oct 2020	6	17.44	84.94	7.4	33.55	8.1	24.3	2.82
C8	28 Oct 2020	7	17.18	84.80	7.4	33.53	8.1	24.3	3.15
C8	28 Oct 2020	8	16.96	84.56	7.2	33.52	8.0	24.4	3.59
C8	28 Oct 2020	9	16.67	84.09	7.1	33.51	8.0	24.4	3.74
C8	28 Oct 2020	10	16.36	83.74	6.9	33.49	8.0	24.5	3.77
C8	28 Oct 2020	11	16.10	83.84	6.8	33.49	8.0	24.6	3.56
C8	28 Oct 2020	12	15.88	84.39	6.6	33.48	8.0	24.6	3.00
C8	28 Oct 2020	13	15.50	85.14	6.5	33.48	8.0	24.7	2.47
C8	28 Oct 2020	14	15.22	85.91	6.3	33.48	8.0	24.8	2.12
C8	28 Oct 2020	15	14.96	86.93	6.2	33.48	7.9	24.8	1.73
C8	28 Oct 2020	16	14.93	87.56	6.0	33.47	7.9	24.8	1.45
C8	28 Oct 2020	17	14.92	88.11	6.0	33.47	7.9	24.8	1.22
C8	28 Oct 2020	18	14.90	88.46	5.9	33.48	7.9	24.8	1.00
C8	28 Oct 2020	19	14.88	88.28	5.8	33.48	7.9	24.8	0.86
C8	28 Oct 2020	20	14.88	87.58	5.7	33.48	7.9	24.8	0.81

