



# Metocean Data Report - 12 Months

## Douglas Shoal Remediation Project

Great Barrier Reef Marine Park Authority

10 June 2020

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**Advisian**  
Worley Group

[advisian.com](http://advisian.com)

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# 1 Introduction

This document provides a factual report of the wave and current data collected at Douglas Shoal using Acoustic Doppler Current Profilers (ADCPs) for the Great Barrier Reef Marine Park Authority (GBRMPA) Douglas Shoal Remediation Project. The data was collected at three locations. Two locations on the Low Relief terrace during Period 1-3 (ADCP1 and ADCP2); one of the ADCP units from ADCP1 was relocated to deeper water (~25m) to ADCP3 during Period 4-6. Please refer to Appendix A for current and wave monitoring locations (ADCP1, ADCP2 and ADCP3).

Figure 1-1 below shows one of the deployed ADCP units at the site ADCP2. This report covers six deployment periods as presented in Table 1-1 whereby two ADCP instruments were deployed per period. Deployment Period 1 collected wave data and current data at ADCP1 and only current data at ADCP2. All other deployments collected both wave and current data at deployment locations. More detail on the ADCP component of the Douglas Shoal Remediation Project can be found in *Sampling and Analysis Plan – Douglas Shoal Remediation Project* (Advisian 2019).

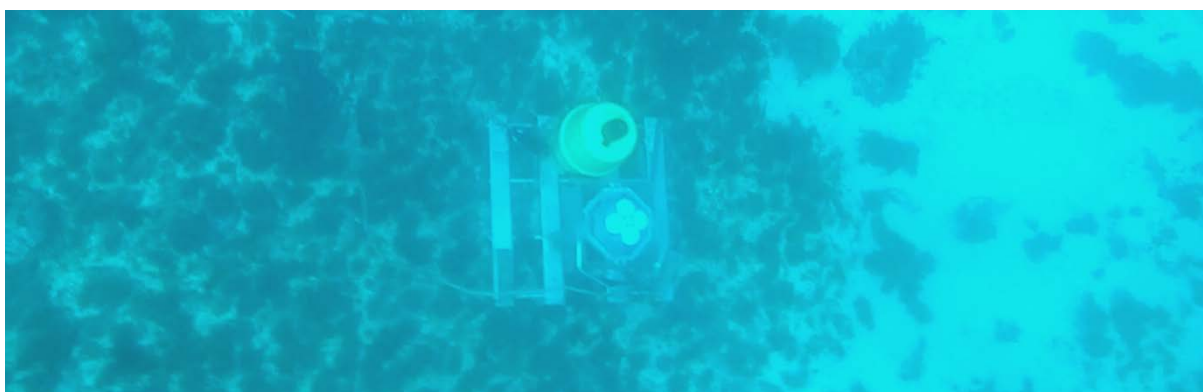


Figure 1-1 Deployed ADCP at site ADCP2

Table 1-1 ADCP deployment periods

Deployment Period	Deployment Date	Recovery Date
1	17/01/2019	14/03/2019
2	16/03/2019	13/06/2019
3	14/06/2019	25/08/2019
4	26/08/2019	05/11/2019
5	16/11/2019	28/01/2020
6	29/01/2020	30/04/2020

## 1.1 Study datum

Geographical positions are provided in geographic (Latitude/Longitude) coordinates unless stated otherwise. Exact seabed elevation relative to a specified datum is not provided. Reported water depths are as measured by each instrument.

## **1.2 Units and conventions**

All units are in standard SI units unless otherwise stated, with all bearings and directions provided in degrees True North.

Wave direction is defined as the direction that the wave is travelling from. Current direction is defined as the direction that the current is travelling towards.

## 2 Deployment Information

### 2.1 Deployment frames

The ADCP's are deployed in a custom-built frame. The ADCP is fitted with an Acoustic Release Pop-Up-Buoy (PUB) for subsequent recovery. A picture of the ADCP frame with the fitted acoustic release on deck is shown in Figure 2-1.



Figure 2-1 ADCP frame and acoustic release

During deployment, a digital tilting sensor (accelerometer), owned and developed by Advisian, was used to ensure the frame was in an upright position within the acceptable range required (normally within 9 degrees of the vertical).

## 2.2 Deployment and retrieval method

The deployment of the ADCP's and weighted frames was undertaken using a lifting crane and the 'endless rope method'. The frames are first lowered to the water using the crane, a rope is slipped through two D shackles placed on the top of the frame and secured to the vessel on two separate bollards, taking the weight of the frame. The crane hook is lowered until all the weight is taken up by the rope and the crane hook is then removed. To lower the frame, one end of the rope remains attached to the vessel (bollard) and the other end is released from the other bollard and gently let-out to control the event of the frame. All efforts are made to ensure that the ADCP settles on a flat area of seafloor devoid of corals. Once the frame hits the seabed, the rope is disconnected from the bollard end and pulled up from the opposite end through the D shackles. The ADCP is anchored to the seafloor using a plough anchor attached to the ADCP via chain up to 10 m in length. The anchor is lowered to the seafloor using the same endless rope method ensuring that the line between the ADCP and anchor is as taught as possible. Deployment takes approximately 30mins per ADCP unit if all operations run smoothly.

To retrieve the ADCP's, the vessel holds position 100 m from the GPS location of the ADCP and frame unit. The acoustic release mechanism on the frame is triggered remotely from the vessel by sending a 'release' signal from the acoustic buoy control box on the vessel via a transducer hanging over the side of the vessel. The buoy is released to the surface and is attached via a cable to the frame on the seafloor. The cable has lifting capacity of 1000 kg which is more than sufficient to support a fully laden ADCP frame and any additional weights on the frame plus anchor and chain.

Depending upon the weather and at the skipper's discretion, the vessel may either:

- Approach the buoy, attach the buoy to a crane hook, maintain position and retrieve the frame, ADCP and anchor
- Anchor in proximity to the ADCP buoy, drift back onto the buoy and use a boat hook to capture the buoy or deploy a tender and crew to retrieve the buoy and return the buoy to the main vessel for connection to the crane hook.
- Depending upon the method used and the weather, retrieval takes between one and two hours.

## 2.3 Deployment location

Details pertaining to the as-deployed location and the depth range during each deployment period are provided in Table 2-1. All deployments at the ADCP1 and ADCP2 locations were within approximately 10 m of the target location. The ADCP unit located at site ADCP1 was moved to a deeper location (ADCP3) during period 4-6 at the request of GBRMPA to provide more spatial information on currents and waves.

Table 2-1 Deployment locations for ADCP1 and ADCP2

Deployment period	Location	Latitude (WGS 84)	Longitude (WGS 84)	Accuracy	Approximate depth range
1	ADCP1	23° 06.017' S	151° 39.588' E	within 10m	13-15
1	ADCP2	23° 05.726' S	151° 39.117' E	within 10m	11-14
2	ADCP1	23° 06.030' S	151° 39.597' E	within 10m	13-15
2	ADCP2	23° 05.730' S	151° 39.132' E	within 10m	12-15
3	ADCP1	23° 06.030' S	151° 39.602' E	within 10m	12-15
3	ADCP2	23° 05.734' S	151° 39.140' E	within 10m	13-16
4	ADCP3	23° 05.407' S	151° 37.728' E	within 10m	23-27
4	ADCP2	23° 05.715' S	151° 39.135' E	within 10m	12-16
5	ADCP3	23° 05.410' S	151° 39.744' E	within 10m	23-27
5	ADCP2	23° 05.721' S	151° 39.131' E	within 10m	12-16
6	ADCP3	23° 05.414' S	151° 39.766' E	within 10m	23-27
6	ADCP2	23° 05.741' S	151° 39.185' E	within 10m	12-16

## 2.4 Deployment configuration

The ADCP's were configured to measure current during all six deployments at the three locations. The ADCP's were configured to measure wave parameters during all six deployment periods at ADCP1 (period 1-3) and ADCP3 (period 4-6) and for deployment periods two, three, four, five and six at location ADCP2. Table 2-2 and Table 2-3 below provide configuration information for ADCP deployments at all sites respectively.



Table 2-2 ADCP1 and ADCP3 deployment configuration information

Parameter	Period 1 (ADCP1)	Period 2 (ADCP1)	Period 3 (ADCP1)	Period 4 (ADCP3)	Period 5 (ADCP3)	Period 6 (ADCP3)
Instrument	Workhorse Sentinel	Workhorse Sentinel	Workhorse Sentinel	Workhorse Sentinel	Workhorse Sentinel	Workhorse Sentinel
Frequency	614400	614400	614400	614400	614400	614400
Water Profile	YES	YES	YES	YES	YES	YES
Bottom Track	NO	NO	NO	NO	NO	NO
High Res. Modes	NO	NO	NO	NO	NO	NO
High Rate Pinging	NO	NO	NO	NO	NO	NO
Shallow Bottom Mode	NO	NO	NO	NO	NO	NO
Wave Gauge	YES	YES	YES	YES	YES	YES
Lowered ADCP	NO	NO	NO	NO	NO	NO
Ice Track	NO	NO	NO	NO	NO	NO
Surface Track	NO	NO	NO	NO	NO	NO
Beam angle	20	20	20	20	20	20
Temperature	27.00	26.00	24.00	23.00	28.00	27.00
Deployment hours	2400.00	2400.00	2160.00	2400.00	2400.00	2400.00
Battery packs	1	1	1	1	1	1
Automatic TP	YES	YES	YES	YES	Yes	YES
Memory size [MB]	448	448	448	448	448	448
Saved Screen	2	3	3	2	1	2
First cell range	1.60 m	1.60 m	1.60 m	1.85 m	1.85 m	1.85 m
Last cell range	25.60 m	25.60 m	25.60 m	37.10 m	37.10 m	37.10 m
Max range	33.75 m	34.37 m	35.57 m	38.18 m	34.93 m	35.60 m
Standard deviation	1.93 cm/s	1.93 cm/s	1.93 cm/s	1.34 cm/s	1.34 cm/s	1.34 cm/s
Ensemble size	1134 bytes	1134 bytes	1134 bytes	1114 bytes	1114 bytes	1114 bytes
Storage required	117.68 MB	117.68 MB	105.91 MB	117.50 MB	117.50 MB	117.50 MB
Power usage	429.95 Wh	429.98 Wh	387.04 Wh	447.61 Wh	447.40 Wh	447.44 Wh
Battery usage	1.0	1.0	0.9	1.0	1.0	1.0
Samples / Wv Burst	600	600	600	600	600	600
Min NonDir Wave Per	2.20 s	2.20 s	2.20 s	2.66 s	2.64 s	2.66 s
Min Dir Wave Period	3.48 s	3.48 s	3.48 s	4.45 s	4.42 s	4.45 s
Bytes / Wave Burst	46880	46880	46880	46880	46880	46880
Profile Interval	15 min	15 min	15 min	15 mins	15 mins	15 mins
No. Cells	49	49	49	48	48	48
Max Depth	20 m	20 m	20 m	32 m	32 m	32 m
Cell Size	0.5 m	0.5 m	0.5 m	0.75 m	0.75 m	0.75 m
Wave Interval	60 min	60 min	60 min	60 min	60 min	60 min
Wave sampling rate	5 min	5 min	5 min	5 min	5 min	5 min



Table 2-3 ADCP2 deployment configuration information

Parameter	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6
Instrument	Workhorse Sentinel	Workhorse Sentinel	Workhorse Sentinel	Workhorse Sentinel	Workhorse Sentinel	Workhorse Sentinel
Frequency	614400	614400	614400	614400	614400	614400
Water Profile	YES	YES	YES	YES	YES	YES
Bottom Track	NO	NO	NO	NO	NO	NO
High Res. Modes	NO	NO	NO	NO	NO	NO
High Rate Pinging	NO	NO	NO	NO	NO	NO
Shallow Bottom Mode	NO	NO	NO	NO	NO	NO
Wave Gauge	NO	YES	YES	YES	YES	YES
Lowered ADCP	NO	NO	NO	NO	NO	NO
Ice Track	NO	NO	NO	NO	NO	NO
Surface Track	NO	NO	NO	NO	NO	NO
Beam angle	20	20	20	20	20	20
Temperature	27.00	26.00	24.00	23.00	28.00	27.00
Deployment hours	2400.00	2400.00	2160.00	2400.00	2400.00	2400.00
Battery packs	1	1	1	1	1	1
Automatic TP	YES	YES	YES	YES	YES	YES
Memory size [MB]	256	448	448	448	448	448
Saved Screen	3	3	3	3	3	2
First cell range	1.60 m	1.60 m	1.60 m	1.60 m	1.60 m	1.60 m
Last cell range	20.60 m	25.60 m	25.60 m	25.60 m	25.60 m	25.60 m
Max range	33.75 m	34.37 m	35.57 m	36.15 m	33.13 m	33.75 m
Standard deviation	1.93 cm/s	1.93 cm/s	1.93 cm/s	1.93 cm/s	1.93 cm/s	1.93 cm/s
Ensemble size	934 bytes	1134 bytes	1134 bytes	1134 bytes	1134 bytes	1134 bytes
Storage required	8.55 MB	117.68 MB	105.91 MB	117.68 MB	117.68 MB	117.68 MB
Power usage	100.24 Wh	429.98 Wh	387.04 Wh	430.08 Wh	429.91 Wh	429.95 Wh
Battery usage	0.2	1.0	0.9	1.0	1.0	1.0
Samples / Wv Burst	N/A	600	600	600	600	600
Min NonDir Wave Per	N/A	2.20 s	2.20 s	2.2 s	2.20 s	2.22 s
Min Dir Wave Period	N/A	3.48 s	3.48 s	3.48 s	3.48 s	3.52 s
Bytes / Wave Burst	N/A	46880	46880	46880	46880	46880
Profile Interval	15 min	15 min	15 min	15 min	15 mins	15 mins
No. Cells	49	49	49	49	49	49
Max Depth	0.5 m	20 m	20 m	20 m	20 m	20 m
Cell Size	20 m	0.5 m	0.5 m	0.5 m	0.5 m	0.5 m

## 3 Results and summary

### 3.1 Quality assurance and control

#### 3.1.1 Compass calibration

A compass calibration was performed for both ADCP units prior to the first deployment for period one. The same ADCP units were used for the following deployments and did not require compass calibration again for the next five deployments. The ADCP internal compass is factory calibrated prior to purchase or re-calibrated during any servicing events. Once the ADCP is attached to the frame, the influence of the metal frame and other attachments needs to be accounted for, prior to deployment.

The re-calibration of directional data collected by the ADCP is carried out on land prior to initial deployment by lifting the frame off the ground (1-2 m) with the ADCP attached into the air using a crane. The ADCP is switched on and placed into the calibration mode then the frame is manually spun slowly and steadily around in a clockwise direction, making sure that there are no tilting motions. The directional data collected by the ADCP are then compared to the original directional data prior to the ADCP unit being attached to the frame and the data adjusted accordingly.

The process is then repeated, and an error is calculated between the adjusted initial results and the new results. As per the manufacturer's recommendations, if the overall error is less than two degrees, the unit is ready for deployment. If the error is greater than two degrees, the procedure should be repeated.

Recalibration of the ADCP and frame are not required between deployments as the ADCP was not removed from the frame in between deployments.

#### 3.1.2 Data interrogation

Advisian's standard method of Quality Assurance / Quality Control (QA/QC) involves a first pass analysis of the raw hydrodynamic and wave information retrieved from the unit. This process involves:

- Confirming the pitch and roll on the unit is within the "accurate range" of within 8 degrees to the vertical (with values preferably less than 5)
- Ensuring wave period, and associated wave parameters, calculated from the spectral binary files, is within acceptable ranges and removing all parameters over the corresponding time if not.

The data presented in the appendices has undergone this standard QA/QC check. Data screening and visual inspection ensure that records determined to be erroneous have been removed from the datasets provided. The data was not adjusted for magnetic declination.

For the purpose of this report and data presentation, the full velocity profile for current measurements has been included in the dataset (from ADCP unit to the surface); however, a small portion of this profile could be affected by 'side-lobe interference' (approximately 10% of the profile closest to the surface).

Note that discrete jumps in peak periods were observed in the processed data whereby the peak period often jumps to the same value at certain frequencies. The size of the jump in peak periods are increasing at higher periods (lower frequencies). This was investigated and was likely due to the processing software which could be smoothing the wave spectrum to remove noise to obtain the underlying signal, thus

reducing the resolution of the spectrum causing the selection of peak periods to often converge to similar values.

Large and sudden variation in peak period was also observed when the wave heights are less than 0.5 m. When the wave height picks up, peak period returns to more usual behavior. An example of this behavior is shown below in Figure 3-1.

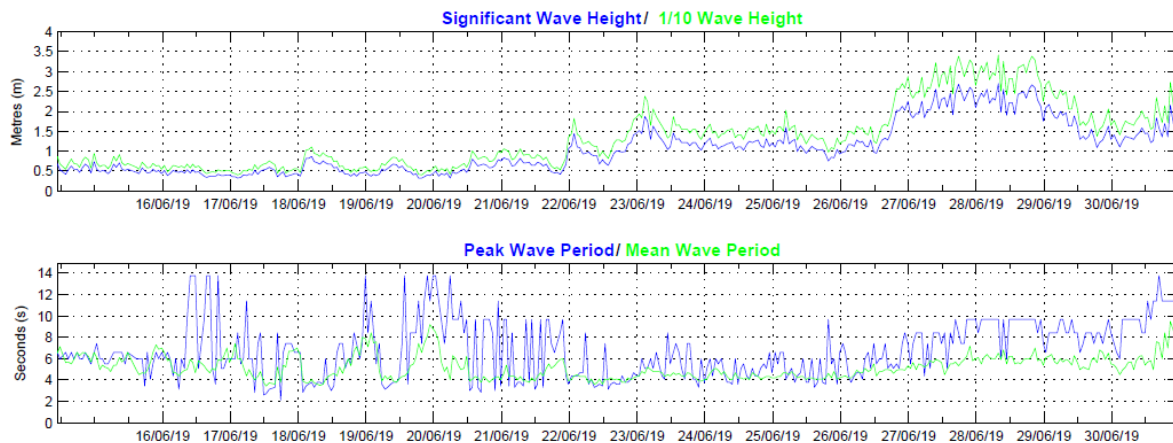


Figure 3-1 Example of Rapid Change in Peak Period and Noise Floor

This behaviour was investigated and is believed to be a result of the instrument noise and processing software which extracts the wave height and peak period from a spectrum.

It is important to note that wave heights below approximately 0.5 m are not reliable as they may not be representative of the wave climate, instead being representative of the noise floor for the ADCP instrument. However, the evidence of the noise floor does indicate that the wave climate shows significant wave heights less than or equal to the wave floor (approximately 0.5 m), thus indicating a relatively calm wave climate.

### 3.2 Current and water levels

A summary of the hydrodynamic components captured by the ADCP unit that has been deployed at ADCP1 and ADCP3 are presented in Appendix B and Appendix C. A summary of the hydrodynamic components captured by the ADCP unit that has been deployed at ADCP2 are presented in Appendix D and Appendix E. These summaries include the following:

- Current and water level time series plots
- Current speed rose plots
- Current velocity scatter (current speed against direction)
- Current joint frequency tables of current speed compared to current direction
- U and V velocity component scatter plots.

### **3.3 Waves**

A summary of the wave parameters captured by the ADCP unit that has been deployed at ADCP1 and ADCP3 are presented in Appendix F and Appendix G. A summary of the wave parameters captured by the ADCP unit that has been deployed at ADCP2 are presented in Appendix H and Appendix I. These summaries include the following:

- Wave parameter time series plots
- Significant wave height rose plots
- Peak period rose plots
- Current joint frequency tables of current speed compared to current direction.

## 4 Lessons learned

The fieldwork provided the opportunity to gain valuable knowledge regarding conditions at Douglas Shoal that are likely to be relevant to future activity for the remediation project. Involving the deployments and retrieval of instruments. A summary of these is provided in Table 4-1 as 'lessons learned'.

Table 4-1 Fieldwork lessons learned

Challenge	Issue	Solution
Open nature of Douglas Shoal	Activities at the Shoal are impacted upon by wind, waves and currents during most of the year, causing delays in mobilisations and can make deployment/retrieval of ADCP's difficult.	Service visits are scheduled during calm periods and during the neap tide period if possible.  The slack period of the tide is utilised for retrieval and deployment
Anchoring on Douglas Shoal	Anchoring can be difficult during certain conditions due to very loose substrate and large areas of smooth rock which did not provide adequate anchoring points.	Smaller (lighter) vessels used during the retrieval of the ADCP and frame.  Utilise the slack period of the tidal cycle to limit current impacts on anchoring
Simultaneous operations nearby	Anchor line from another work vessel dragged over the ADCP frame and turned over the frame	Use divers/snorkelers to right the frame  Trigger the remote buoy on the ADCP, retrieve and reset the buoy then redeploy the unit  Ensure no other boating activities involving anchoring of vessels occur nearby during the deployment of the ADCPS  Ensure the ADCP on the seafloor is well clear of the vessel anchor line
Abundant fauna	Interactions with fauna	Limit vessel speeds in sensitive locations. Ensure protocols for interactions with fauna are communicated and adhered too. For example, maintain look out and slow speeds when on the Shoal and when approaching or leaving the Shoal.

## 5 References

Advisian (2019). Sampling and Analysis Plan – Douglas Shoal Remediation Project. Report prepared by Advisian for the Great Barrier Reef Marine Park Authority, Version 3, 17 May 2019.









**Appendix A**  
**Current and Wave Monitoring Locations**



# Douglas Shoal Remediation Planning

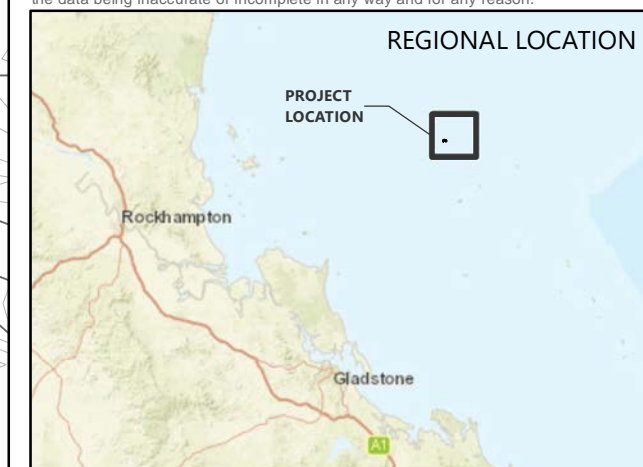
## Metecean Data Report – 12 Months

### ADCP deployment Locations

-  Current and wave monitoring locations (approximate)
-  Grounding footprint
- Contour (eAtlas Bathymetry)**
-  5m Contour
-  1m Contour

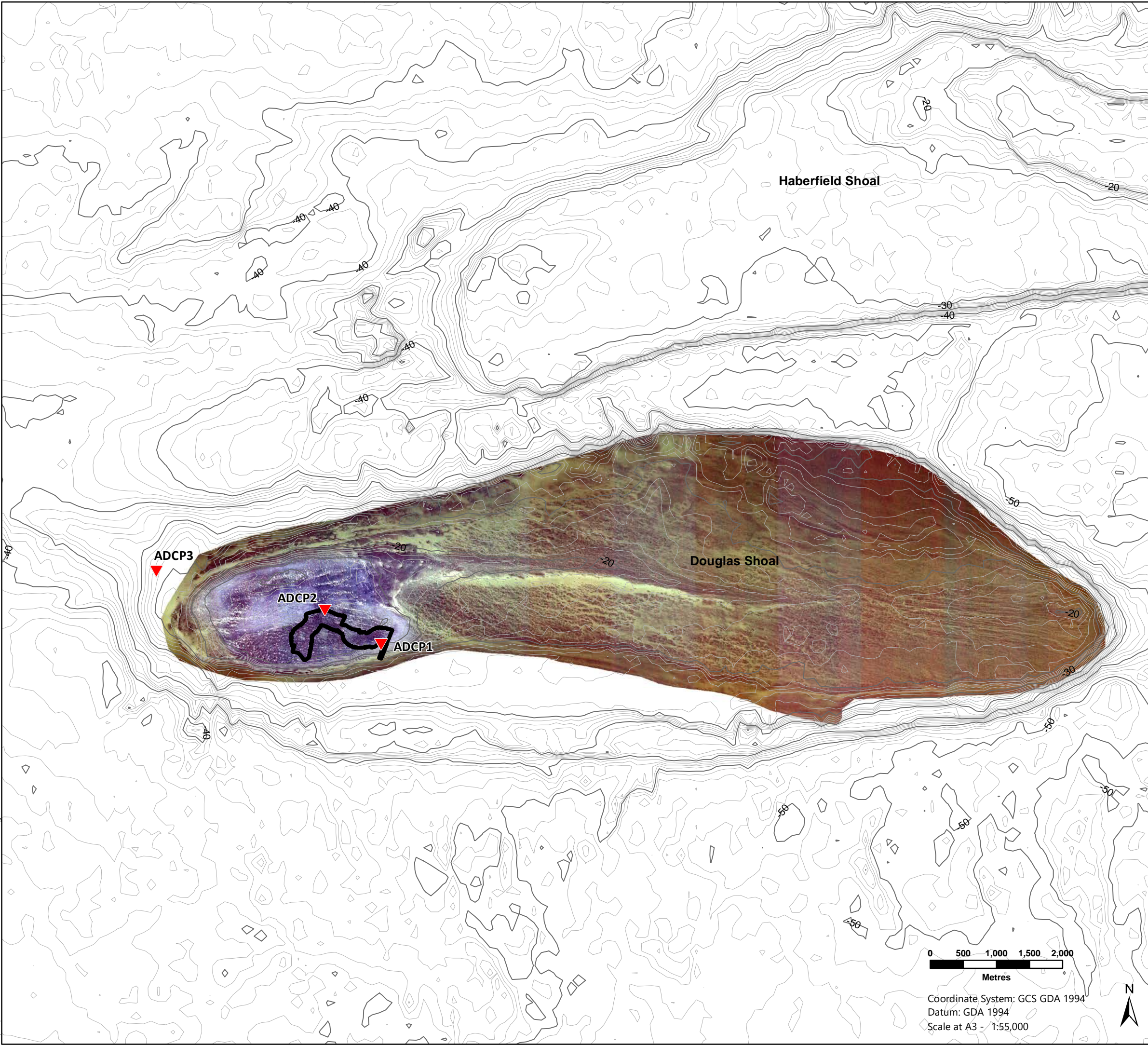
Source Information:  
 Contour (eAtlas Bathymetry), Grounding footprint  
 Cardno 2017  
 2018 Imagery  
 EOMAP GmbH & Co. KG (© DigitalGlobe Inc)

While every care is taken to ensure the accuracy of this data, Advisian makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which might be incurred as a result of the data being inaccurate or incomplete in any way and for any reason.



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User

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 26/05/2020 Rev: C ISSUED FOR INFORMATION Org: KM Chk: SN




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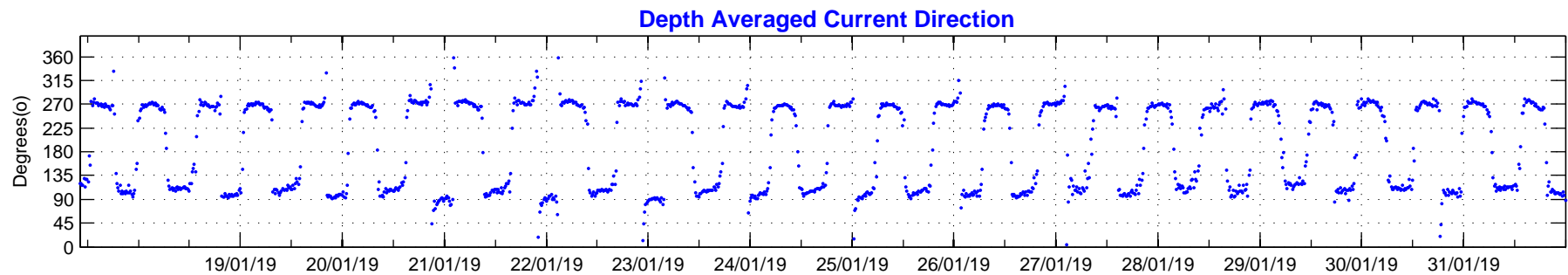
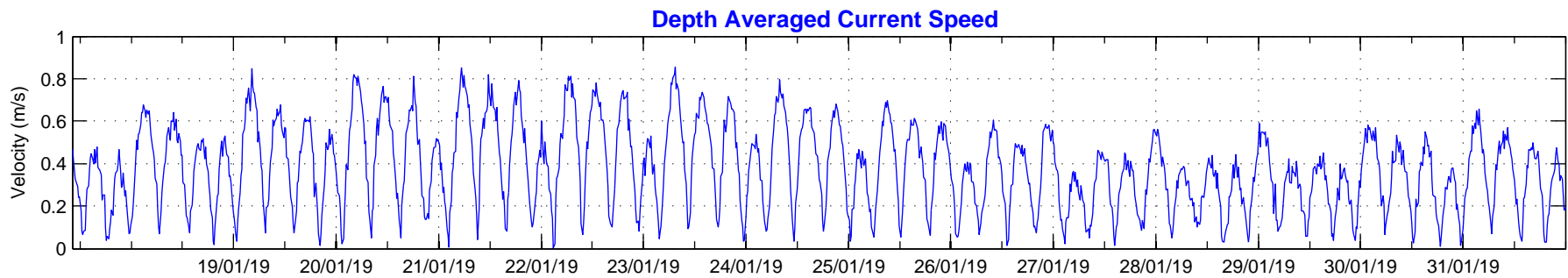
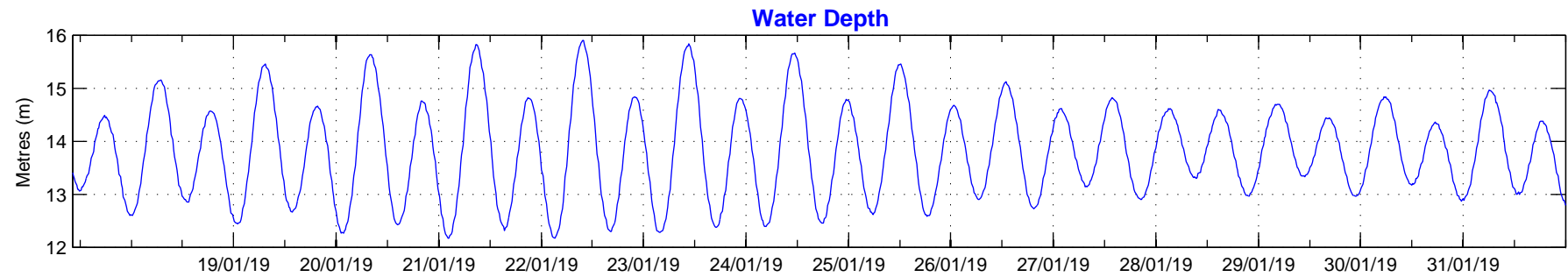
Coordinate System: GCS GDA 1994  
 Datum: GDA 1994  
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**Appendix B**  
**ADCP1 and ADCP3: Current and Water Level**  
**Time Series Plots**



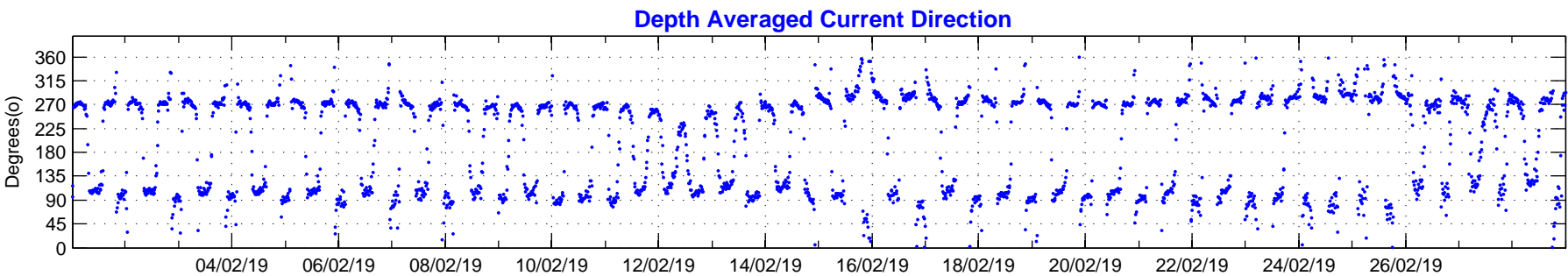
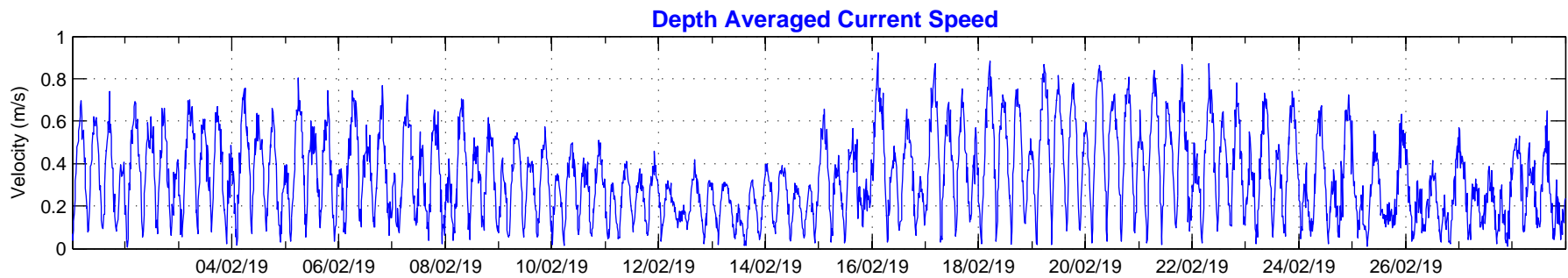
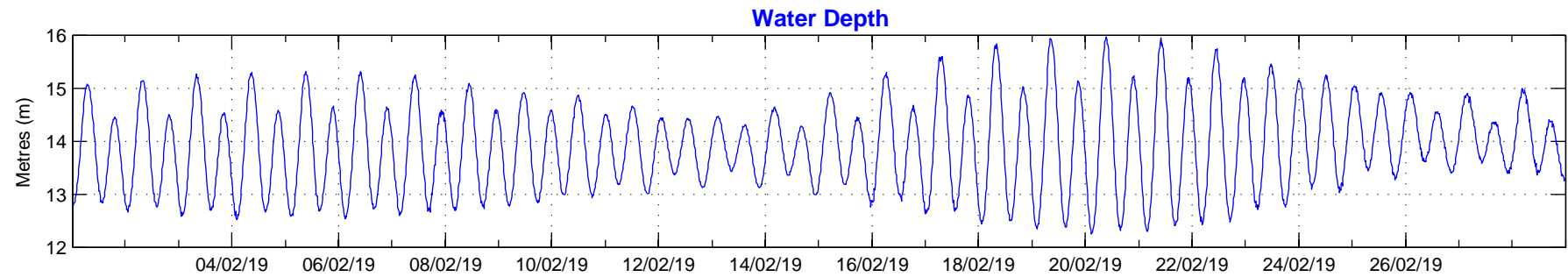
**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP1 Period1 [151° 39.588E , 23° 06.017S]  
 Data period: January 2019 (17-Jan-2019 to 31-Jan-2019)  
 Data source: ADCP  
 Data summary: January 2019  
 Number of Records: 1400  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.85 m/s  
 Mean Curr Spd: 0.38 m/s  
 StdDev. Curr Spd: 0.19 m/s

**Current Data Summary January 2019**



**Data Information:**

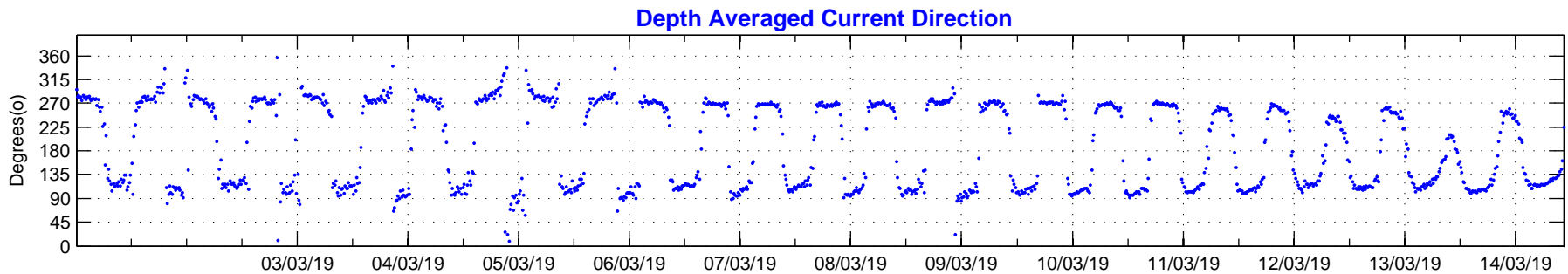
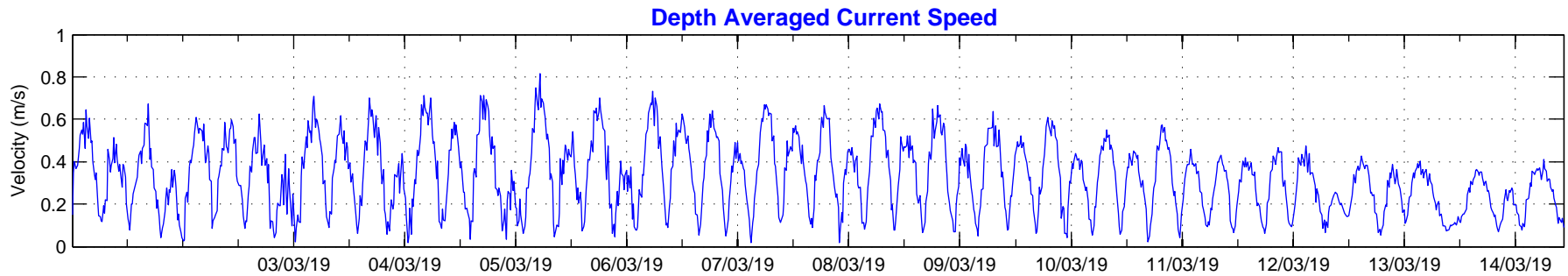
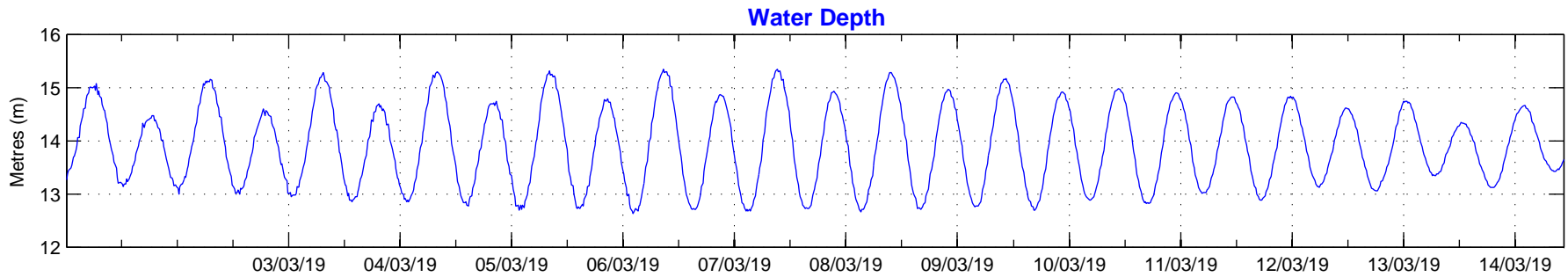
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP1 Period1 [151° 39.588E , 23° 06.017S]  
 Data period: February 2019 (01-Feb-2019 to 28-Feb-2019)  
 Data source: ADCP  
 Data summary: February 2019  
 Number of Records: 2688  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.92 m/s  
 Mean Curr Spd: 0.34 m/s  
 StdDev. Curr Spd: 0.19 m/s

**Current Data Summary February 2019**





**Data Information:**

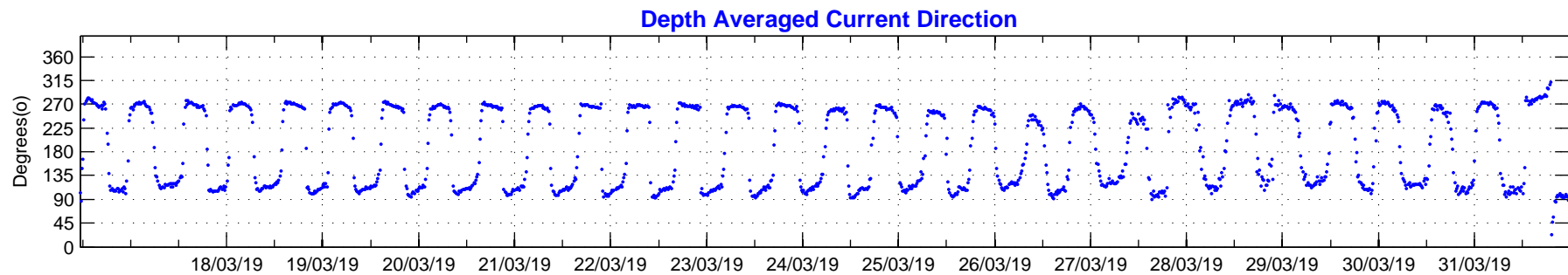
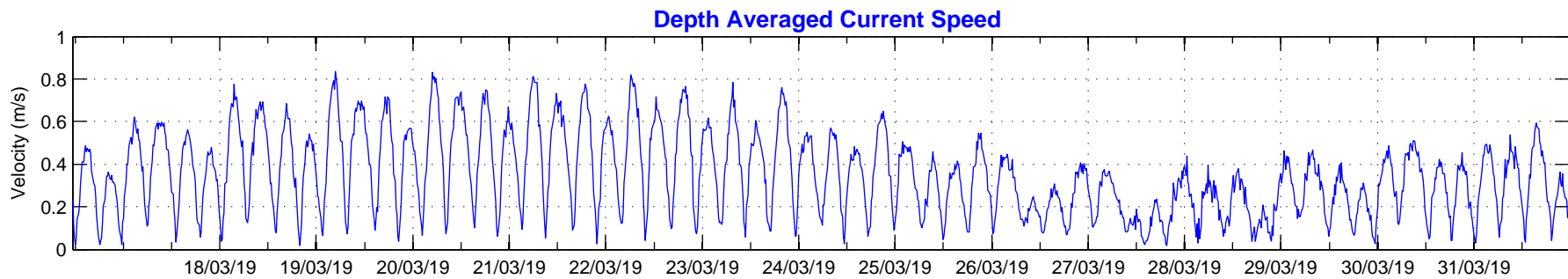
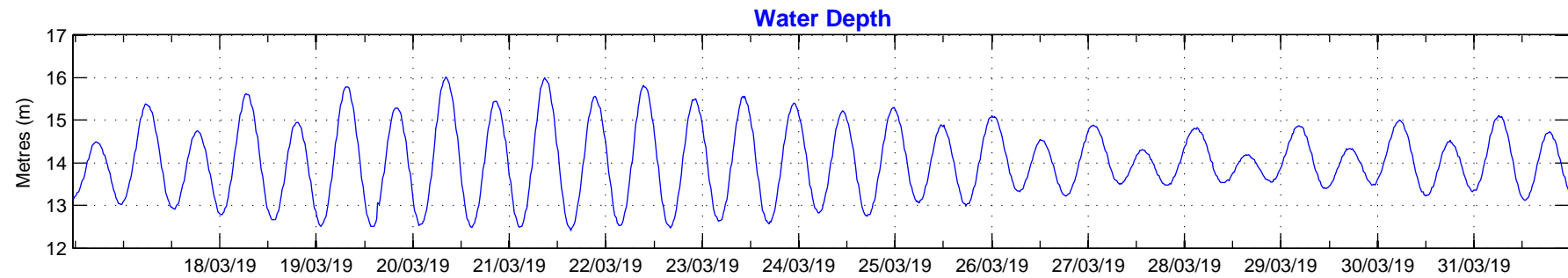
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP1 Period1 [151° 39.588E , 23° 06.017S]  
 Data period: March 2019 (01-Mar-2019 to 14-Mar-2019)  
 Data source: ADCP  
 Data summary: March 2019  
 Number of Records: 1290  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.82 m/s  
 Mean Curr Spd: 0.33 m/s  
 StdDev. Curr Spd: 0.17 m/s