NA = not available

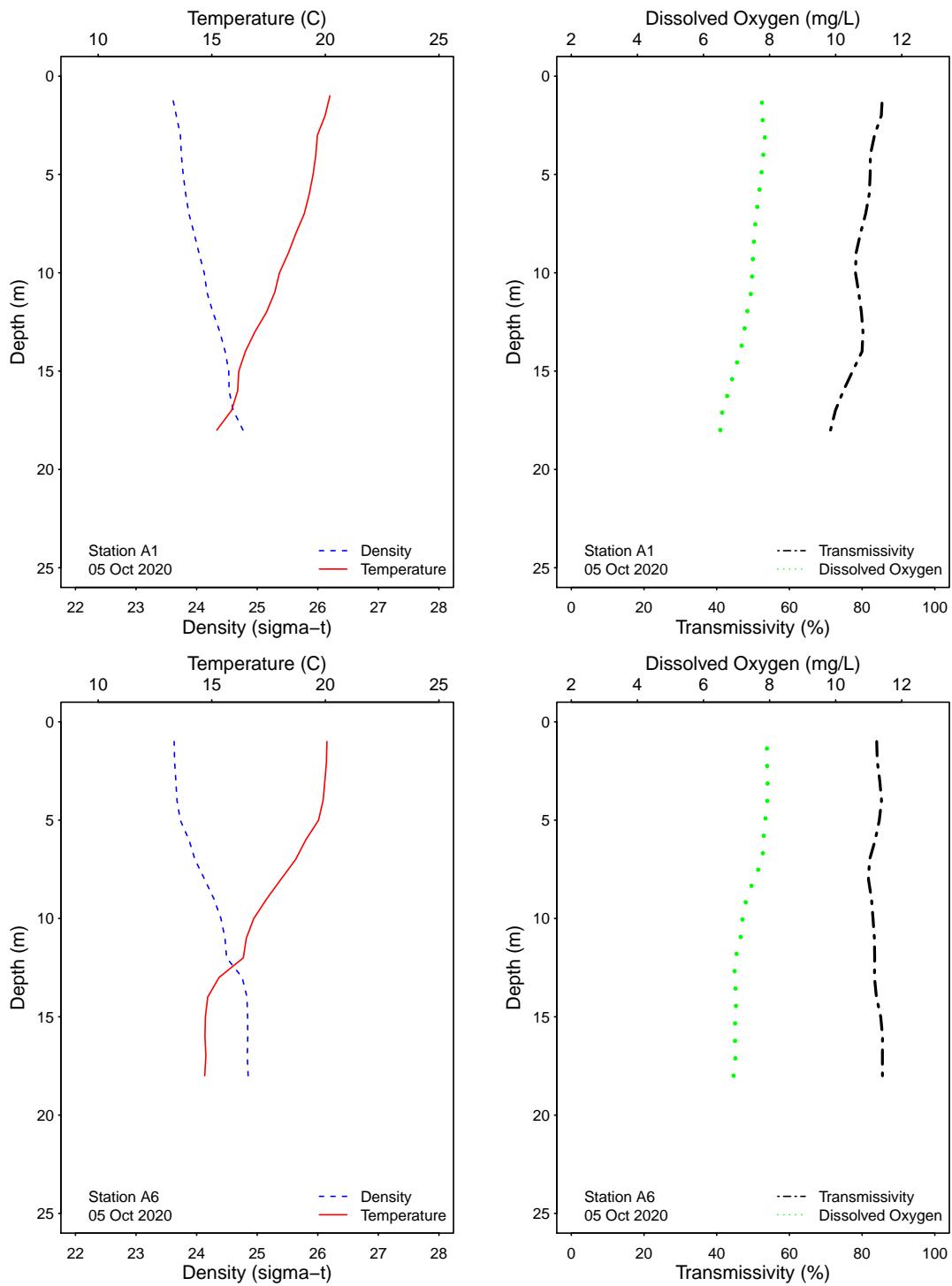


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

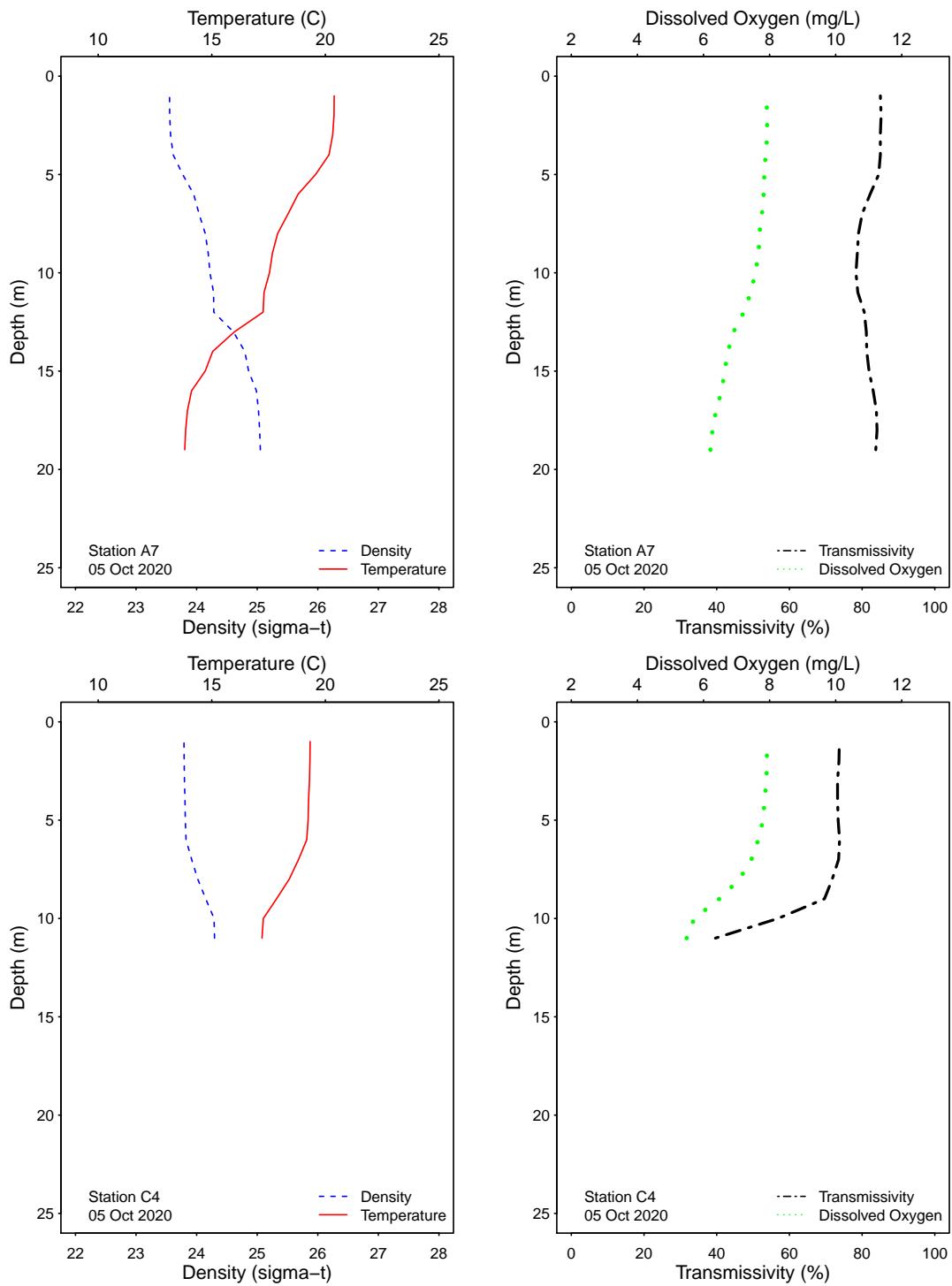


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

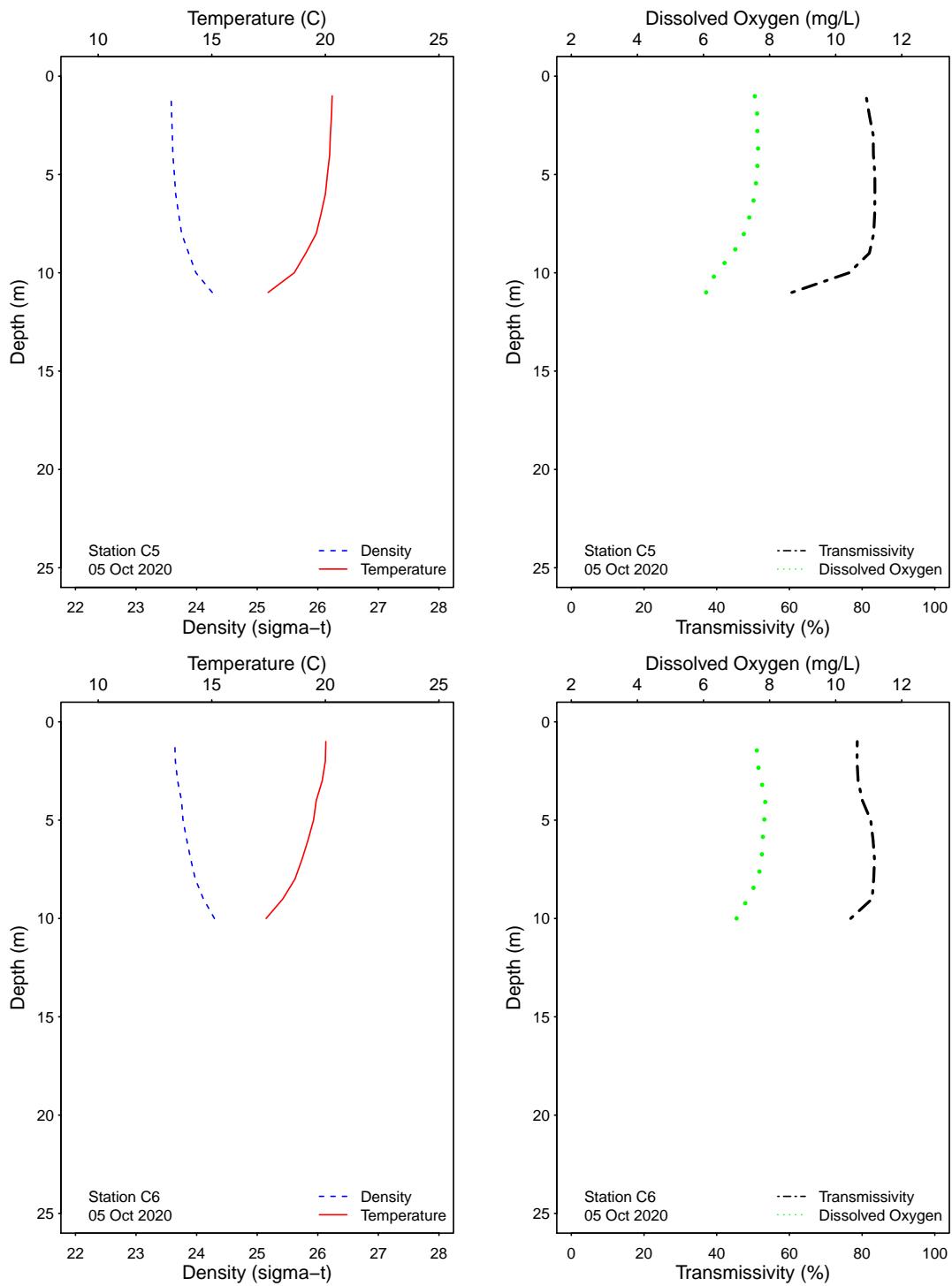


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

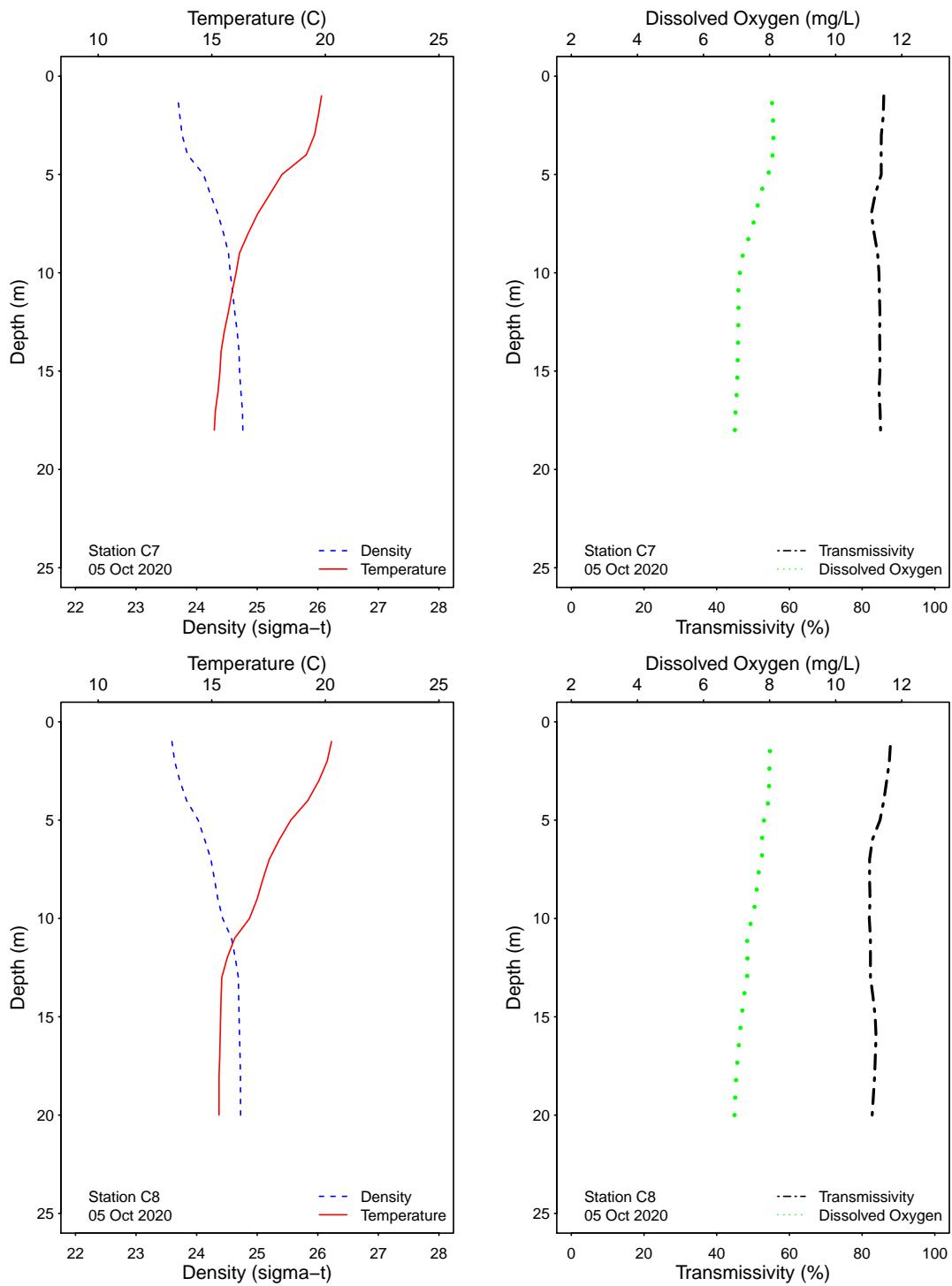


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

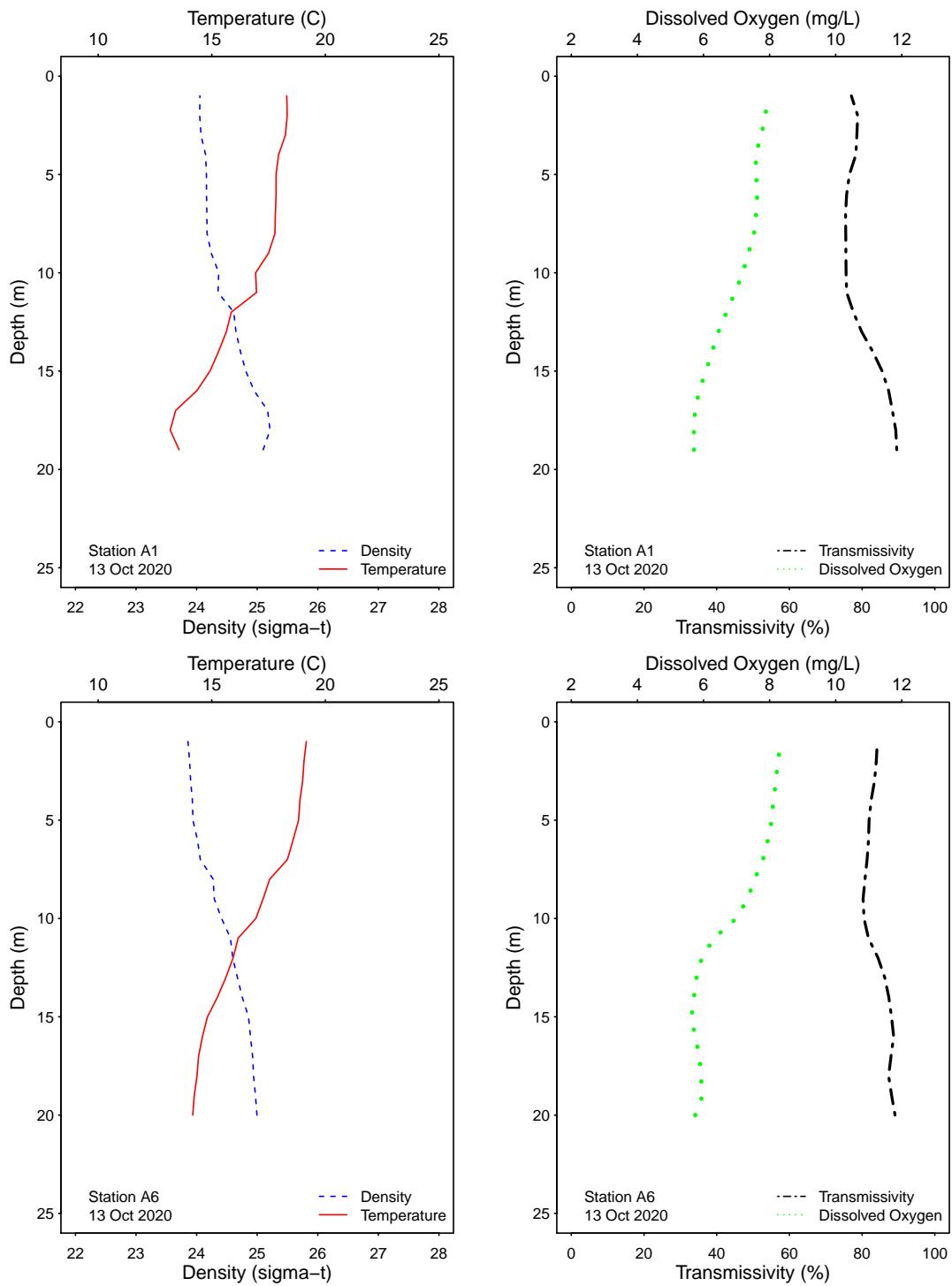


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

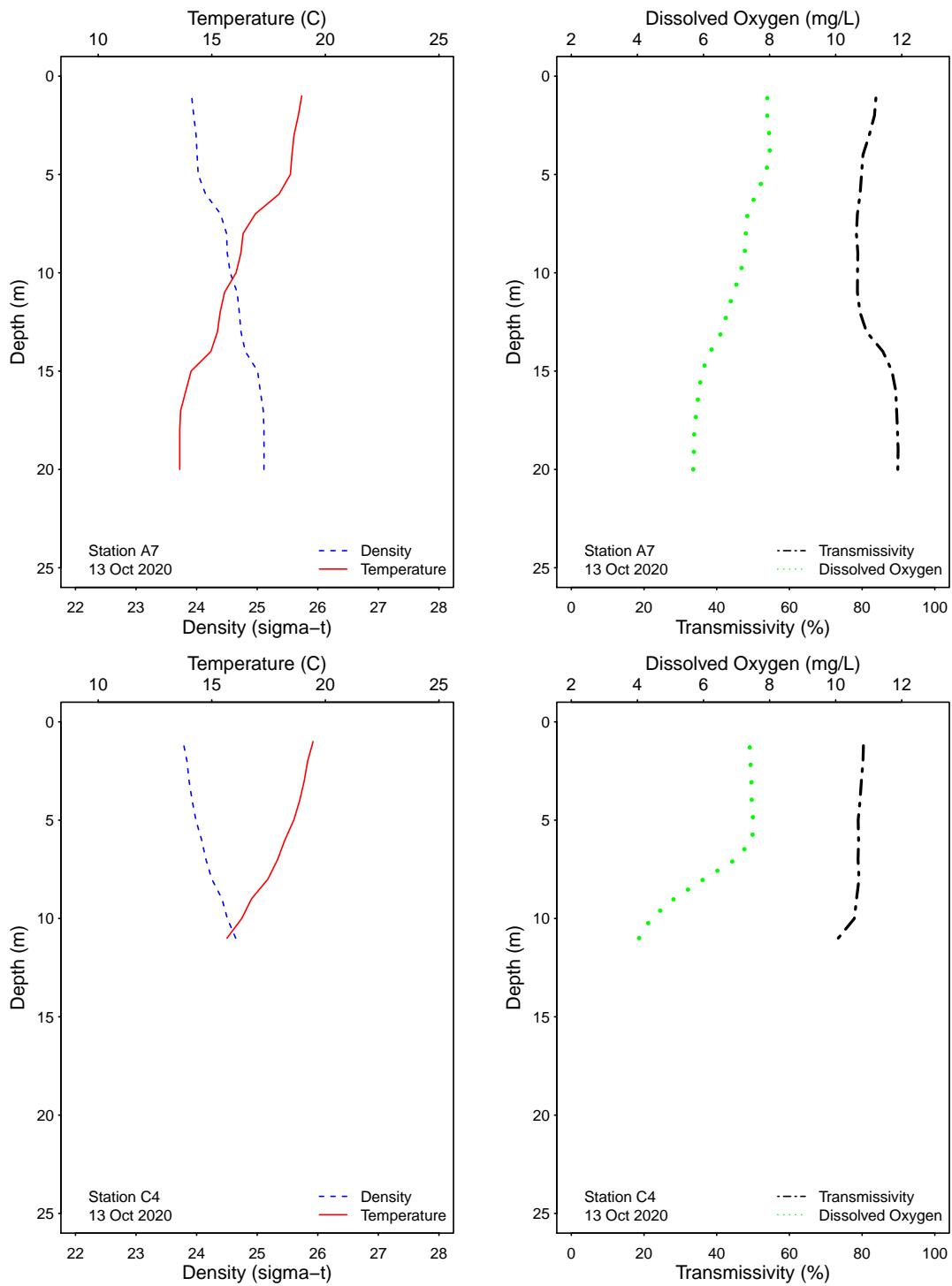


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

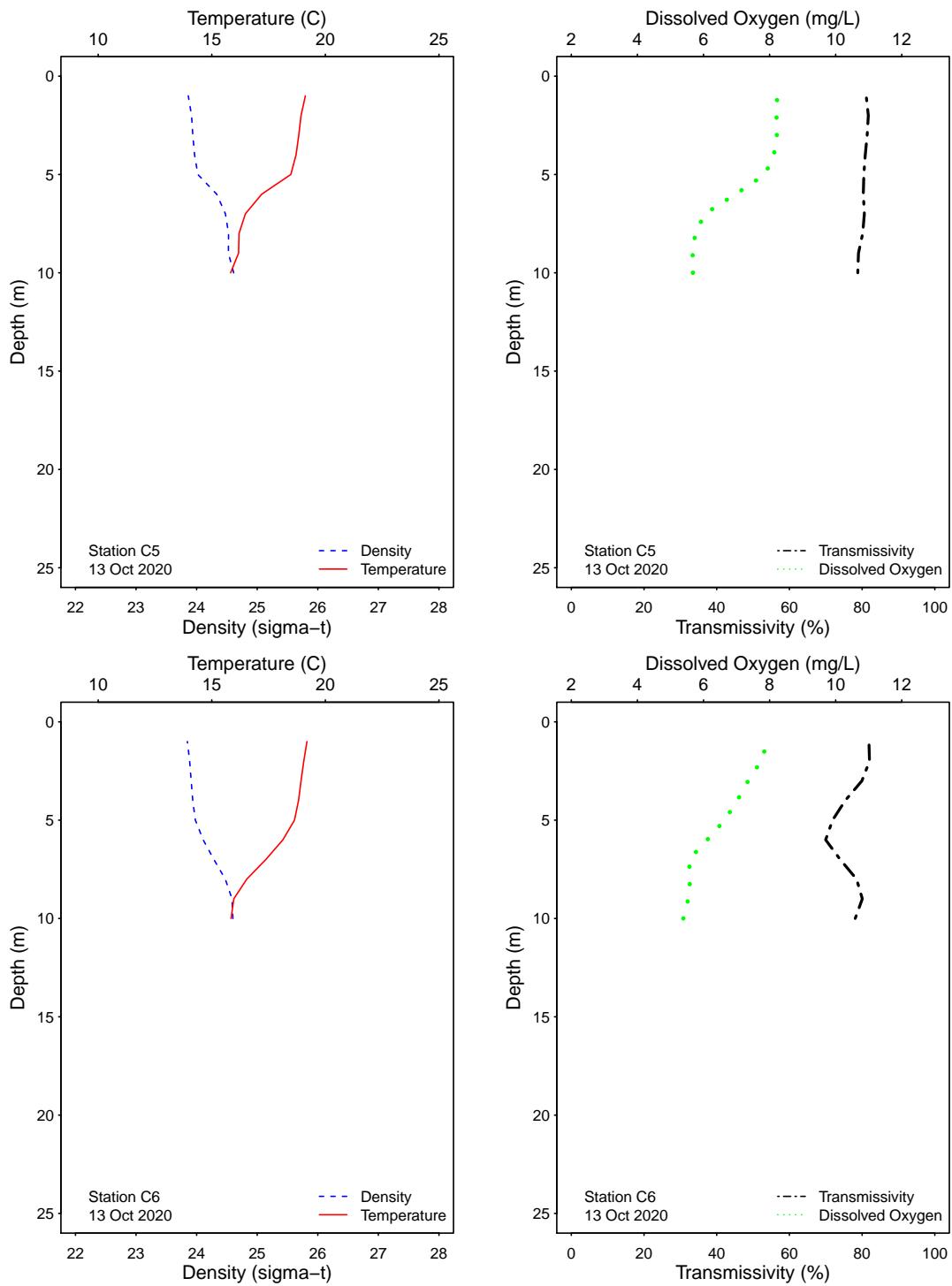


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

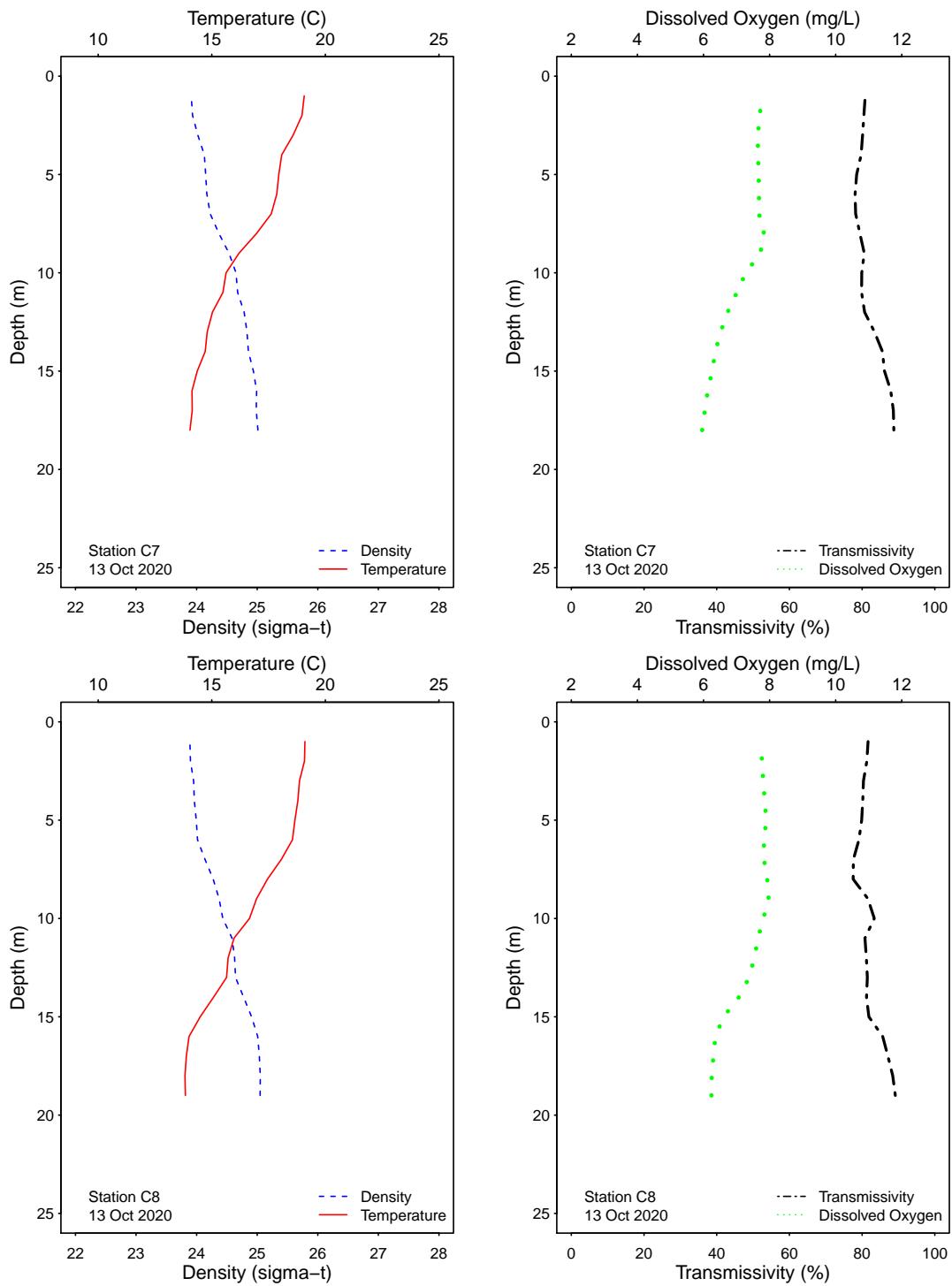


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

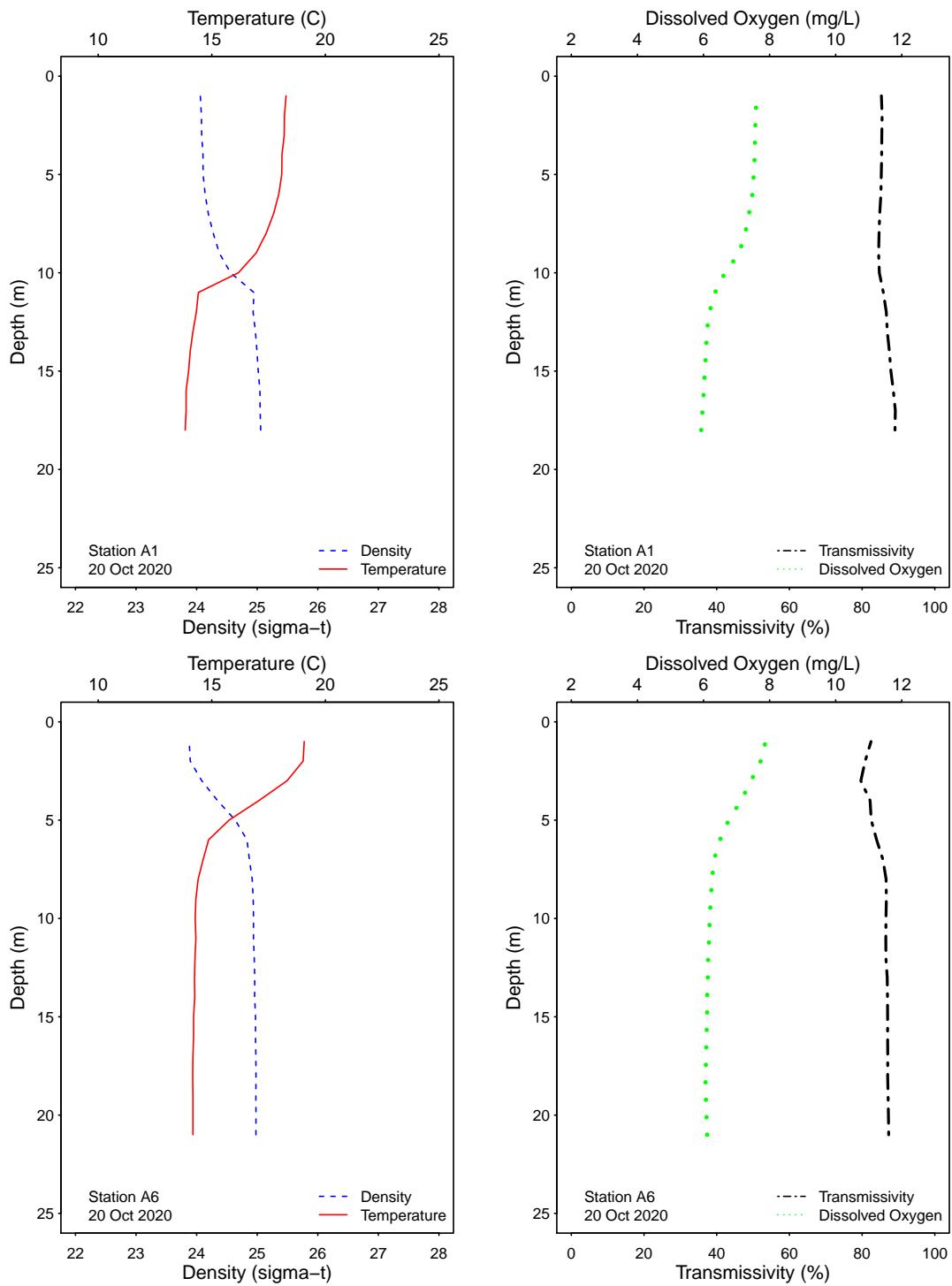


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