**Current Data Summary March 2019**





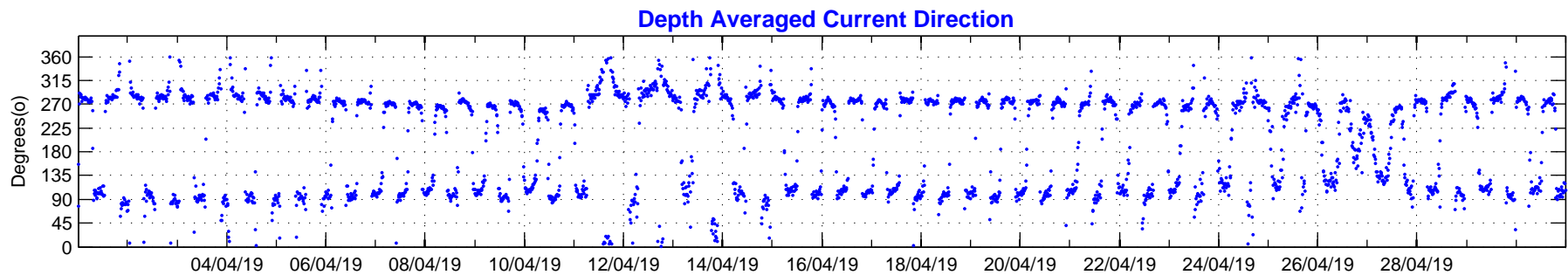
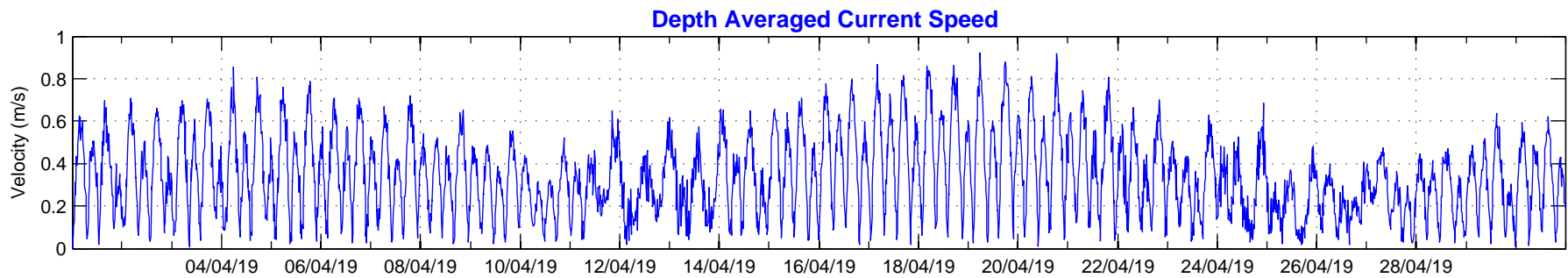
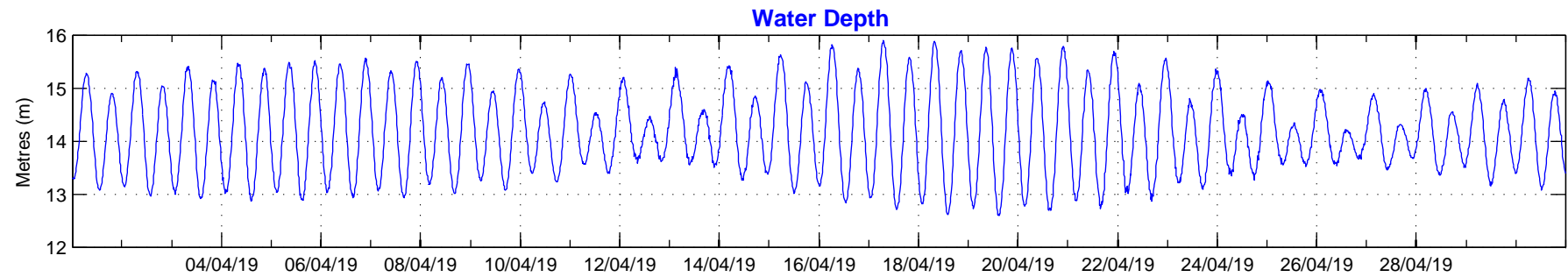
**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP1 Period2 [151° 39.597E , 23° 06.030S]  
 Data period: March 2019 (16-Mar-2019 to 31-Mar-2019)  
 Data source: ADCP  
 Data summary: March 2019  
 Number of Records: 1489  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.83 m/s  
 Mean Curr Spd: 0.35 m/s  
 StdDev. Curr Spd: 0.19 m/s

**Current Data Summary March 2019**



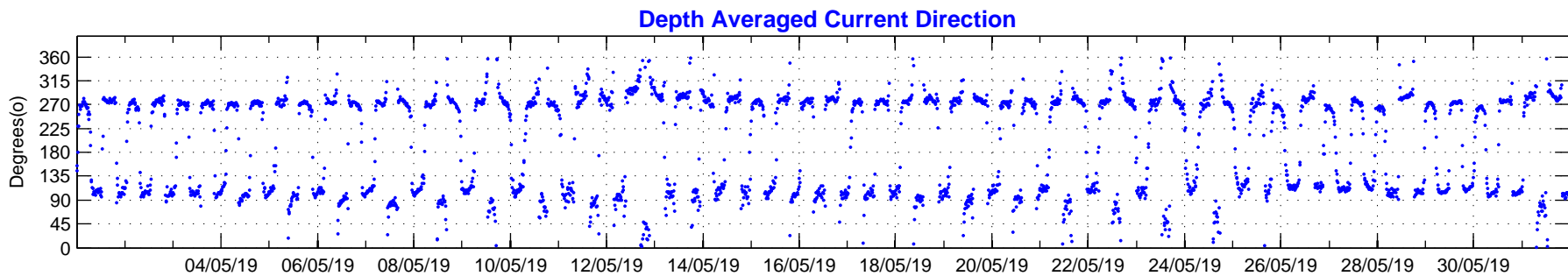
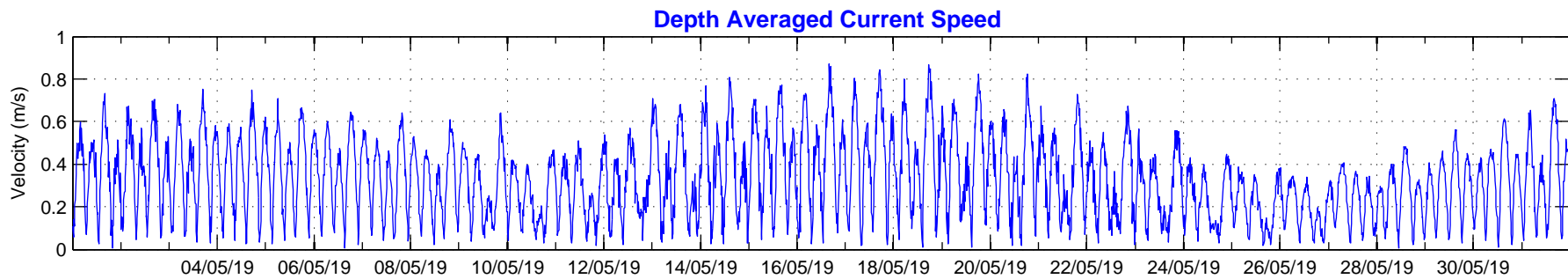
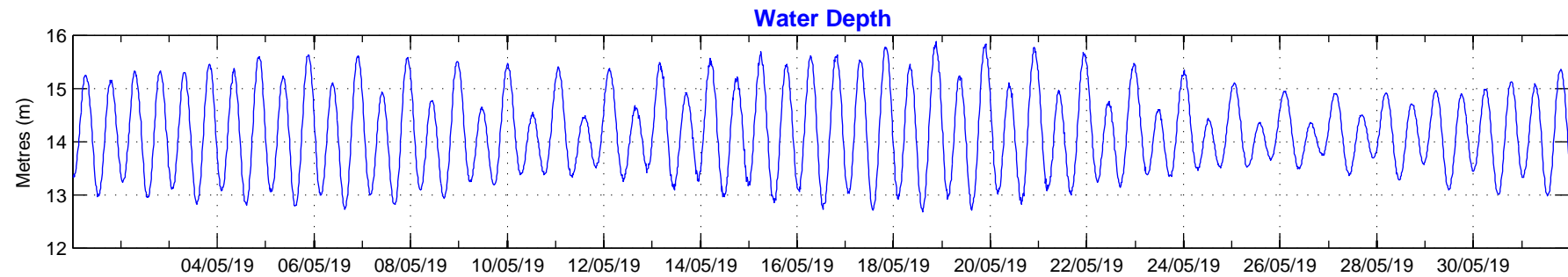
**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP1 Period2 [151° 39.597E , 23° 06.030S]  
 Data period: April 2019 (01-Apr-2019 to 30-Apr-2019)  
 Data source: ADCP  
 Data summary: April 2019  
 Number of Records: 2877  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.92 m/s  
 Mean Curr Spd: 0.34 m/s  
 StdDev. Curr Spd: 0.19 m/s

**Current Data Summary April 2019**



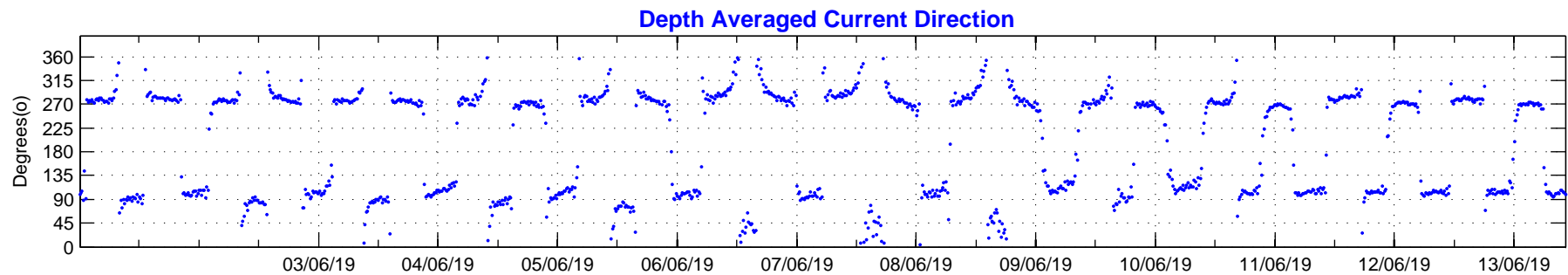
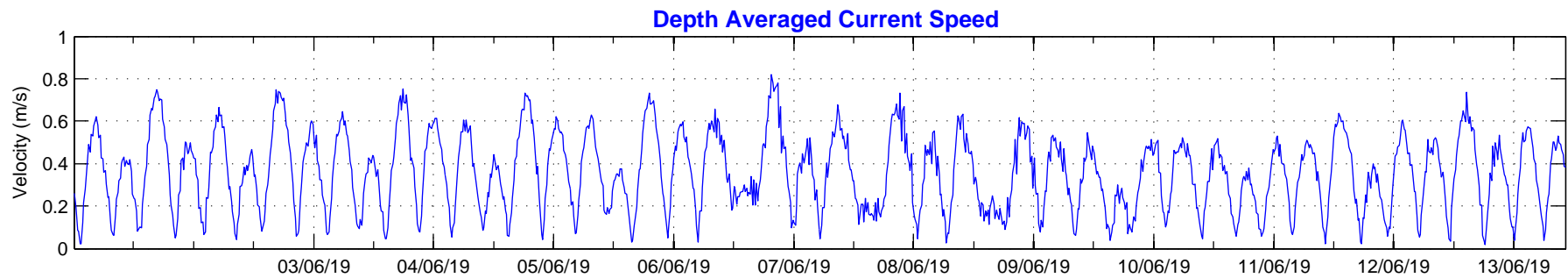
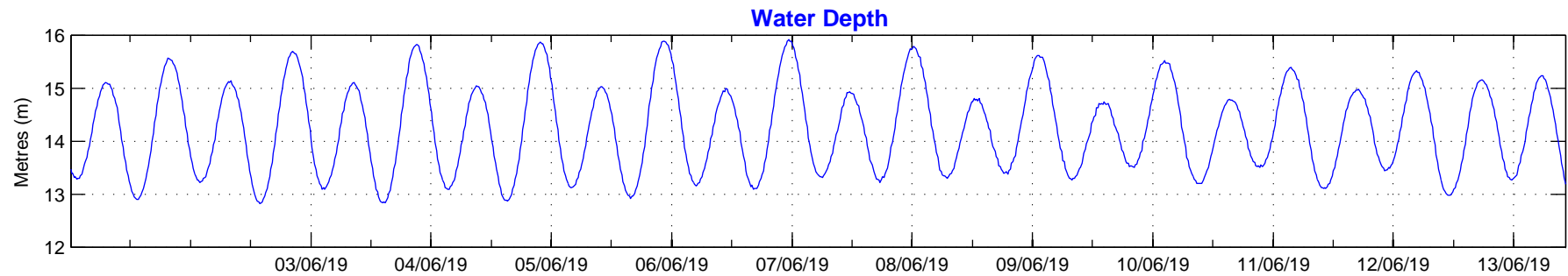
**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP1 Period2 [151° 39.597E , 23° 06.030S]  
 Data period: May 2019 (01-May-2019 to 31-May-2019)  
 Data source: ADCP  
 Data summary: May 2019  
 Number of Records: 2970  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.87 m/s  
 Mean Curr Spd: 0.33 m/s  
 StdDev. Curr Spd: 0.18 m/s

**Current Data Summary May 2019**



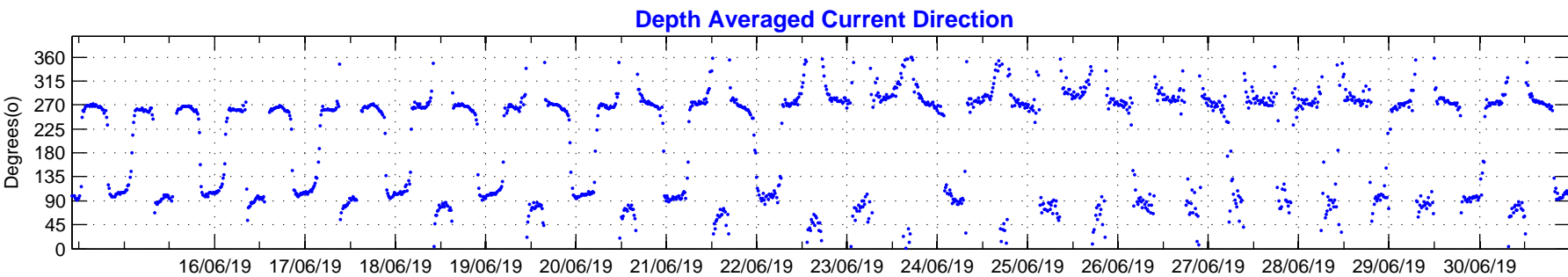
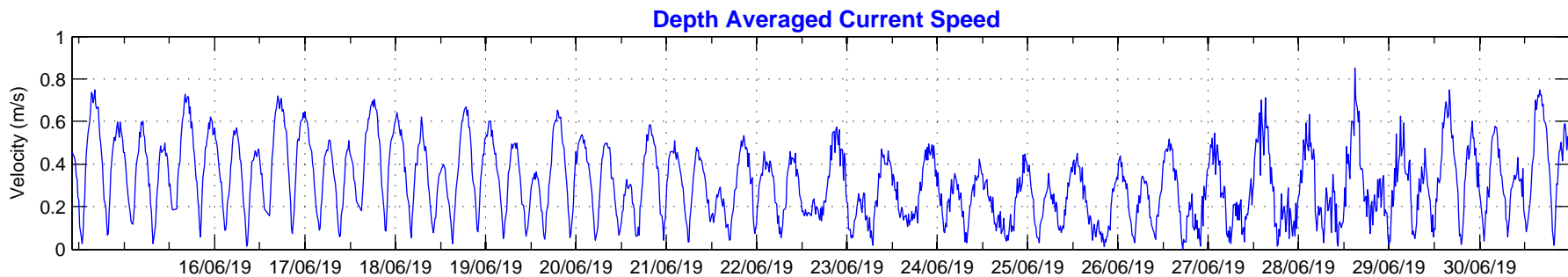
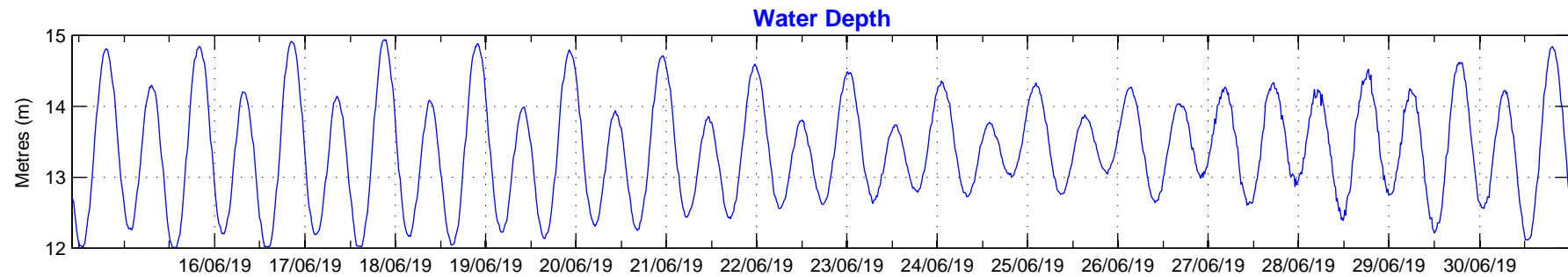
**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP1 Period2 [151° 39.597E , 23° 06.030S]  
 Data period: June 2019 (01-Jun-2019 to 13-Jun-2019)  
 Data source: ADCP  
 Data summary: June 2019  
 Number of Records: 1188  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.82 m/s  
 Mean Curr Spd: 0.36 m/s  
 StdDev. Curr Spd: 0.18 m/s

**Current Data Summary June 2019**



**Data Information:**

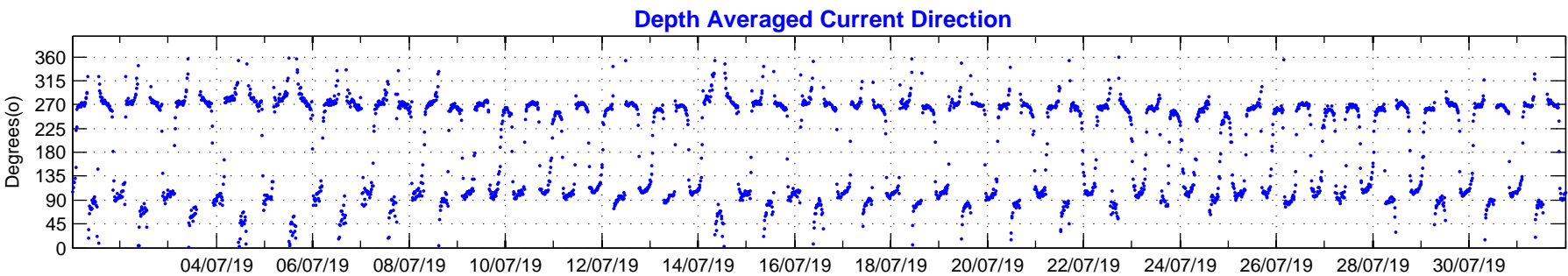
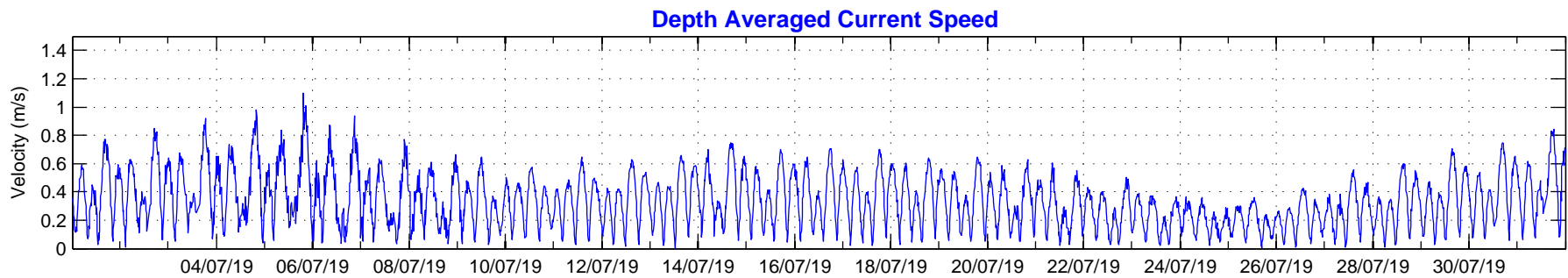
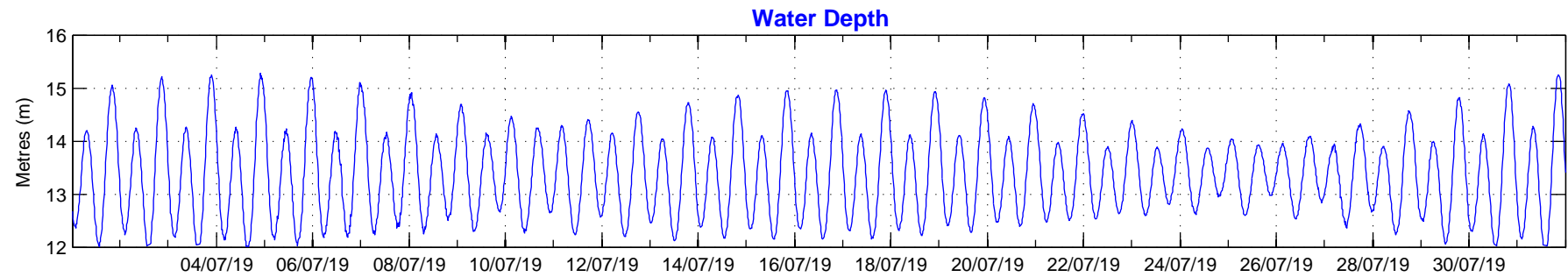
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP1 Period3 [151° 39.602E , 23° 06.030S]  
 Data period: June 2019 (14-Jun-2019 to 30-Jun-2019)  
 Data source: ADCP  
 Data summary: June 2019  
 Number of Records: 1580  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.85 m/s  
 Mean Curr Spd: 0.32 m/s  
 StdDev. Curr Spd: 0.17 m/s

**Current Data Summary June 2019**





**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP1 Period3 [151° 39.602E , 23° 06.030S]  
 Data period: July 2019 (01-Jul-2019 to 31-Jul-2019)  
 Data source: ADCP  
 Data summary: July 2019  
 Number of Records: 2950  
 Missing data (%): 0.00  
 Record Depth: m ASB

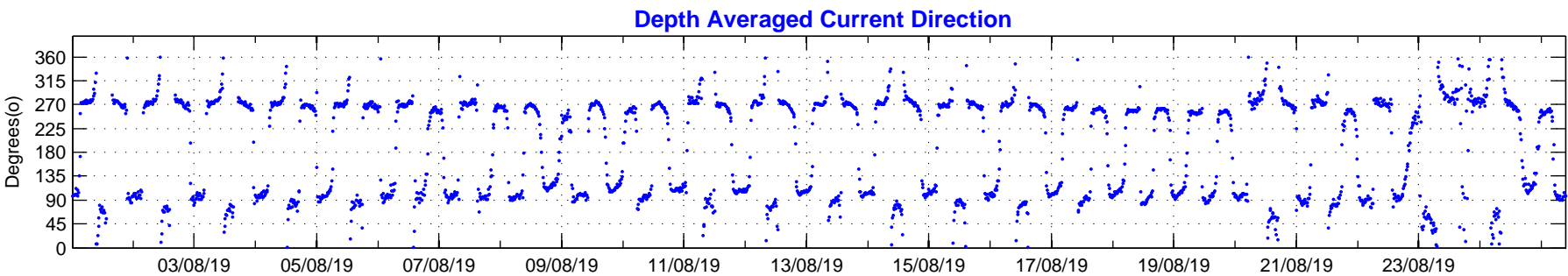
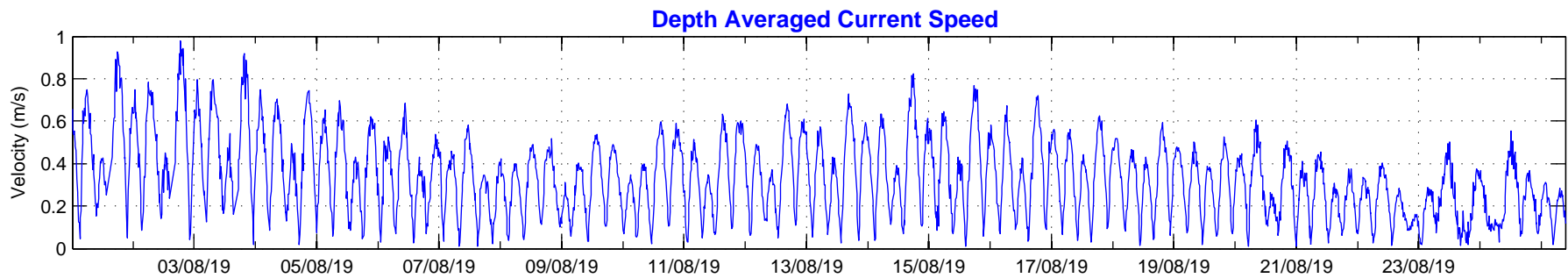
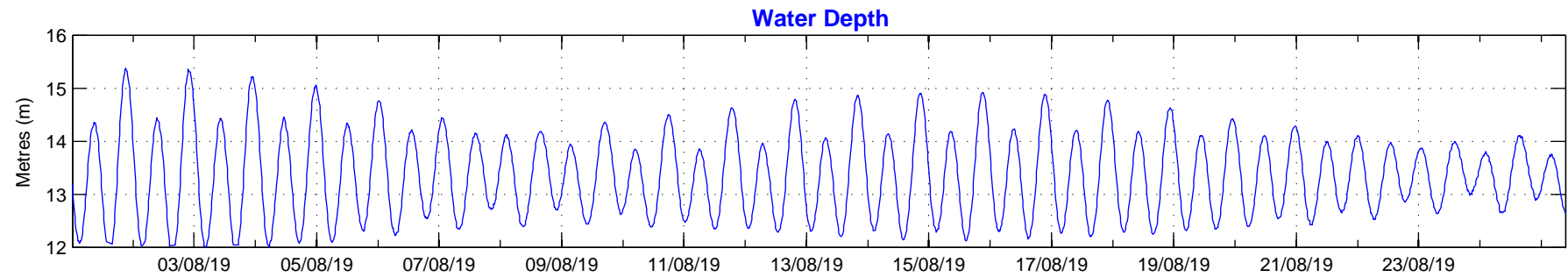
**Key Data Statistics:**

Max Curr Spd: 1.10 m/s  
 Mean Curr Spd: 0.34 m/s  
 StdDev. Curr Spd: 0.19 m/s

**Current Data Summary July 2019**







**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP1 Period3 [151° 39.602E , 23° 06.030S]  
 Data period: August 2019 (01-Aug-2019 to 25-Aug-2019)  
 Data source: ADCP  
 Data summary: August 2019  
 Number of Records: 2314  
 Missing data (%): 0.00  
 Record Depth: m ASB

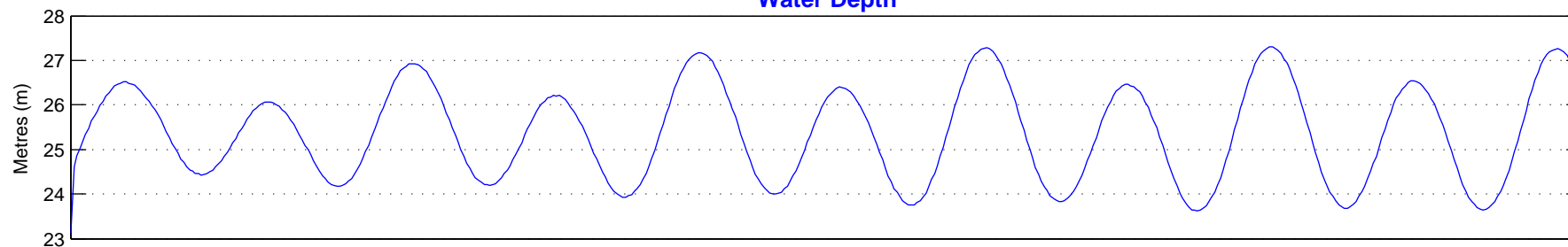
**Key Data Statistics:**

Max Curr Spd: 0.98 m/s  
 Mean Curr Spd: 0.34 m/s  
 StdDev. Curr Spd: 0.18 m/s

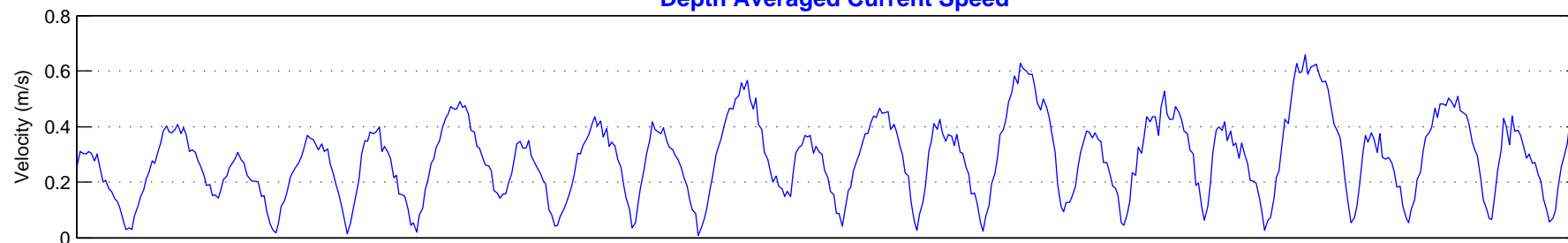
**Current Data Summary August 2019**



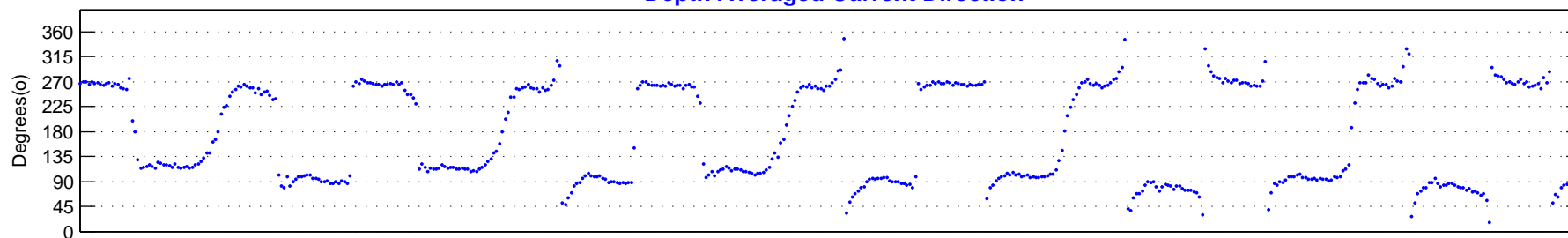
### Water Depth



### Depth Averaged Current Speed



### Depth Averaged Current Direction



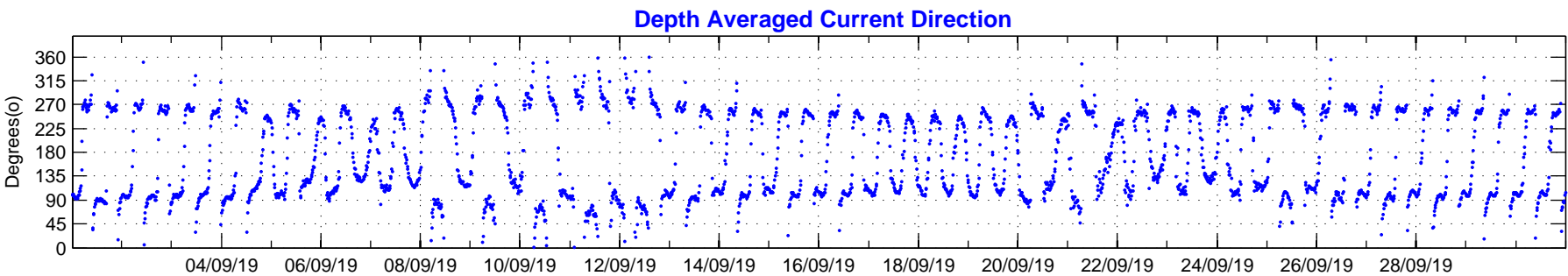
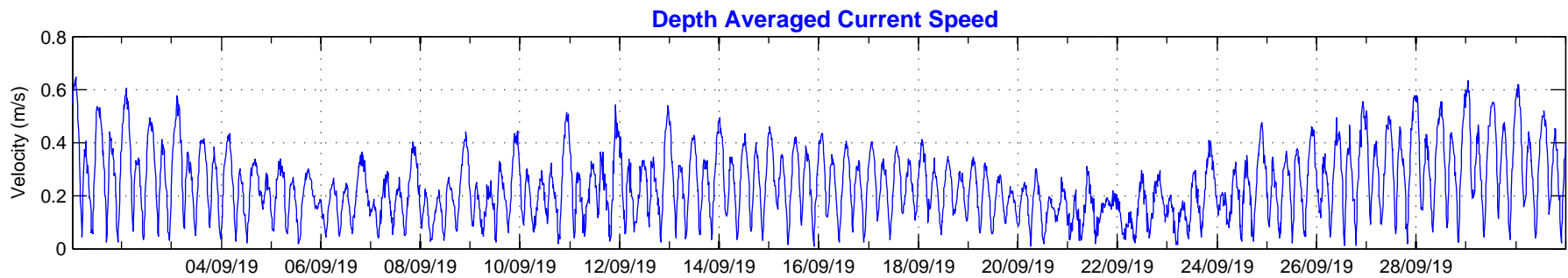
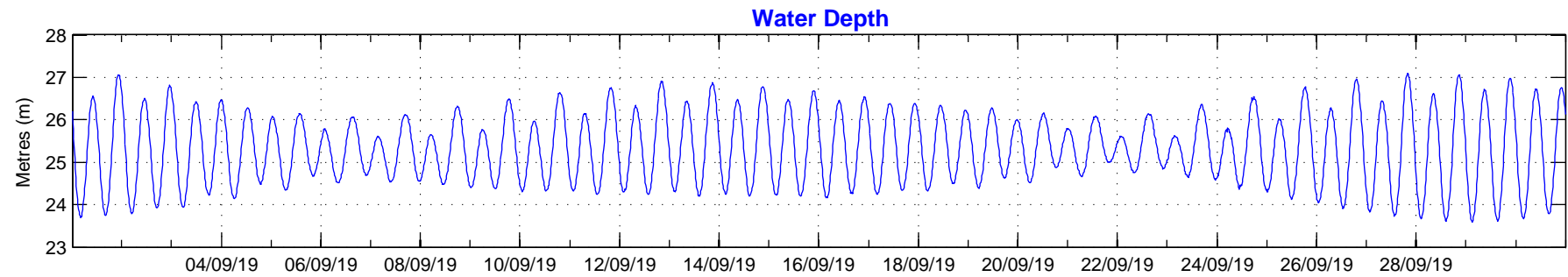
#### Data Information:

Project: 301001-02112 Douglas Shoal Remediation Project  
Location: ADCP3 Period4 [151° 37.728E , 23° 05.407S]  
Data period: August 2019 (26-Aug-2019 to 31-Aug-2019)  
Data source: ADCP  
Data summary: August 2019  
Number of Records: 524  
Missing data (%): 0.00  
Record Depth: m ASB

#### Key Data Statistics:

Max Curr Spd: 0.66 m/s  
Mean Curr Spd: 0.29 m/s  
StdDev. Curr Spd: 0.14 m/s

Current Data Summary August 2019



**Data Information:**

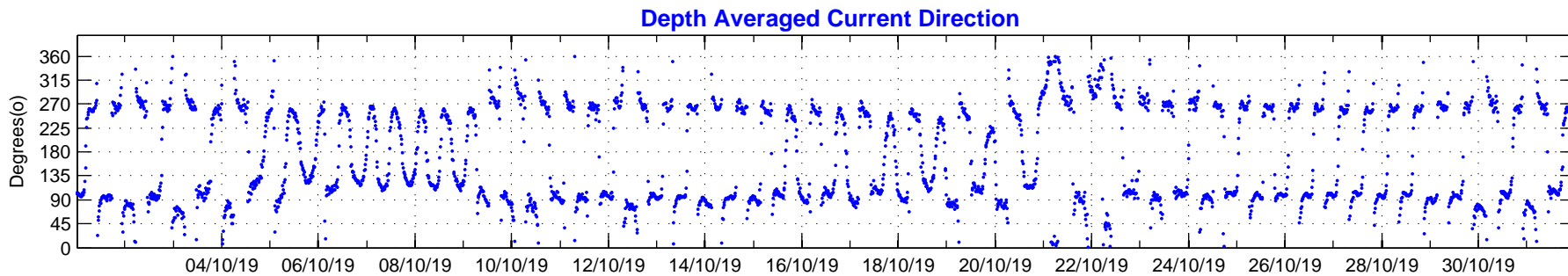
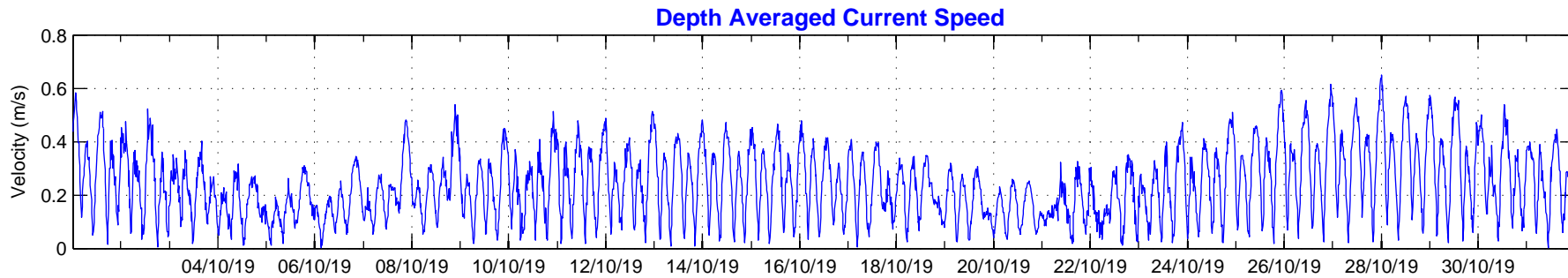
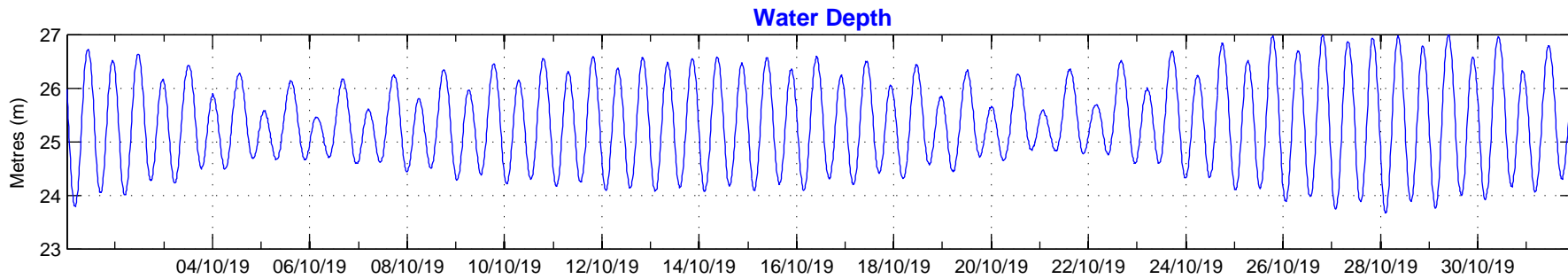
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP3 Period4 [151° 37.728E , 23° 05.407S]  
 Data period: September 2019 (01-Sep-2019 to 30-Sep-2019)  
 Data source: ADCP  
 Data summary: September 2019  
 Number of Records: 2880  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.64 m/s  
 Mean Curr Spd: 0.24 m/s  
 StdDev. Curr Spd: 0.13 m/s

**Current Data Summary September 2019**





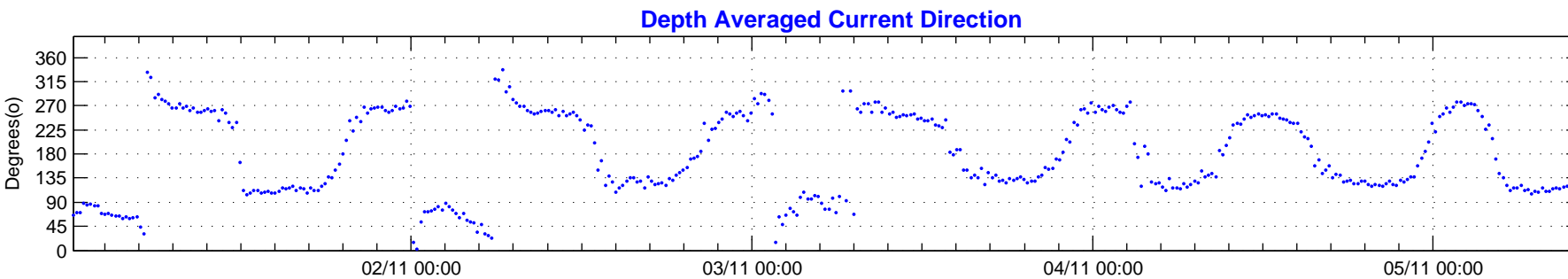
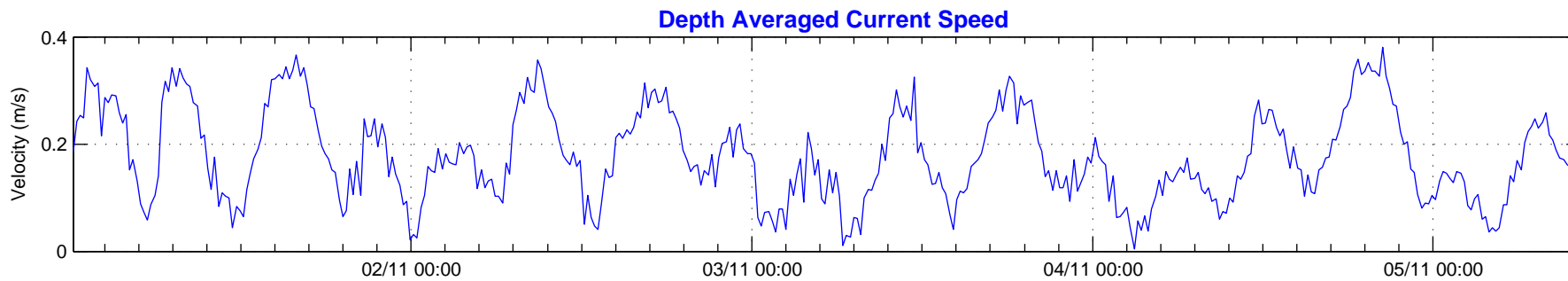
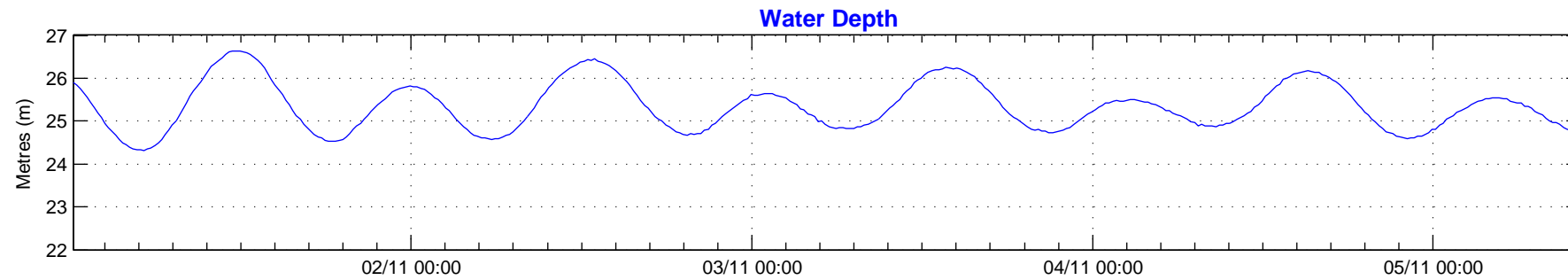
**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP3 Period4 [151° 37.728E , 23° 05.407S]  
 Data period: October 2019 (01-Oct-2019 to 31-Oct-2019)  
 Data source: ADCP  
 Data summary: October 2019  
 Number of Records: 2976  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.65 m/s  
 Mean Curr Spd: 0.24 m/s  
 StdDev. Curr Spd: 0.13 m/s

**Current Data Summary October 2019**



**Data Information:**

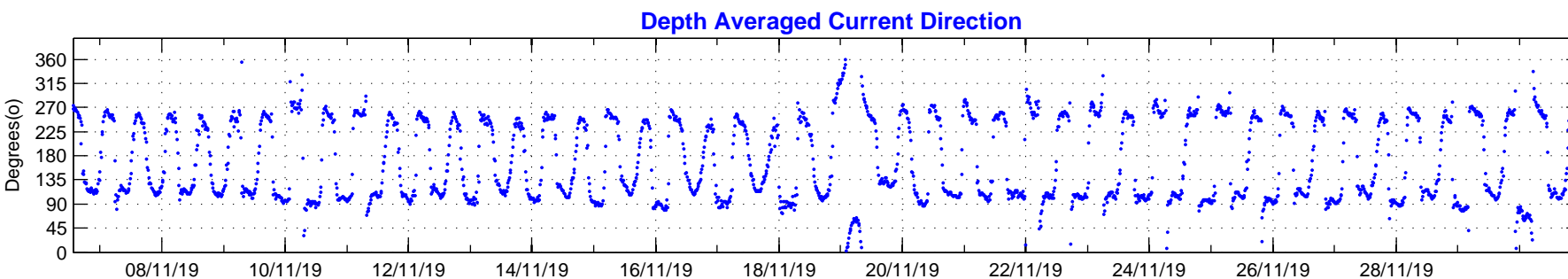
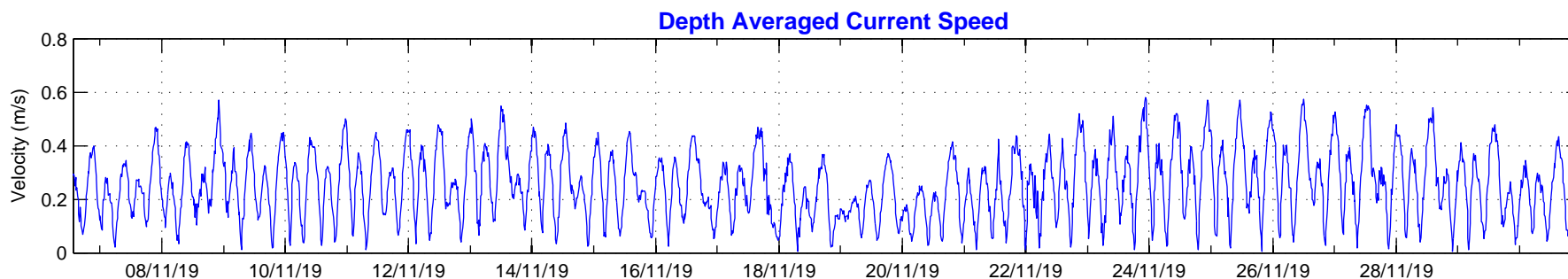
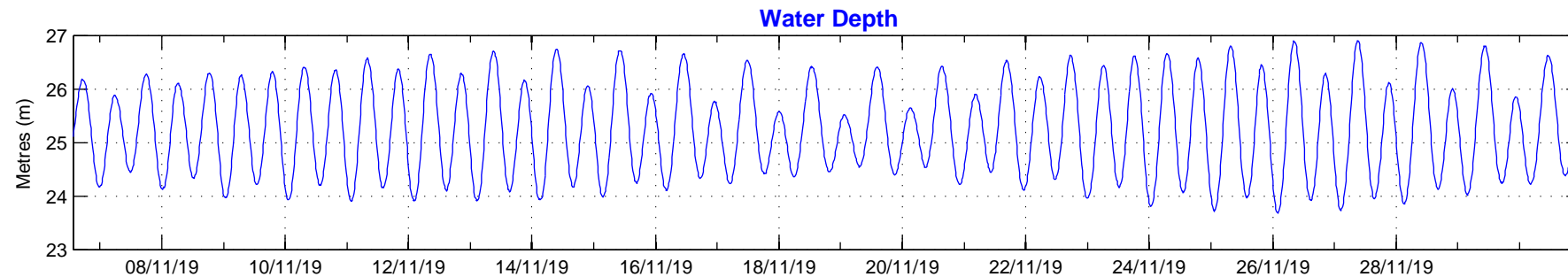
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP3 Period4 [151° 37.728E , 23° 05.407S]  
 Data period: November 2019 (01-Nov-2019 to 05-Nov-2019)  
 Data source: ADCP  
 Data summary: November 2019  
 Number of Records: 426  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.38 m/s  
 Mean Curr Spd: 0.18 m/s  
 StdDev. Curr Spd: 0.08 m/s