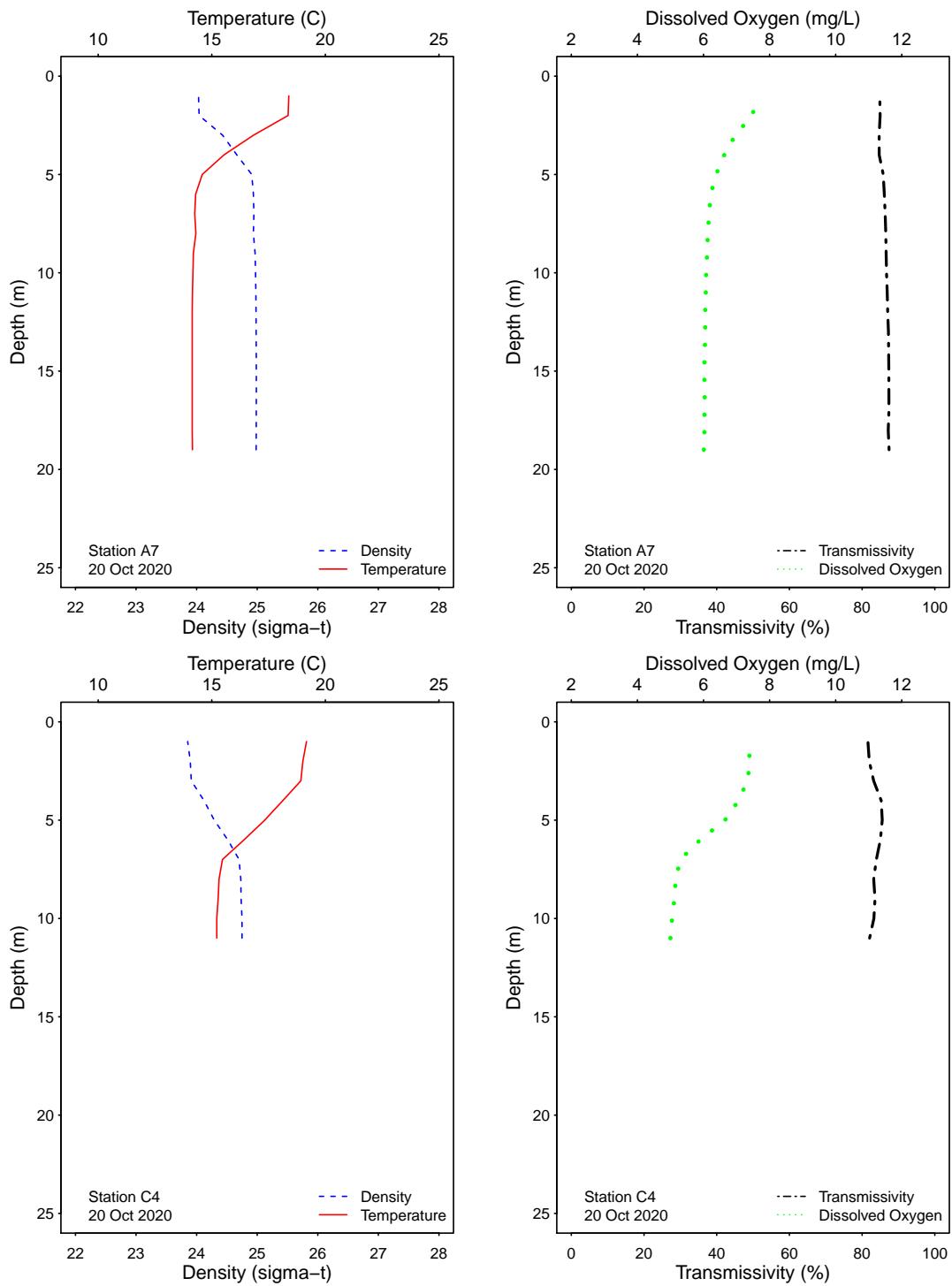


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

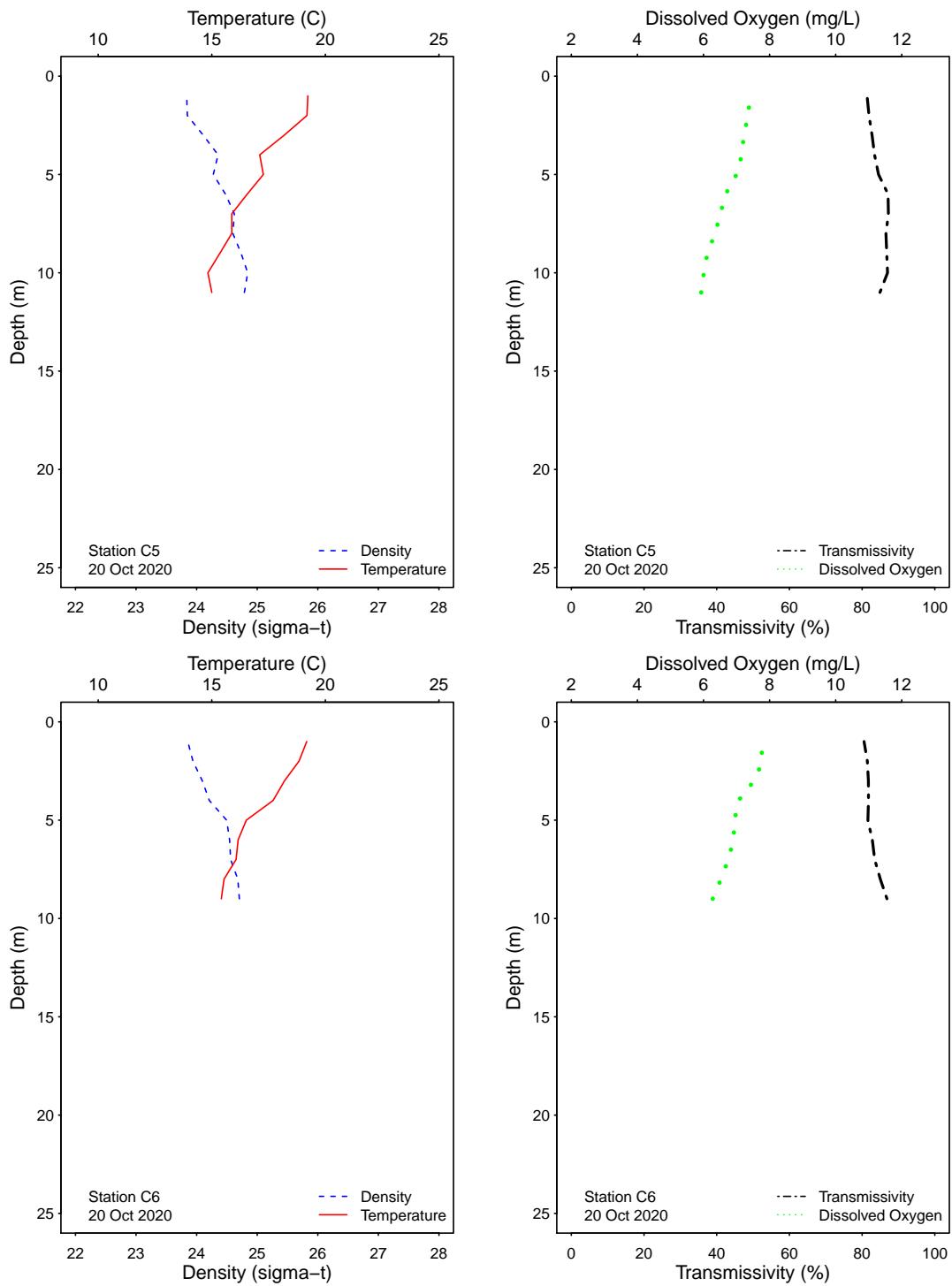


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

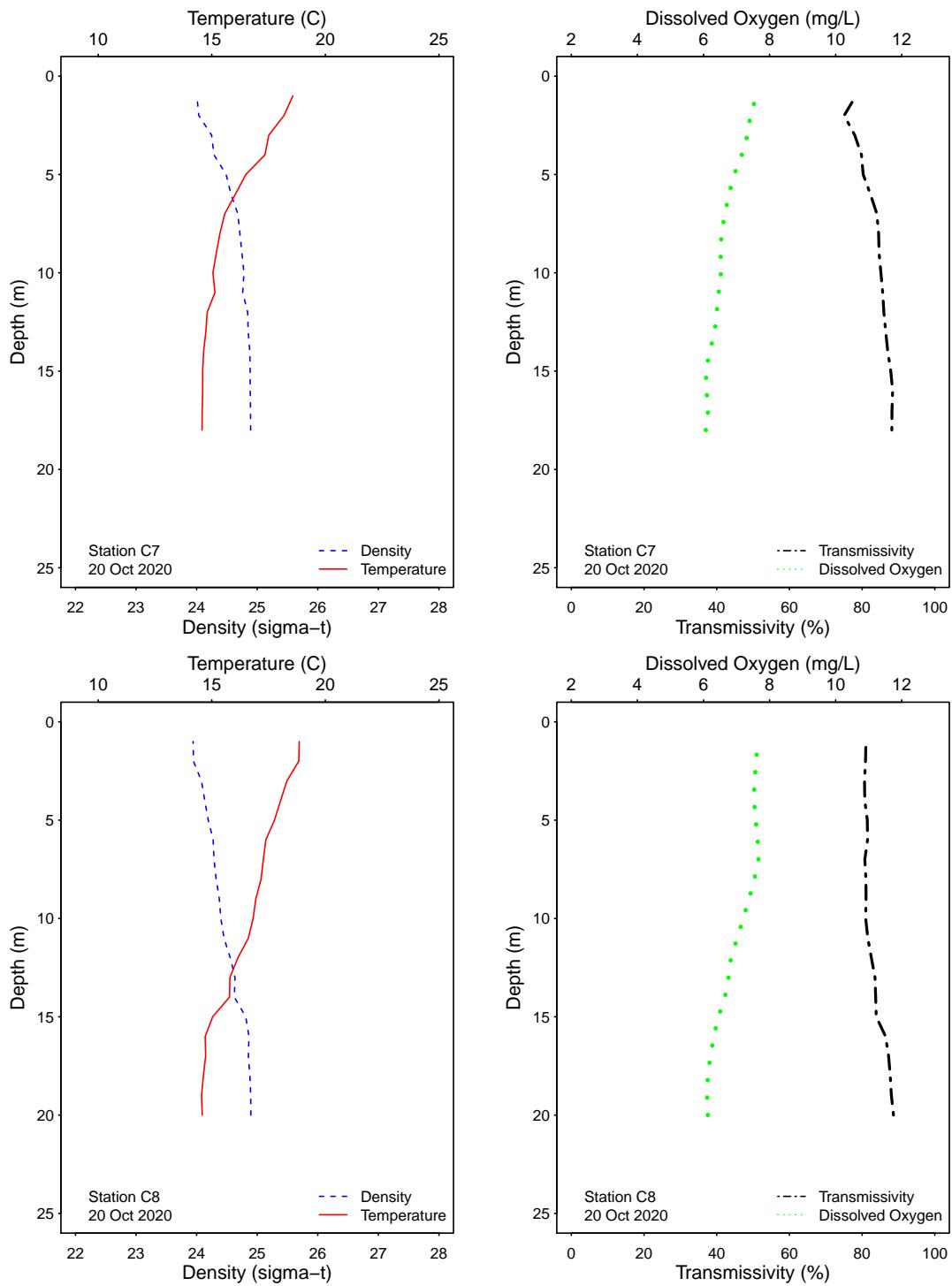


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

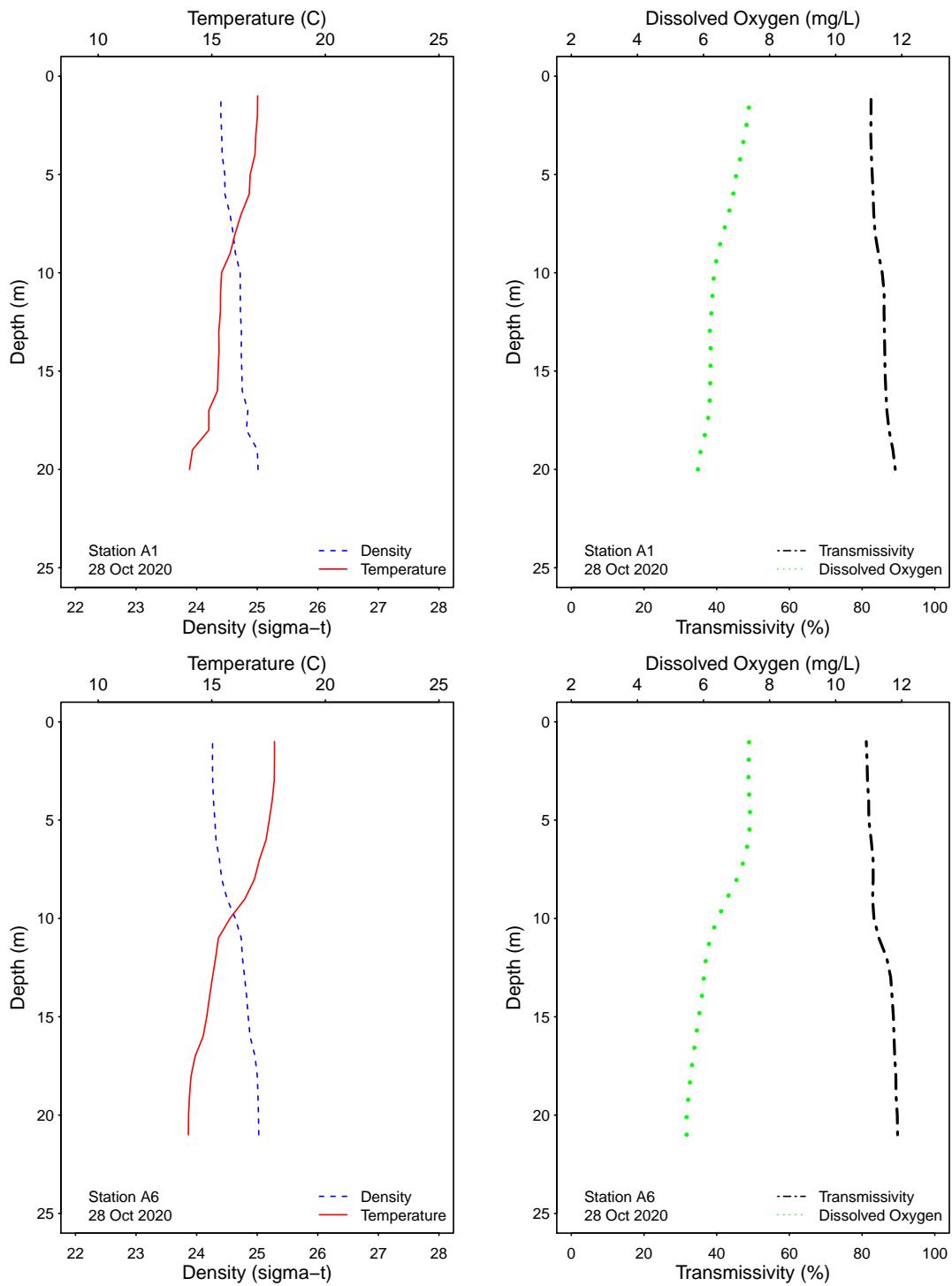


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

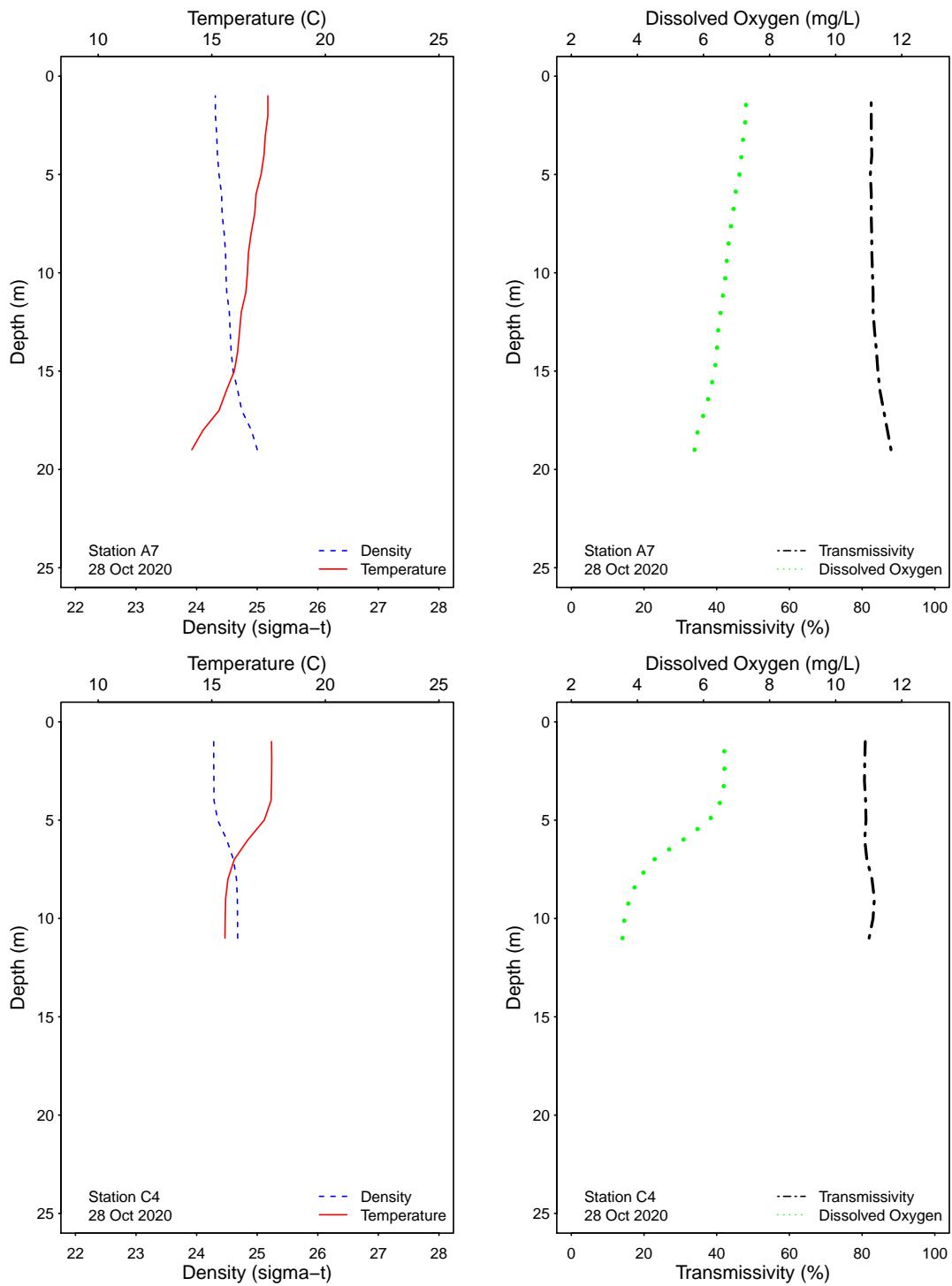


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

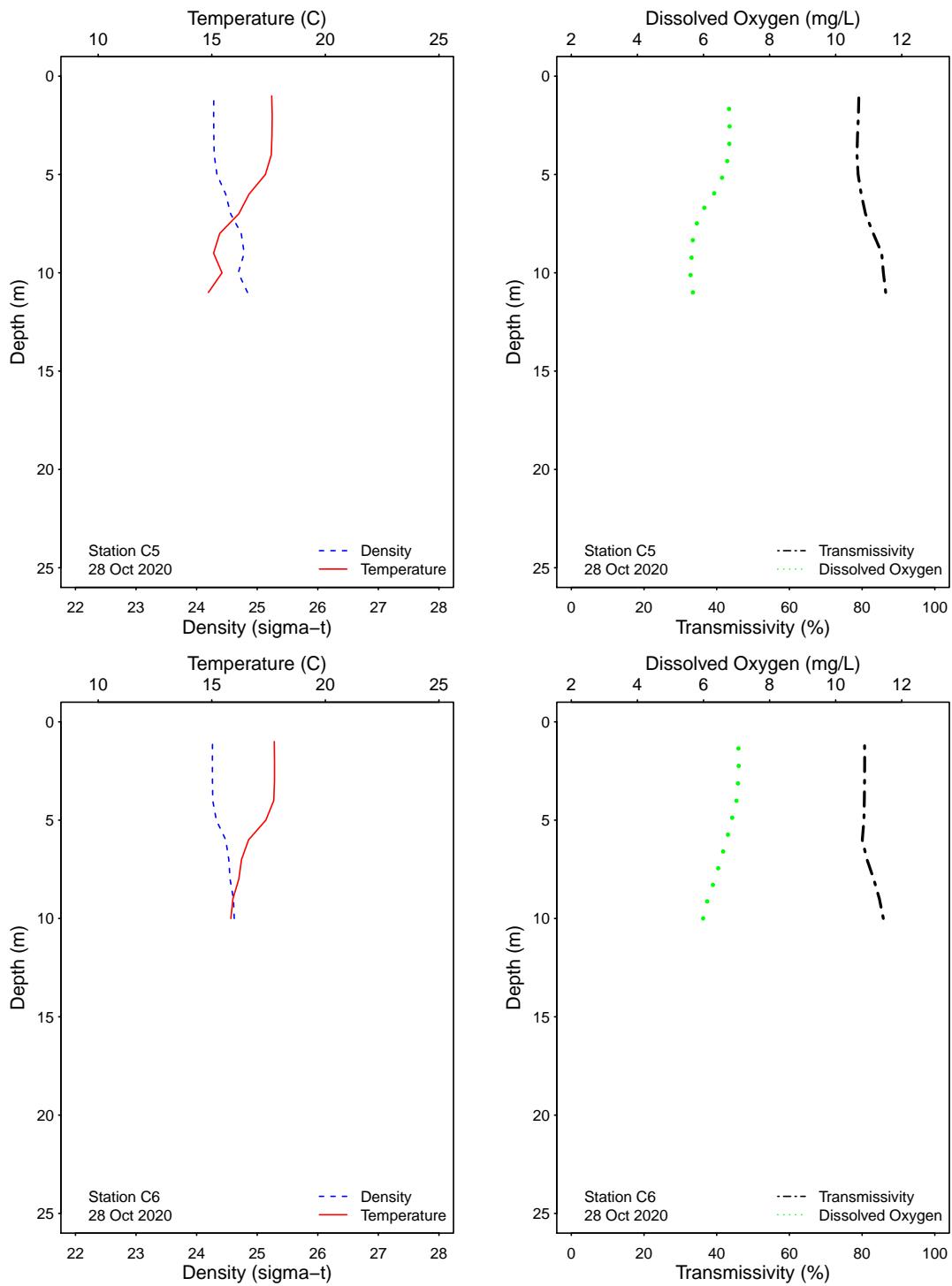


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

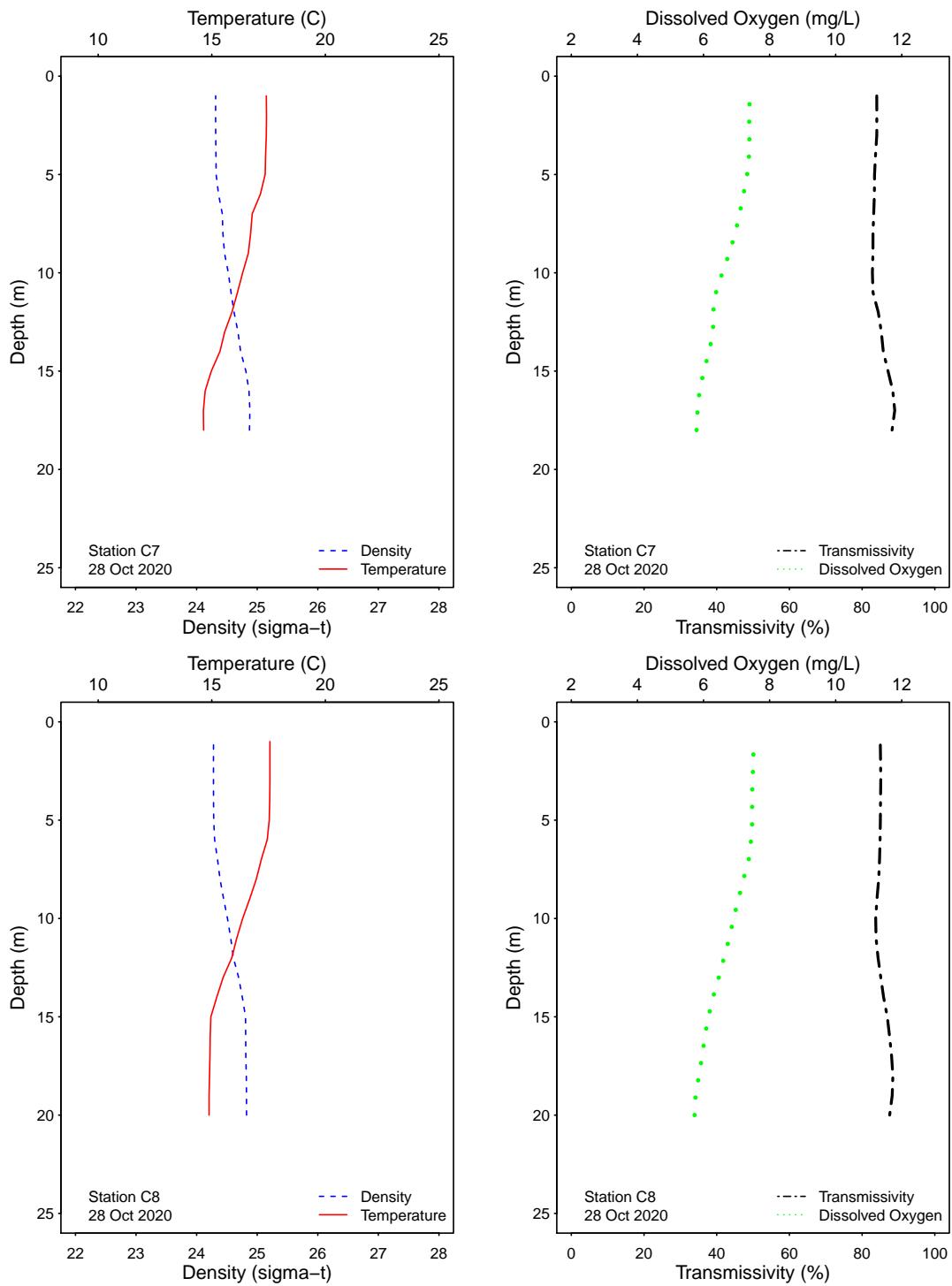


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

## APPENDIX A

### Quality Assurance



**Table A.1**

Summary of bacteriological quality assurance field and lab duplicate sample analyses at selected PLOO stations. Densities of total coliform (Total), fecal coliform (Fecal), and *Enterococcus* (Enter) are reported as CFU/100 mL.

<b>Station</b>	<b>Date</b>	<b>Depth</b>	<b>Analyst</b>	<b>Procedure</b>	<b>Total</b>	<b>Fecal</b>	<b>Enter</b>
A7	05 Oct 2020	18	AE	LAB DUPLICATE	180e	32e	4e
A7	13 Oct 2020	18	BS	LAB DUPLICATE	8e	4e	<2
A7	20 Oct 2020	18	BS	LAB DUPLICATE	40e	2e	2e
A7	28 Oct 2020	18	AE	LAB DUPLICATE	20e	4e	<2
C7	05 Oct 2020	18	BS	LAB DUPLICATE	4e	2e	<2
C7	13 Oct 2020	18	AE	LAB DUPLICATE	2e	<2	<2
C7	20 Oct 2020	18	BS	LAB DUPLICATE	12e	4e	2e
C7	28 Oct 2020	18	AE	LAB DUPLICATE	8e	<2	2e
C8	05 Oct 2020	12	BS	LAB DUPLICATE	<2	<2	ns
C8	13 Oct 2020	12	JF	LAB DUPLICATE	<2	2e	<2
C8	20 Oct 2020	12	BS	LAB DUPLICATE	<20	<2	<2
C8	28 Oct 2020	12	AE	LAB DUPLICATE	2e	<2	<2
D12	07 Oct 2020		JF	FIELD DUPLICATE	40e	32e	200e
D12	07 Oct 2020		JF	LAB DUPLICATE	80e	34e	160e
D12	14 Oct 2020		AE	FIELD DUPLICATE	20e	2e	<2
D12	14 Oct 2020		AE	LAB DUPLICATE	4e	4e	ns
D12	21 Oct 2020		BS	FIELD DUPLICATE	60e	20e	4e