**Current Data Summary November 2019**





**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP3 Period5 [151° 39.140E , 23° 05.734S]  
 Data period: November 2019 (06-Nov-2019 to 30-Nov-2019)  
 Data source: ADCP  
 Data summary: November 2019  
 Number of Records: 2347  
 Missing data (%): 0.00  
 Record Depth: m ASB

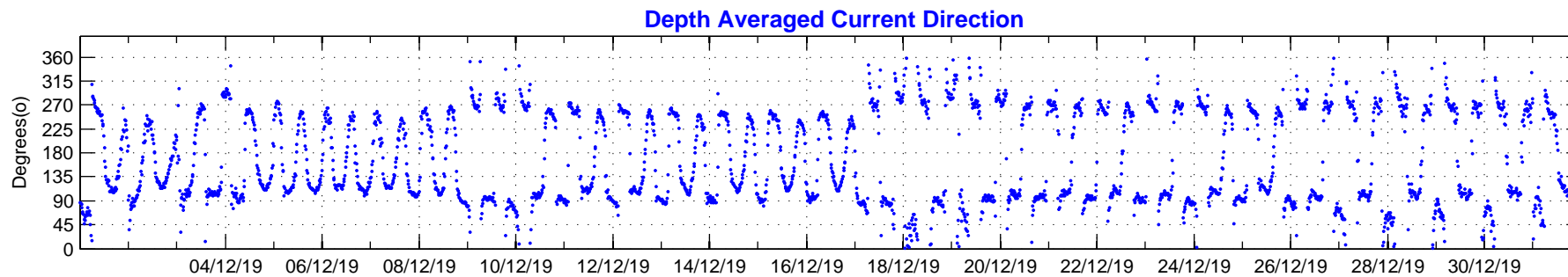
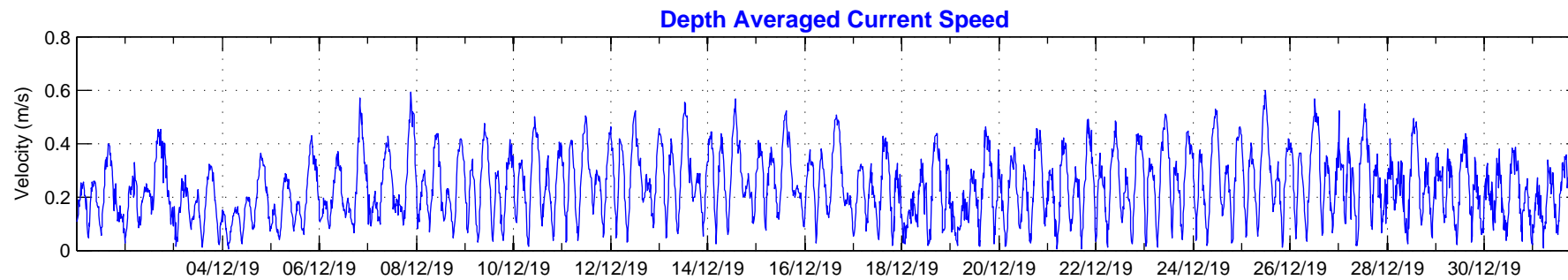
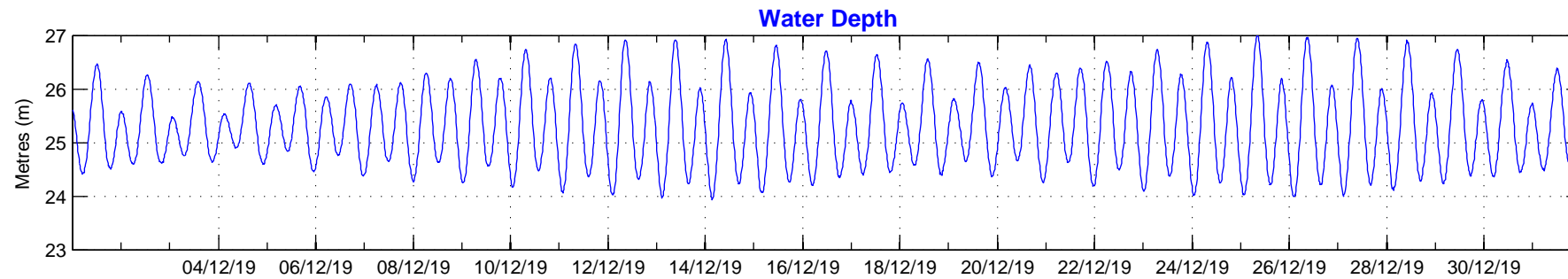
**Key Data Statistics:**

Max Curr Spd: 0.58 m/s  
 Mean Curr Spd: 0.25 m/s  
 StdDev. Curr Spd: 0.12 m/s

**Current Data Summary November 2019**







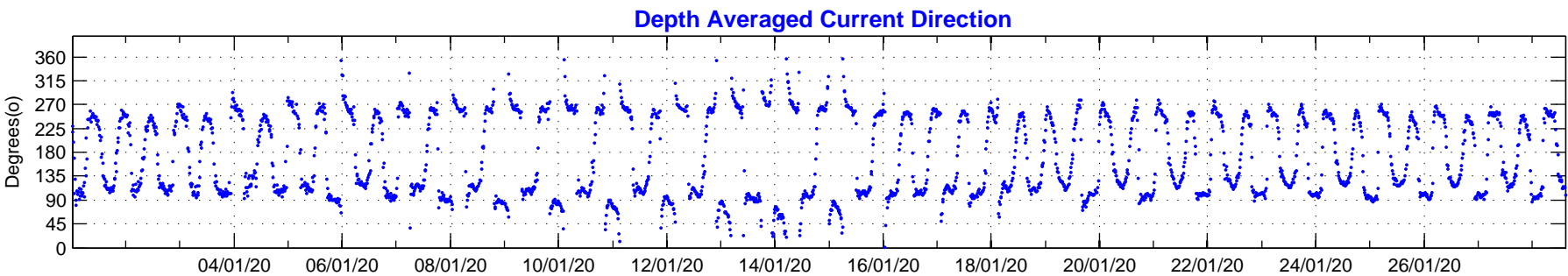
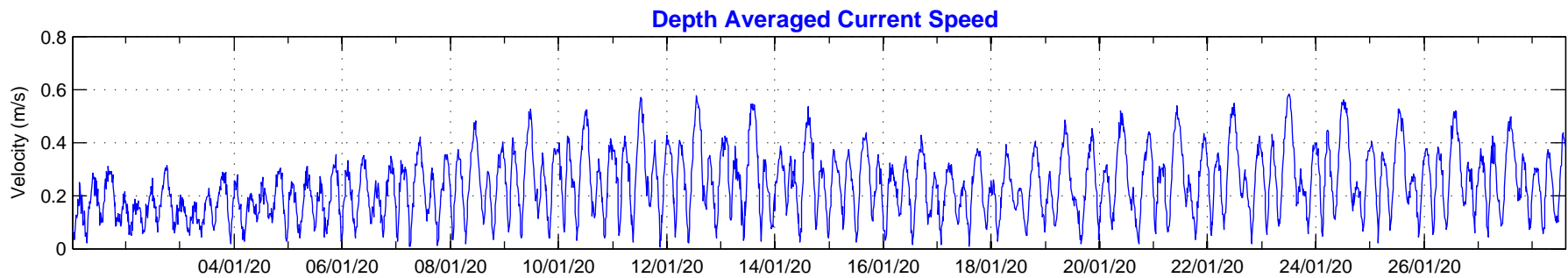
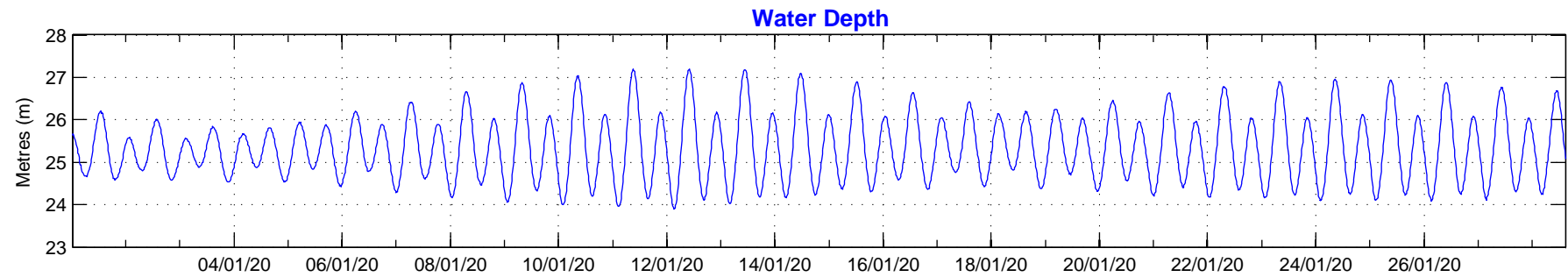
**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP3 Period5 [151° 39.140E , 23° 05.734S]  
 Data period: December 2019 (01-Dec-2019 to 31-Dec-2019)  
 Data source: ADCP  
 Data summary: December 2019  
 Number of Records: 2976  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.60 m/s  
 Mean Curr Spd: 0.24 m/s  
 StdDev. Curr Spd: 0.12 m/s

**Current Data Summary December 2019**



**Data Information:**

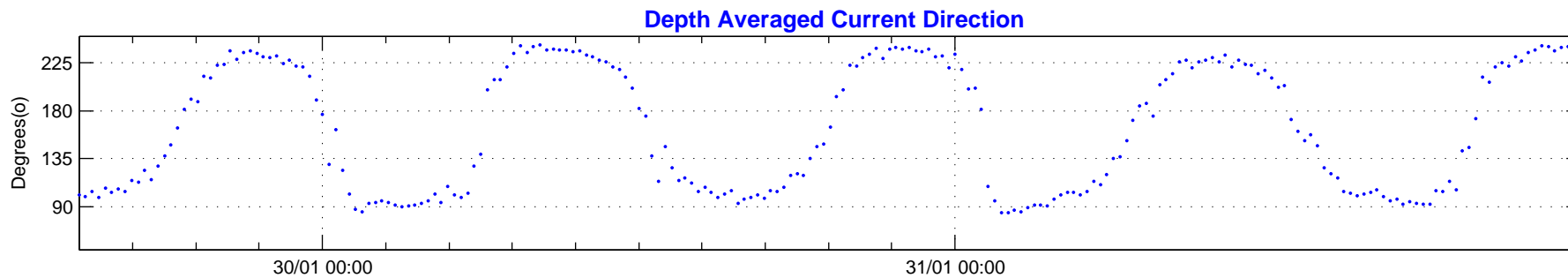
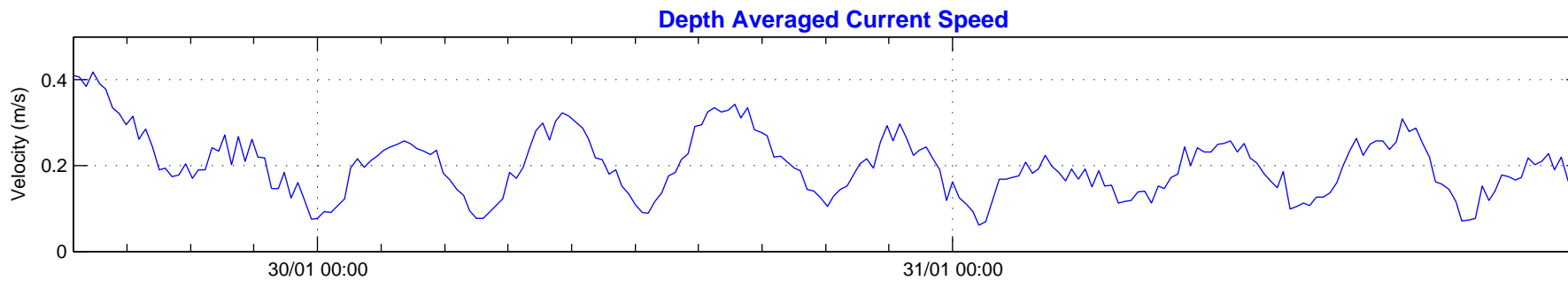
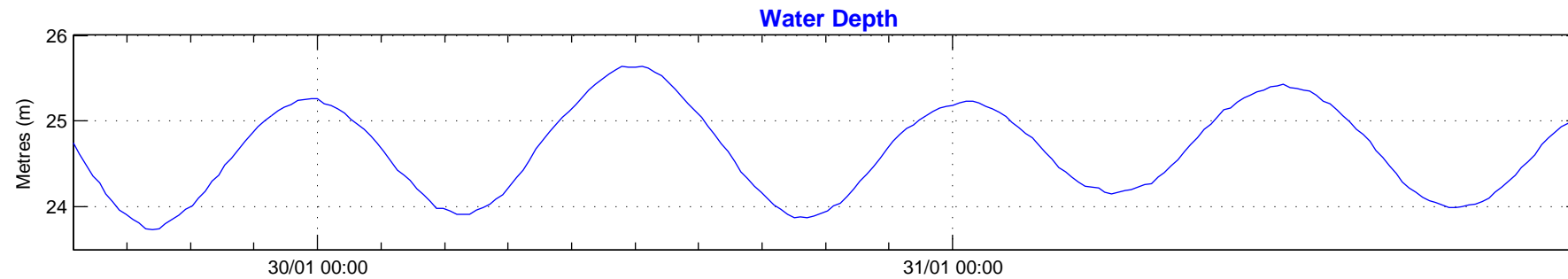
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP3 Period5 [151° 39.140E , 23° 05.734S]  
 Data period: January 2020 (01-Jan-2020 to 28-Jan-2020)  
 Data source: ADCP  
 Data summary: January 2020  
 Number of Records: 2651  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.58 m/s  
 Mean Curr Spd: 0.24 m/s  
 StdDev. Curr Spd: 0.12 m/s

**Current Data Summary January 2020**





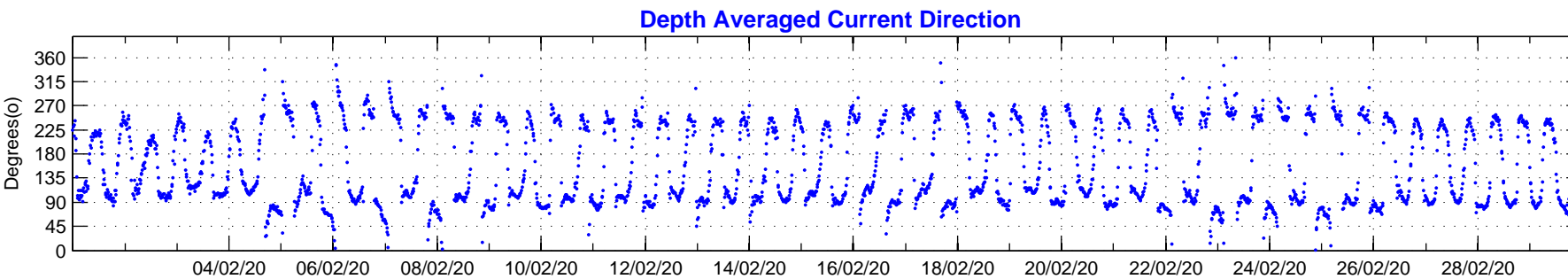
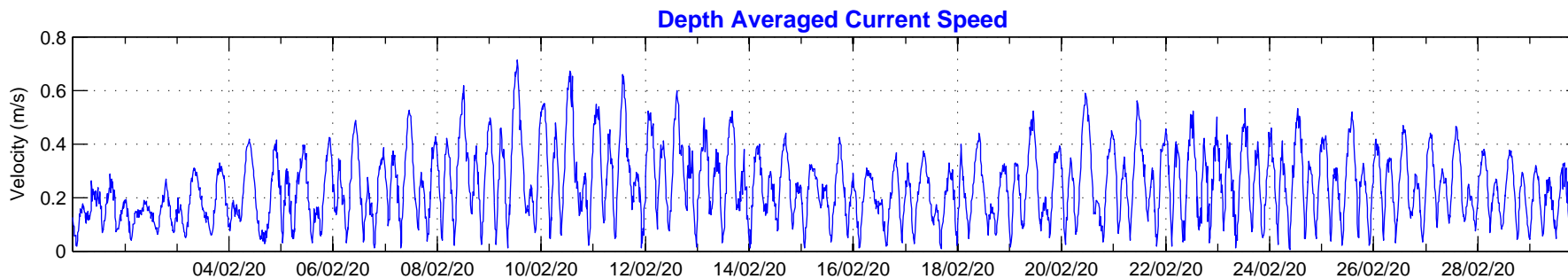
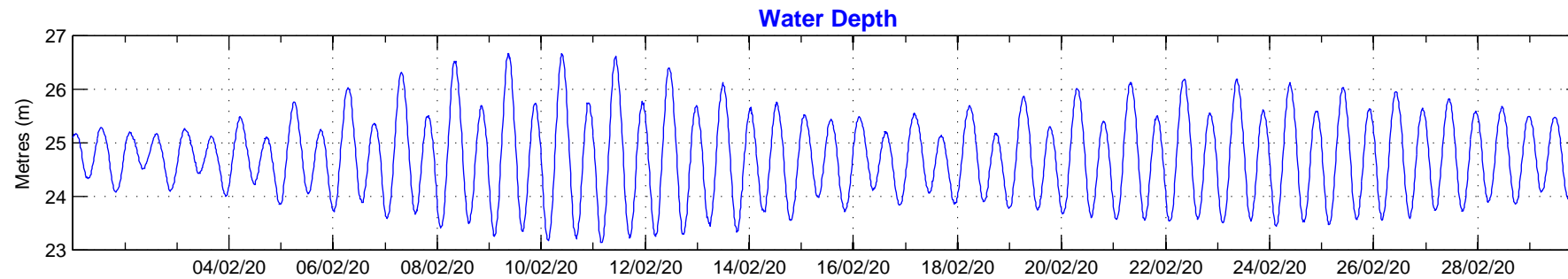
**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP3 Period6 [151° 37.766E , 23° 05.414S]  
 Data period: January 2020 (29-Jan-2020 to 31-Jan-2020)  
 Data source: ADCP  
 Data summary: January 2020  
 Number of Records: 229  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.42 m/s  
 Mean Curr Spd: 0.20 m/s  
 StdDev. Curr Spd: 0.07 m/s

Current Data Summary January 2020



**Data Information:**

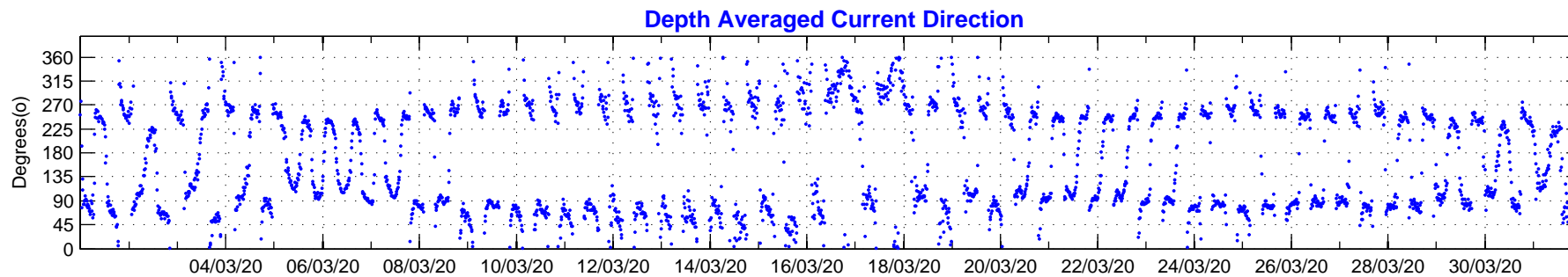
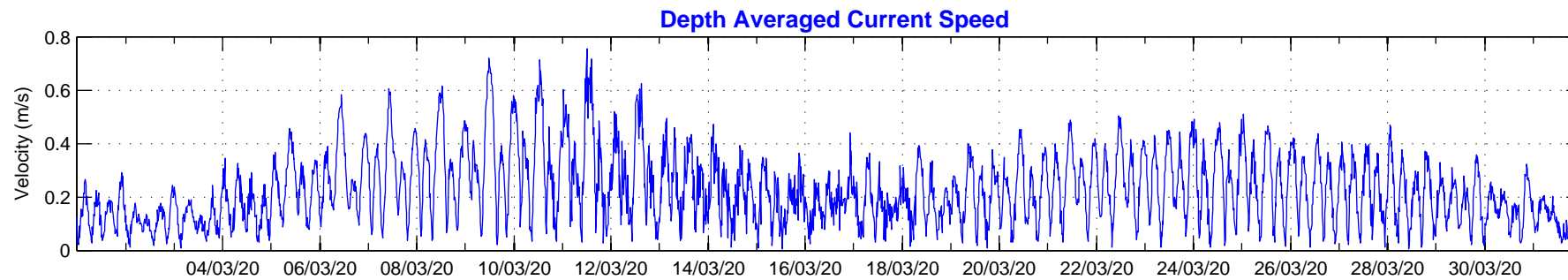
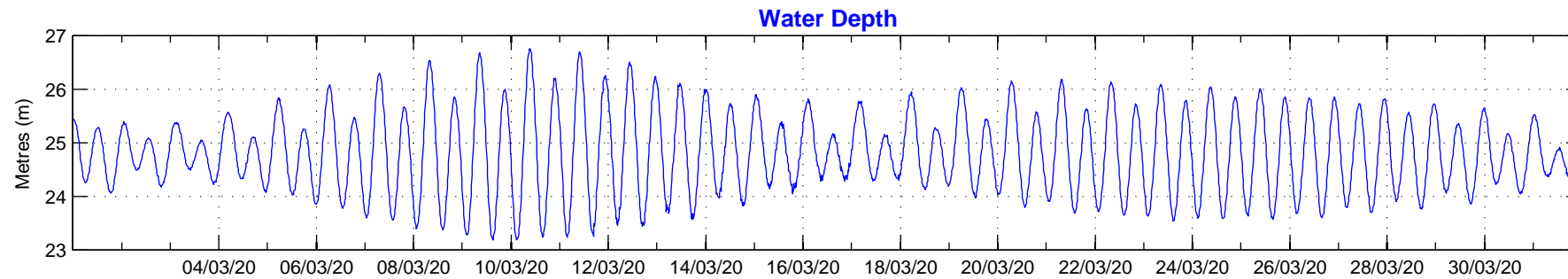
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP3 Period6 [151° 37.766E , 23° 05.414S]  
 Data period: February 2020 (01-Feb-2020 to 29-Feb-2020)  
 Data source: ADCP  
 Data summary: February 2020  
 Number of Records: 2784  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.71 m/s  
 Mean Curr Spd: 0.24 m/s  
 StdDev. Curr Spd: 0.13 m/s

**Current Data Summary February 2020**





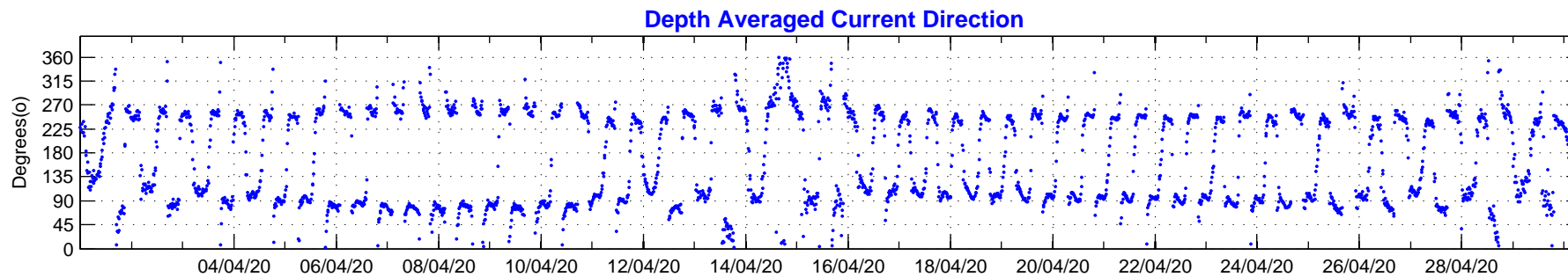
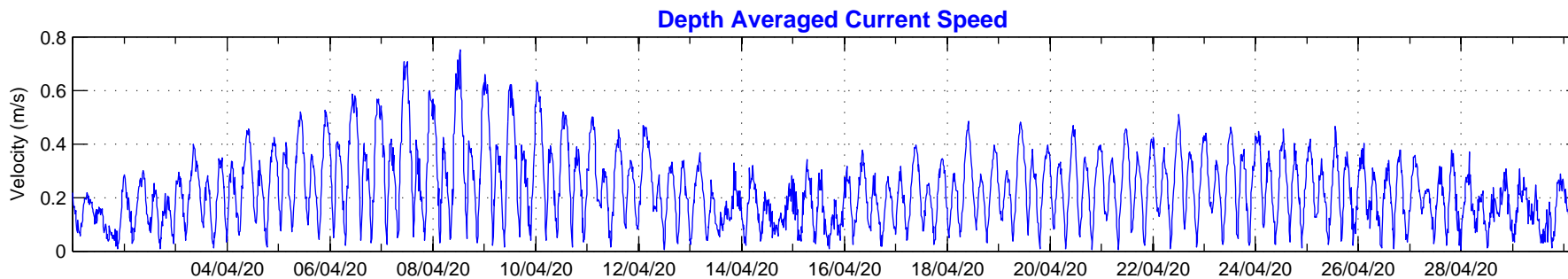
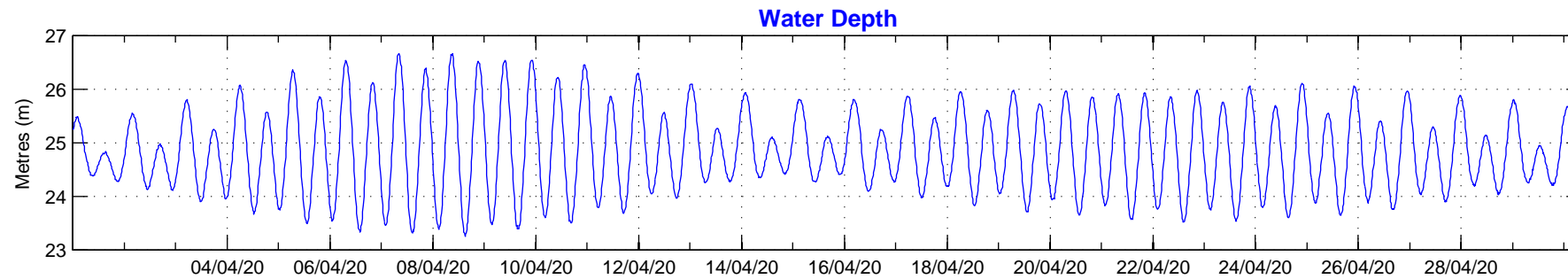
**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP3 Period6 [151° 37.766E , 23° 05.414S]  
 Data period: March 2020 (01-Mar-2020 to 31-Mar-2020)  
 Data source: ADCP  
 Data summary: March 2020  
 Number of Records: 2976  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.75 m/s  
 Mean Curr Spd: 0.23 m/s  
 StdDev. Curr Spd: 0.13 m/s

**Current Data Summary March 2020**



**Data Information:**


Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP3 Period6 [151° 37.766E , 23° 05.414S]  
 Data period: April 2020 (01-Apr-2020 to 30-Apr-2020)  
 Data source: ADCP  
 Data summary: April 2020  
 Number of Records: 2817  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.75 m/s  
 Mean Curr Spd: 0.23 m/s  
 StdDev. Curr Spd: 0.13 m/s

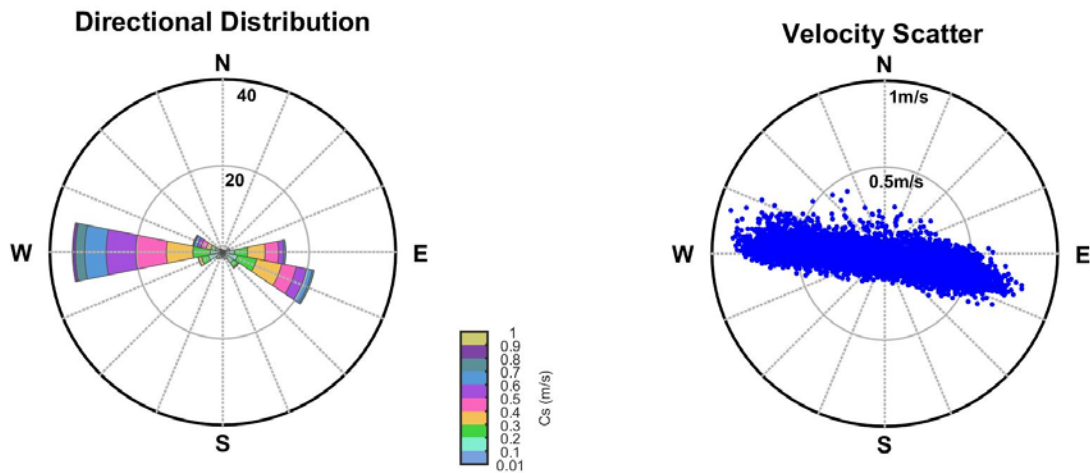
**Current Data Summary April 2020**





**Appendix C**  
**ADCP1 and ADCP3: Current Rose, Velocity**  
**Scatter and Joint Frequency Table Plots**

## Current Speed for ADCP1 Location: Period 1



JFT (%) of Current Speed against Direction for the entire period 17-Jan-2019 to 14-Mar-2019

N=5378	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
0-0.01 (Calm)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.07	100.00
0.01-0.1	0.26	0.28	0.22	0.41	0.58	0.63	0.87	0.93	0.87	0.89	0.73	1.08	0.65	0.33	0.45	0.39	9.58	99.93
0.1-0.2	0.11	0.07	0.37	0.67	2.12	2.83	2.12	0.86	0.30	0.56	1.13	2.31	2.27	1.38	0.33	0.28	17.70	90.35
0.2-0.3	0.06	0.07	0.09	0.52	3.03	4.50	1.23	-	-	-	0.07	1.67	4.00	1.12	0.13	0.07	16.57	72.65
0.3-0.4	-	-	0.02	0.15	4.07	5.91	0.26	-	-	-	-	0.71	6.14	1.10	0.11	-	18.46	56.08
0.4-0.5	-	-	-	-	3.11	3.42	0.04	-	-	-	-	0.09	7.07	1.26	0.02	0.02	15.02	37.62
0.5-0.6	-	-	-	-	1.19	2.44	-	-	-	-	-	0.02	6.86	0.82	0.02	-	11.34	22.59
0.6-0.7	-	-	-	-	0.43	1.36	-	-	-	-	-	-	4.98	0.82	-	-	7.59	11.25
0.7-0.8	-	-	-	-	0.07	0.45	-	-	-	-	-	-	2.14	0.22	-	-	2.88	3.66
0.8-0.9	-	-	-	-	-	0.04	-	-	-	-	-	-	0.67	0.06	-	-	0.76	0.78
0.9-1	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02	-	-	0.02	0.02
>1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
subTot.	0.43	0.43	0.71	1.75	14.60	21.57	4.52	1.79	1.17	1.45	1.93	5.88	34.77	7.12	1.06	0.76		
Total **	0.43	0.43	0.71	1.75	14.60	21.57	4.52	1.79	1.18	1.46	1.94	5.88	34.78	7.13	1.06	0.77		
Cumul.	0.43	0.86	1.58	3.33	17.93	39.50	44.03	45.82	46.99	48.45	50.39	56.27	91.04	98.17	99.23	100.00		

\* denotes values less than 0.01%

- denotes no records in bin

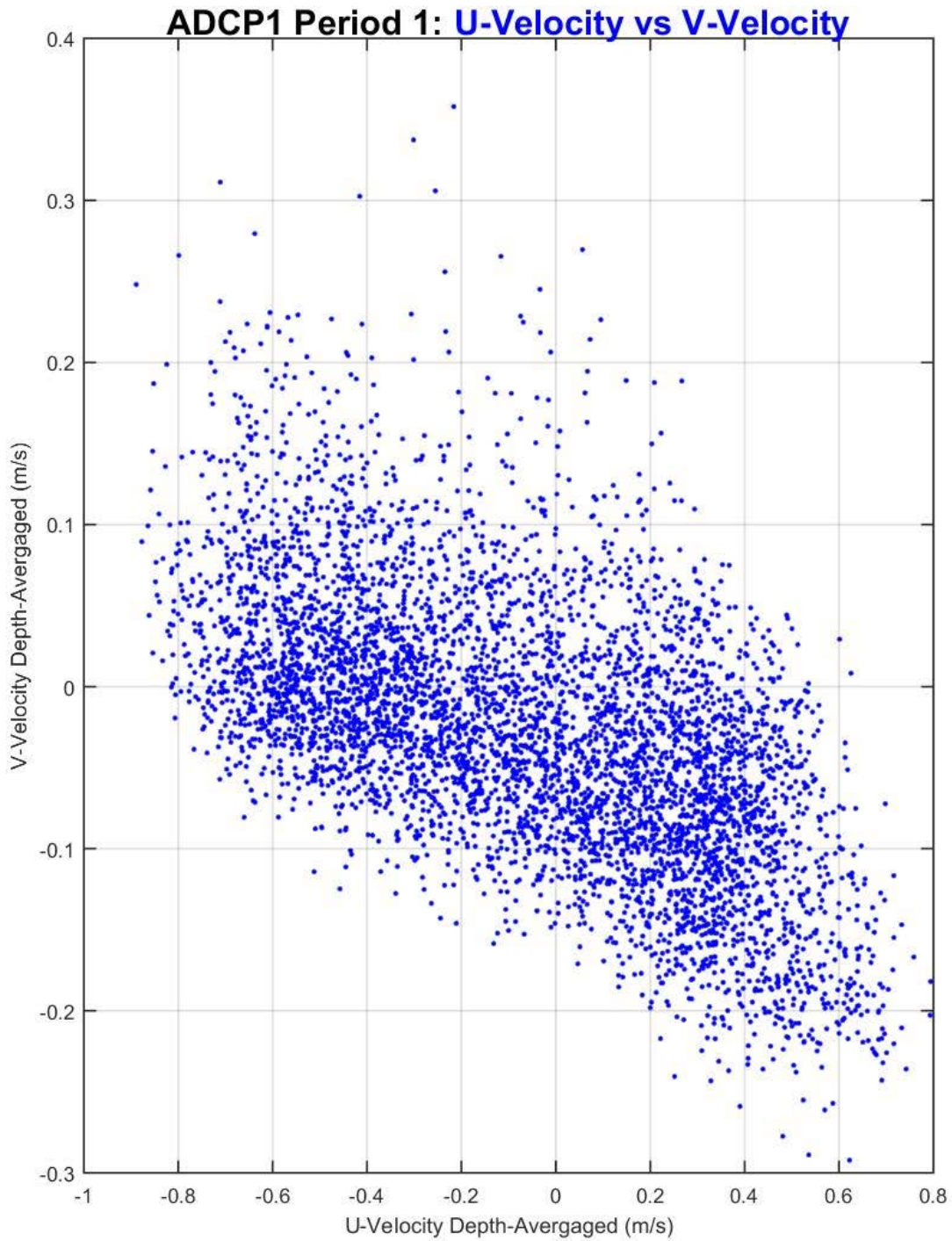
\*\* includes the calm winds which are evenly distributed amongst the directional bins

**Data Information:**

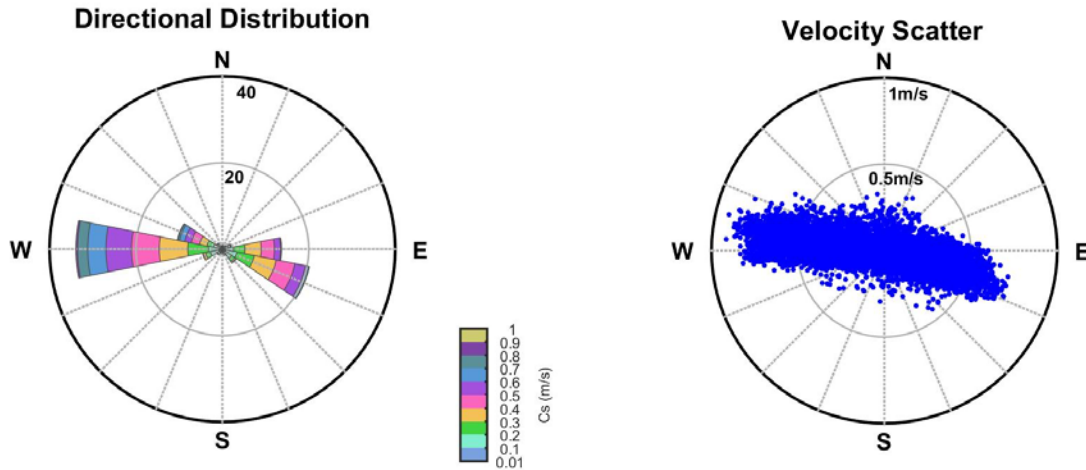
Project: 301001-02112  
 Location: ADCP1 [151° 39.588' E , 23° 06.017' S ]  
 Data period: All data (17-Jan-2019 to 14-Mar-2019)  
 Data source: ADCP1 Period 1  
 Data summary: Complete  
 Number of Records: 5378  
 Missing data (%): 0.00  
 Calm (% < 0.01m/s): 0.07

**Key Data Statistics:**

Max Curr Spd: 0.92 m/s  
 Mean Curr Spd: 0.34 m/s  
 StdDev. Curr Spd: 0.19 m/s



## Current Speed for ADCP1 Location: Period 2



JFT (%) of Current Speed against Direction for the entire period 16-Mar-2019 to 13-Jun-2019

N=8524	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
0-0.01 (Calm)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.09	100.00
0.01-0.1	0.41	0.32	0.27	0.60	0.56	0.84	0.86	0.87	0.60	0.80	0.81	0.88	0.70	0.56	0.42	0.32	9.82	99.91
0.1-0.2	0.29	0.33	0.54	0.83	2.05	2.60	1.74	0.47	0.40	0.26	0.63	1.95	2.53	1.51	0.57	0.28	17.00	90.09
0.2-0.3	0.25	0.09	0.21	0.52	2.59	4.07	0.88	0.08	0.07	0.05	0.09	1.15	4.77	1.55	0.45	0.19	17.01	73.09
0.3-0.4	0.01	0.02	-	0.19	3.79	5.19	0.35	0.01	-	-	0.02	0.56	6.60	1.76	0.22	0.01	18.75	56.08
0.4-0.5	-	-	-	-	3.05	4.40	0.09	-	-	-	-	0.09	6.42	1.96	0.02	-	16.04	37.33
0.5-0.6	-	-	-	-	1.43	2.51	-	-	-	-	-	0.02	5.91	1.55	-	-	11.43	21.29
0.6-0.7	-	-	-	-	0.22	0.81	-	-	-	-	-	-	4.21	1.23	-	-	6.48	9.87
0.7-0.8	-	-	-	-	-	0.11	-	-	-	-	-	-	2.35	0.40	-	-	2.85	3.39
0.8-0.9	-	-	-	-	-	-	-	-	-	-	-	-	0.40	0.12	-	-	0.52	0.54
0.9-1	-	-	-	-	-	-	-	-	-	-	-	-	0.01	0.01	-	-	0.02	0.02
>1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
subTot.	0.96	0.76	1.02	2.14	13.70	20.53	3.92	1.43	1.07	1.10	1.56	4.66	33.92	10.65	1.69	0.80		
Total **	0.97	0.77	1.03	2.14	13.71	20.54	3.92	1.44	1.07	1.11	1.57	4.66	33.92	10.66	1.70	0.80		
Cumul.	0.97	1.74	2.76	4.90	18.61	39.15	43.07	44.51	45.58	46.69	48.26	52.92	86.84	97.50	99.20	100.00		

\* denotes values less than 0.01%

- denotes no records in bin

\*\* includes the calm winds which are evenly distributed amongst the directional bins

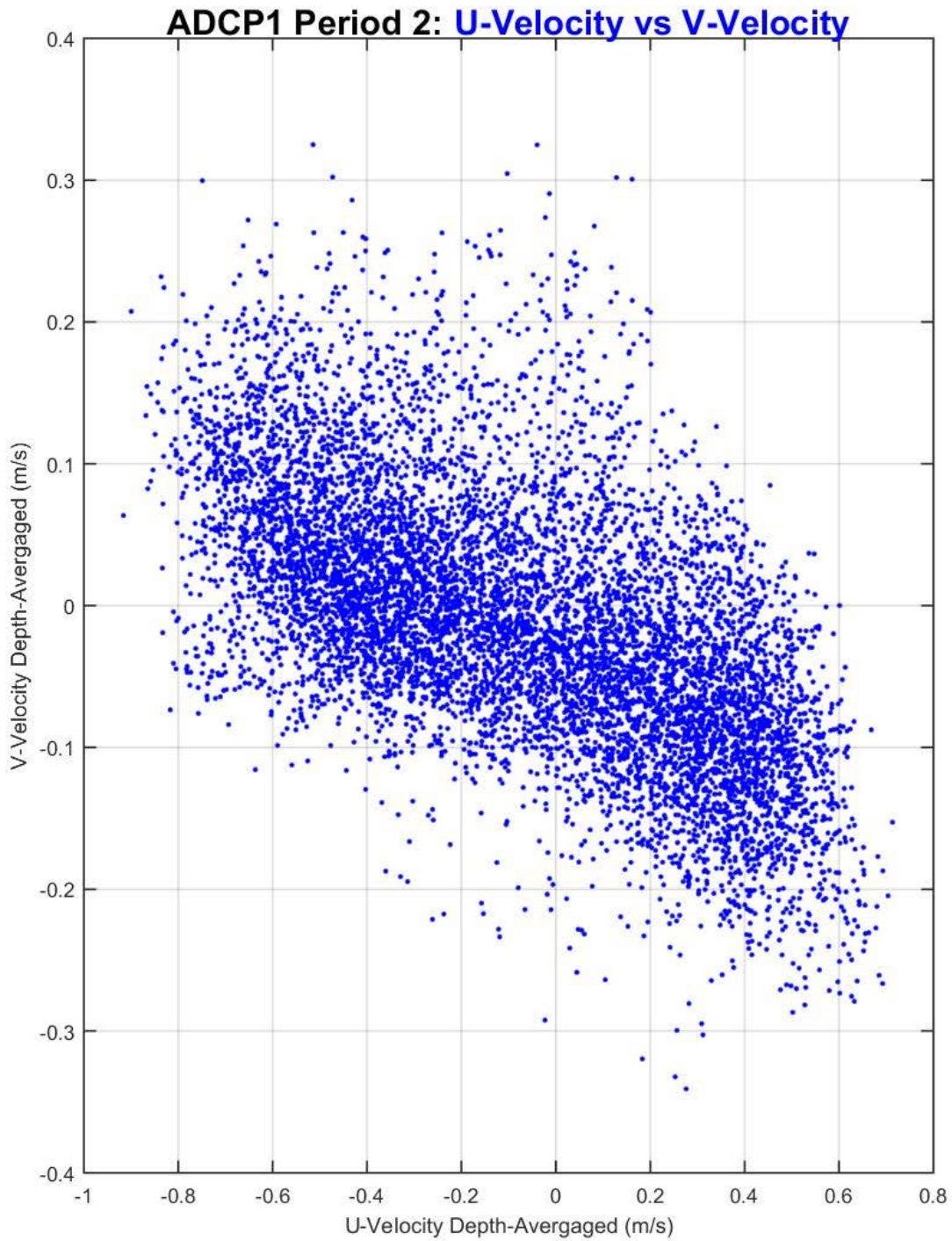
**Data Information:**

Project: 301001-02112  
 Location: ADCP1 [151° 39.597' E , 23° 06.030' S ]  
 Data period: All data (16-Mar-2019 to 13-Jun-2019)  
 Data source: ADCP1 Period 2  
 Data summary: Complete  
 Number of Records: 8524  
 Missing data (%): 0.00  
 Calm (% < 0.01m/s): 0.09

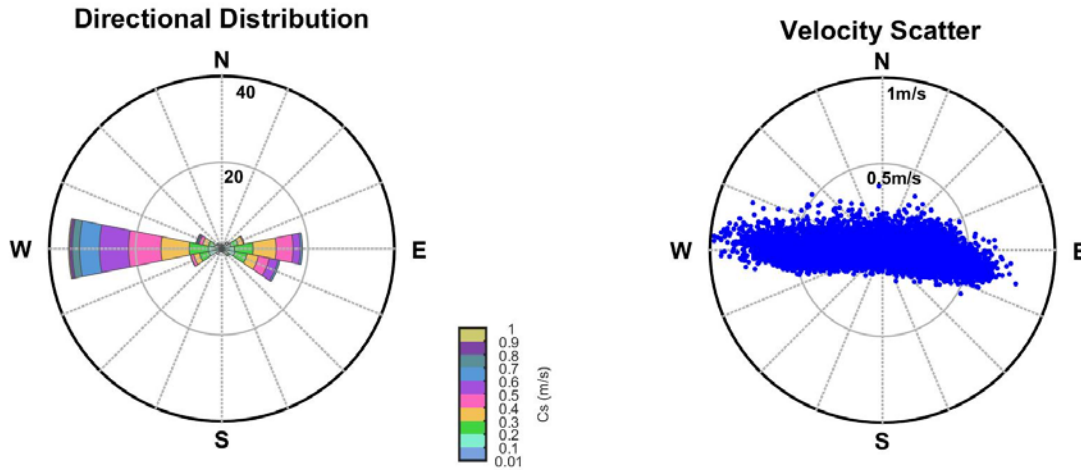
**Key Data Statistics:**

Max Curr Spd: 0.92 m/s  
 Mean Curr Spd: 0.34 m/s  
 StdDev. Curr Spd: 0.19 m/s





## Current Speed for ADCP1 Location: Period 3



JFT (%) of Current Speed against Direction for the entire period 14-Jun-2019 to 25-Aug-2019