D12	21 Oct 2020		BS	LAB DUPLICATE	<20	8e	8e
D12	28 Oct 2020		AR	FIELD DUPLICATE	<20	<2	2e
D12	28 Oct 2020		AR	LAB DUPLICATE	<20	<2	<2

ns = not sampled

ND = no data



## **APPENDIX B**

### **New 2019 Ocean Plan Water Quality Objectives**



# Shore Stations



**Table B.1**

Summary of compliance with the Ocean Plan's 6-week Geometric Mean standard for *Enterococcus* at the PLOO shore stations. Data are based on the geometric mean of the five most recent samples from each site over the previous 6 weeks unless otherwise noted (\*). Values >30 CFU/100 mL exceed the standard.

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
01 Oct 2020	3	2	6	3	2	5	4	6
02 Oct 2020	3	2	6	3	2	5	4	6
03 Oct 2020	3	2	6	3	2	5	4	6
04 Oct 2020	3	2	6	3	2	5	4	6
05 Oct 2020	3	2	6	3	2	5	4	6
06 Oct 2020	3	2	6	3	2	5	4	6
07 Oct 2020	3	2	7	4	2	5	5	12
08 Oct 2020	3	2	7	4	2	5	5	11
09 Oct 2020	3	2	7	4	2	5	5	11
10 Oct 2020	3	2	7	4	2	5	5	11
11 Oct 2020	3	2	7	4	2	5	5	11
12 Oct 2020	3	2	7	4	2	5	5	11
13 Oct 2020	3	2	7	4	2	5	5	11
14 Oct 2020	3	2	8	6	2	6	4	7
15 Oct 2020	3	2	8	6	2	6	4	7
16 Oct 2020	3	2	8	6	2	6	4	7
17 Oct 2020	3	2	8	6	2	6	4	7
18 Oct 2020	3	2	8	6	2	6	4	7
19 Oct 2020	3	2	8	6	2	6	4	7
20 Oct 2020	3	2	8	6	2	6	4	7
21 Oct 2020	3	2	6	6	2	4	3	6
22 Oct 2020	3	2	6	6	2	4	3	6
23 Oct 2020	3	2	6	6	2	4	3	6
24 Oct 2020	3	2	6	6	2	4	3	6
25 Oct 2020	3	2	6	6	2	4	3	6
26 Oct 2020	3	2	6	6	2	4	3	6
27 Oct 2020	3	2	6	6	2	4	3	6
28 Oct 2020	3	2	8	5	2	3	3	7
29 Oct 2020	3	2	8	5	2	3	3	7
30 Oct 2020	3	2	8	5	2	3	3	7
31 Oct 2020	3	2	8	5	2	3	3	7

\* Geometric mean calculated using n<5

ns = not sampled

**Table B.2**

Summary of compliance at the PLOO shore stations with the Ocean Plan's Statistical Threshold Value standard for *Enterococcus* bacteria, which states that *Enterococcus* density shall not exceed 110 CFU/100 mL in more than 10% of samples per month.