N=6844	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
0-0.01 (Calm)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.12	100.00
0.01-0.1	0.41	0.31	0.50	0.64	0.61	0.91	0.70	0.63	0.70	0.50	0.88	0.86	0.73	0.72	0.39	0.48	9.96	99.88
0.1-0.2	0.60	0.48	0.92	1.45	2.29	2.18	1.11	0.38	0.10	0.29	0.77	2.22	2.40	1.08	0.60	0.53	17.40	89.92
0.2-0.3	0.09	0.10	0.45	1.74	4.35	2.89	0.37	-	-	-	0.01	2.19	4.44	1.36	0.35	0.09	18.44	72.52
0.3-0.4	0.01	0.04	0.09	1.23	5.33	2.66	-	-	-	-	-	1.37	6.55	1.34	0.15	0.01	18.79	54.08
0.4-0.5	-	-	-	0.25	3.92	2.57	-	-	-	-	-	0.69	7.52	0.83	0.03	-	15.81	35.29
0.5-0.6	-	-	-	-	1.68	2.06	-	-	-	-	0.10	6.74	0.32	0.01	-	-	10.91	19.48
0.6-0.7	-	-	-	-	0.47	0.42	-	-	-	-	-	4.60	0.28	-	-	-	5.77	8.56
0.7-0.8	-	-	-	-	0.04	0.03	-	-	-	-	-	1.68	0.12	-	-	-	1.87	2.79
0.8-0.9	-	-	-	-	-	-	-	-	-	-	-	0.60	0.04	-	-	-	0.64	0.92
0.9-1	-	-	-	-	-	-	-	-	-	-	-	0.25	-	-	-	-	0.25	0.28
>1	-	-	-	-	-	-	-	-	-	-	-	0.03	-	-	-	-	0.03	0.03
subTot.	1.11	0.94	1.96	5.30	18.70	13.72	2.18	1.01	0.80	0.79	1.67	7.44	35.53	6.09	1.53	1.11		
Total **	1.12	0.94	1.97	5.31	18.71	13.73	2.18	1.02	0.81	0.80	1.67	7.44	35.54	6.10	1.54	1.12		
Cumul.	1.12	2.06	4.03	9.34	28.05	41.77	43.96	44.97	45.78	46.58	48.25	55.70	91.24	97.34	98.88	100.00		

\* denotes values less than 0.01% - denotes no records in bin

\*\* includes the calm winds which are evenly distributed amongst the directional bins

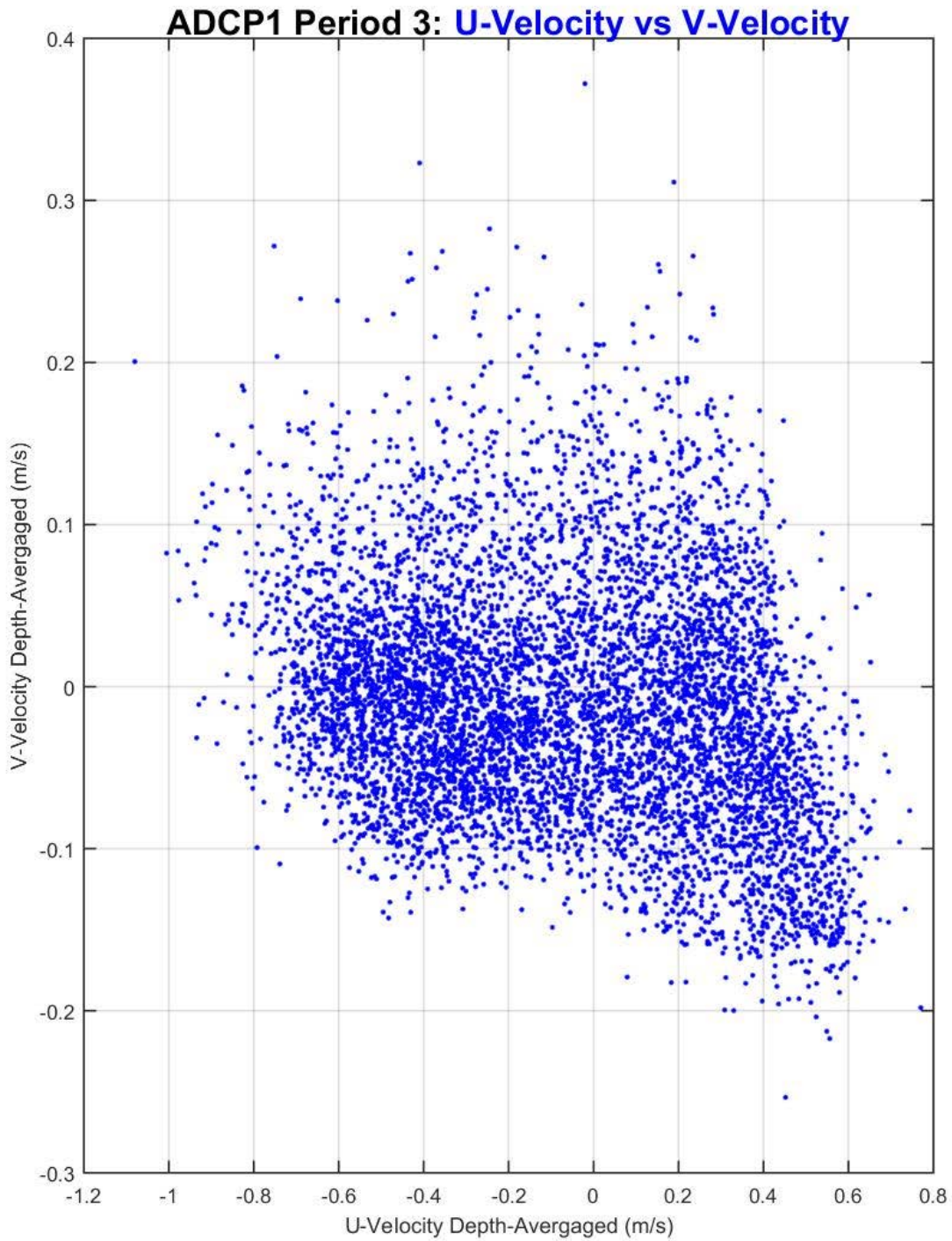
**Data Information:**

Project: 301001-02112  
 Location: ADCP1 [151° 39.602' E , 23° 06.030' S]  
 Data period: All data (14-Jun-2019 to 25-Aug-2019)  
 Data source: ADCP1 Period 3  
 Data summary: Complete  
 Number of Records: 6844  
 Missing data (%): 0.00  
 Calm (% < 0.01m/s): 0.12

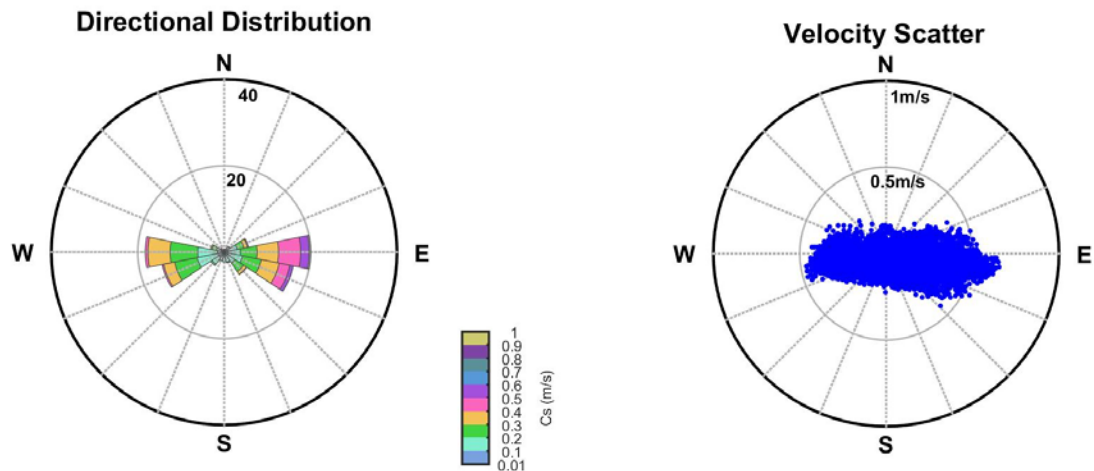
**Key Data Statistics:**

Max Curr Spd: 1.10 m/s  
 Mean Curr Spd: 0.33 m/s  
 StdDev. Curr Spd: 0.18 m/s





## Current Speed for ADCP3 Location: Period 4



**JFT (%) of Current Speed against Direction for the entire period 26-Aug-2019 to 05-Nov-2019**

N=6806	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
0-0.01 (Calm)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.18	100.00
0.01-0.1	0.43	0.56	0.85	0.98	0.94	1.06	0.98	0.84	1.10	0.90	1.32	1.43	1.54	0.75	0.56	0.50	14.74	99.82
0.1-0.2	0.26	0.22	0.71	2.06	2.78	3.28	2.01	1.51	1.09	1.13	2.06	4.94	4.57	1.07	0.40	0.22	28.30	85.09
0.2-0.3	-	-	0.04	1.62	3.91	4.42	2.39	0.19	0.01	0.01	0.38	5.32	6.39	1.06	0.10	-	25.86	56.79
0.3-0.4	-	-	-	0.82	4.95	4.22	0.78	-	-	-	-	2.59	5.14	0.32	-	-	18.82	30.93
0.4-0.5	-	-	-	0.25	5.11	2.51	0.09	-	-	-	-	0.37	0.62	-	-	-	8.95	12.11
0.5-0.6	-	-	-	0.01	1.98	0.79	-	-	-	-	-	-	-	-	-	-	2.79	3.16
0.6-0.7	-	-	-	-	0.34	0.03	-	-	-	-	-	-	-	-	-	-	0.37	0.37
0.7-0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.8-0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.9-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
>1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
subTot.	0.69	0.78	1.60	5.74	20.01	16.31	6.26	2.54	2.20	2.04	3.76	14.63	18.26	3.20	1.06	0.72		
Total **	0.70	0.79	1.61	5.76	20.02	16.32	6.27	2.55	2.21	2.05	3.77	14.65	18.27	3.21	1.07	0.73		
Cumul.	0.70	1.49	3.10	8.86	28.88	45.20	51.47	54.03	56.24	58.29	62.07	76.71	94.99	98.20	99.27	100.00		

\* denotes values less than 0.01%

- denotes no records in bin

\*\* includes the calm winds which are evenly distributed amongst the directional bins

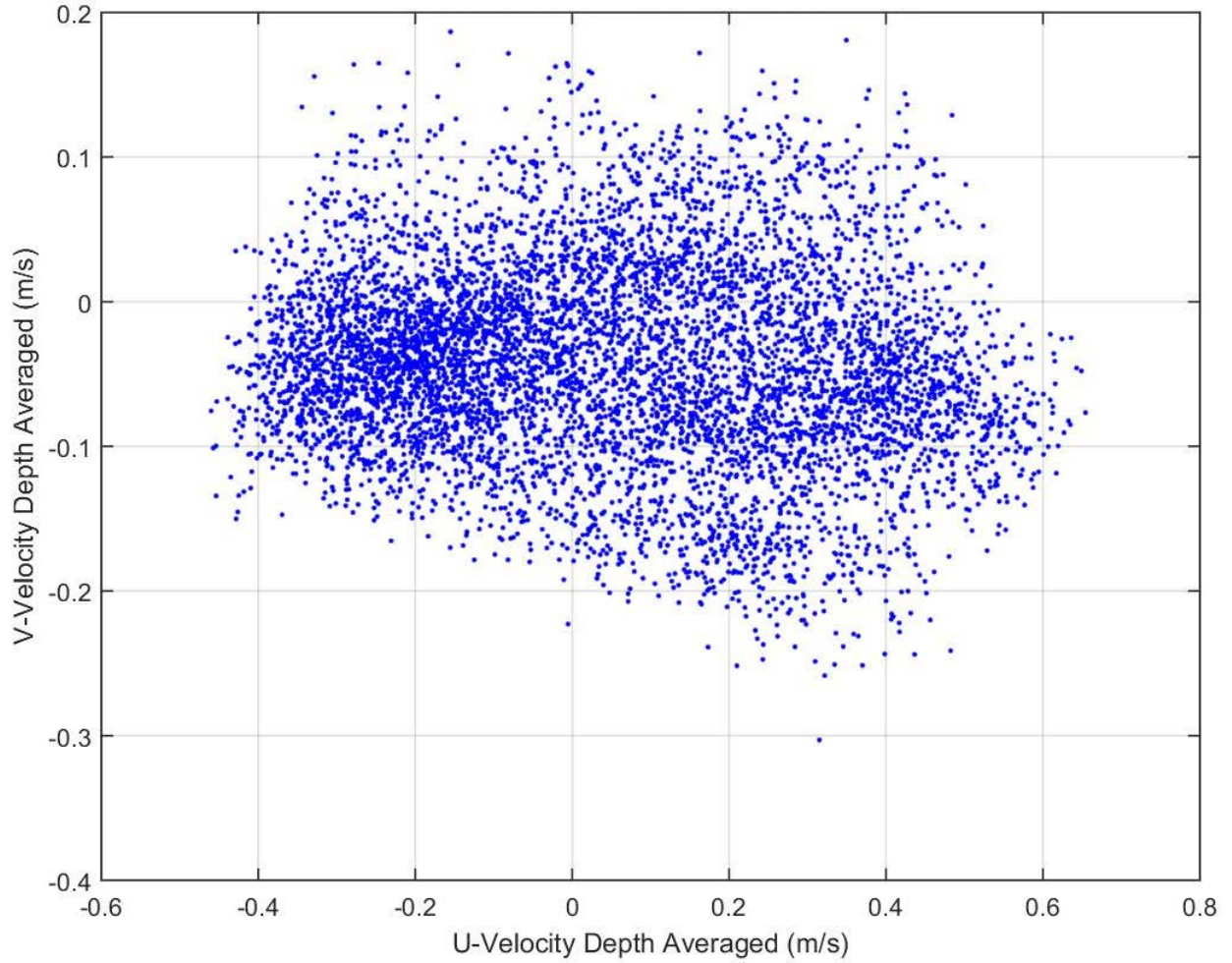
**Data Information:**

Project Number: 301001-02112  
 Location: ADCP3 Period 4 QAQC [151° 37.728E , 23° 05.407S]  
 Data period: All data (26-Aug-2019 to 05-Nov-2019)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 6806  
 Missing data (%): 0.00  
 Calm (% < 0.01m/s): 0.18

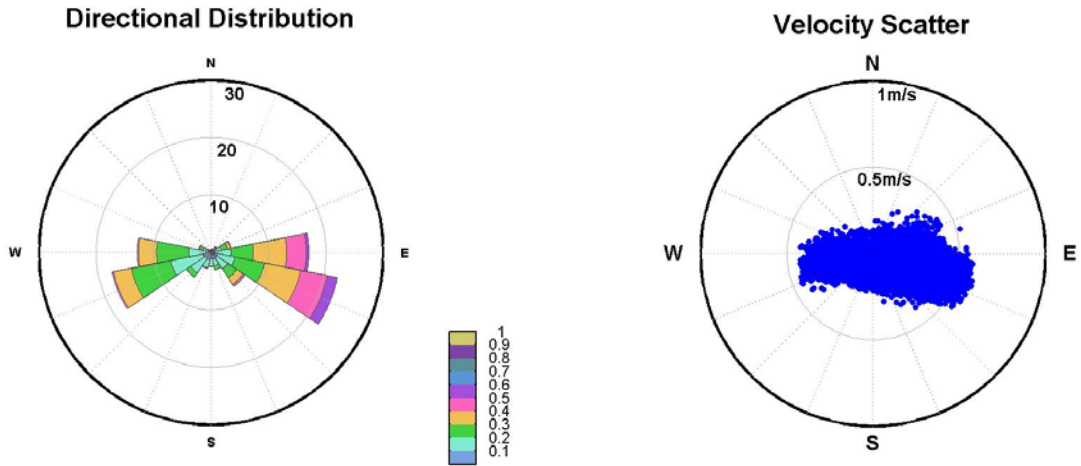
**Key Data Statistics:**

Max Curr Spd: 0.66 m/s  
 Mean Curr Spd: 0.24 m/s  
 StdDev. Curr Spd: 0.13 m/s

### ADCP3 Period 4: U-Velocity vs V-Velocity



## Current Speed for ADCP3 Location: Period 5



**JFT (%) of Current Speed against Direction for the entire period 06-Nov-2019 to 28-Jan-2020**

N=7974	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
0-0.01 (Calm)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.18	100.00
0.01-0.1	0.34	0.36	0.48	0.70	0.71	1.13	1.22	1.10	1.05	1.27	1.22	1.40	0.98	0.65	0.35	0.23	13.19	99.82
0.1-0.2	0.16	0.28	0.53	1.05	2.73	3.09	2.23	1.27	1.29	1.43	3.05	5.78	2.87	0.84	0.35	0.21	27.16	86.63
0.2-0.3	-	0.04	0.18	1.12	3.90	5.24	1.87	0.66	0.14	0.18	0.94	6.95	5.63	0.54	0.01	-	27.39	59.47
0.3-0.4	-	-	0.10	0.56	5.76	6.40	1.35	0.04	-	-	0.01	3.16	3.16	0.19	-	-	20.73	32.08
0.4-0.5	-	-	-	0.09	3.41	4.75	0.35	-	-	-	-	0.24	0.23	-	-	-	9.07	11.35
0.5-0.6	-	-	-	0.01	0.49	1.76	0.03	-	-	-	-	-	-	-	-	-	2.28	2.28
0.6-0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.7-0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.8-0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.9-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
>1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
subTot.	0.50	0.68	1.28	3.54	17.01	22.36	7.05	3.07	2.48	2.87	5.22	17.53	12.87	2.22	0.71	0.44		
Total **	0.51	0.69	1.29	3.55	17.02	22.37	7.06	3.08	2.49	2.88	5.23	17.54	12.88	2.23	0.73	0.45		
Cumul.	0.51	1.20	2.49	6.04	23.05	45.43	52.48	55.57	58.06	60.94	66.17	83.72	96.59	98.82	99.55	100.00		

\* denotes values less than 0.01%

- denotes no records in bin

\*\* includes the calm winds which are evenly distributed amongst the directional bins

**Data Information:**

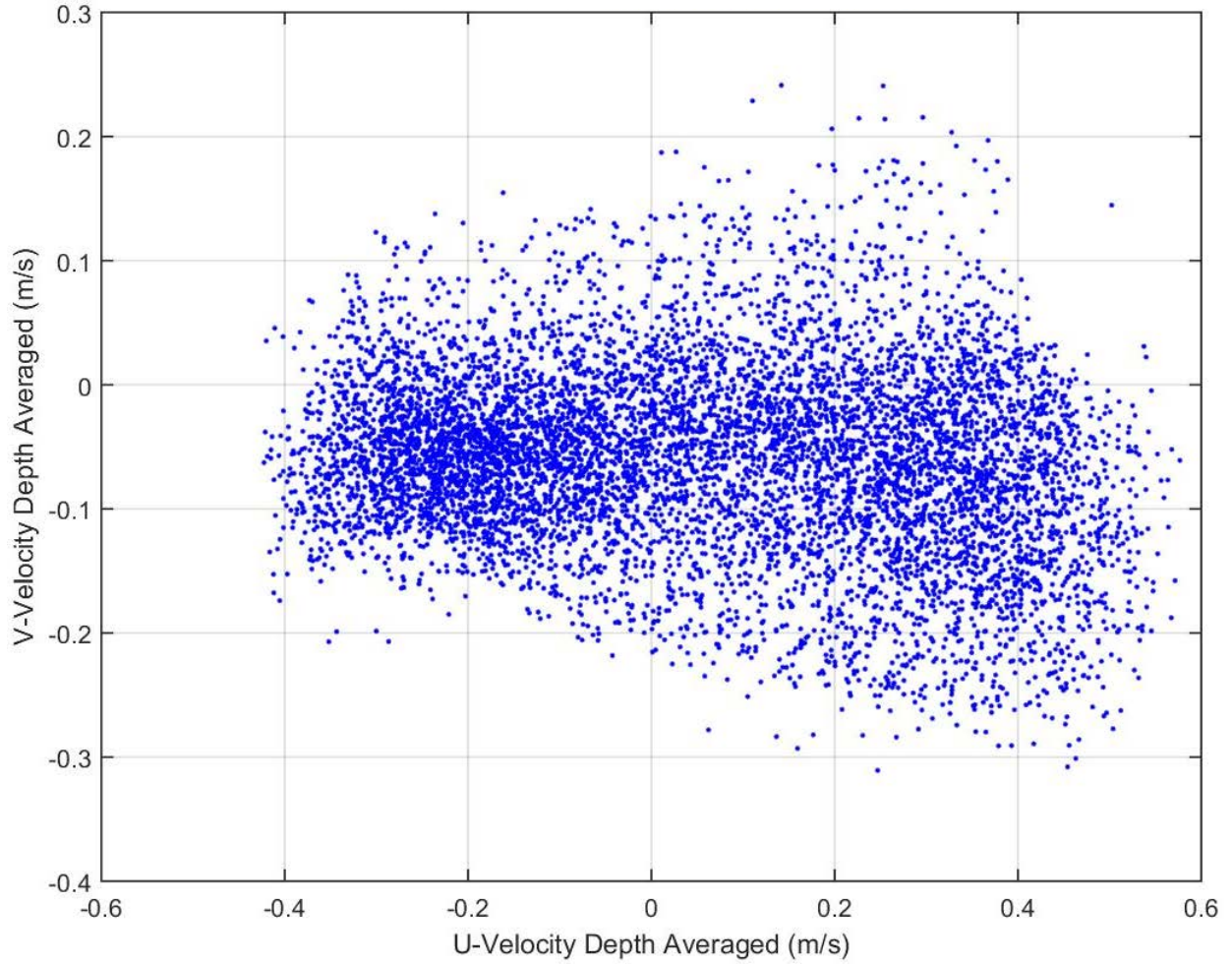
Project Number: 301001-02112  
 Location: ADCP3 Period 5 QAQC [151° 39.140E, 23° 05.734S]  
 Data period: All data (06-Nov-2019 to 28-Jan-2020)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 7974  
 Missing data (%): 0.00  
 Calm (% < 0.01m/s): 0.18

**Key Data Statistics:**

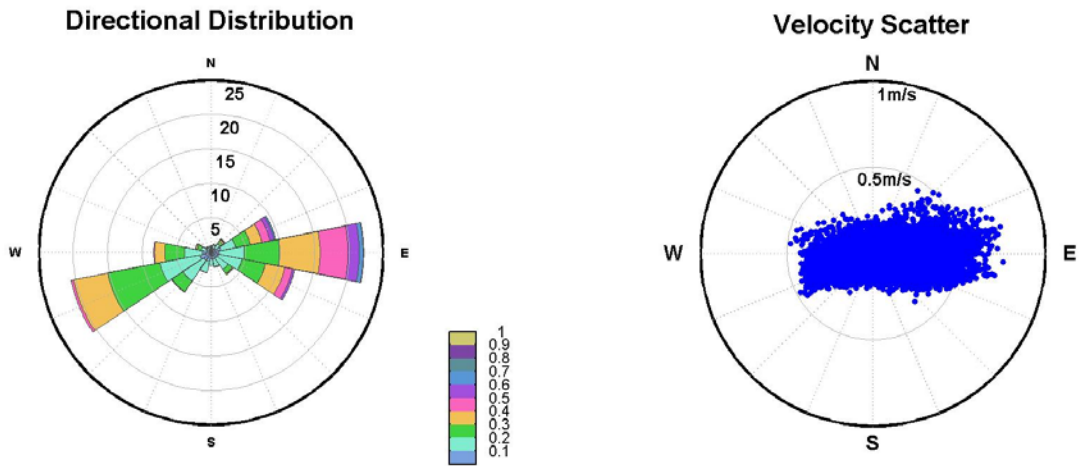
Max Curr Spd: 0.60 m/s  
 Mean Curr Spd: 0.24 m/s  
 StdDev. Curr Spd: 0.12 m/s



### ADCP3 Period 5: U-Velocity vs V-Velocity



## Current Speed for ADCP3 Location: Period 6



**JFT (%) of Current Speed against Direction for the entire period 29-Jan-2020 to 30-Apr-2020**

N=8806	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
0-0.01 (Calm)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.24	100.00
0.01-0.1	0.55	0.67	0.68	1.45	1.12	1.09	1.00	0.92	0.91	1.34	1.34	1.66	1.28	0.74	0.40	0.41	15.56	99.76
0.1-0.2	0.44	0.44	0.89	2.16	3.67	3.46	1.98	1.18	0.97	1.61	3.61	5.91	2.57	0.74	0.41	0.41	30.43	84.20
0.2-0.3	0.02	0.09	0.47	2.16	5.09	3.45	0.74	0.10	0.01	0.05	1.90	7.71	2.87	0.59	0.18	0.03	25.46	53.77
0.3-0.4	-	0.01	0.25	1.71	5.89	2.87	0.18	-	-	-	0.08	5.02	1.46	0.23	-	-	17.72	28.31
0.4-0.5	-	-	0.16	1.18	4.05	1.11	-	-	-	-	-	0.36	0.14	0.07	-	-	7.07	10.60
0.5-0.6	-	-	0.01	0.61	1.62	0.34	-	-	-	-	-	-	-	-	-	-	2.59	3.52
0.6-0.7	-	-	-	0.22	0.58	0.02	-	-	-	-	-	-	-	-	-	-	0.82	0.93
0.7-0.8	-	-	-	0.03	0.08	-	-	-	-	-	-	-	-	-	-	-	0.11	0.11
0.8-0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.9-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
>1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
subTot.	1.01	1.22	2.45	9.53	22.11	12.36	3.90	2.20	1.89	3.00	6.93	20.66	8.32	2.36	0.99	0.85		
Total **	1.03	1.23	2.47	9.54	22.12	12.37	3.91	2.22	1.90	3.01	6.94	20.67	8.34	2.38	1.00	0.87		
Cumul.	1.03	2.26	4.72	14.27	36.39	48.76	52.67	54.89	56.79	59.80	66.74	87.41	95.75	98.13	99.13	100.00		

\* denotes values less than 0.01%

- denotes no records in bin

\*\* includes the calm winds which are evenly distributed amongst the directional bins

**Data Information:**

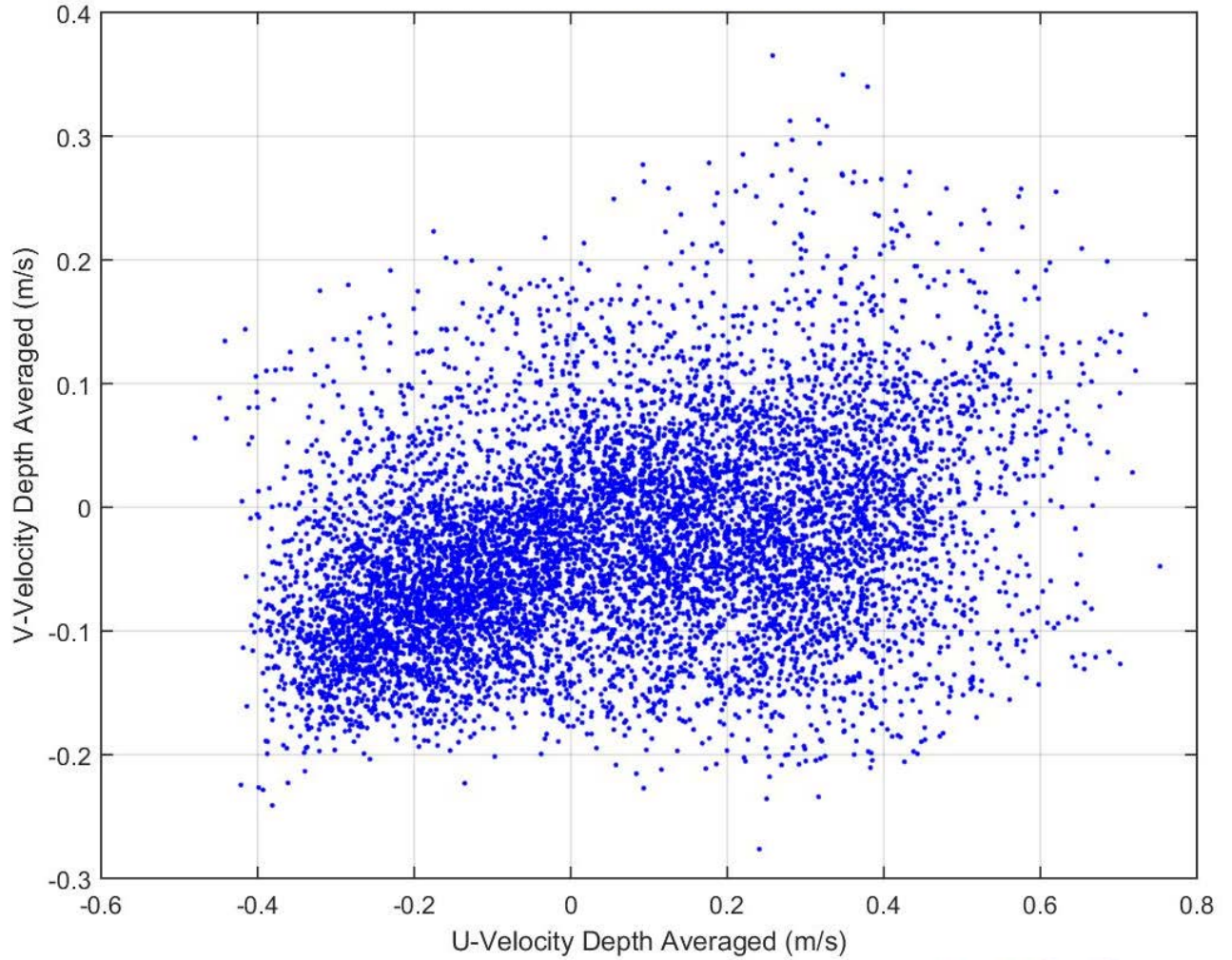
Project Number: 301001-02112  
 Location: ADCP3 Period 6 QAQC [151° 37.766E, 23° 05.414S]  
 Data period: All data (29-Jan-2020 to 30-Apr-2020)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 8806  
 Missing data (%): 0.00  
 Calm (% < 0.01m/s): 0.24


**Key Data Statistics:**

Max Curr Spd: 0.75 m/s  
 Mean Curr Spd: 0.23 m/s  
 StdDev. Curr Spd: 0.13 m/s

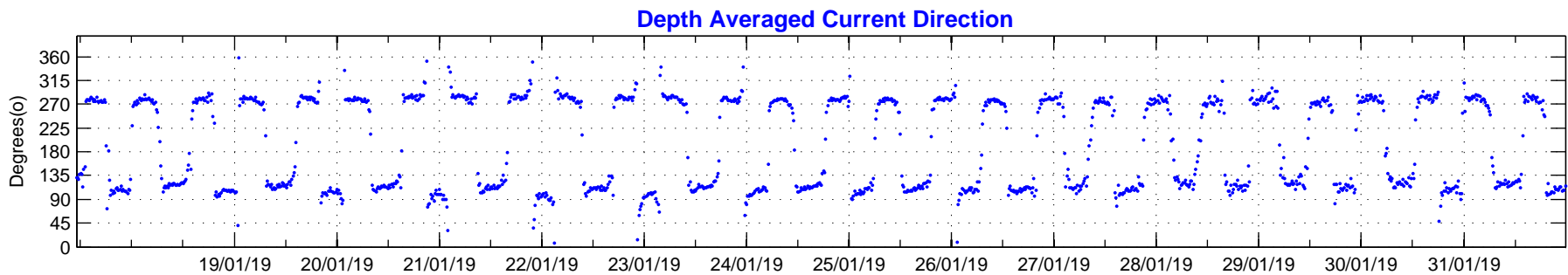
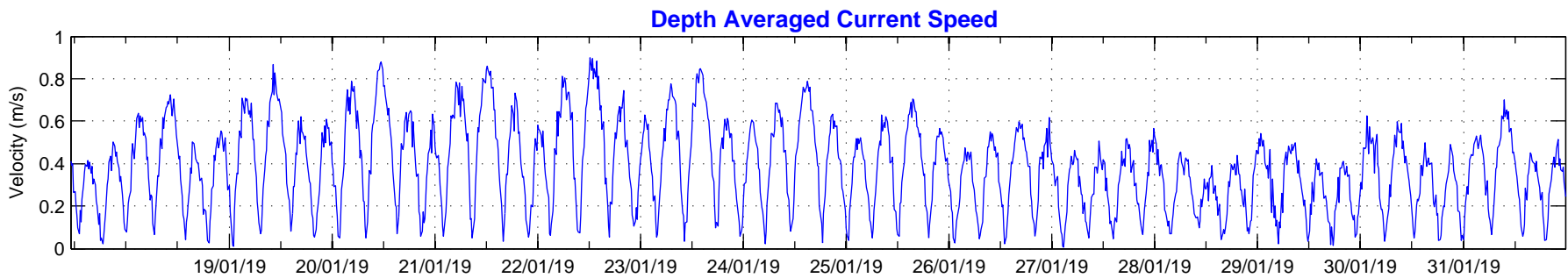
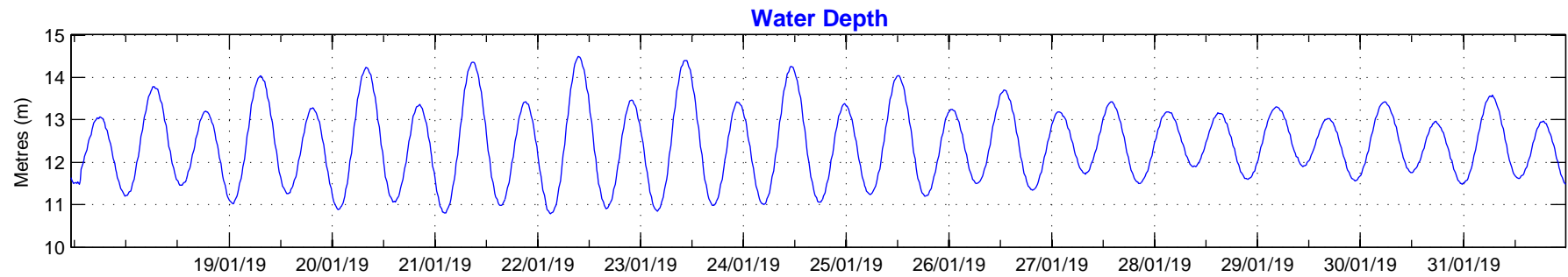


### ADCP3 Period 6: U-Velocity vs V-Velocity





**Appendix D**  
**ADCP2: Current and Water Level Time Series**  
**Plots**



**Data Information:**

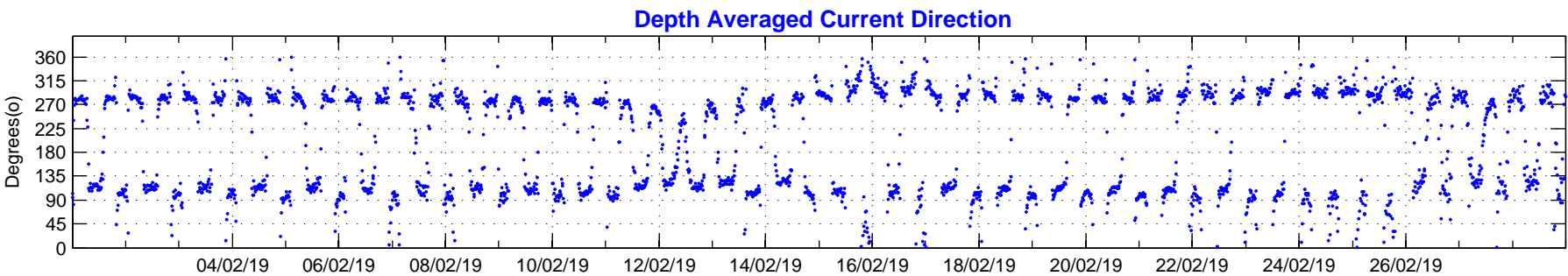
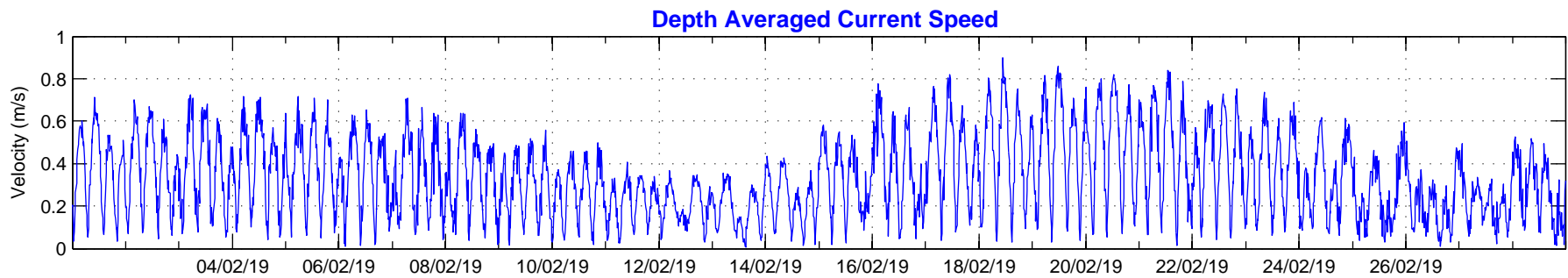
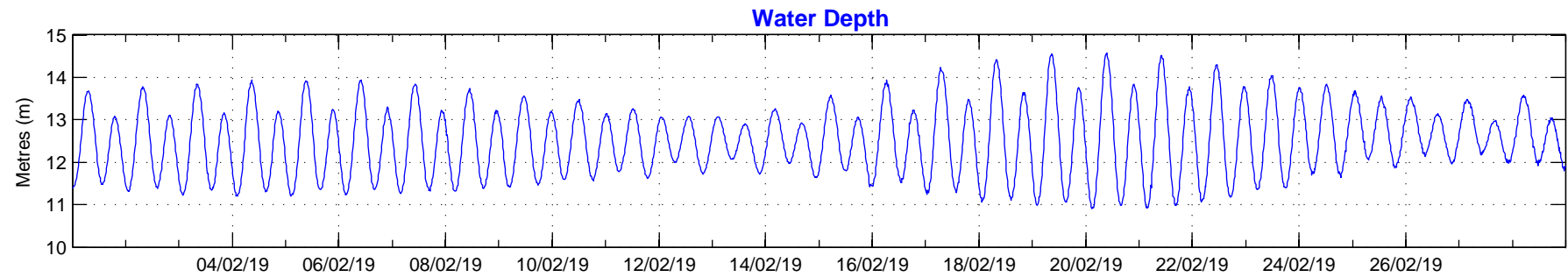
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period1 [151° 39.117E , 23° 05.726S]  
 Data period: January 2019 (17-Jan-2019 to 31-Jan-2019)  
 Data source: ADCP  
 Data summary: January 2019  
 Number of Records: 1396  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.90 m/s  
 Mean Curr Spd: 0.38 m/s  
 StdDev. Curr Spd: 0.20 m/s

**Current Data Summary January 2019**





**Data Information:**

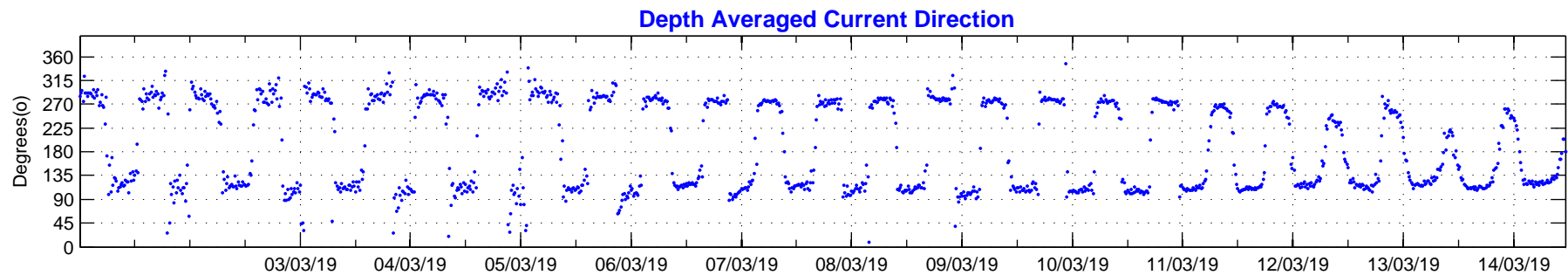
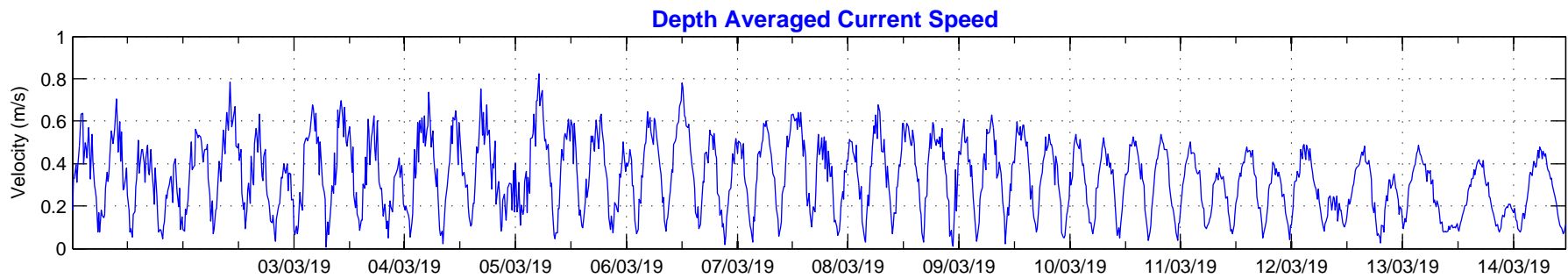
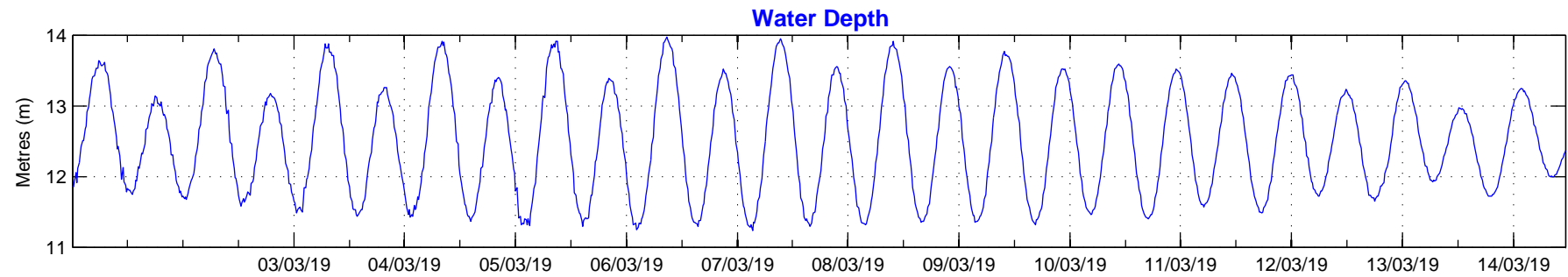
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period1 [151° 39.117E , 23° 05.726S]  
 Data period: February 2019 (01-Feb-2019 to 28-Feb-2019)  
 Data source: ADCP  
 Data summary: February 2019  
 Number of Records: 2688  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.90 m/s  
 Mean Curr Spd: 0.34 m/s  
 StdDev. Curr Spd: 0.19 m/s

**Current Data Summary February 2019**





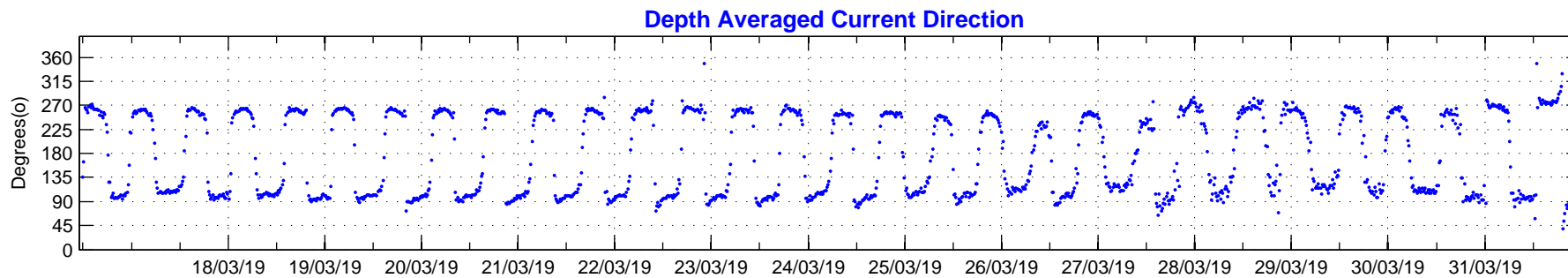
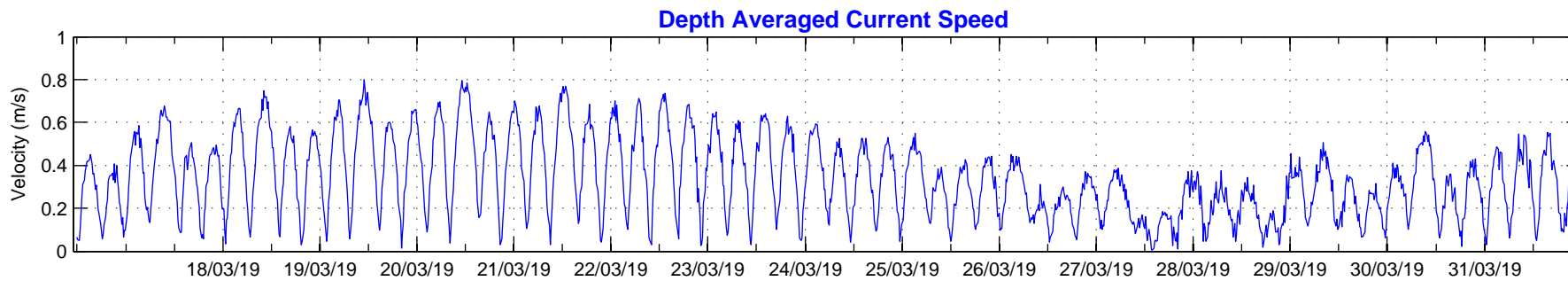
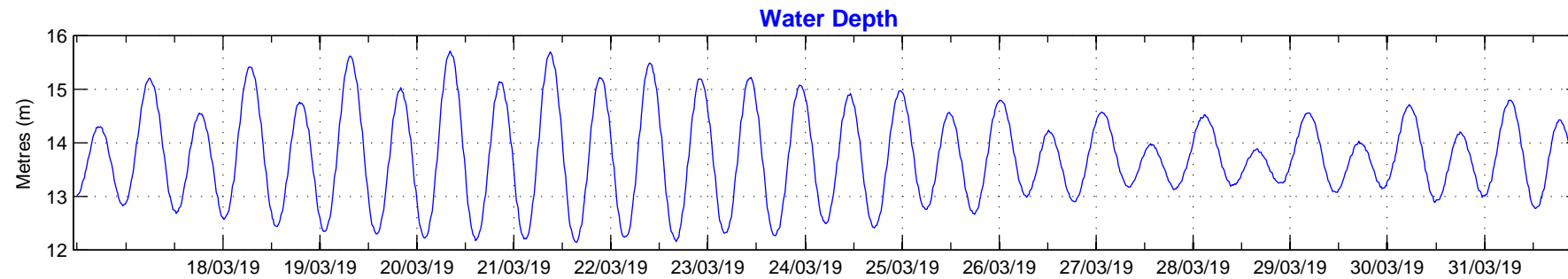
**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period1 [151° 39.117E , 23° 05.726S]  
 Data period: March 2019 (01-Mar-2019 to 14-Mar-2019)  
 Data source: ADCP  
 Data summary: March 2019  
 Number of Records: 1294  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.82 m/s  
 Mean Curr Spd: 0.33 m/s  
 StdDev. Curr Spd: 0.17 m/s

**Current Data Summary March 2019**



**Data Information:**

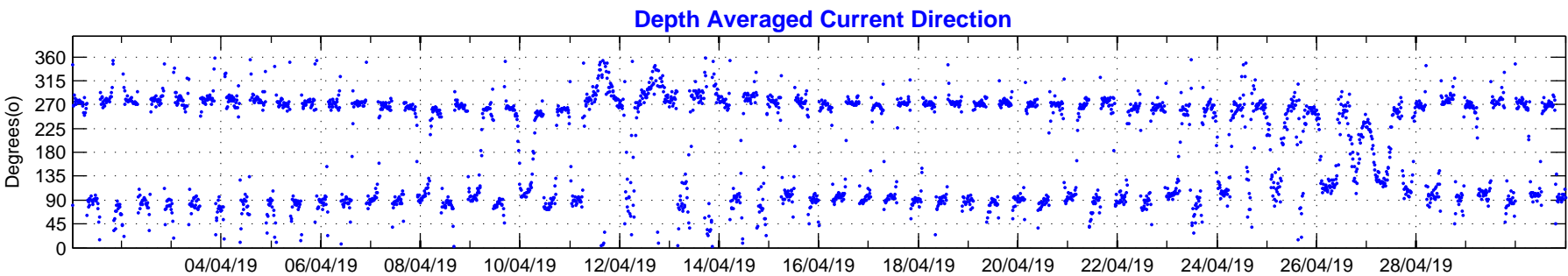
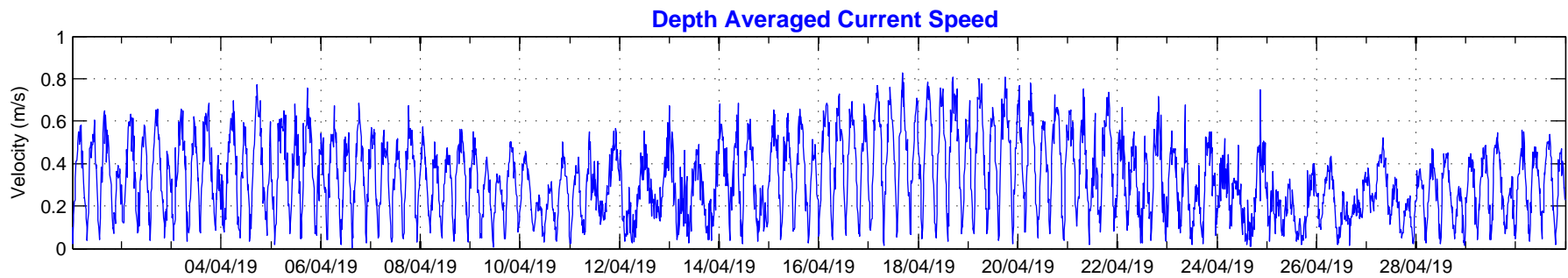
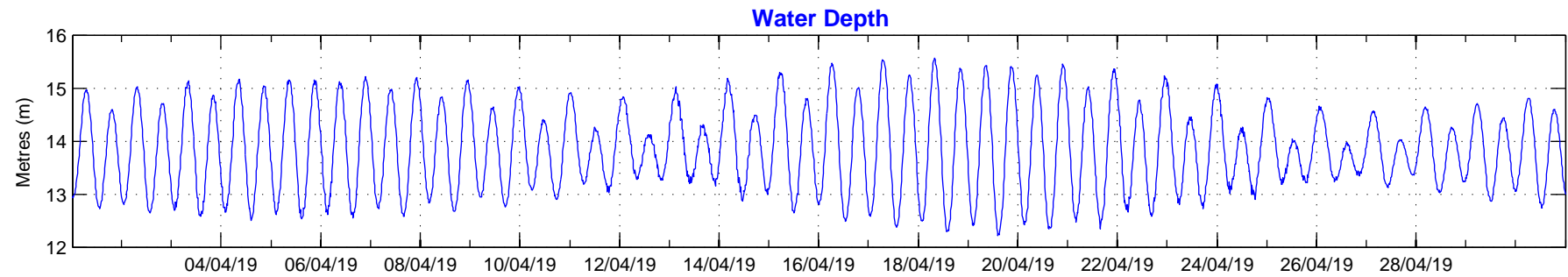
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period2 [151° 39.132E , 23° 05.730S]  
 Data period: March 2019 (16-Mar-2019 to 31-Mar-2019)  
 Data source: ADCP  
 Data summary: March 2019  
 Number of Records: 1493  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.80 m/s  
 Mean Curr Spd: 0.34 m/s  
 StdDev. Curr Spd: 0.18 m/s

**Current Data Summary March 2019**





**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period2 [151° 39.132E , 23° 05.730S]  
 Data period: April 2019 (01-Apr-2019 to 30-Apr-2019)  
 Data source: ADCP  
 Data summary: April 2019  
 Number of Records: 2880  
 Missing data (%): 0.00  
 Record Depth: m ASB

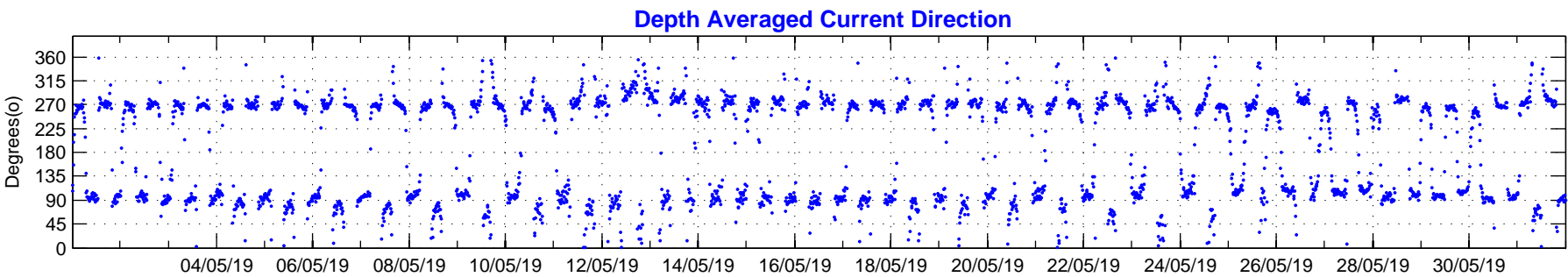
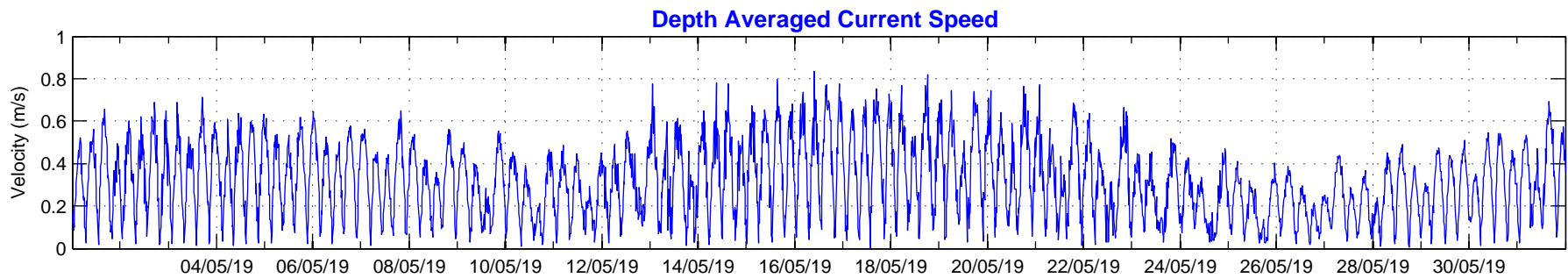
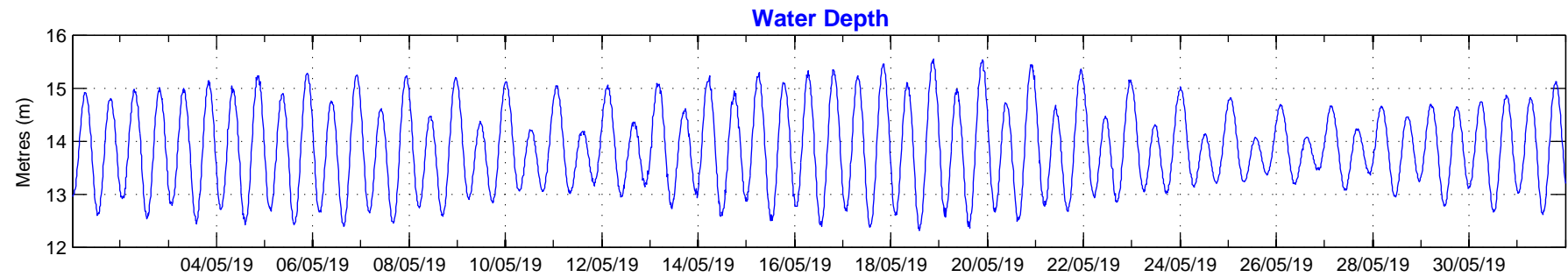
**Key Data Statistics:**

Max Curr Spd: 0.83 m/s  
 Mean Curr Spd: 0.33 m/s  
 StdDev. Curr Spd: 0.18 m/s

**Current Data Summary April 2019**







**Data Information:**

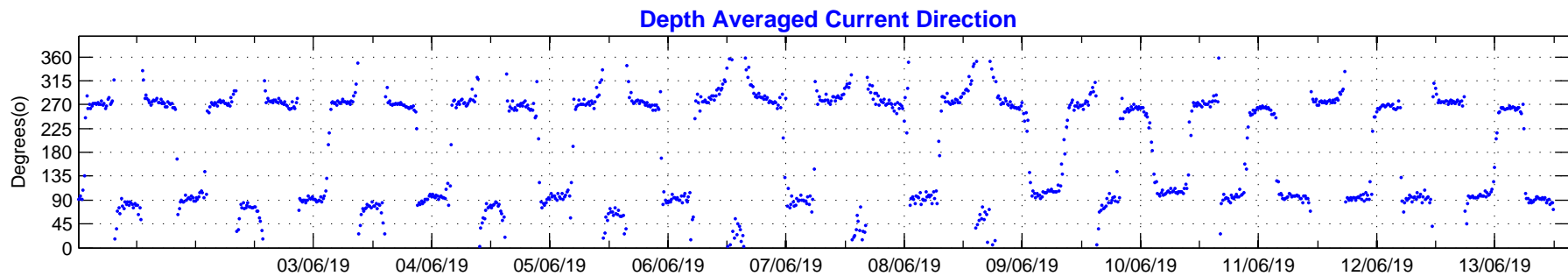
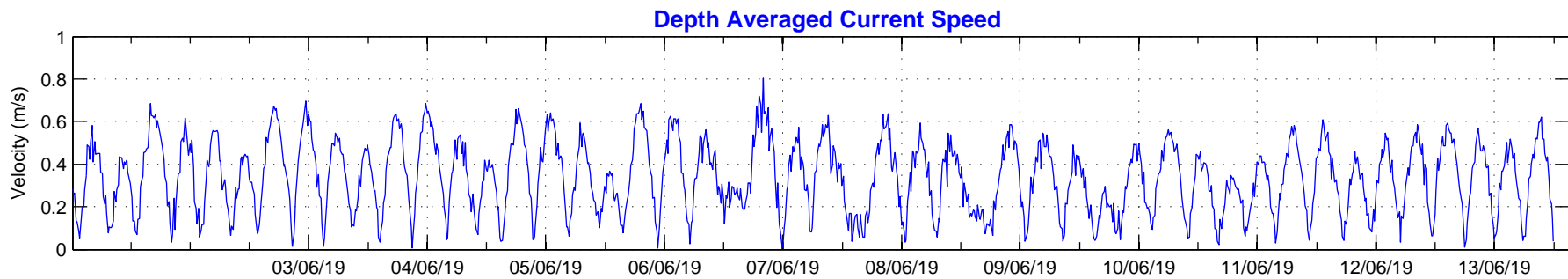
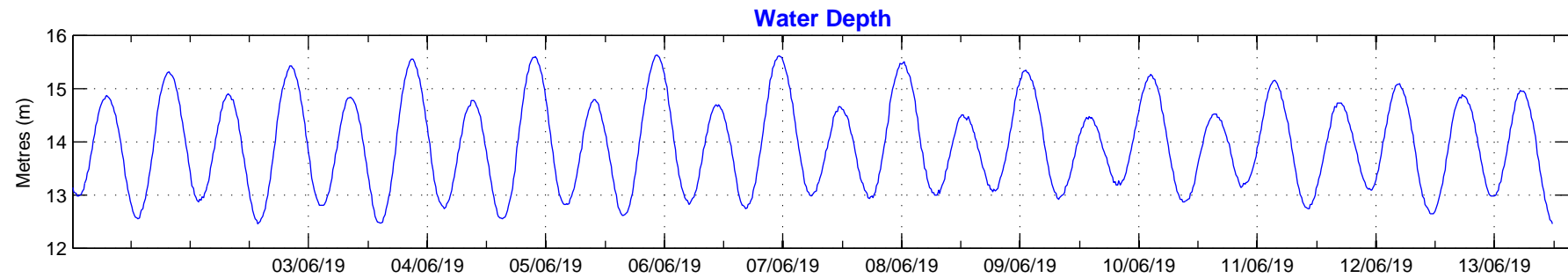
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period2 [151° 39.132E , 23° 05.730S]  
 Data period: May 2019 (01-May-2019 to 31-May-2019)  
 Data source: ADCP  
 Data summary: May 2019  
 Number of Records: 2976  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.83 m/s  
 Mean Curr Spd: 0.32 m/s  
 StdDev. Curr Spd: 0.17 m/s

**Current Data Summary May 2019**





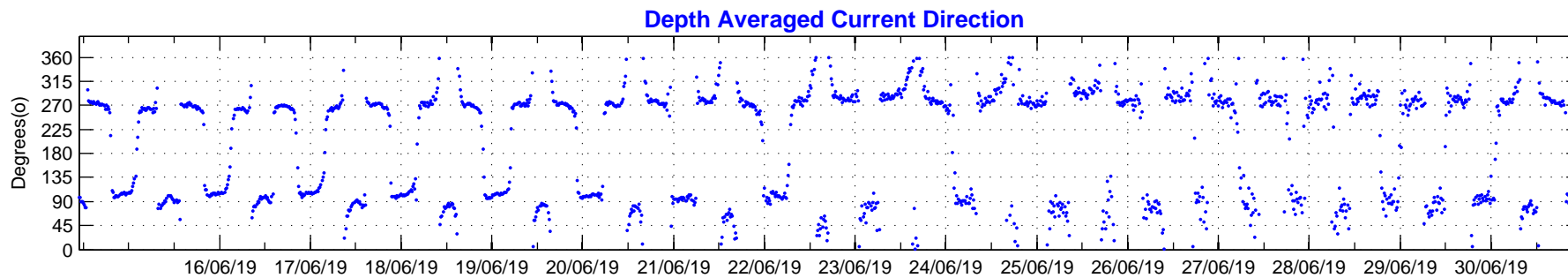
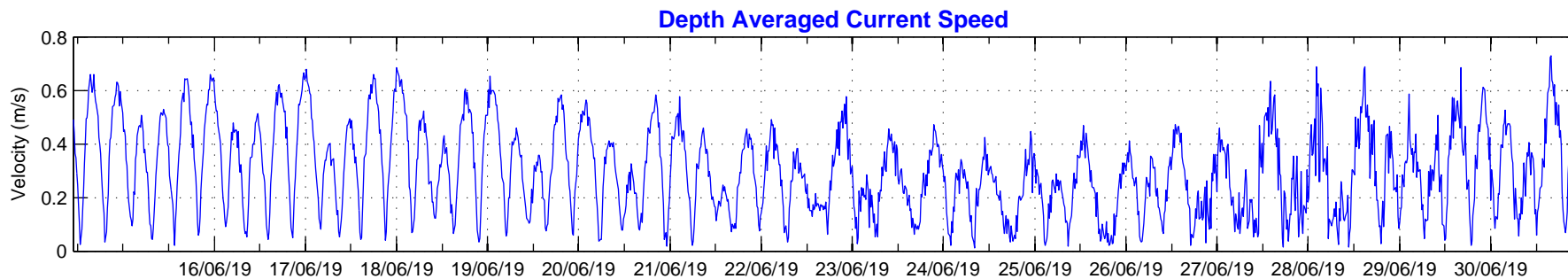
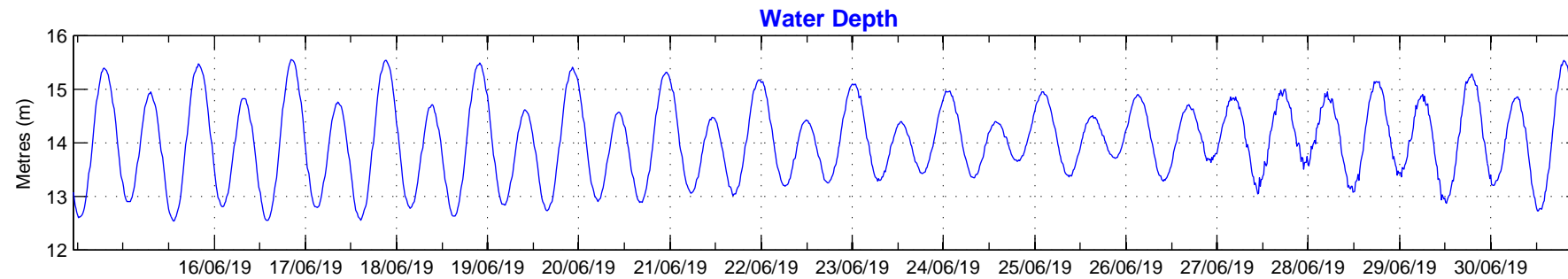
**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period2 [151° 39.132E , 23° 05.730S]  
 Data period: June 2019 (01-Jun-2019 to 13-Jun-2019)  
 Data source: ADCP  
 Data summary: June 2019  
 Number of Records: 1213  
 Missing data (%): 0.01  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.80 m/s  
 Mean Curr Spd: 0.34 m/s  
 StdDev. Curr Spd: 0.17 m/s

**Current Data Summary June 2019**



#### Data Information:

Project: 301001-02112 Douglas Shoal Remediation Project

Location: ADCP2 Period3 [151° 39.140E , 23° 05.734S]

Data period: June 2019 (14-Jun-2019 to 30-Jun-2019)

Data source: ADCP

Data summary: June 2019

Number of Records: 1589

Missing data (%): 0.00

Record Depth: m ASB

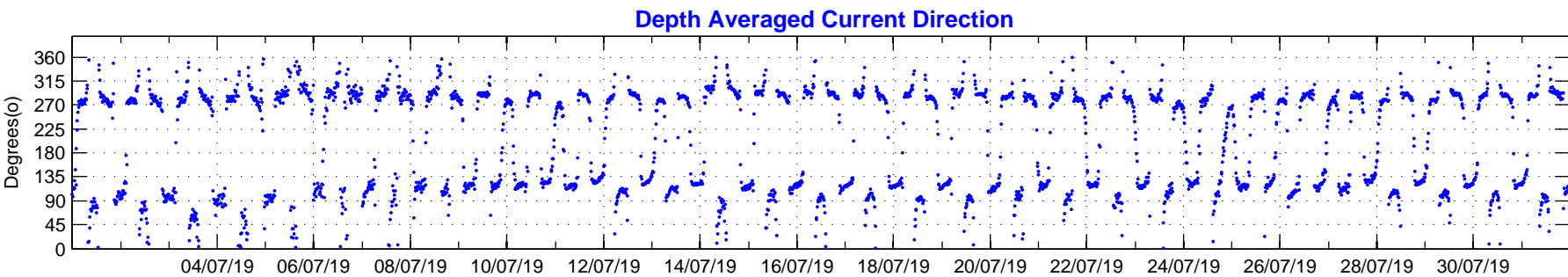
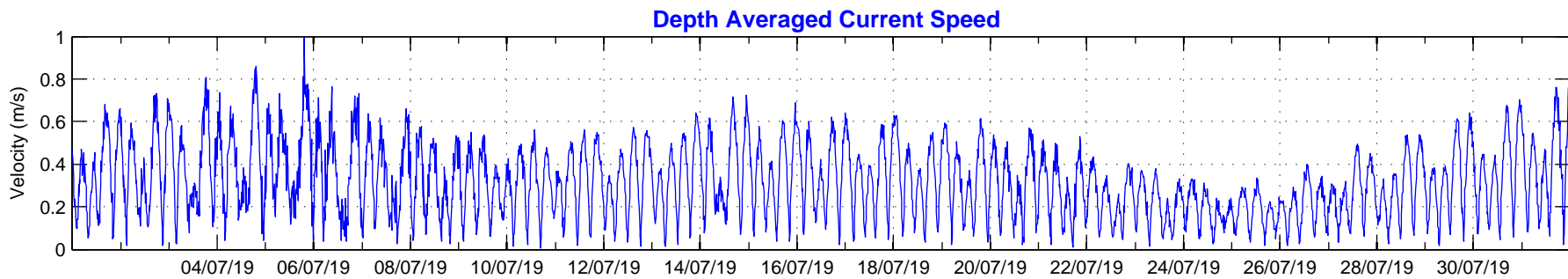
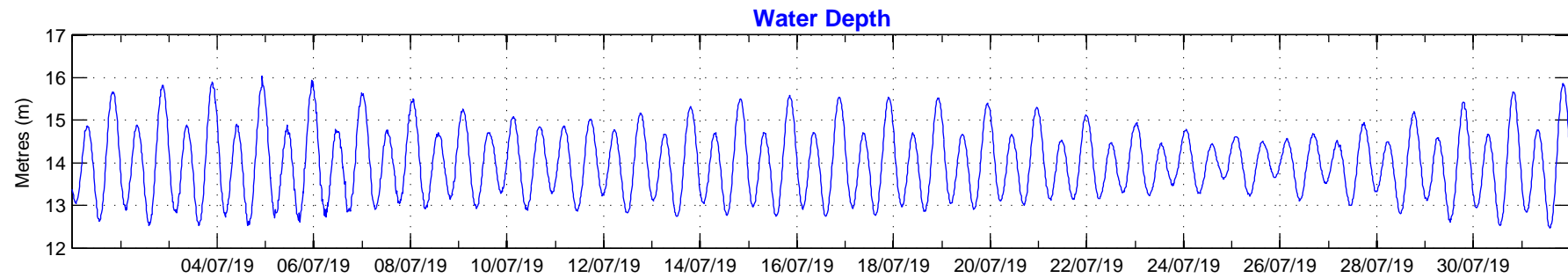
#### Key Data Statistics:

Max Curr Spd: 0.73 m/s

Mean Curr Spd: 0.30 m/s

StdDev. Curr Spd: 0.16 m/s

#### Current Data Summary June 2019



**Data Information:**

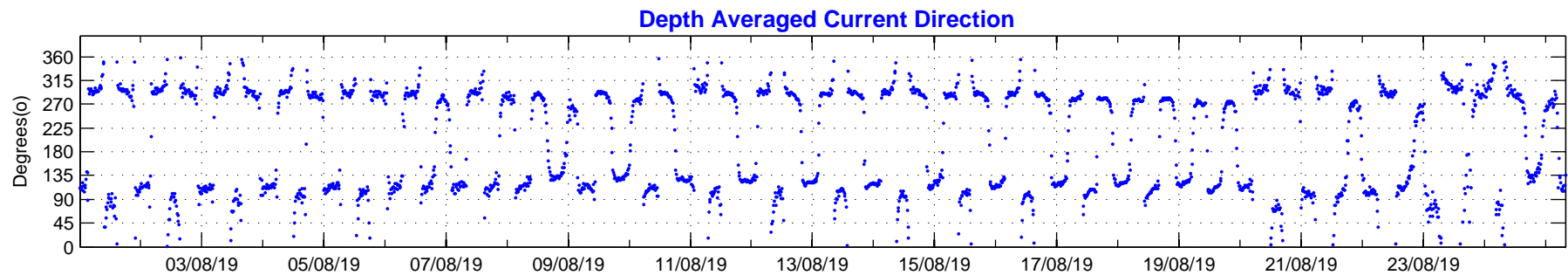
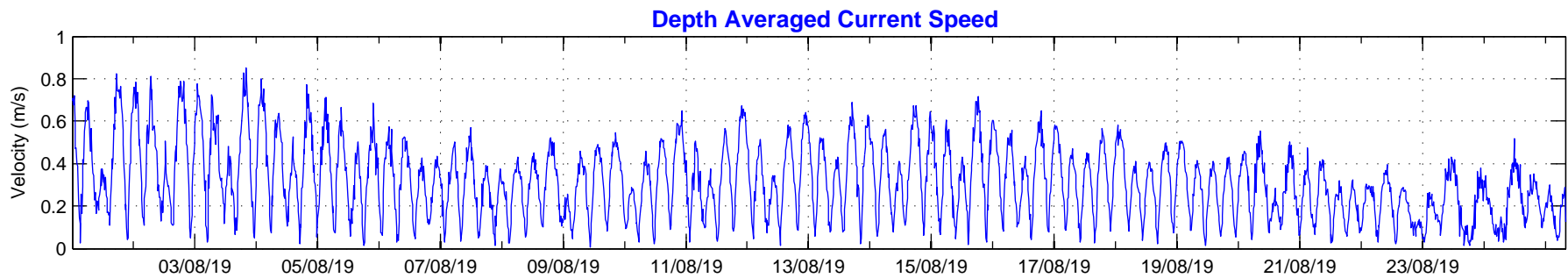
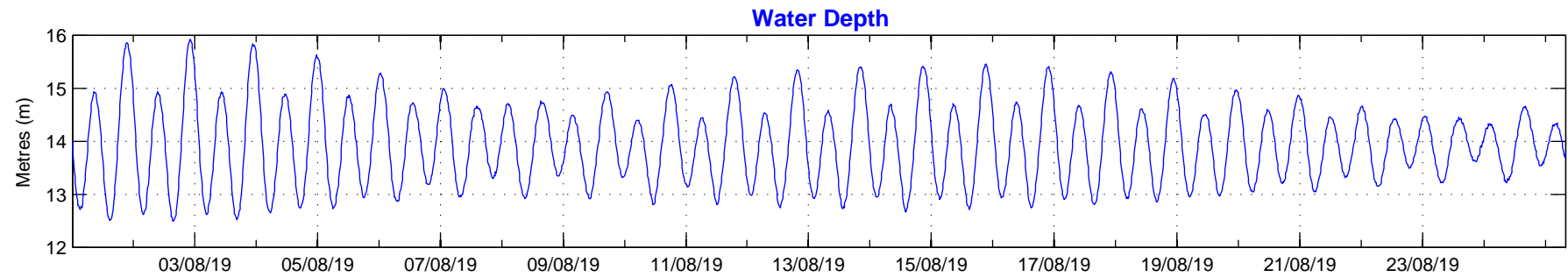
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period3 [151° 39.140E , 23° 05.734S]  
 Data period: July 2019 (01-Jul-2019 to 31-Jul-2019)  
 Data source: ADCP  
 Data summary: July 2019  
 Number of Records: 2976  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.99 m/s  
 Mean Curr Spd: 0.32 m/s  
 StdDev. Curr Spd: 0.17 m/s

**Current Data Summary July 2019**





**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period3 [151° 39.140E , 23° 05.734S]  
 Data period: August 2019 (01-Aug-2019 to 25-Aug-2019)  
 Data source: ADCP  
 Data summary: August 2019  
 Number of Records: 2336  
 Missing data (%): 0.00  
 Record Depth: m ASB

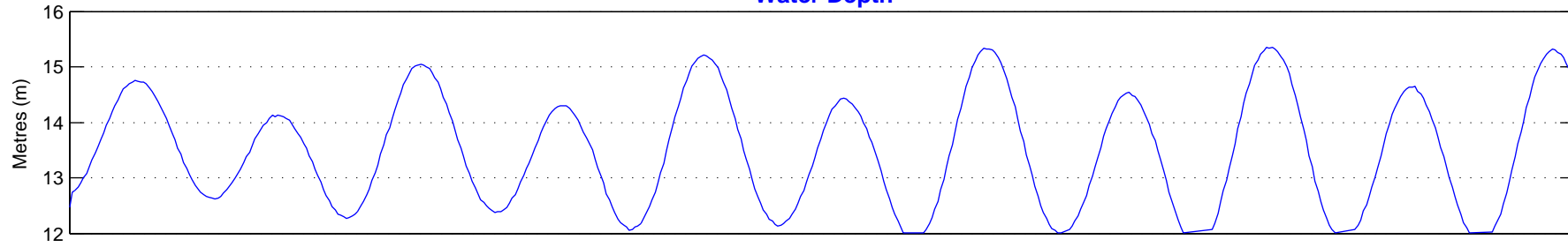
**Key Data Statistics:**

Max Curr Spd: 0.85 m/s  
 Mean Curr Spd: 0.32 m/s  
 StdDev. Curr Spd: 0.17 m/s

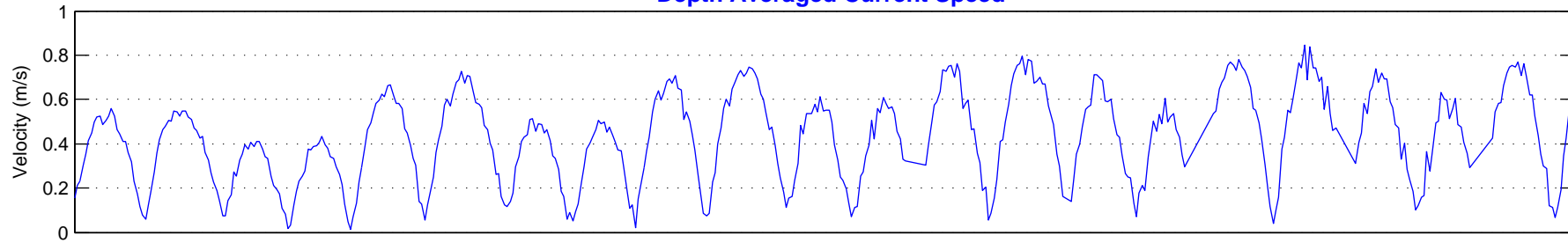
**Current Data Summary August 2019**



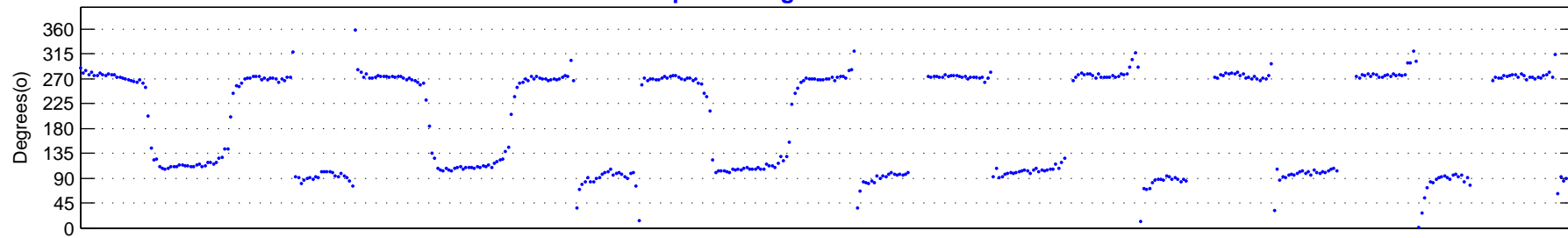
### Water Depth



### Depth Averaged Current Speed



### Depth Averaged Current Direction



#### Data Information:

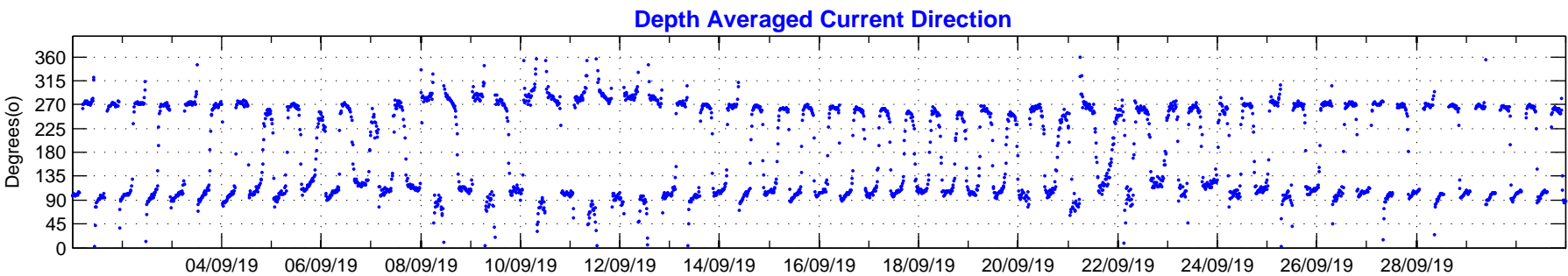
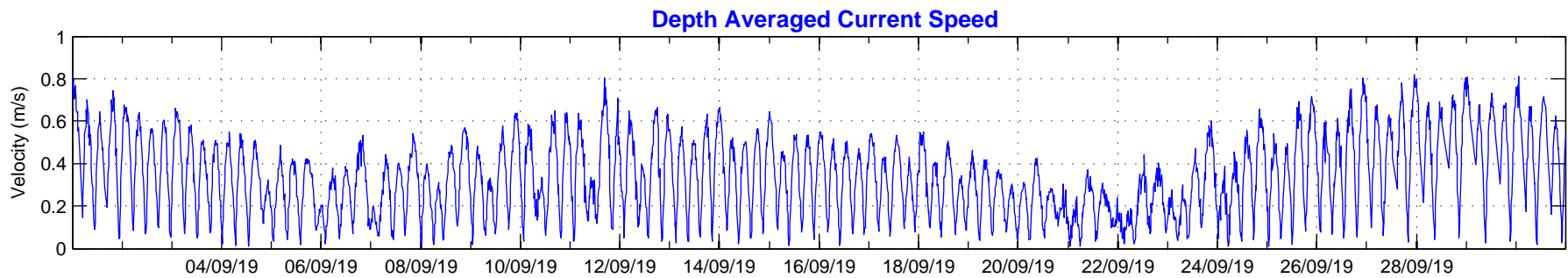
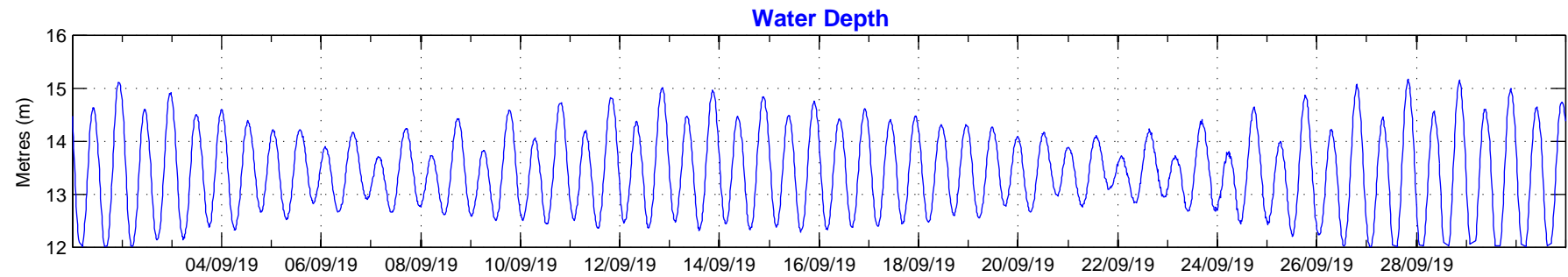
Project: 301001-02112 Douglas Shoal Remediation Project  
Location: ADCP2 Period4 [151° 39.135E , 23° 05.715S]  
Data period: August 2019 (26-Aug-2019 to 31-Aug-2019)  
Data source: ADCP  
Data summary: August 2019  
Number of Records: 498  
Missing data (%): 0.00  
Record Depth: m ASB

#### Key Data Statistics:

Max Curr Spd: 0.85 m/s  
Mean Curr Spd: 0.43 m/s  
StdDev. Curr Spd: 0.20 m/s

Current Data Summary August 2019





**Data Information:**

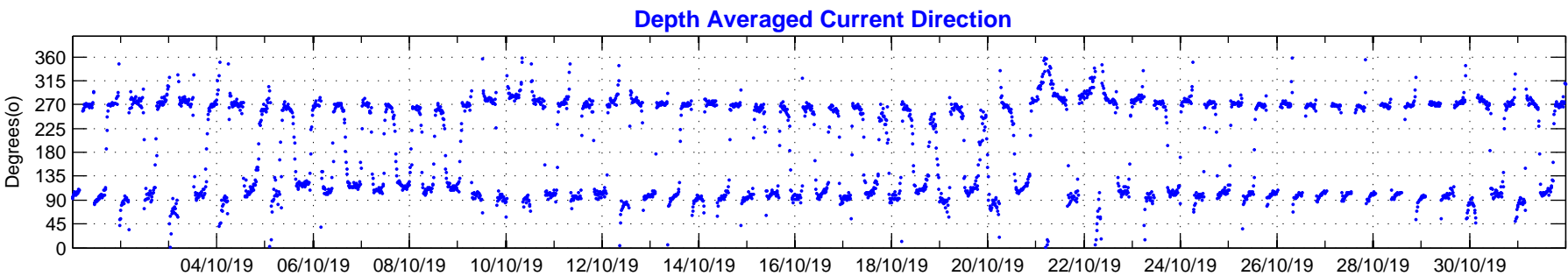
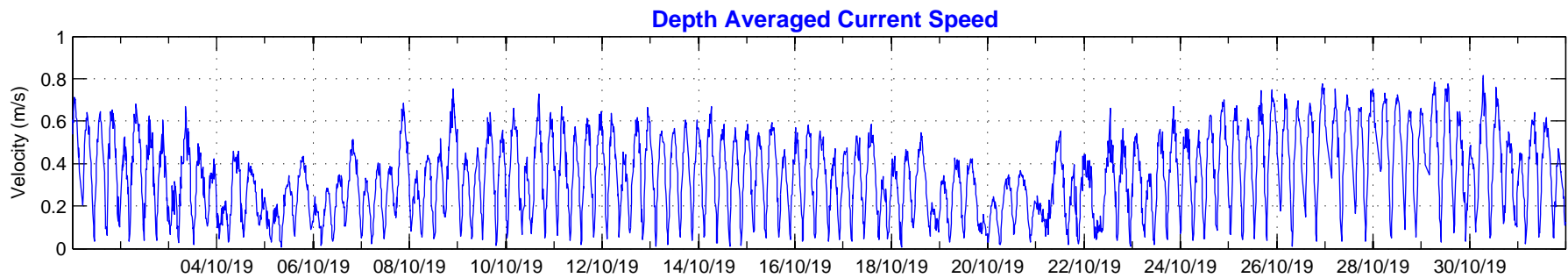
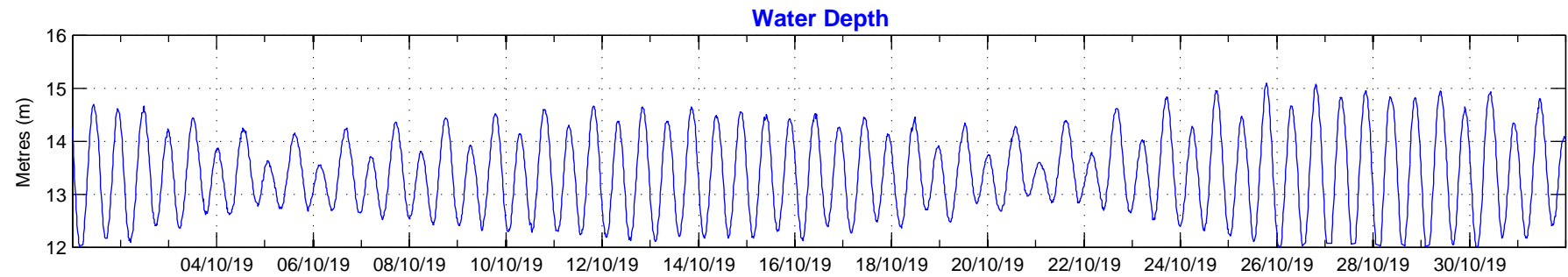
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period4 [151° 39.135E , 23° 05.715S]  
 Data period: September 2019 (01-Sep-2019 to 30-Sep-2019)  
 Data source: ADCP  
 Data summary: September 2019  
 Number of Records: 2804  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.82 m/s  
 Mean Curr Spd: 0.34 m/s  
 StdDev. Curr Spd: 0.18 m/s

**Current Data Summary September 2019**





**Data Information:**

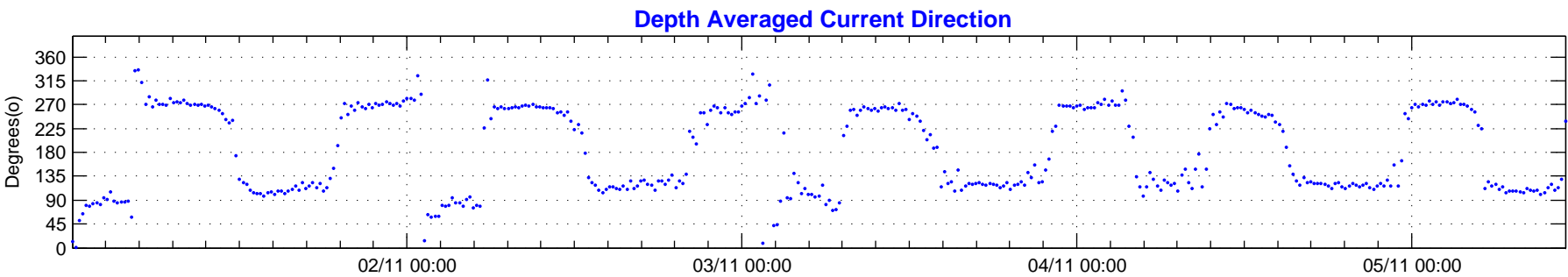
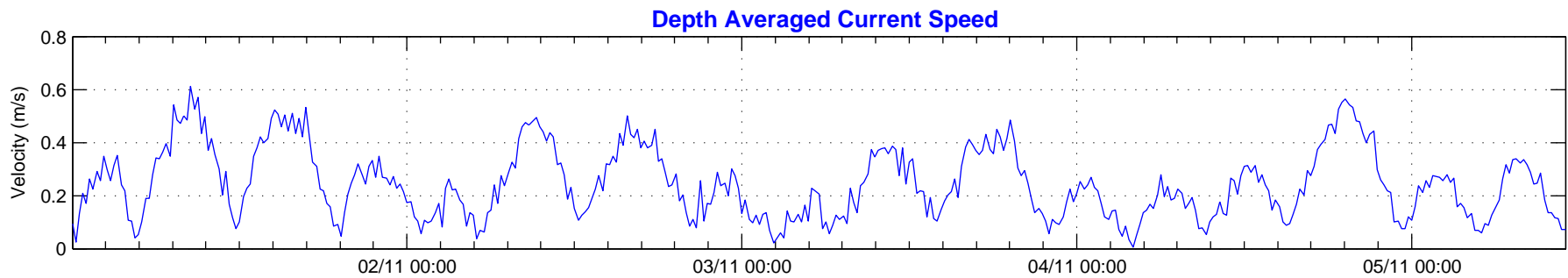
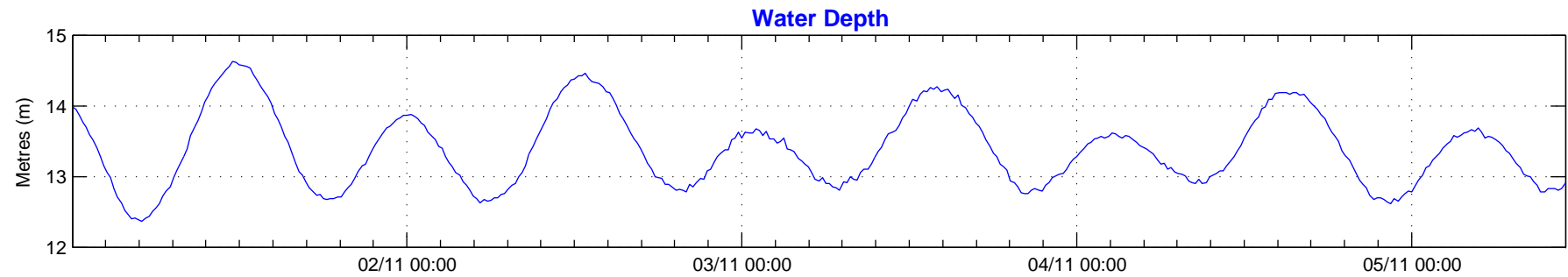
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period4 [151° 39.135E , 23° 05.715S]  
 Data period: October 2019 (01-Oct-2019 to 31-Oct-2019)  
 Data source: ADCP  
 Data summary: October 2019  
 Number of Records: 2919  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.81 m/s  
 Mean Curr Spd: 0.34 m/s  
 StdDev. Curr Spd: 0.18 m/s