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
October	IC	IC	IC	IC	IC	IC	IC	E

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

# Kelp Stations



**Table B.3**

Summary of compliance with the Ocean Plan's 6-week Geometric Mean standard for *Enterococcus* at the PLOO kelp stations. Data are based on the geometric mean of the five most recent samples from each site over the previous 6 weeks unless otherwise noted (\*). Values >30 CFU/100 mL exceed the standard.

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Oct 2020	2	2	2	3	2	2	2	2
02 Oct 2020	2	2	2	3	2	2	2	2
03 Oct 2020	2	2	2	3	2	2	2	2
04 Oct 2020	2	2	2	3	2	2	2	2
05 Oct 2020	2	2	2	2	2	2	2	2
06 Oct 2020	2	2	2	2	2	2	2	2
07 Oct 2020	2	2	2	2	2	2	2	2
08 Oct 2020	2	2	2	3	2	2	2	2
09 Oct 2020	2	2	2	3	2	2	2	2
10 Oct 2020	2	2	2	3	2	2	2	2
11 Oct 2020	2	2	2	3	2	2	2	2
12 Oct 2020	2	2	2	3	2	2	2	2
13 Oct 2020	2	2	2	3	2	2	2	2
14 Oct 2020	2	2	2	3	2	2	2	2
15 Oct 2020	2	2	2	3	2	2	2	2
16 Oct 2020	2	2	2	3	2	2	2	2
17 Oct 2020	2	2	2	3	2	2	2	2
18 Oct 2020	2	2	2	3	2	2	2	2
19 Oct 2020	2	2	2	3	2	2	2	2
20 Oct 2020	2	2	2	3	2	2	2	2
21 Oct 2020	2	2	2	3	2	2	2	2
22 Oct 2020	2	2	2	3	2	2	2	2
23 Oct 2020	2	2	2	3	2	2	2	2
24 Oct 2020	2	2	2	3	2	2	2	2
25 Oct 2020	2	2	2	3	2	2	2	2
26 Oct 2020	2	2	2	3	2	2	2	2
27 Oct 2020	2	2	2	3	2	2	2	2
28 Oct 2020	2	2	2	3	2	2	2	2
29 Oct 2020	2	2	2	3	2	2	2	2
30 Oct 2020	2	2	2	3	2	2	2	2
31 Oct 2020	2	2	2	3	2	2	2	2

\* Geometric mean calculated using n<5

**Table B.4**

Summary of compliance at the PLOO kelp stations with the Ocean Plan's Single Sample Maximum standard for *Enterococcus* bacteria, which states that *Enterococcus* density shall not exceed 110 CFU/100 mL in more than 10% of samples per month.

Date	A1	A6	A7	C4	C5	C6	C7	C8
October	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data