**Current Data Summary October 2019**





**Data Information:**

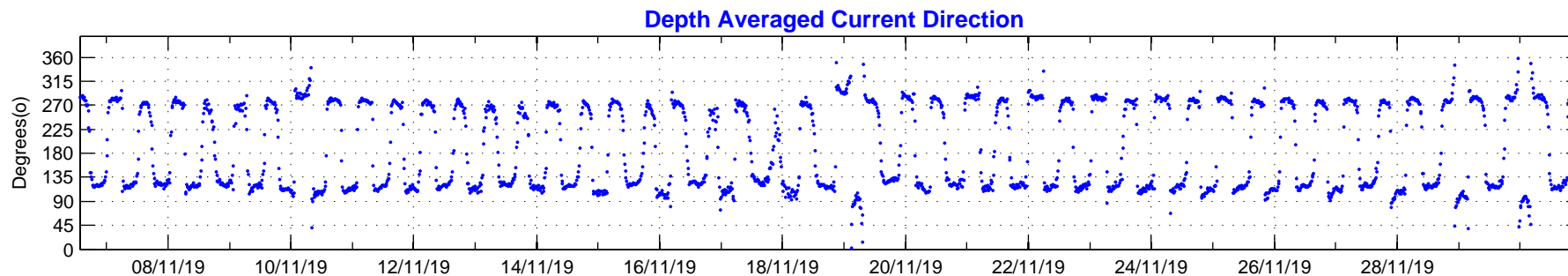
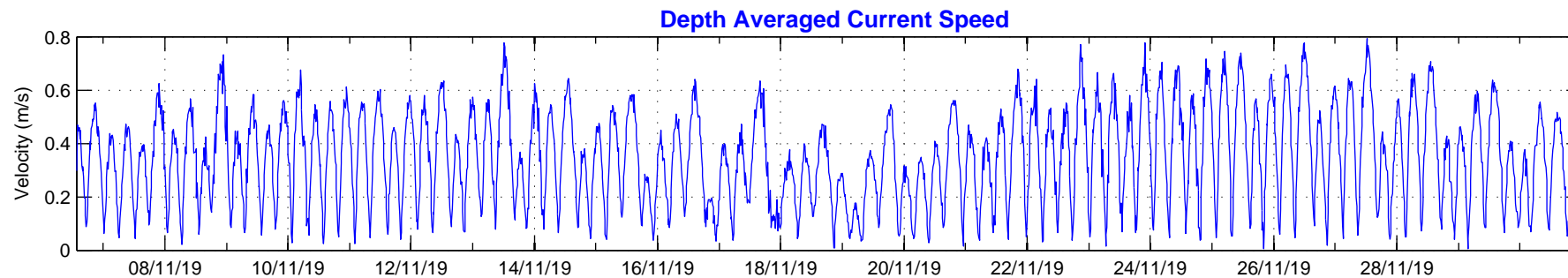
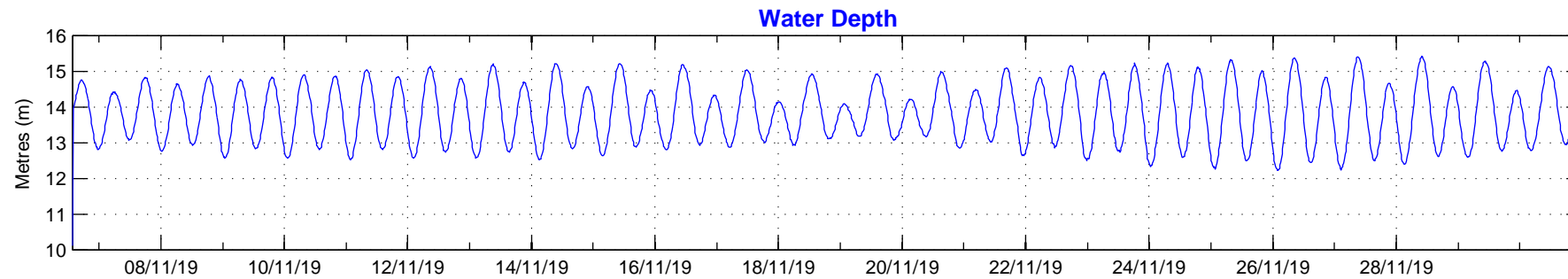
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period4 [151° 39.135E , 23° 05.715S]  
 Data period: November 2019 (01-Nov-2019 to 05-Nov-2019)  
 Data source: ADCP  
 Data summary: November 2019  
 Number of Records: 429  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.61 m/s  
 Mean Curr Spd: 0.24 m/s  
 StdDev. Curr Spd: 0.13 m/s

**Current Data Summary November 2019**





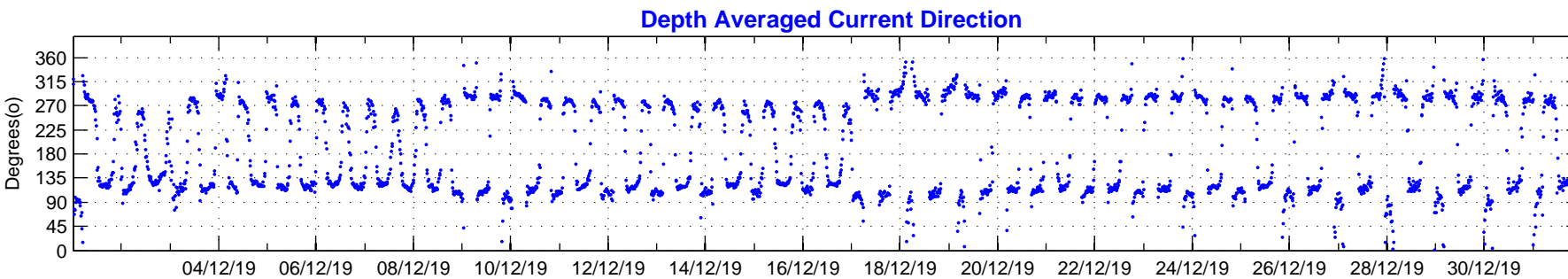
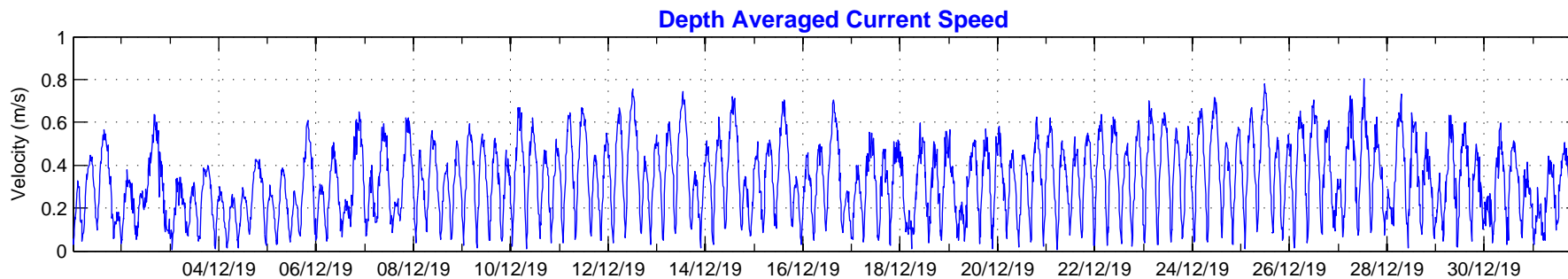
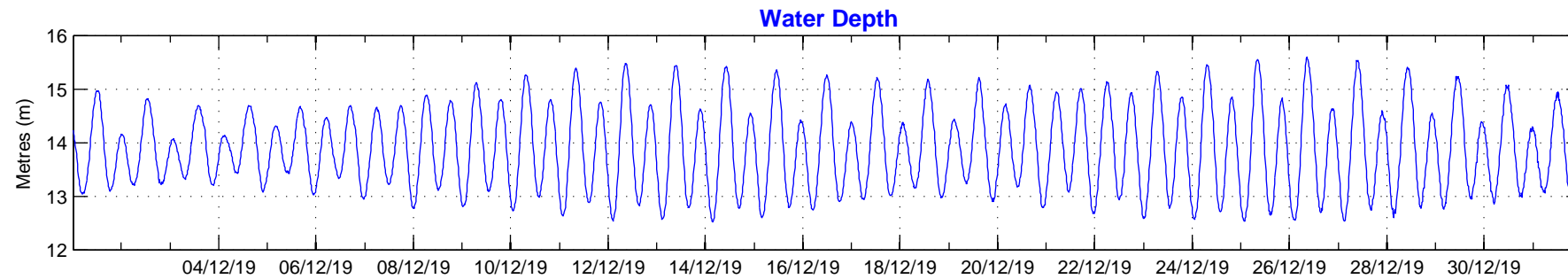
**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period5 [151° 39.131E , 23° 05.721S]  
 Data period: November 2019 (06-Nov-2019 to 30-Nov-2019)  
 Data source: ADCP  
 Data summary: November 2019  
 Number of Records: 2345  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.79 m/s  
 Mean Curr Spd: 0.35 m/s  
 StdDev. Curr Spd: 0.18 m/s

**Current Data Summary November 2019**



**Data Information:**

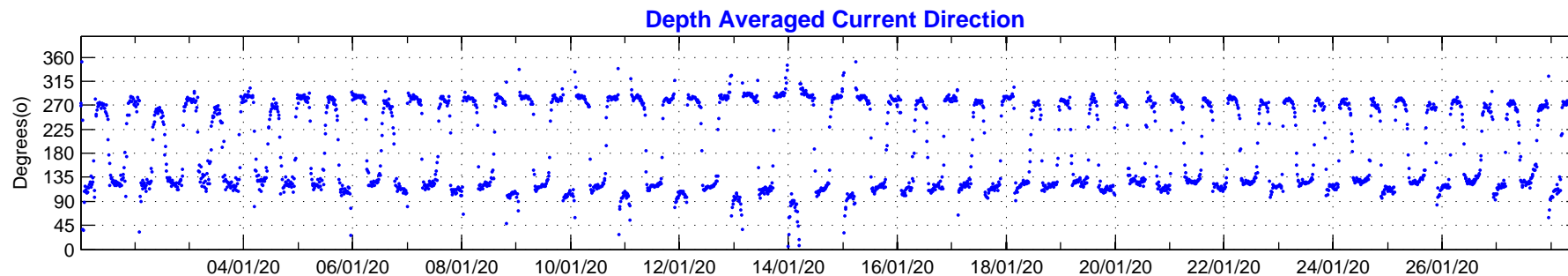
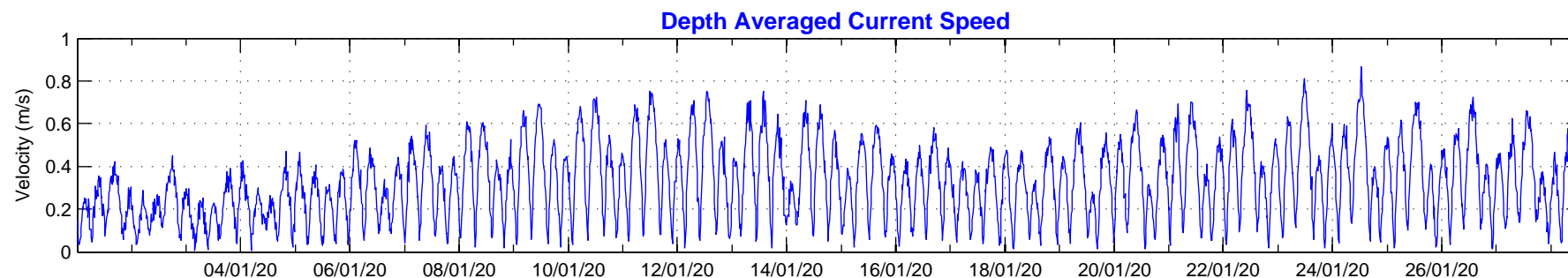
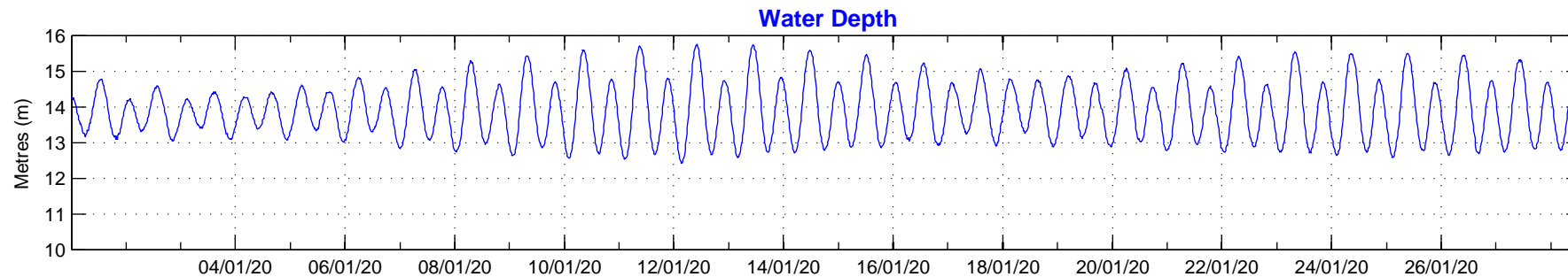
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period5 [151° 39.131E , 23° 05.721S]  
 Data period: December 2019 (01-Dec-2019 to 31-Dec-2019)  
 Data source: ADCP  
 Data summary: December 2019  
 Number of Records: 2976  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.80 m/s  
 Mean Curr Spd: 0.33 m/s  
 StdDev. Curr Spd: 0.17 m/s

**Current Data Summary December 2019**





**Data Information:**

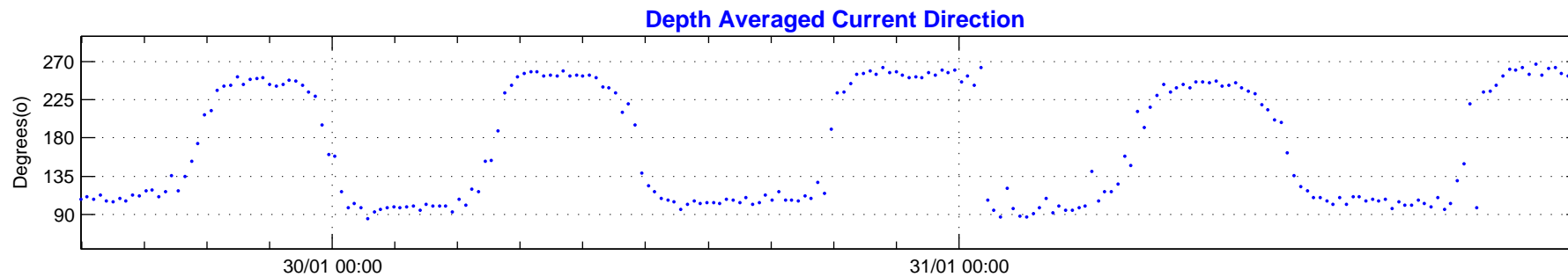
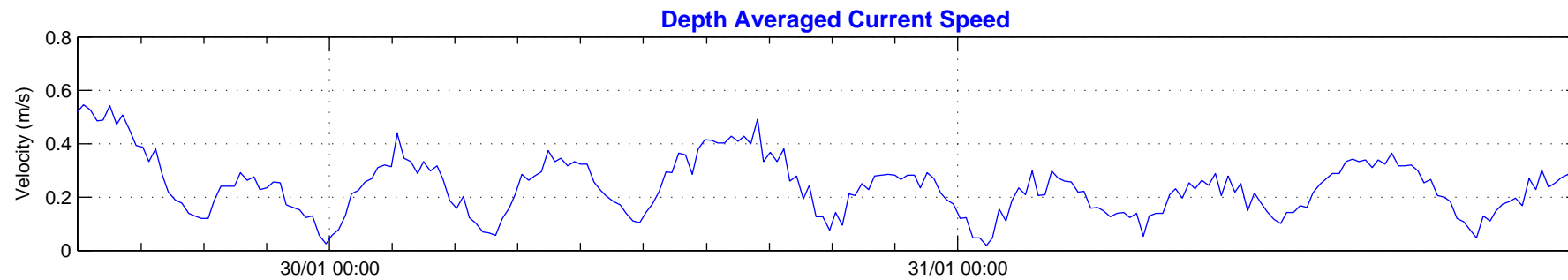
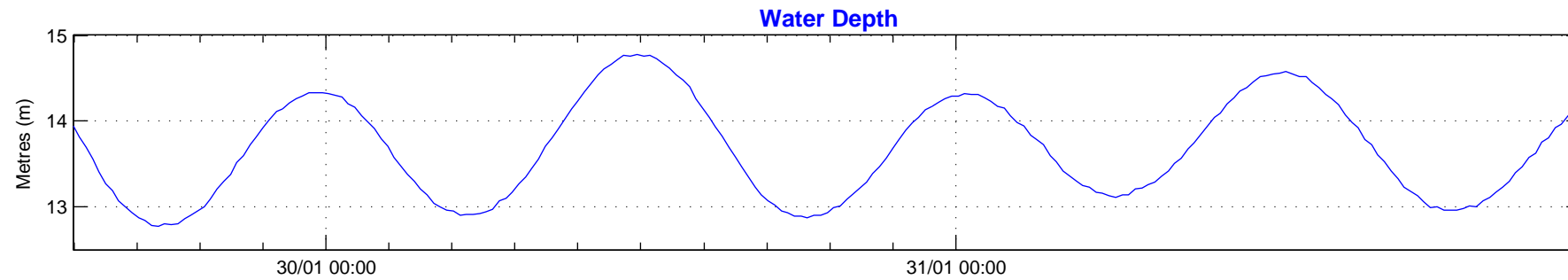
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period5 [151° 39.131E , 23° 05.721S]  
 Data period: January 2020 (01-Jan-2020 to 28-Jan-2020)  
 Data source: ADCP  
 Data summary: January 2020  
 Number of Records: 2646  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.87 m/s  
 Mean Curr Spd: 0.33 m/s  
 StdDev. Curr Spd: 0.17 m/s

Current Data Summary January 2020





**Data Information:**

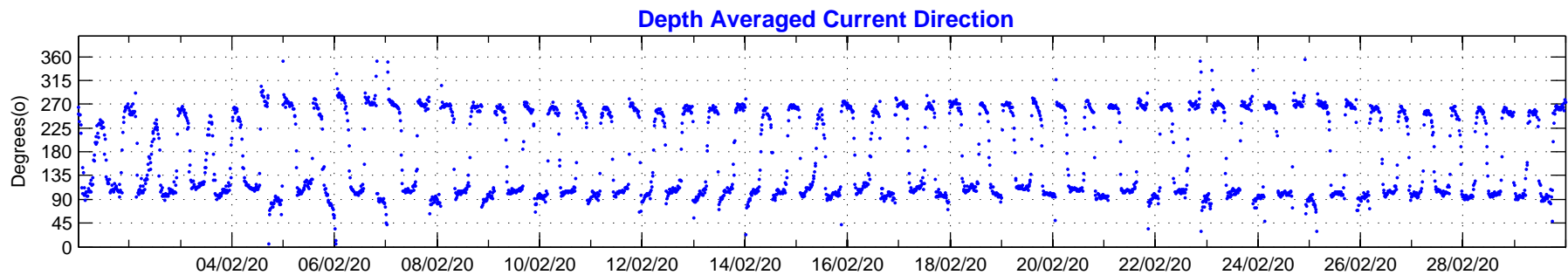
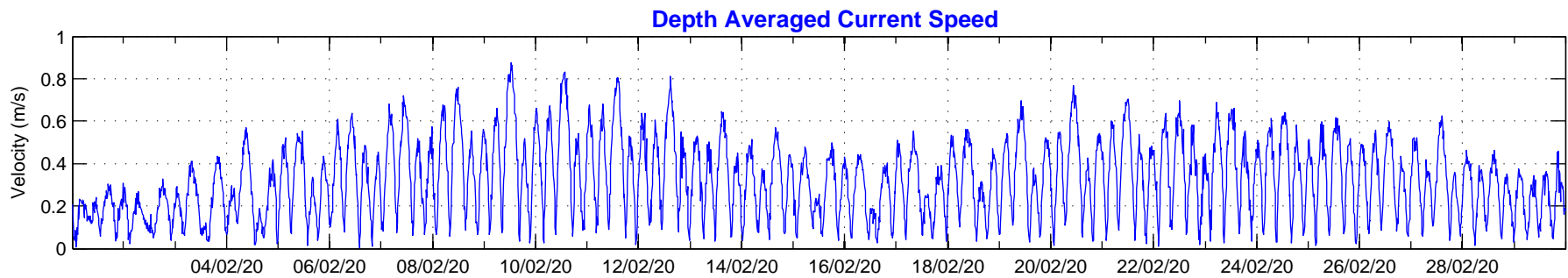
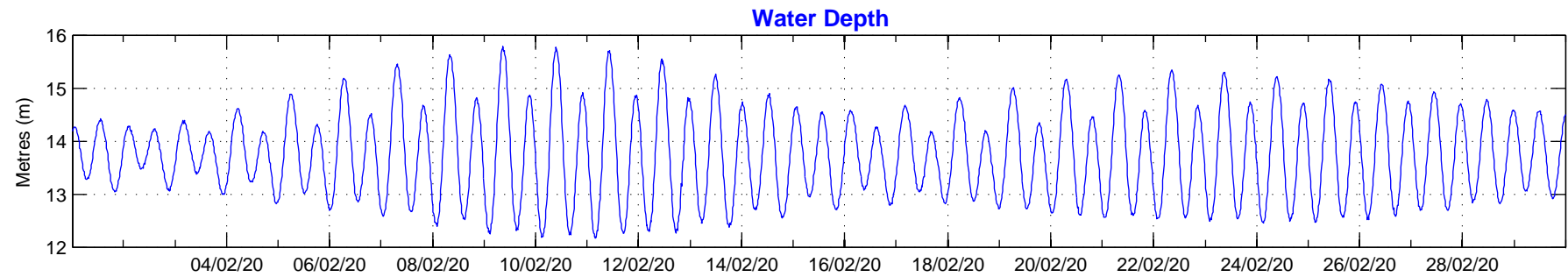
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period6 [151° 39.185E , 23° 05.741S]  
 Data period: January 2020 (29-Jan-2020 to 31-Jan-2020)  
 Data source: ADCP  
 Data summary: January 2020  
 Number of Records: 231  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.54 m/s  
 Mean Curr Spd: 0.24 m/s  
 StdDev. Curr Spd: 0.11 m/s

Current Data Summary January 2020





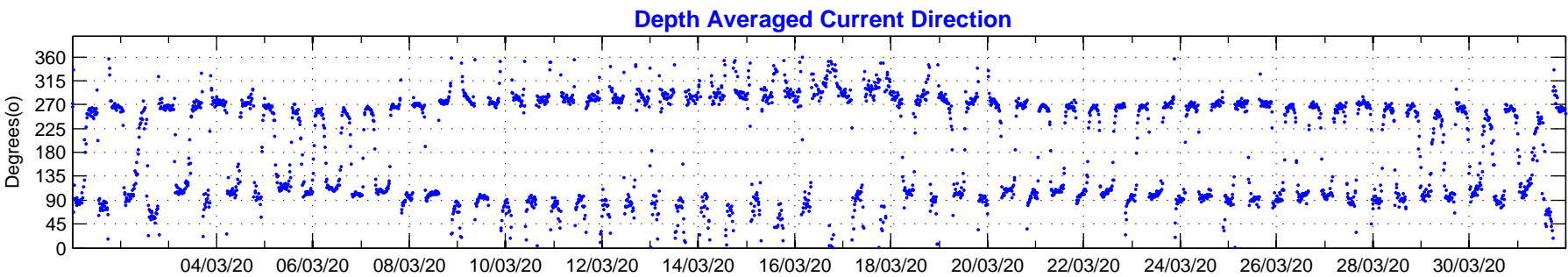
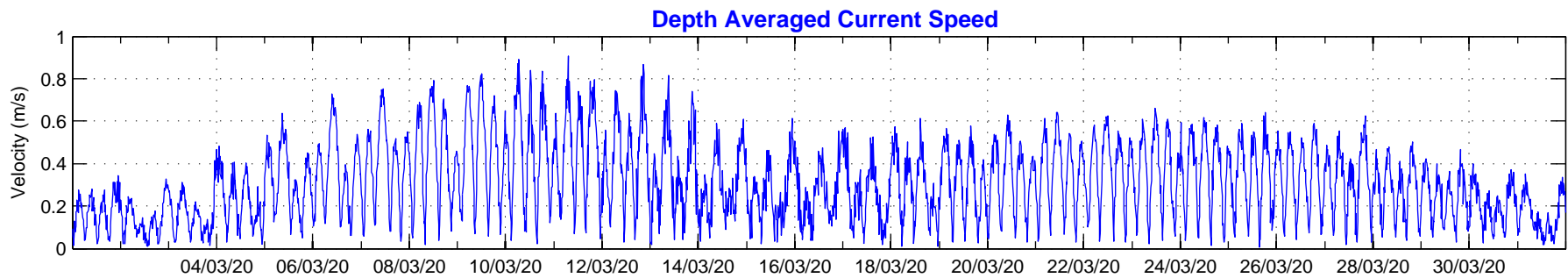
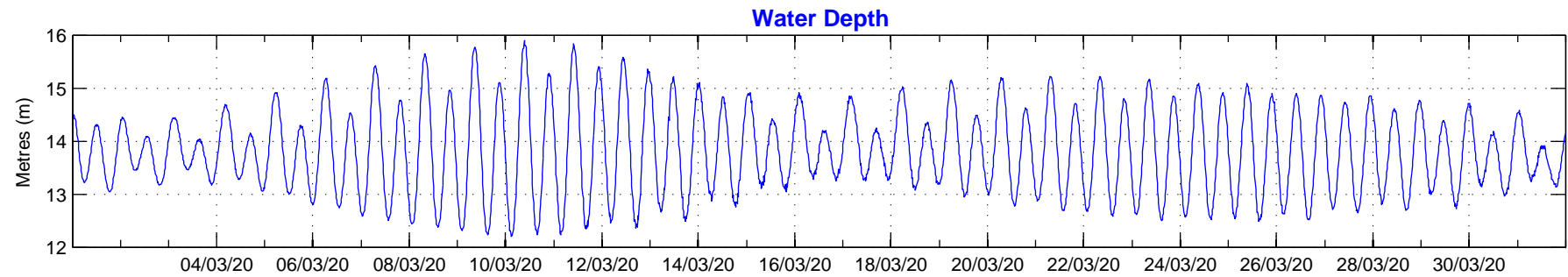
**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period6 [151° 39.185E , 23° 05.741S]  
 Data period: February 2020 (01-Feb-2020 to 29-Feb-2020)  
 Data source: ADCP  
 Data summary: February 2020  
 Number of Records: 2784  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.88 m/s  
 Mean Curr Spd: 0.32 m/s  
 StdDev. Curr Spd: 0.18 m/s

**Current Data Summary February 2020**



**Data Information:**

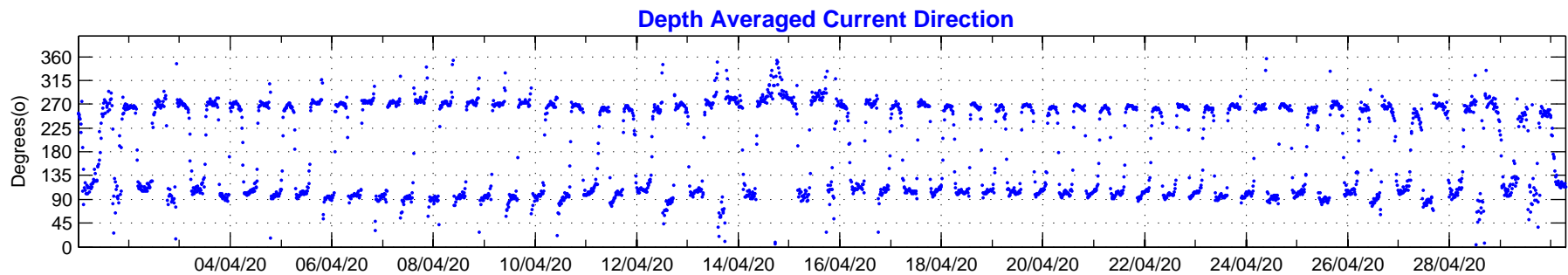
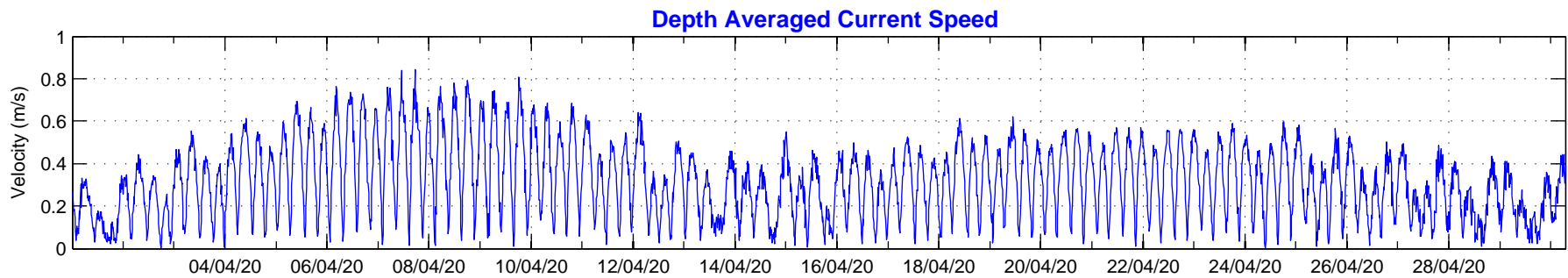
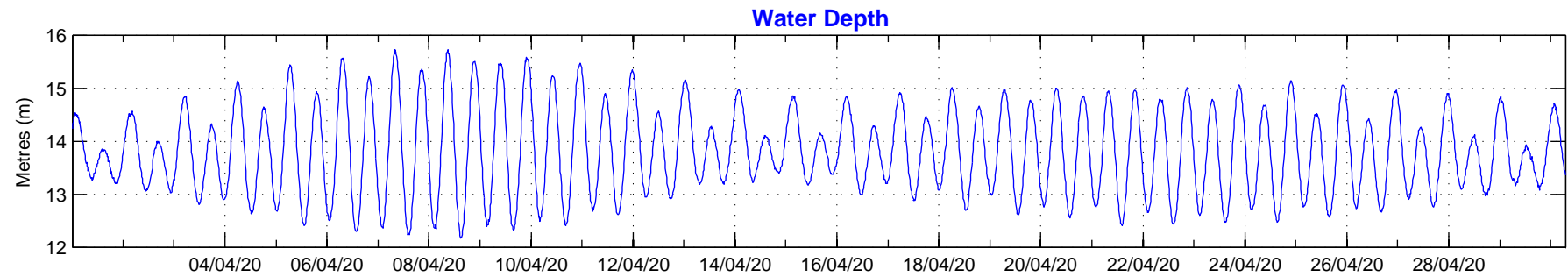
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period6 [151° 39.185E , 23° 05.741S]  
 Data period: March 2020 (01-Mar-2020 to 31-Mar-2020)  
 Data source: ADCP  
 Data summary: March 2020  
 Number of Records: 2976  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

Max Curr Spd: 0.91 m/s  
 Mean Curr Spd: 0.31 m/s  
 StdDev. Curr Spd: 0.18 m/s

**Current Data Summary March 2020**






**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period6 [151° 39.185E , 23° 05.741S]  
 Data period: April 2020 (01-Apr-2020 to 30-Apr-2020)  
 Data source: ADCP  
 Data summary: April 2020  
 Number of Records: 2812  
 Missing data (%): 0.00  
 Record Depth: m ASB

**Key Data Statistics:**

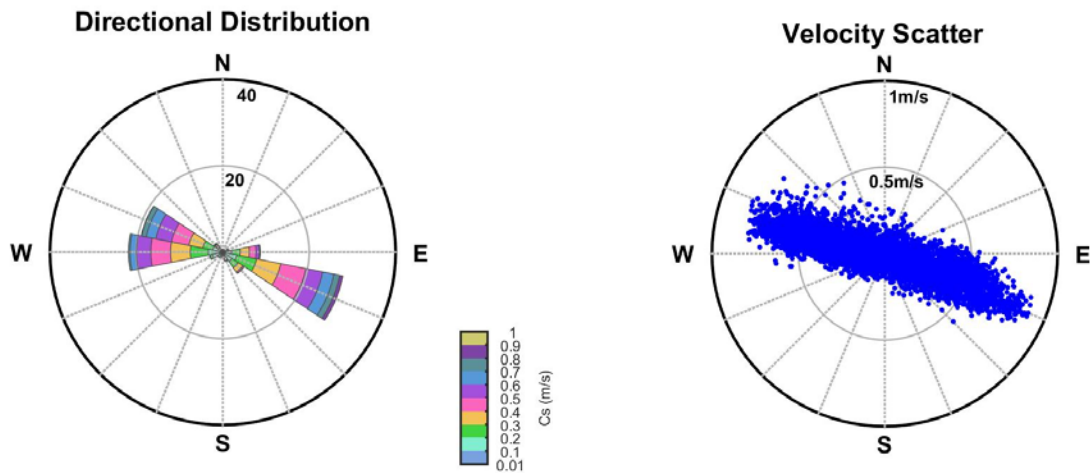
Max Curr Spd: 0.84 m/s  
 Mean Curr Spd: 0.32 m/s  
 StdDev. Curr Spd: 0.17 m/s

**Current Data Summary April 2020**



**Appendix E**  
**ADCP2: Current Rose, Velocity Scatter and**  
**Joint Frequency Table Plots**

## Current Speed for ADCP2 Location: Period 1



**JFT (%) of Current Speed against Direction for the entire period 17-Jan-2019 to 14-Mar-2019**

N=5378	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
0-0.01 (Calm)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.09	100.00
0.01-0.1	0.37	0.20	0.41	0.32	0.60	0.61	0.65	0.97	0.67	0.97	0.69	0.91	0.65	0.63	0.48	0.32	9.45	99.91
0.1-0.2	0.17	0.41	0.30	0.78	1.43	2.70	1.92	1.06	0.24	0.37	0.65	1.56	2.70	1.75	0.84	0.30	17.16	90.46
0.2-0.3	0.13	0.07	0.04	0.22	2.01	4.65	1.77	0.17	-	-	0.07	0.56	4.18	2.34	0.52	0.07	16.81	73.30
0.3-0.4	-	-	-	0.06	2.10	5.71	1.25	-	-	-	-	0.11	4.56	3.29	0.33	0.06	17.46	56.49
0.4-0.5	-	-	-	-	1.56	5.93	0.33	-	-	-	-	-	4.56	4.07	0.20	0.02	16.68	39.03
0.5-0.6	-	-	-	-	0.76	3.96	0.06	-	-	-	-	-	3.31	3.70	0.13	-	11.92	22.35
0.6-0.7	-	-	-	-	0.22	2.66	0.02	-	-	-	-	-	1.49	2.27	-	-	6.66	10.43
0.7-0.8	-	-	-	-	0.04	1.36	-	-	-	-	-	-	0.39	1.10	0.02	-	2.90	3.77
0.8-0.9	-	-	-	-	-	0.78	-	-	-	-	-	-	-	0.09	-	-	0.87	0.87
0.9-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
>1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
subTot.	0.67	0.69	0.74	1.38	8.72	28.36	5.99	2.19	0.91	1.34	1.41	3.14	21.83	19.25	2.53	0.76		
Total **	0.68	0.69	0.75	1.38	8.73	28.36	5.99	2.20	0.92	1.34	1.42	3.15	21.84	19.25	2.53	0.77		
Cumul.	0.68	1.37	2.12	3.50	12.23	40.59	46.58	48.78	49.70	51.04	52.46	55.61	77.45	96.70	99.23	100.00		

\* denotes values less than 0.01%

- denotes no records in bin

\*\* includes the calm winds which are evenly distributed amongst the directional bins

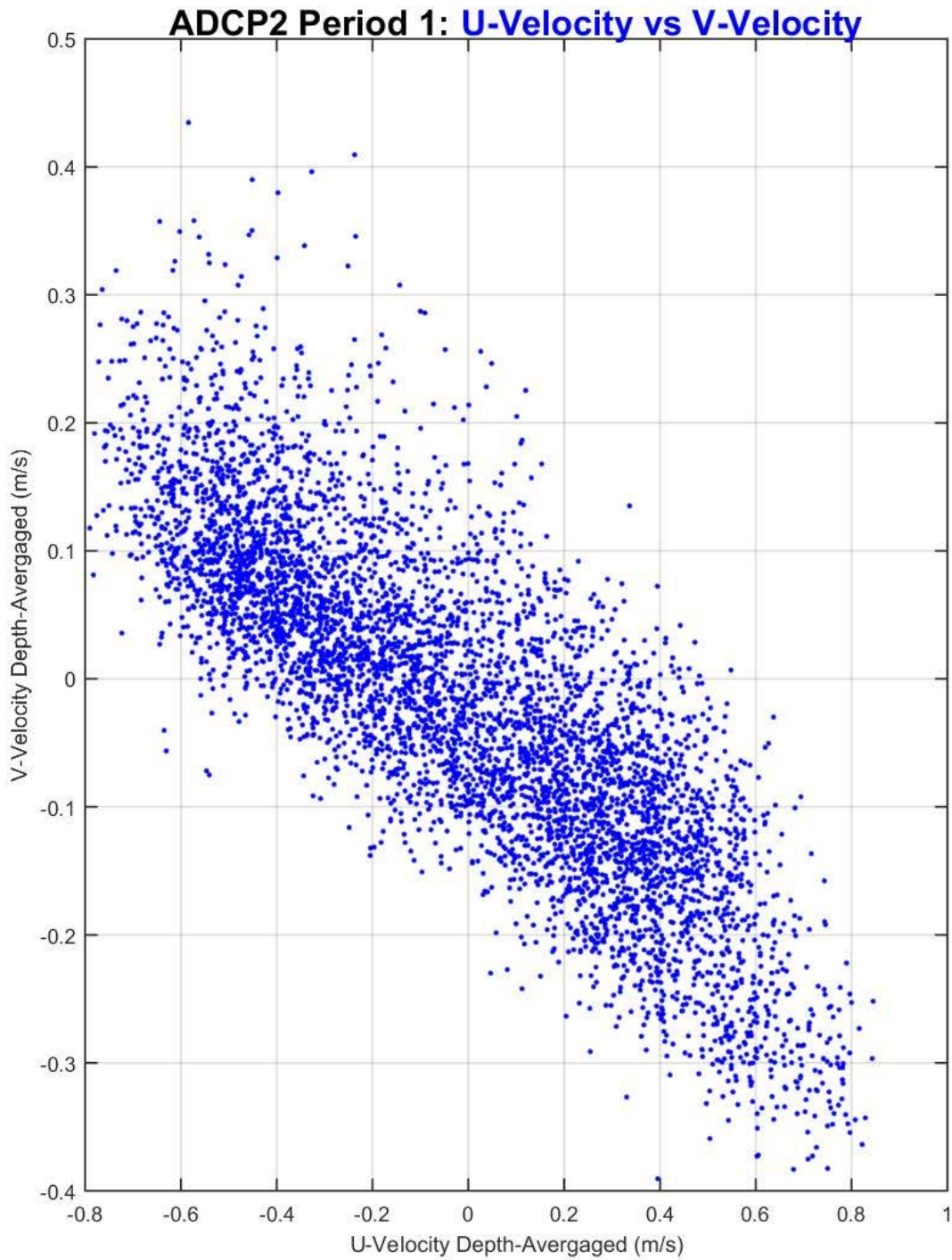
**Data Information:**

Project: 301001-02112  
 Location: ADCP2 [151° 39.117' E , 23° 05.726' S ]  
 Data period: All data (17-Jan-2019 to 14-Mar-2019)  
 Data source: ADCP2 Period 1  
 Data summary: Complete  
 Number of Records: 5378  
 Missing data (%): 0.00  
 Calm (% < 0.01m/s): 0.09

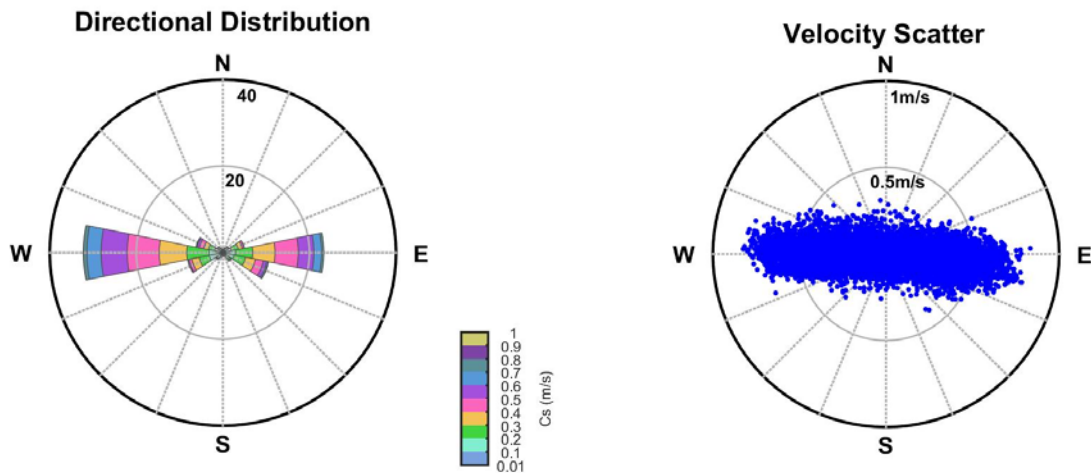
**Key Data Statistics:**

Max Curr Spd: 0.90 m/s  
 Mean Curr Spd: 0.35 m/s  
 StdDev. Curr Spd: 0.19 m/s





## Current Speed for ADCP2 Location: Period 2



JFT (%) of Current Speed against Direction for the entire period 16-Mar-2019 to 13-Jun-2019

N=8562	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
0-0.01 (Calm)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.13	100.00
0.01-0.1	0.36	0.62	0.69	0.64	0.69	0.78	0.89	0.57	0.53	0.59	0.68	0.78	0.81	0.56	0.59	0.36	10.15	99.87
0.1-0.2	0.35	0.39	0.76	1.33	2.24	1.88	0.95	0.41	0.39	0.49	1.03	2.41	2.36	1.39	0.60	0.49	17.47	89.72
0.2-0.3	0.06	0.08	0.28	1.66	3.97	2.68	0.39	0.05	0.02	0.07	0.21	2.38	5.16	1.45	0.37	0.14	18.97	72.25
0.3-0.4	0.01	-	0.01	0.95	5.16	2.33	0.14	-	-	-	0.06	1.74	6.38	1.10	0.08	0.01	17.98	53.28
0.4-0.5	-	-	-	0.42	5.37	1.85	0.05	-	-	-	-	0.67	7.38	1.04	0.01	-	16.79	35.31
0.5-0.6	-	-	-	0.08	3.59	0.81	-	-	-	-	-	0.28	6.02	0.56	-	-	11.34	18.51
0.6-0.7	-	-	-	-	1.79	0.33	-	-	-	-	-	0.05	3.30	0.20	-	-	5.66	7.17
0.7-0.8	-	-	-	-	0.50	0.12	-	-	-	-	-	-	0.77	0.04	-	-	1.43	1.51
0.8-0.9	-	-	-	-	0.01	0.01	-	-	-	-	-	-	0.06	-	-	-	0.08	0.08
0.9-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
>1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
subTot.	0.78	1.09	1.74	5.09	23.32	10.79	2.41	1.03	0.94	1.15	1.98	8.31	32.24	6.34	1.65	1.01		
Total **	0.79	1.10	1.75	5.10	23.33	10.80	2.42	1.04	0.94	1.15	1.99	8.32	32.25	6.35	1.66	1.01		
Cumul.	0.79	1.89	3.64	8.74	32.07	42.87	45.29	46.33	47.27	48.42	50.41	58.73	90.98	97.33	98.99	100.00		

\* denotes values less than 0.01% - denotes no records in bin

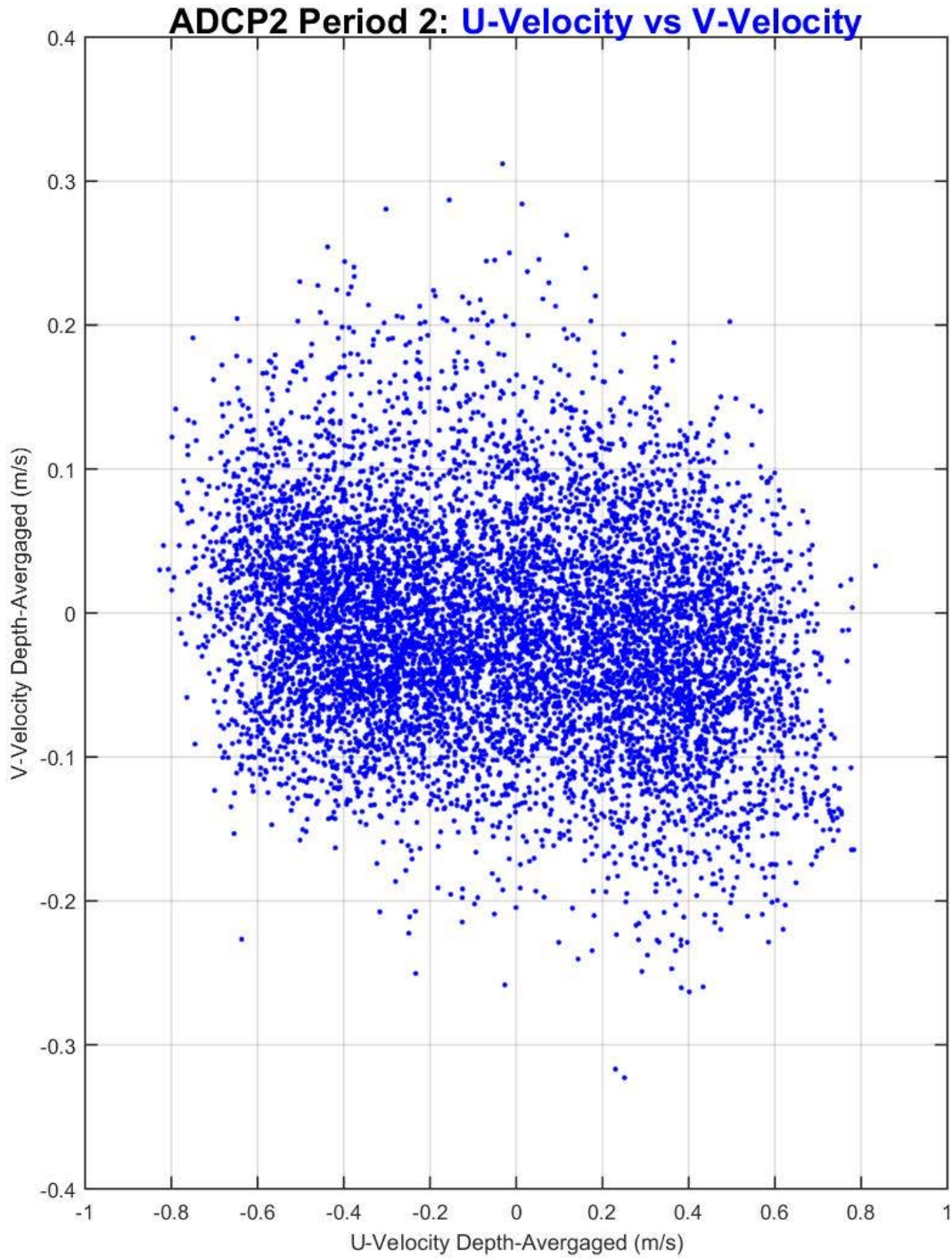
\*\* includes the calm winds which are evenly distributed amongst the directional bins

**Data Information:**

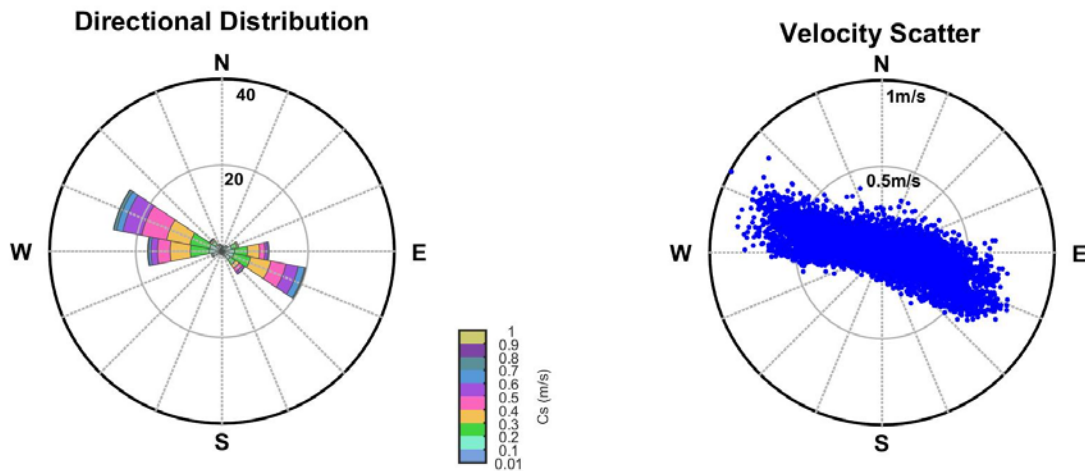
Project: 301001-02112  
 Location: ADCP2 [151° 39.132' E , 23° 05.730' S ]  
 Data period: All data (16-Mar-2019 to 13-Jun-2019)  
 Data source: ADCP2 Period 2  
 Data summary: Complete  
 Number of Records: 8562  
 Missing data (%): 0.20  
 Calm (% < 0.01m/s): 0.13

**Key Data Statistics:**

Max Curr Spd: 0.83 m/s  
 Mean Curr Spd: 0.33 m/s  
 StdDev. Curr Spd: 0.18 m/s



## Current Speed for ADCP2 Location: Period 3



JFT (%) of Current Speed against Direction for the entire period 14-Jun-2019 to 25-Aug-2019

N=6901	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
0-0.01 (Calm)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04	100.00
0.01-0.1	0.64	0.43	0.42	0.67	0.84	0.78	0.68	0.39	0.59	0.65	0.57	0.83	0.57	0.67	0.67	0.70	10.09	99.96
0.1-0.2	0.59	0.52	0.85	1.62	2.06	1.97	1.65	0.61	0.36	0.16	0.43	1.28	2.36	2.25	1.19	0.72	18.63	89.87
0.2-0.3	0.10	0.07	0.32	1.25	3.01	4.04	1.46	0.14	-	-	-	0.35	4.39	4.67	1.00	0.28	21.08	71.24
0.3-0.4	-	0.03	0.03	0.38	2.78	4.74	1.00	0.01	-	-	-	0.06	4.71	5.52	0.41	0.07	19.74	50.15
0.4-0.5	-	-	-	0.04	1.25	3.59	0.96	-	-	-	-	0.01	2.94	5.87	0.17	-	14.84	30.42
0.5-0.6	-	-	-	-	0.67	2.90	0.58	-	-	-	-	-	1.51	4.48	0.09	-	10.22	15.58
0.6-0.7	-	-	-	-	0.32	1.51	0.12	-	-	-	-	-	0.57	1.45	0.03	-	3.98	5.36
0.7-0.8	-	-	-	-	0.03	0.29	-	-	-	-	-	-	0.20	0.70	-	-	1.22	1.38
0.8-0.9	-	-	-	-	-	-	-	-	-	-	-	-	0.03	0.10	0.01	-	0.14	0.16
0.9-1	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01	-	-	0.01	0.01
>1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
subTot.	1.33	1.06	1.62	3.96	10.95	19.82	6.45	1.16	0.96	0.81	1.00	2.52	17.27	25.71	3.56	1.77		
Total **	1.34	1.06	1.63	3.96	10.96	19.83	6.45	1.16	0.96	0.81	1.00	2.52	17.28	25.71	3.57	1.77		
Cumul.	1.34	2.40	4.02	7.98	18.94	38.76	45.22	46.38	47.34	48.15	49.15	51.68	68.95	94.66	98.23	100.00		

\* denotes values less than 0.01% - denotes no records in bin

\*\* includes the calm winds which are evenly distributed amongst the directional bins

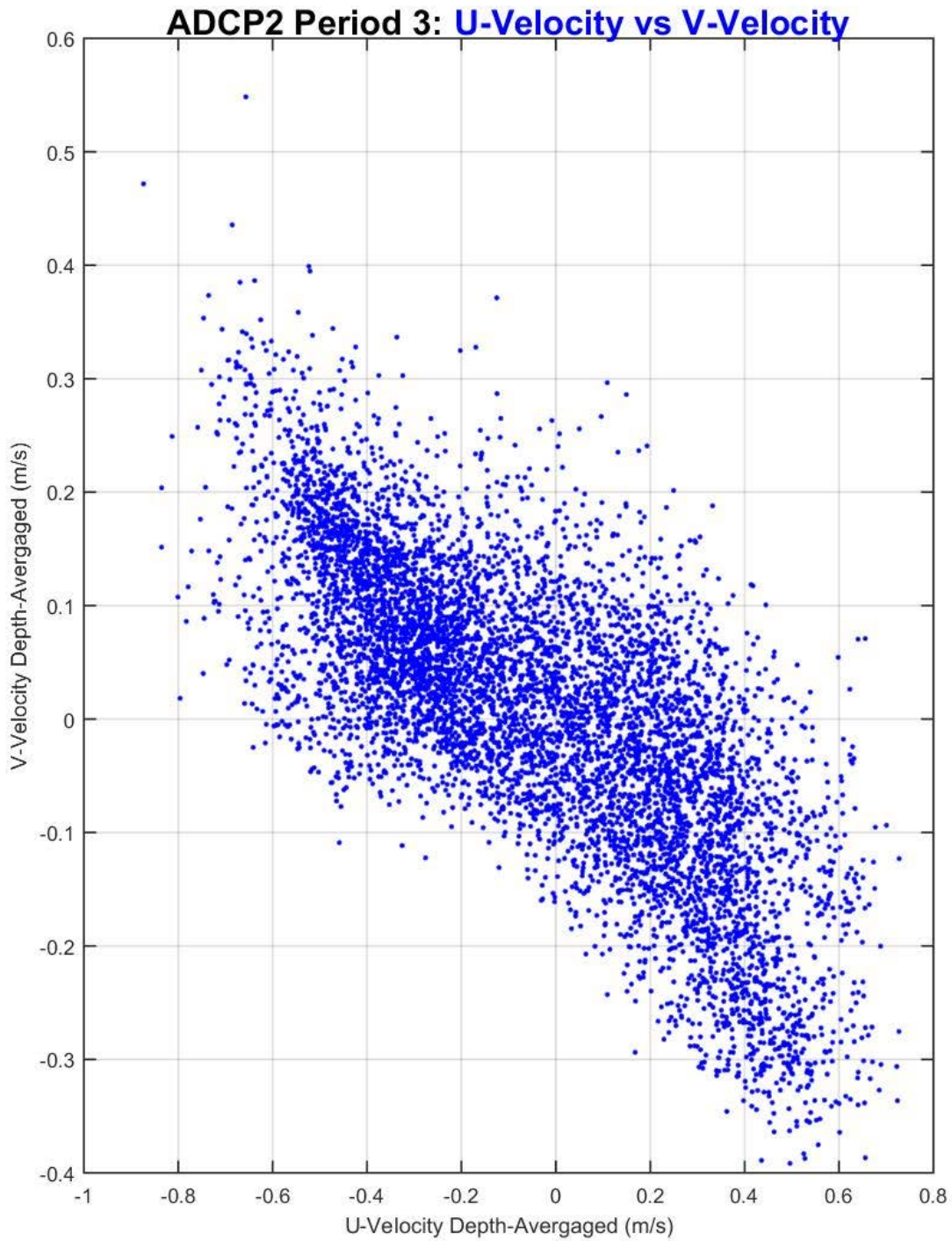
**Data Information:**

Project: 301001-02112  
 Location: ADCP2 [151° 39.140' E , 23° 05.734' S]  
 Data period: All data (14-Jun-2019 to 25-Aug-2019)  
 Data source: ADCP2 Period 3  
 Data summary: Complete  
 Number of Records: 6901  
 Missing data (%): 0.00  
 Calm (% < 0.01m/s): 0.04

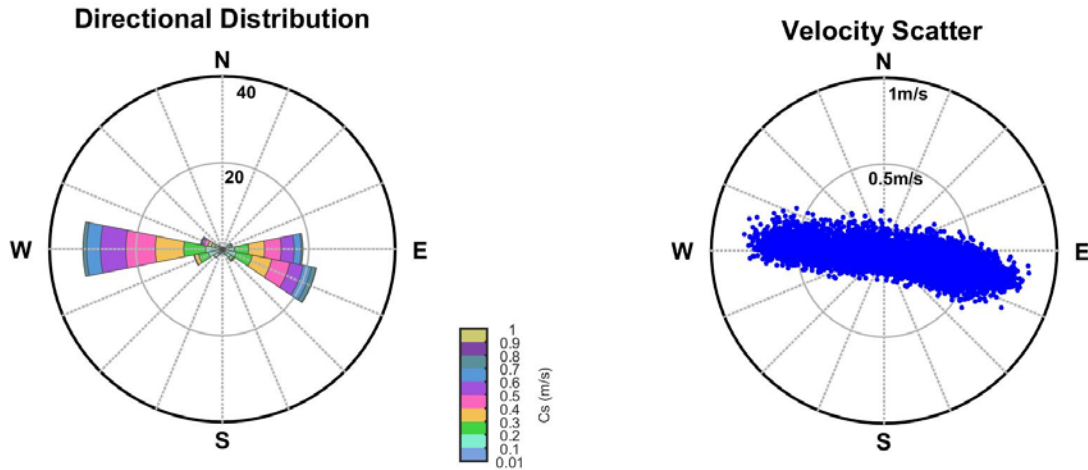
**Key Data Statistics:**

Max Curr Spd: 0.99 m/s  
 Mean Curr Spd: 0.31 m/s  
 StdDev. Curr Spd: 0.17 m/s





## Current Speed for ADCP2 Location: Period 4



**JFT (%) of Current Speed against Direction for the entire period 26-Aug-2019 to 05-Nov-2019**

N=6650	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
0-0.01 (Calm)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.11	100.00
0.01-0.1	0.35	0.23	0.30	0.53	0.75	0.69	0.87	0.62	0.56	0.89	1.23	0.71	0.83	0.59	0.45	0.27	9.85	99.89
0.1-0.2	0.17	0.09	0.38	1.10	2.08	2.57	1.53	0.63	0.24	0.39	1.16	2.62	3.05	1.13	0.50	0.23	17.85	90.05
0.2-0.3	0.02	-	0.03	0.56	3.23	3.79	0.69	0.05	-	-	0.06	2.32	5.07	0.93	0.17	0.02	16.92	72.20
0.3-0.4	-	-	-	0.15	3.71	4.59	0.29	-	-	-	-	0.93	6.57	0.78	0.02	-	17.04	55.28
0.4-0.5	-	-	-	0.02	3.83	4.27	0.09	-	-	-	-	0.18	6.84	0.93	-	-	16.17	38.24
0.5-0.6	-	-	-	-	3.01	3.16	0.02	-	-	-	-	-	5.85	0.54	-	-	12.57	22.08
0.6-0.7	-	-	-	-	1.62	1.95	-	-	-	-	-	-	3.20	0.24	-	-	7.02	9.50
0.7-0.8	-	-	-	-	0.38	1.07	-	-	-	-	-	-	0.84	0.03	-	-	2.32	2.48
0.8-0.9	-	-	-	-	0.03	0.11	-	-	-	-	-	-	0.02	0.02	-	-	0.17	0.17
0.9-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
>1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
subTot.	0.53	0.32	0.71	2.35	18.65	22.20	3.49	1.29	0.80	1.28	2.45	6.75	32.27	5.19	1.13	0.51		
Total **	0.53	0.32	0.71	2.35	18.65	22.20	3.50	1.30	0.80	1.28	2.46	6.76	32.28	5.19	1.13	0.52		
Cumul.	0.53	0.86	1.57	3.92	22.57	44.78	48.27	49.57	50.38	51.66	54.12	60.88	93.15	98.35	99.48	100.00		

\* denotes values less than 0.01%

- denotes no records in bin

\*\* includes the calm winds which are evenly distributed amongst the directional bins

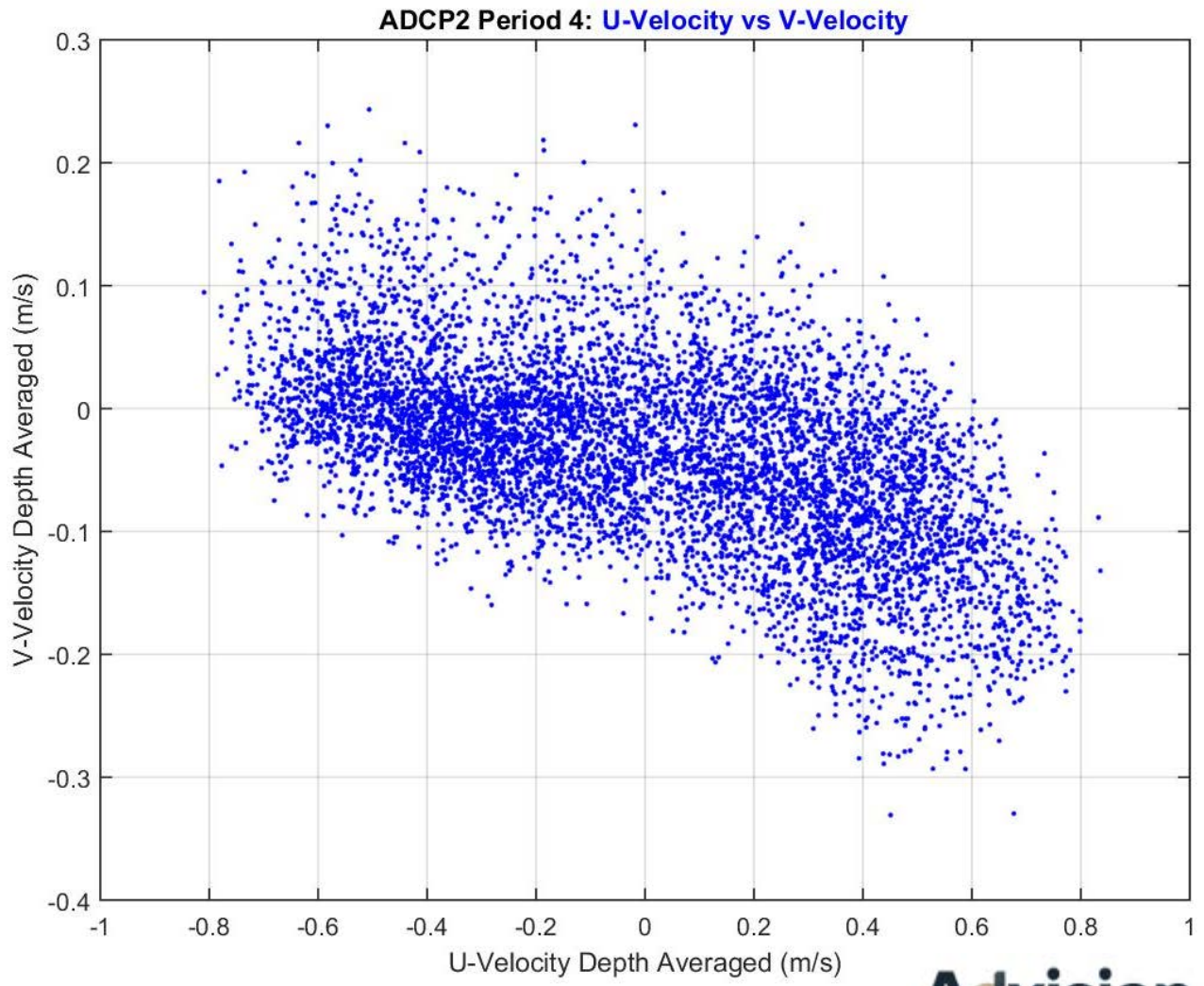
**Data Information:**

Project: 301001-02112  
 Location: ADCP2 Period4 QAQC [151° 39.135E , 23° 05.715S]  
 Data period: All data (26-Aug-2019 to 05-Nov-2019)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 6650  
 Missing data (%): 0.00  
 Calm (% < 0.01m/s): 0.11

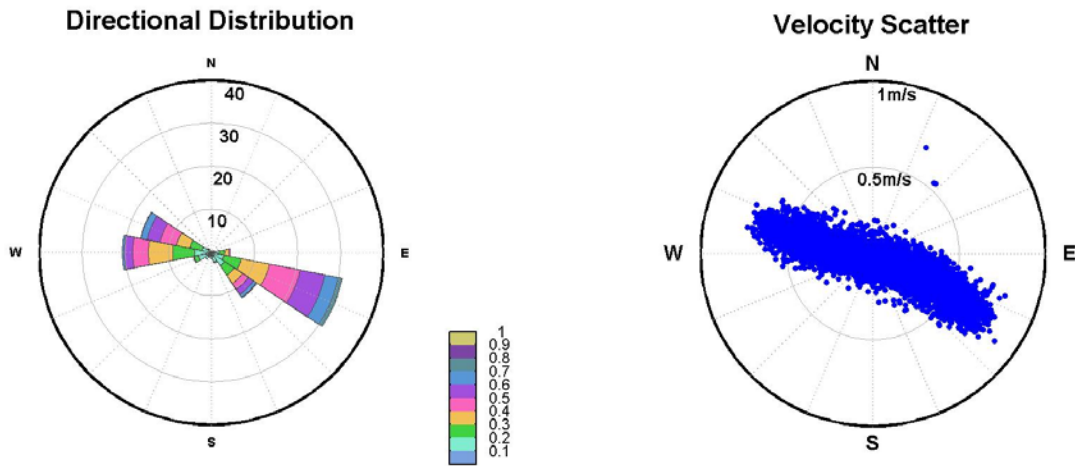
**Key Data Statistics:**

Max Curr Spd: 0.85 m/s  
 Mean Curr Spd: 0.34 m/s  
 StdDev. Curr Spd: 0.18 m/s





## Current Speed for ADCP2 Location: Period 5



**JFT (%) of Current Speed against Direction for the entire period 06-Nov-2019 to 28-Jan-2020**

N=7967	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
0-0.01 (Calm)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.13	100.00
0.01-0.1	0.16	0.18	0.28	0.29	0.53	0.73	0.92	1.07	0.89	0.77	0.98	1.13	0.67	0.51	0.40	0.24	9.73	99.87
0.1-0.2	0.11	0.09	0.14	0.34	1.28	2.23	2.70	1.19	0.44	0.39	0.80	1.98	3.23	1.69	0.50	0.11	17.23	90.15
0.2-0.3	-	-	0.03	0.10	1.31	4.10	2.75	0.13	0.06	0.03	0.04	0.99	5.11	2.86	0.11	-	17.61	72.91
0.3-0.4	-	-	-	-	0.95	6.63	2.30	0.08	-	-	-	0.18	5.62	3.18	0.15	-	19.08	55.30
0.4-0.5	-	-	-	-	0.34	7.24	1.63	-	-	-	-	0.01	3.63	3.88	-	-	16.73	36.22
0.5-0.6	-	-	0.03	-	0.01	5.85	1.42	-	-	-	-	-	1.97	3.08	-	-	12.35	19.49
0.6-0.7	-	0.01	-	-	-	3.14	0.78	-	-	-	-	-	0.45	1.46	-	-	5.84	7.14
0.7-0.8	-	-	-	-	-	0.93	0.20	-	-	-	-	-	0.01	0.13	-	-	1.27	1.31
0.8-0.9	-	-	-	-	-	0.03	0.01	-	-	-	-	-	-	-	-	-	0.04	0.04
0.9-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
>1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
subTot.	0.28	0.28	0.46	0.73	4.42	30.88	12.70	2.46	1.39	1.18	1.82	4.29	20.69	16.78	1.17	0.35		
Total **	0.28	0.28	0.47	0.74	4.43	30.89	12.71	2.47	1.40	1.19	1.83	4.30	20.69	16.79	1.18	0.36		
Cumul.	0.28	0.57	1.04	1.78	6.20	37.09	49.80	52.27	53.67	54.85	56.68	60.98	81.68	98.47	99.64	100.00		

\* denotes values less than 0.01%

- denotes no records in bin

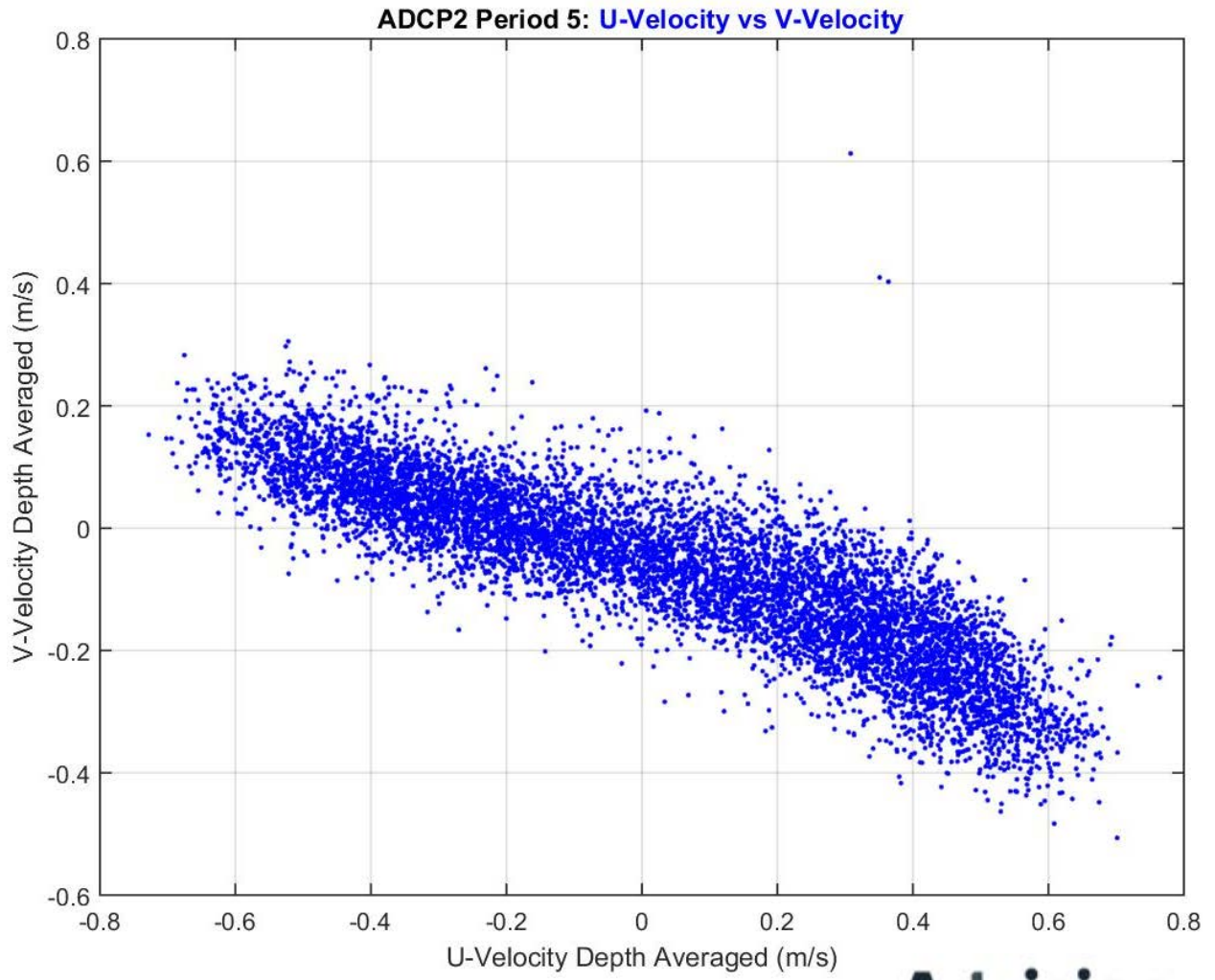
\*\* includes the calm winds which are evenly distributed amongst the directional bins

**Data Information:**

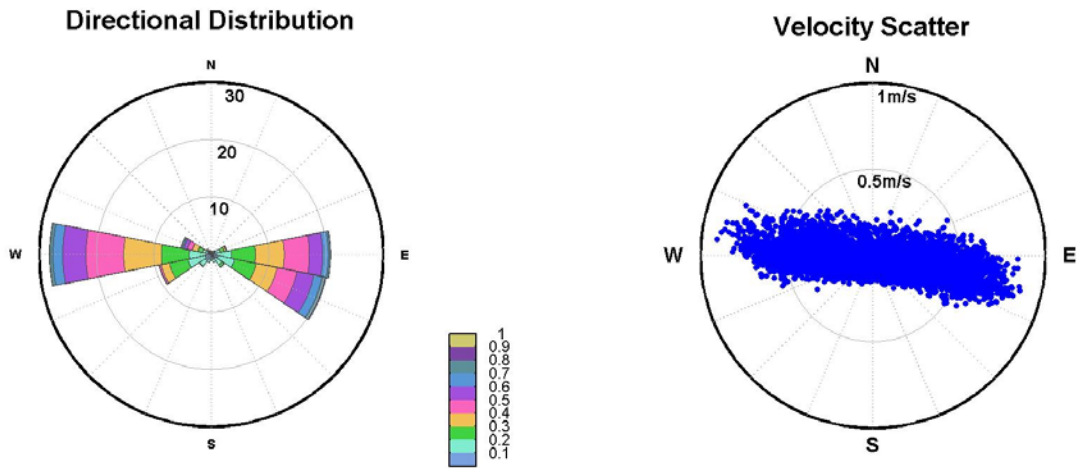
Project: 301001-02112  
 Location: ADCP2 Period5 [151° 39.131E , 23° 05.721S]  
 Data period: All data (06-Nov-2019 to 28-Jan-2020)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 7967  
 Missing data (%): 0.00  
 Calm (% < 0.01m/s): 0.13

**Key Data Statistics:**

Max Curr Spd: 0.87 m/s  
 Mean Curr Spd: 0.33 m/s  
 StdDev. Curr Spd: 0.17 m/s



## Current Speed for ADCP2 Location: Period 6



**JFT (%) of Current Speed against Direction for the entire period 29-Jan-2020 to 30-Apr-2020**

N=8803	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
0-0.01 (Calm)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.12	100.00
0.01-0.1	0.33	0.34	0.34	0.68	0.90	1.18	0.86	0.87	0.81	1.01	1.27	1.02	0.94	0.58	0.27	0.36	11.78	99.88
0.1-0.2	0.17	0.20	0.40	0.89	2.65	2.92	1.37	0.51	0.28	0.42	1.19	3.12	2.89	0.97	0.31	0.35	18.64	88.09
0.2-0.3	0.01	0.05	0.11	0.70	4.12	3.85	0.45	0.01	-	-	0.11	3.28	4.88	0.84	0.28	0.05	18.77	69.45
0.3-0.4	-	-	0.02	0.33	5.00	3.69	0.05	-	-	-	-	1.45	6.54	0.98	0.20	-	18.27	50.69
0.4-0.5	-	-	-	0.15	4.40	3.53	0.02	-	-	-	-	0.31	6.54	0.90	-	-	15.85	32.42
0.5-0.6	-	-	-	0.05	2.29	3.00	-	-	-	-	-	0.10	4.04	0.62	-	-	10.11	16.57
0.6-0.7	-	-	-	-	1.03	1.47	-	-	-	-	-	-	1.69	0.24	-	-	4.43	6.46
0.7-0.8	-	-	-	-	0.33	0.56	-	-	-	-	-	-	0.56	0.27	-	-	1.72	2.03
0.8-0.9	-	-	-	-	0.05	0.15	-	-	-	-	-	-	0.07	0.05	-	-	0.31	0.32
0.9-1	-	-	-	-	-	-	-	-	-	-	-	-	0.01	-	-	-	0.01	0.01
>1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
subTot.	0.51	0.59	0.87	2.79	20.77	20.35	2.76	1.40	1.09	1.43	2.58	9.29	28.17	5.44	1.07	0.76		
Total **	0.52	0.60	0.88	2.80	20.77	20.35	2.77	1.41	1.10	1.44	2.59	9.30	28.18	5.45	1.08	0.77		
Cumul.	0.52	1.12	2.00	4.80	25.58	45.93	48.70	50.10	51.20	52.64	55.23	64.53	92.71	98.16	99.23	100.00		

\* denotes values less than 0.01%

- denotes no records in bin

\*\* includes the calm winds which are evenly distributed amongst the directional bins

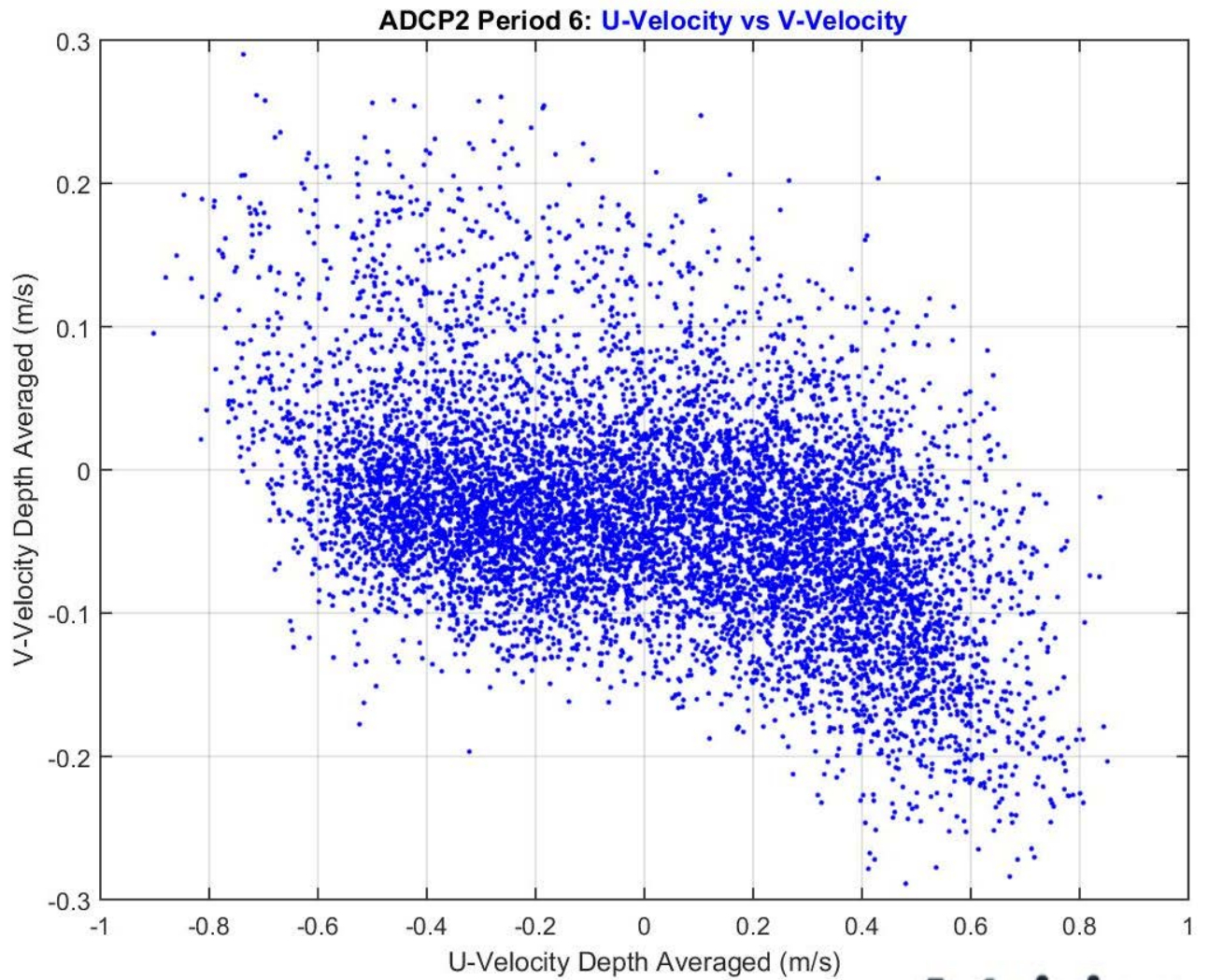
**Data Information:**

Project: 301001-02112  
 Location: ADCP2 Period6 [151° 39.185E , 23° 05.741S]  
 Data period: All data (29-Jan-2020 to 30-Apr-2020)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 8803  
 Missing data (%): 0.00  
 Calm (% < 0.01m/s): 0.12

**Key Data Statistics:**

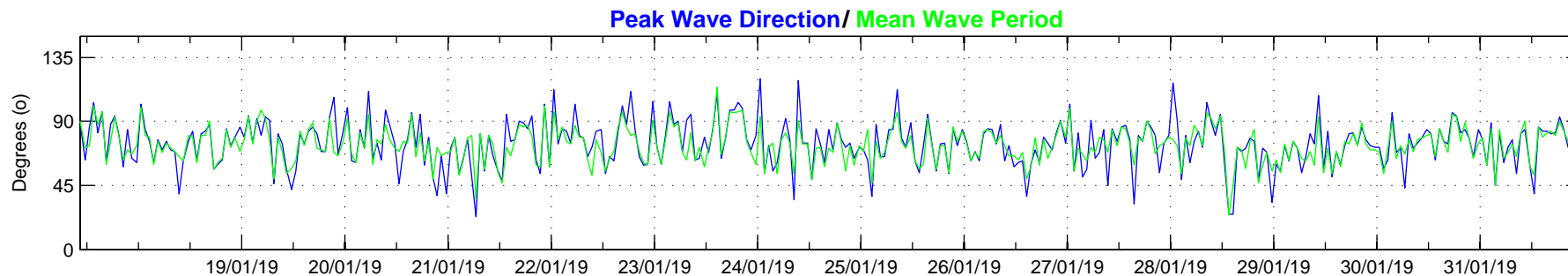
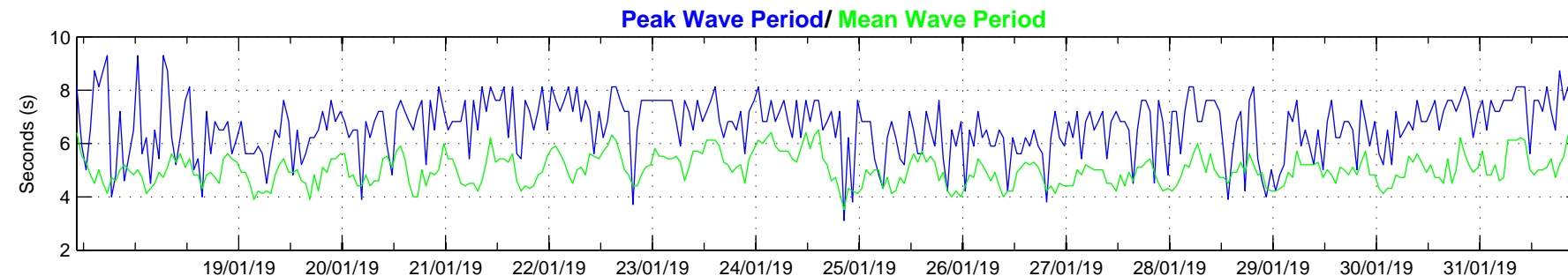
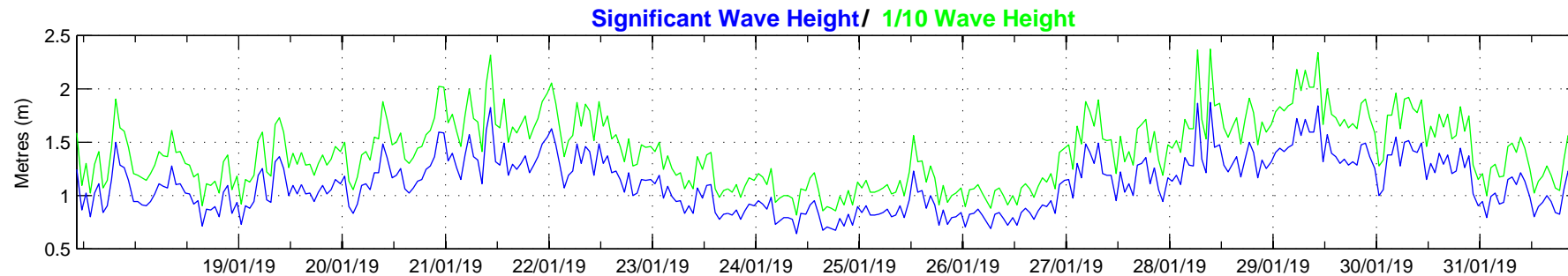
Max Curr Spd: 0.91 m/s  
 Mean Curr Spd: 0.32 m/s  
 StdDev. Curr Spd: 0.18 m/s







**Appendix F**  
**ADCP1 and ADCP3: Wave Time Series Plots**



**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP1 Period1 [151° 39.588E , 23° 06.017S]  
 Data period: January 2019 (17-Jan-2019 to 31-Jan-2019)  
 Data source: ADCP  
 Data summary: January 2019  
 Number of Records: 350  
 Missing data (%): 0.00

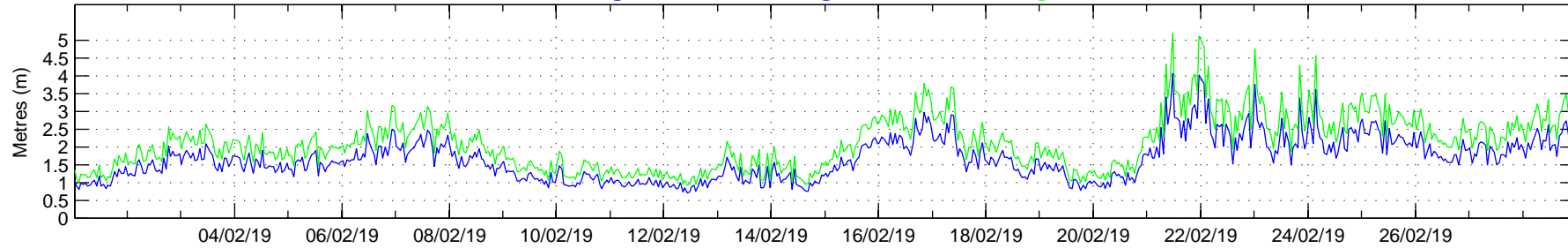
**Key Data Statistics:**

Max Hs: 1.87 m	Max Tp: 9.30 s
Mean Hs: 1.11 m	Mean Tp: 6.63 s
StdDev. Hs: 0.25 m	StdDev. Tp: 1.08 s

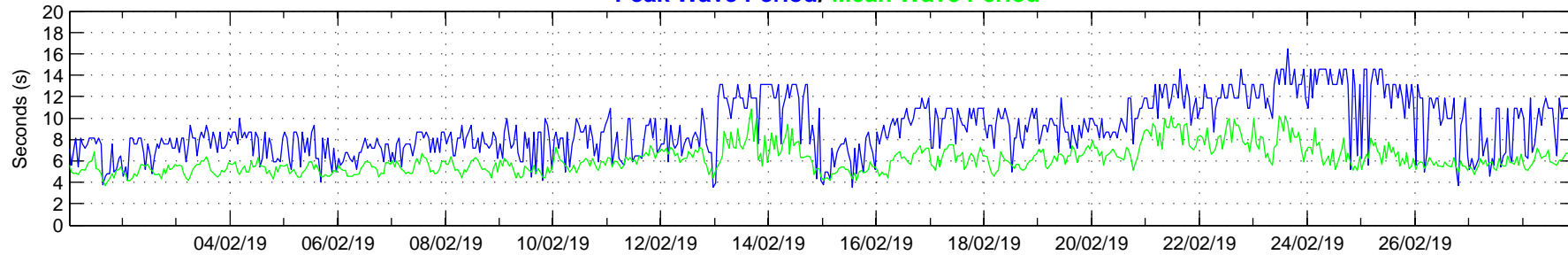
**Wave Summary January 2019**



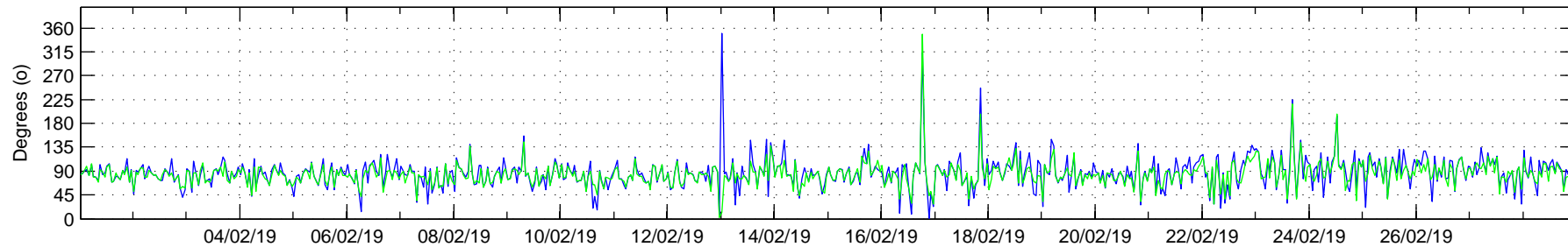
Significant Wave Height/ 1/10 Wave Height



Peak Wave Period/ Mean Wave Period



Peak Wave Direction/ Mean Wave Period



**Data Information:**

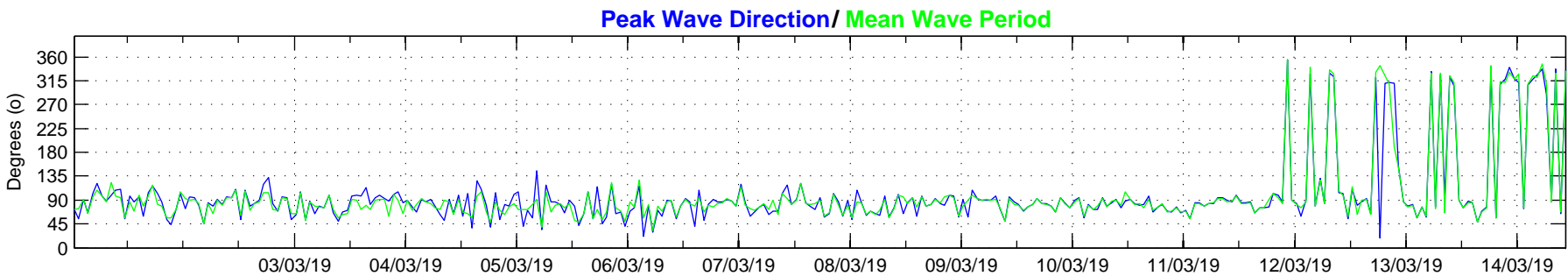
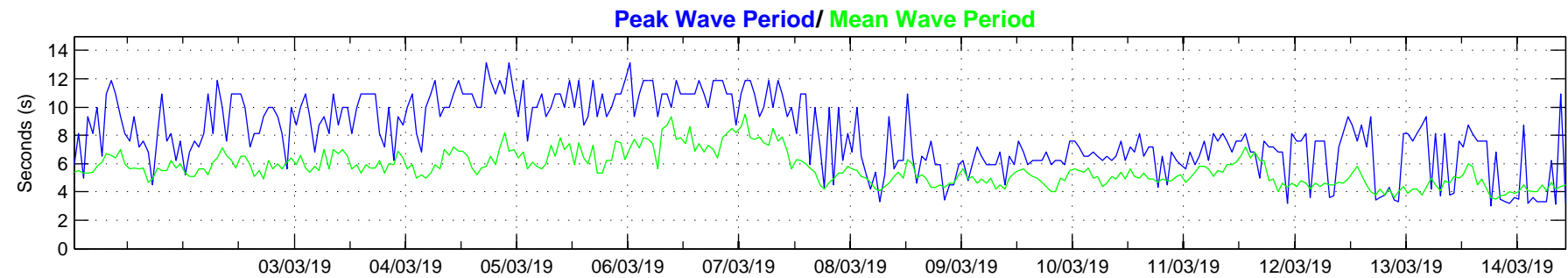
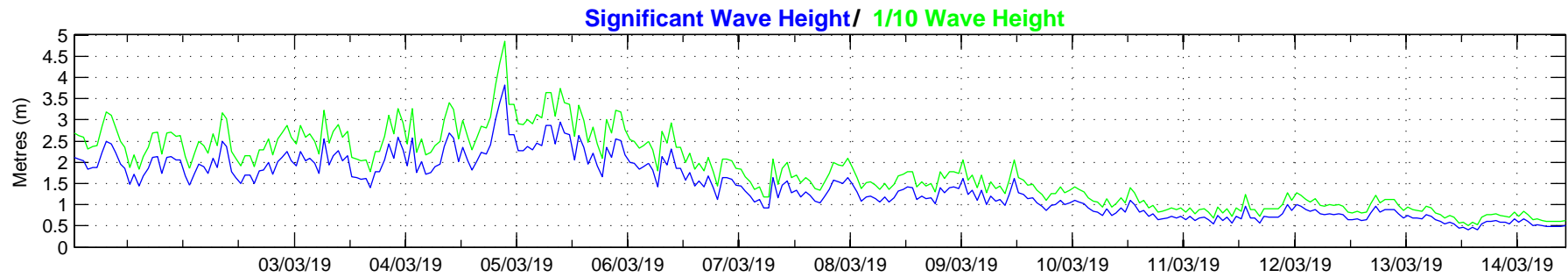
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP1 Period1 [151° 39.588E , 23° 06.017S]  
 Data period: February 2019 (01-Feb-2019 to 28-Feb-2019)  
 Data source: ADCP  
 Data summary: February 2019  
 Number of Records: 672  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 4.07 m	Max Tp: 16.50 s
Mean Hs: 1.67 m	Mean Tp: 9.09 s
StdDev. Hs: 0.58 m	StdDev. Tp: 2.58 s

**Wave Summary February 2019**





**Data Information:**

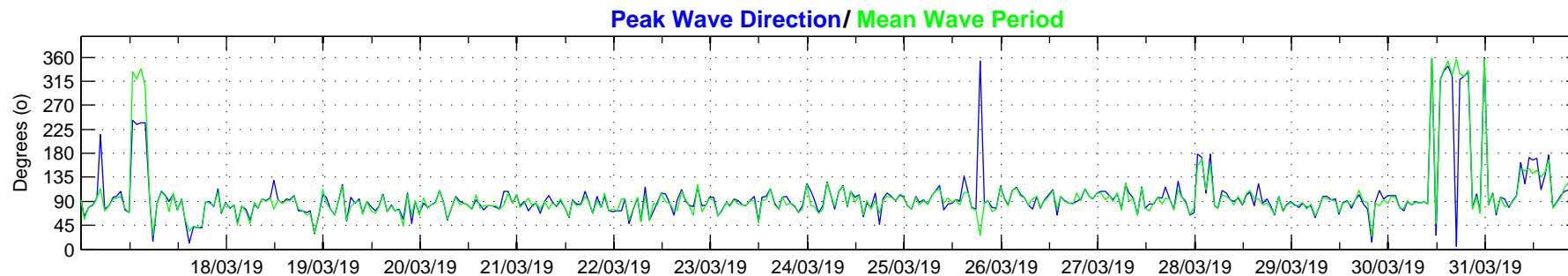
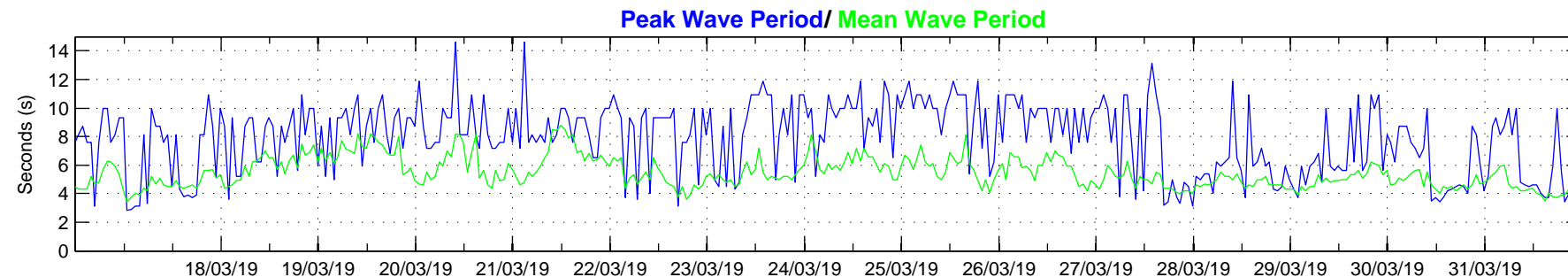
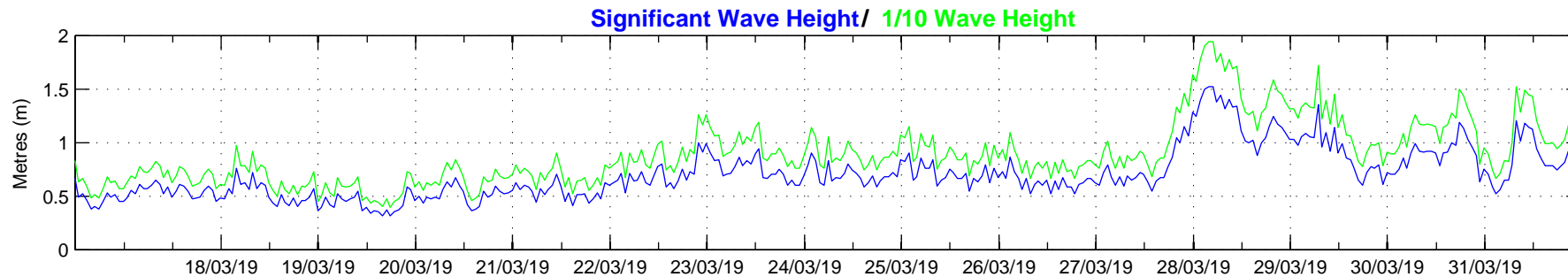
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP1 Period1 [151° 39.588E , 23° 06.017S]  
 Data period: March 2019 (01-Mar-2019 to 14-Mar-2019)  
 Data source: ADCP  
 Data summary: March 2019  
 Number of Records: 323  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 3.82 m	Max Tp: 13.10 s
Mean Hs: 1.42 m	Mean Tp: 8.05 s
StdDev. Hs: 0.66 m	StdDev. Tp: 2.47 s

**Wave Summary March 2019**





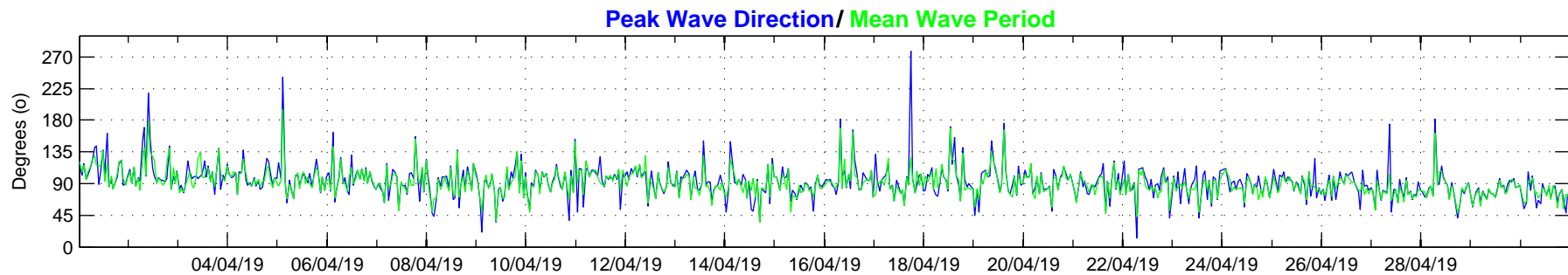
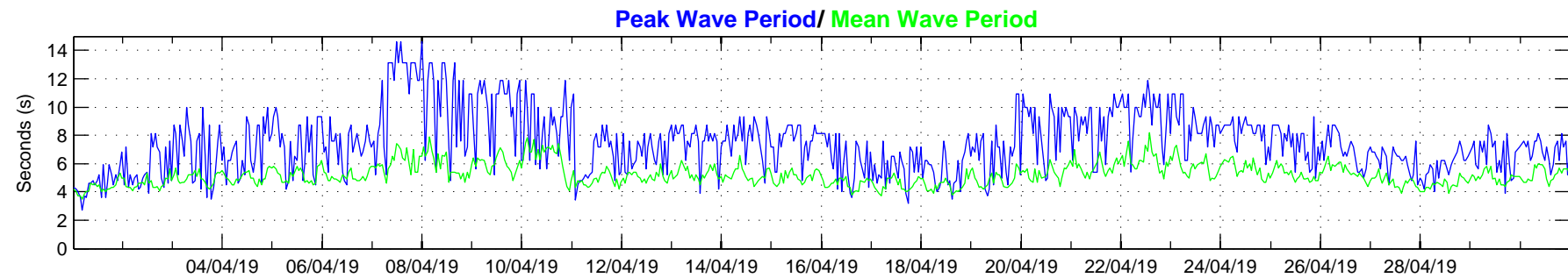
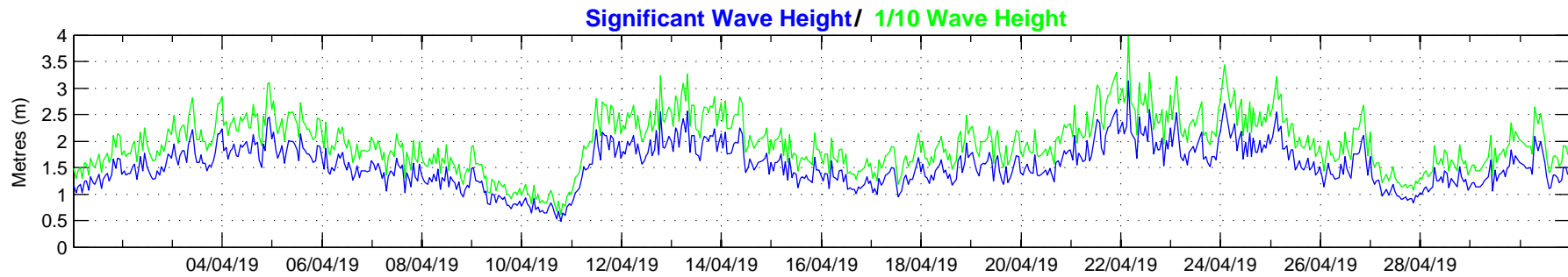
**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP1 Period2 [151° 39.597E , 23° 06.030S]  
 Data period: March 2019 (16-Mar-2019 to 31-Mar-2019)  
 Data source: ADCP  
 Data summary: March 2019  
 Number of Records: 373  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 1.52 m	Max Tp: 14.60 s
Mean Hs: 0.70 m	Mean Tp: 7.86 s
StdDev. Hs: 0.23 m	StdDev. Tp: 2.48 s

**Wave Summary March 2019**



**Data Information:**

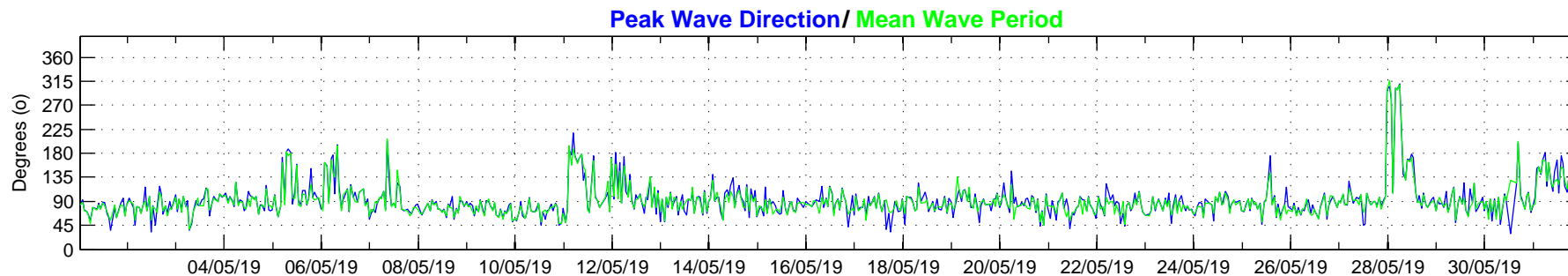
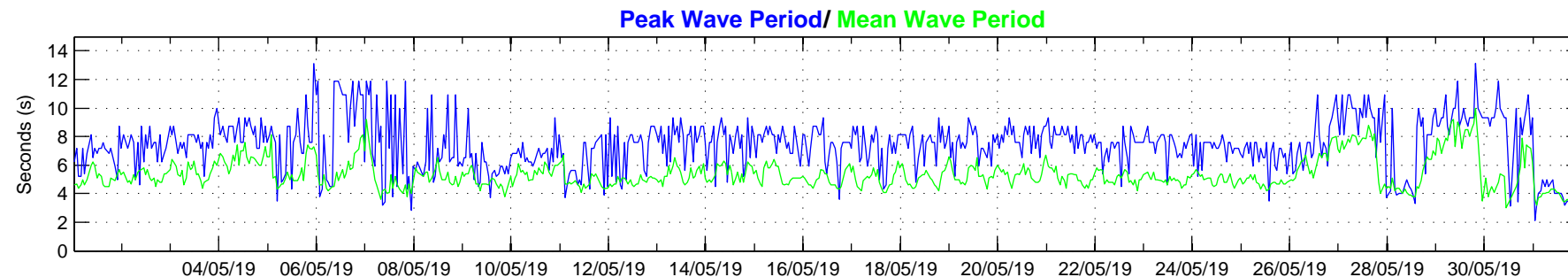
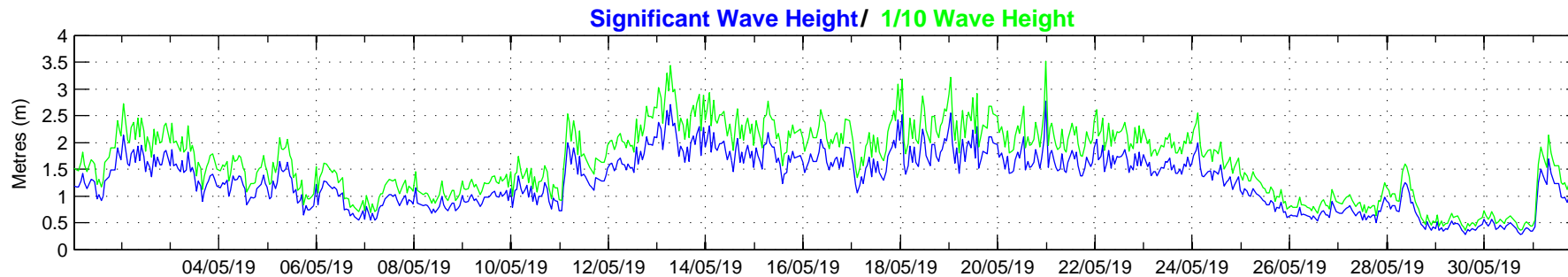
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP1 Period2 [151° 39.597E , 23° 06.030S]  
 Data period: April 2019 (01-Apr-2019 to 30-Apr-2019)  
 Data source: ADCP  
 Data summary: April 2019  
 Number of Records: 699  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 3.14 m	Max Tp: 14.60 s
Mean Hs: 1.54 m	Mean Tp: 7.43 s
StdDev. Hs: 0.40 m	StdDev. Tp: 2.19 s

**Wave Summary April 2019**





**Data Information:**

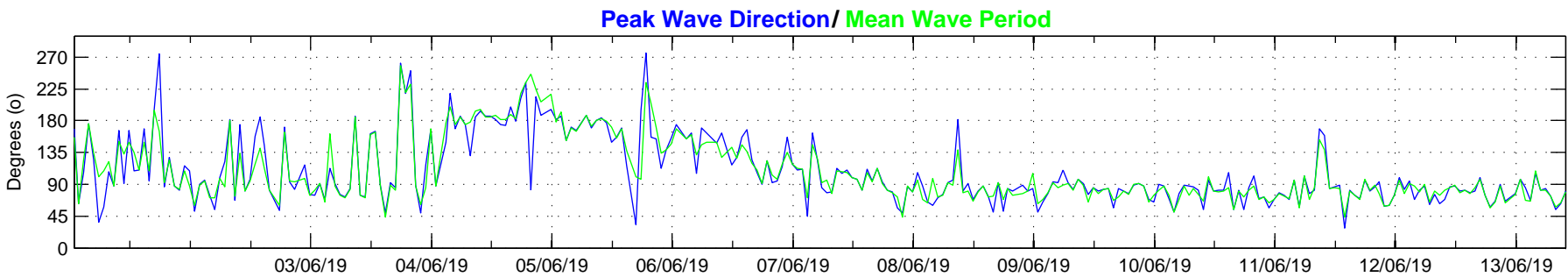
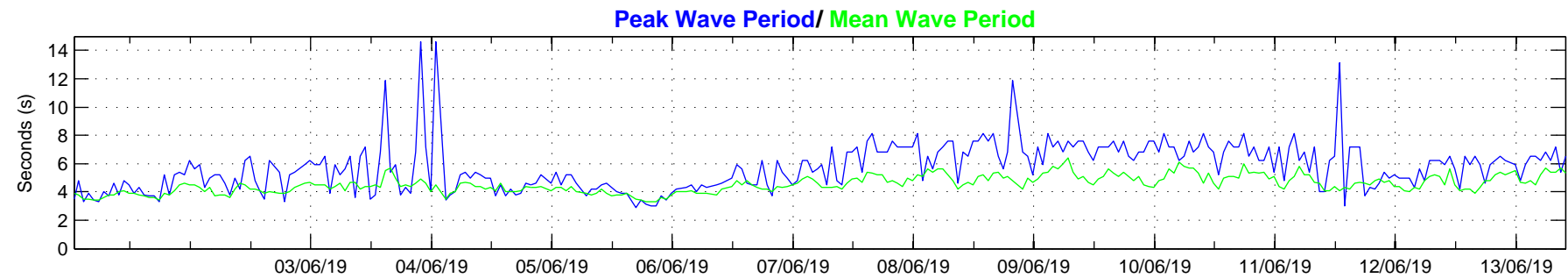
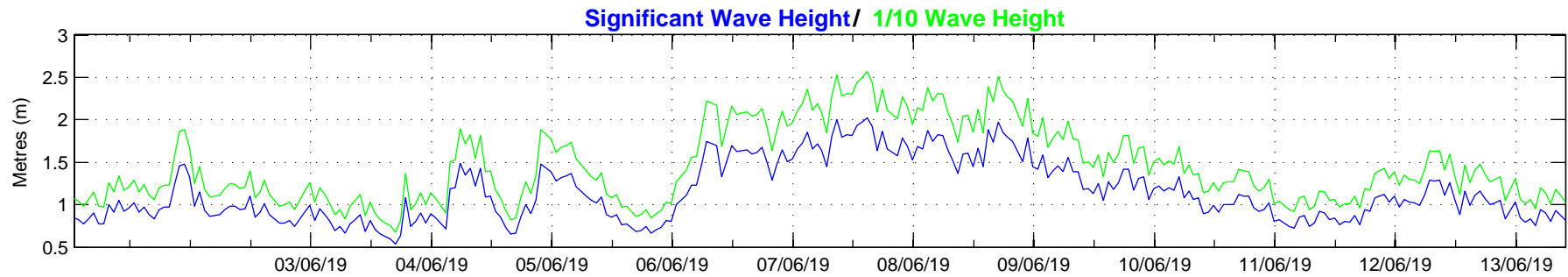
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP1 Period2 [151° 39.597E , 23° 06.030S]  
 Data period: May 2019 (01-May-2019 to 31-May-2019)  
 Data source: ADCP  
 Data summary: May 2019  
 Number of Records: 707  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 2.77 m	Max Tp: 13.10 s
Mean Hs: 1.30 m	Mean Tp: 7.40 s
StdDev. Hs: 0.51 m	StdDev. Tp: 1.80 s

**Wave Summary May 2019**





**Data Information:**

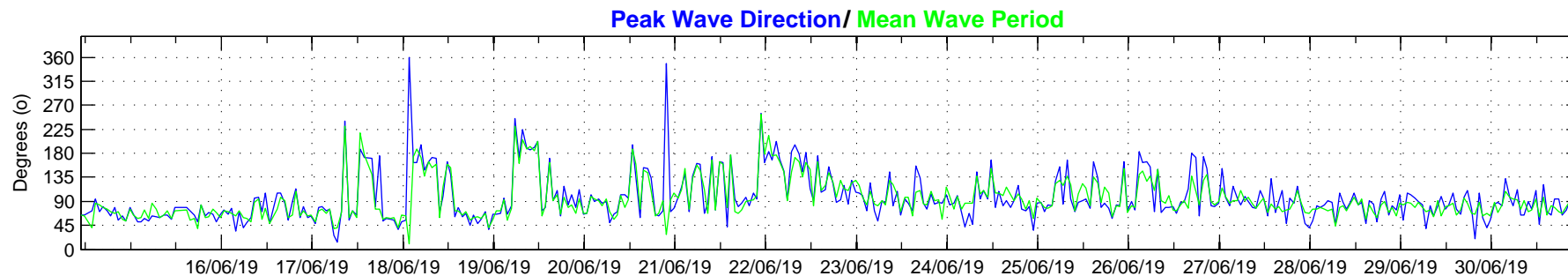
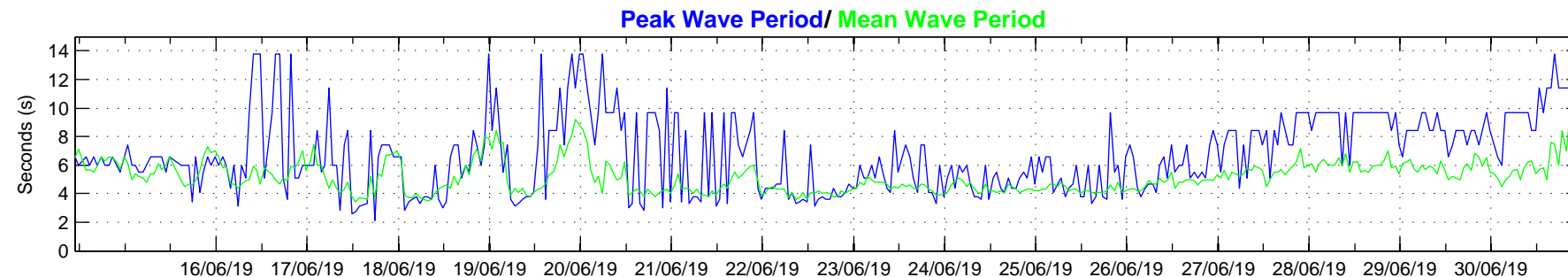
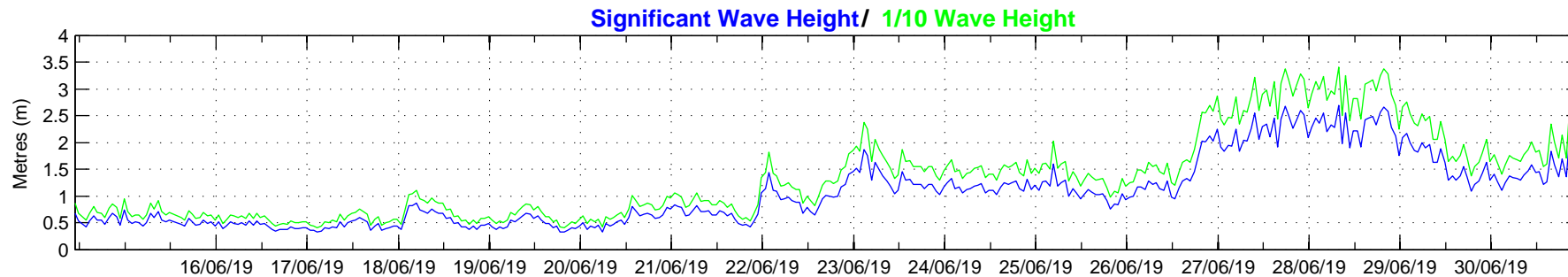
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP1 Period2 [151° 39.597E , 23° 06.030S]  
 Data period: June 2019 (01-Jun-2019 to 13-Jun-2019)  
 Data source: ADCP  
 Data summary: June 2019  
 Number of Records: 287  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 2.02 m	Max Tp: 14.60 s
Mean Hs: 1.15 m	Mean Tp: 5.73 s
StdDev. Hs: 0.35 m	StdDev. Tp: 1.69 s

**Wave Summary June 2019**





**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP1 Period3 [151° 39.602E , 23° 06.030S]  
 Data period: June 2019 (14-Jun-2019 to 30-Jun-2019)  
 Data source: ADCP  
 Data summary: June 2019  
 Number of Records: 393  
 Missing data (%): 0.00

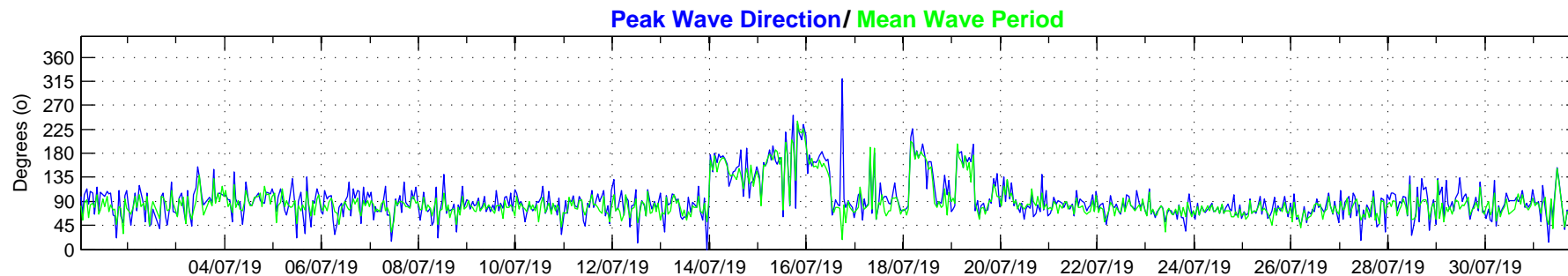
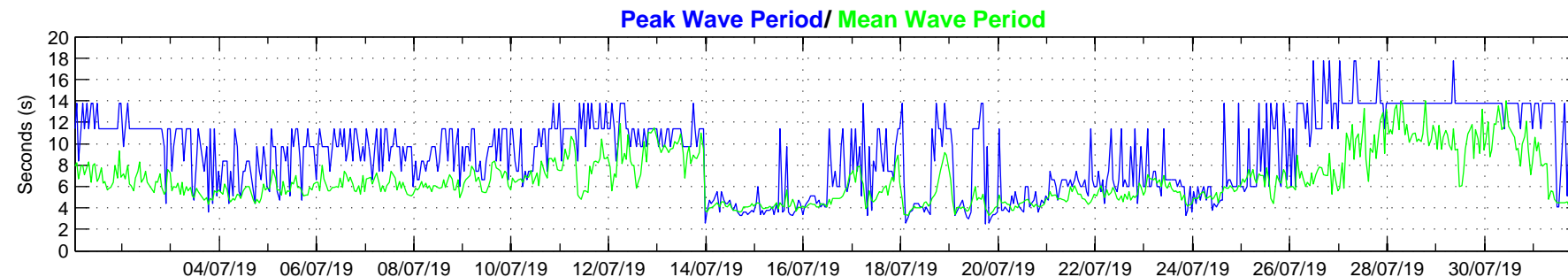
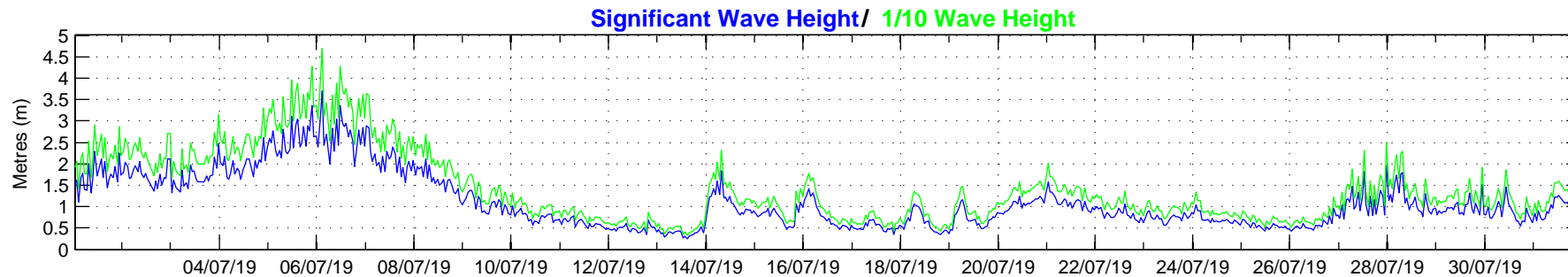
**Key Data Statistics:**

Max Hs: 2.69 m	Max Tp: 13.80 s
Mean Hs: 1.07 m	Mean Tp: 6.81 s
StdDev. Hs: 0.62 m	StdDev. Tp: 2.65 s

**Wave Summary June 2019**







**Data Information:**

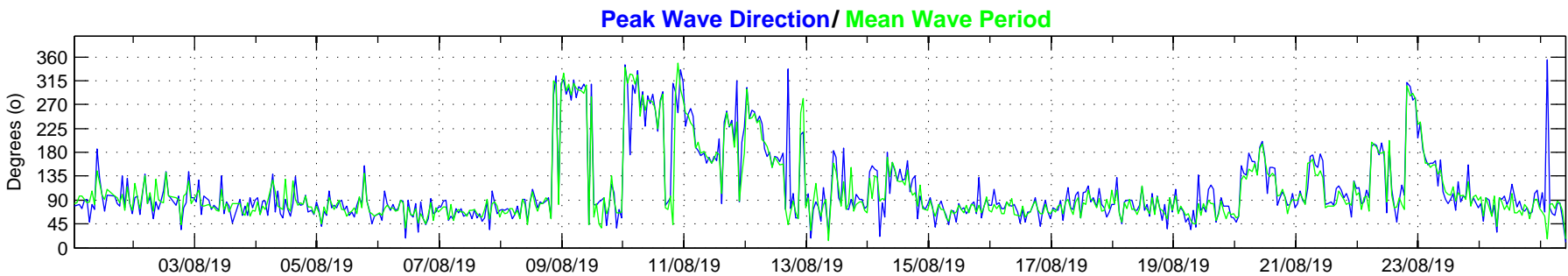
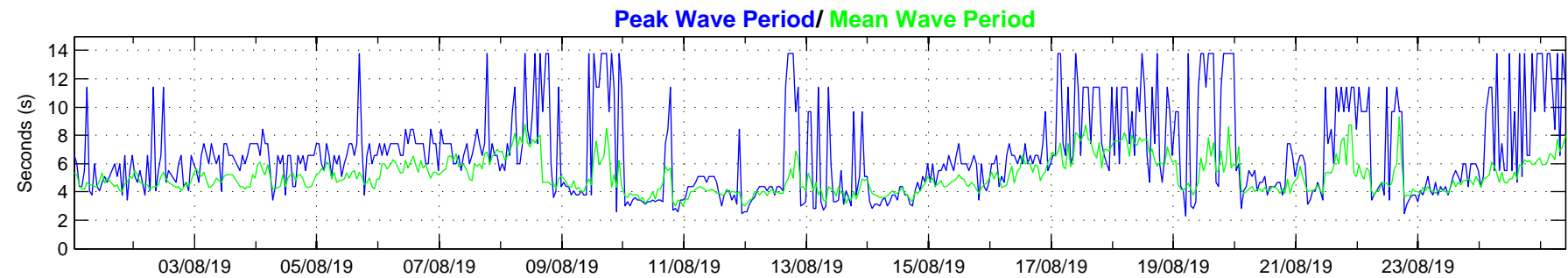
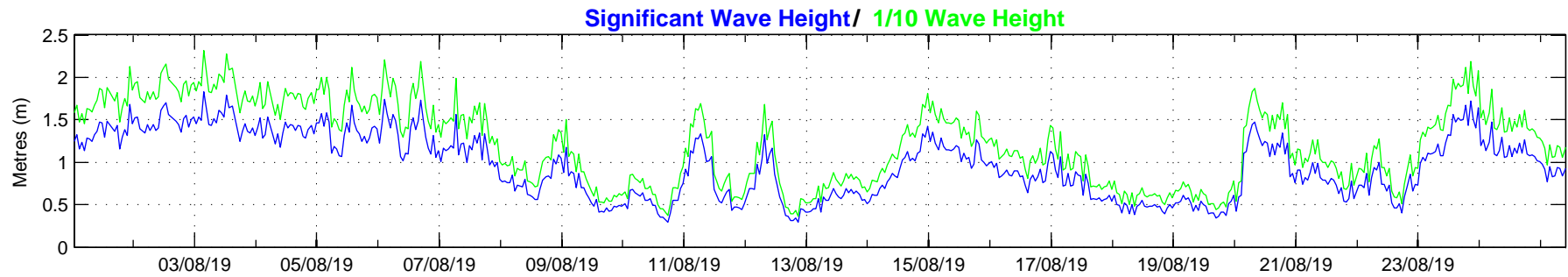
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP1 Period3 [151° 39.602E , 23° 06.030S]  
 Data period: July 2019 (01-Jul-2019 to 31-Jul-2019)  
 Data source: ADCP  
 Data summary: July 2019  
 Number of Records: 735  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 3.70 m	Max Tp: 17.70 s
Mean Hs: 1.11 m	Mean Tp: 9.14 s
StdDev. Hs: 0.63 m	StdDev. Tp: 3.58 s

**Wave Summary July 2019**





**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP1 Period3 [151° 39.602E , 23° 06.030S]  
 Data period: August 2019 (01-Aug-2019 to 25-Aug-2019)  
 Data source: ADCP  
 Data summary: August 2019  
 Number of Records: 577  
 Missing data (%): 0.00

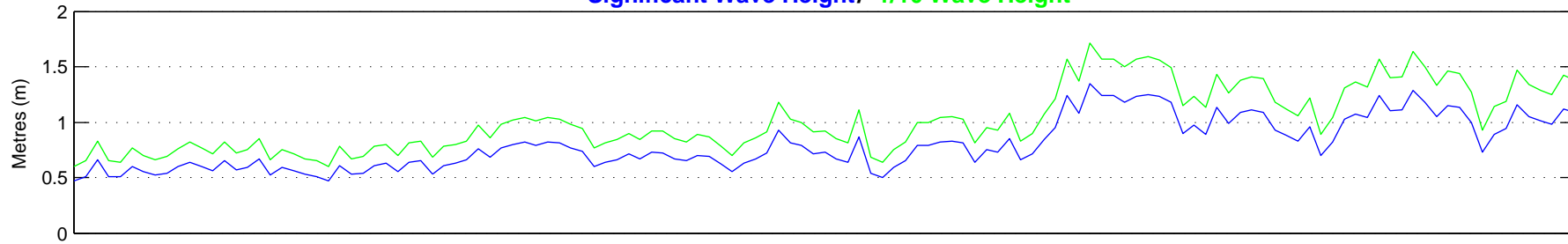
**Key Data Statistics:**

Max Hs: 1.83 m	Max Tp: 13.80 s
Mean Hs: 0.95 m	Mean Tp: 6.70 s
StdDev. Hs: 0.37 m	StdDev. Tp: 3.09 s

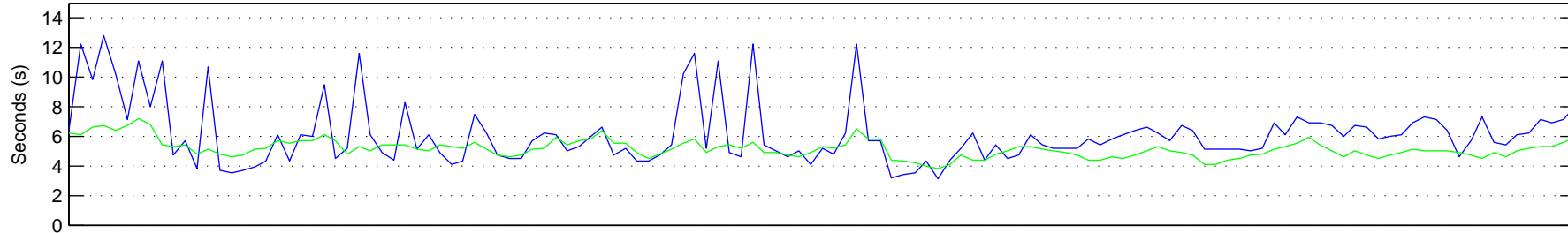
**Wave Summary August 2019**



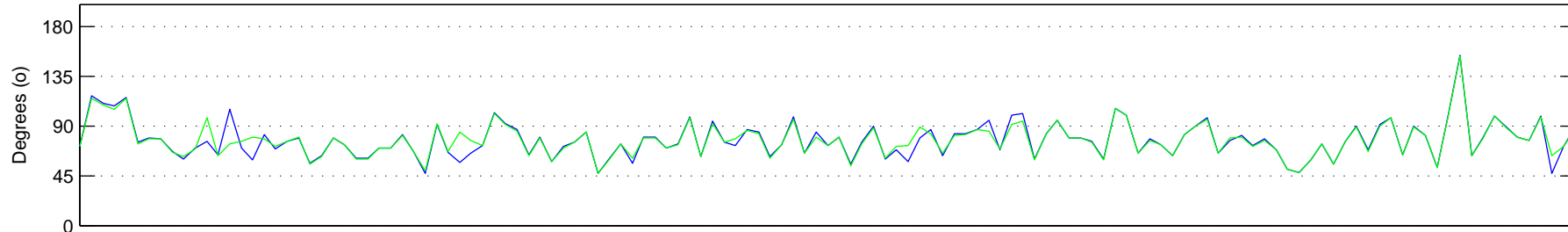
Significant Wave Height/ 1/10 Wave Height



Peak Wave Period/ Mean Wave Period



Peak Wave Direction/ Mean Wave Period



**Data Information:**

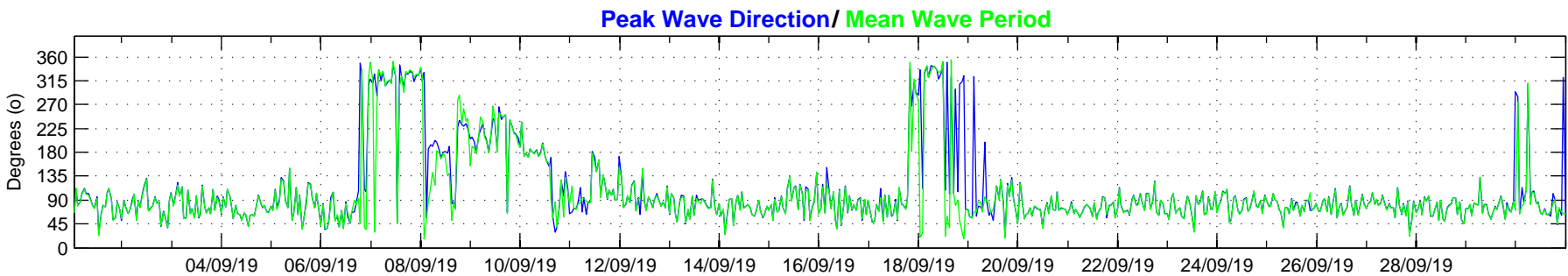
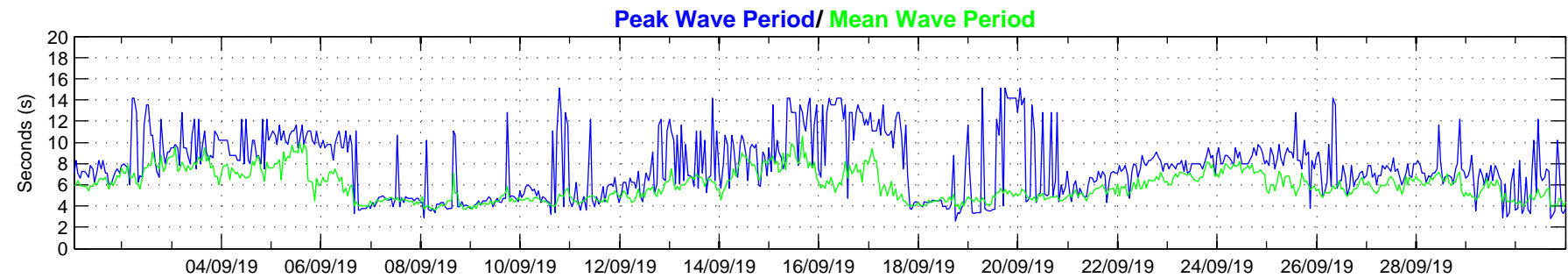
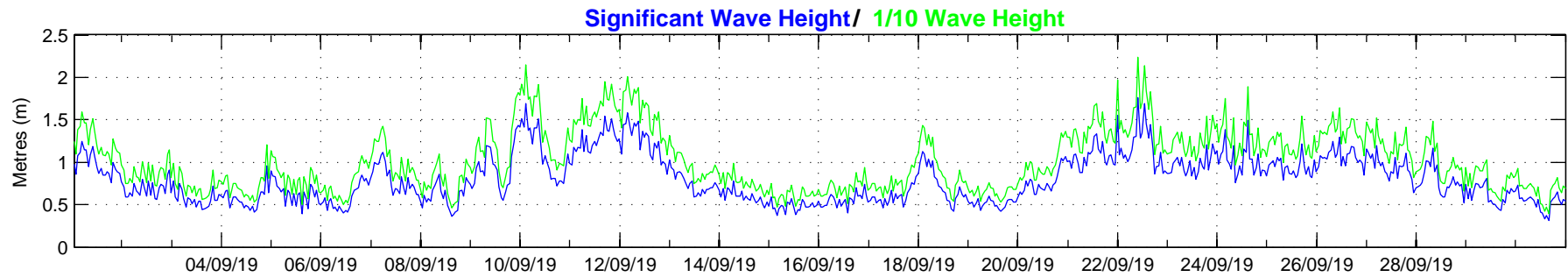
Project: 301001-02112 Douglas Shoal Remediation Project  
Location: ADCP3 Period4 [151° 37.728E , 23° 05.407S]  
Data period: August 2019 (26-Aug-2019 to 31-Aug-2019)  
Data source: ADCP  
Data summary: August 2019  
Number of Records: 131  
Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 1.35 m	Max Tp: 12.80 s
Mean Hs: 0.80 m	Mean Tp: 6.12 s
StdDev. Hs: 0.23 m	StdDev. Tp: 2.06 s

Wave Summary August 2019





**Data Information:**

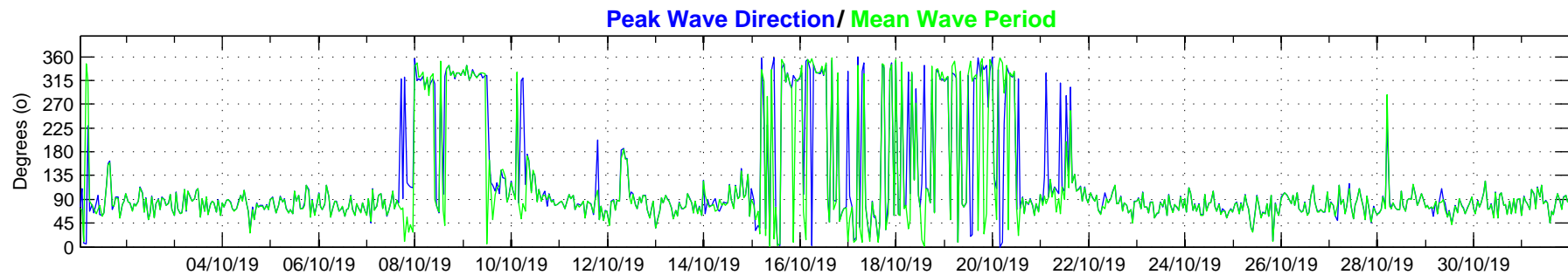
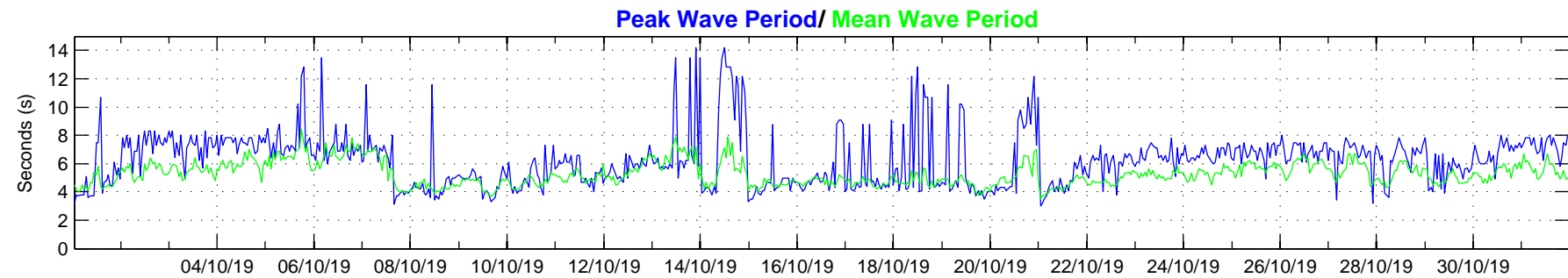
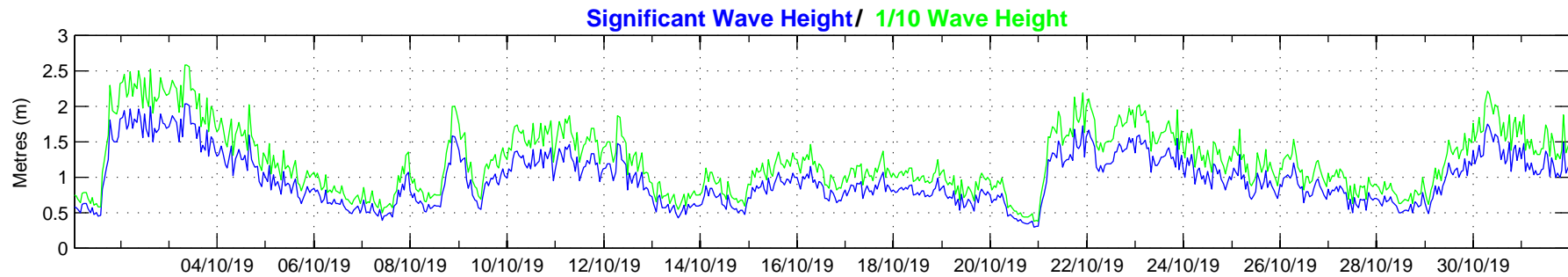
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP3 Period4 [151° 37.728E , 23° 05.407S]  
 Data period: September 2019 (01-Sep-2019 to 30-Sep-2019)  
 Data source: ADCP  
 Data summary: September 2019  
 Number of Records: 720  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 1.76 m      Max Tp: 15.10 s  
 Mean Hs: 0.80 m      Mean Tp: 7.73 s  
 StdDev. Hs: 0.28 m      StdDev. Tp: 2.92 s

**Wave Summary September 2019**





**Data Information:**

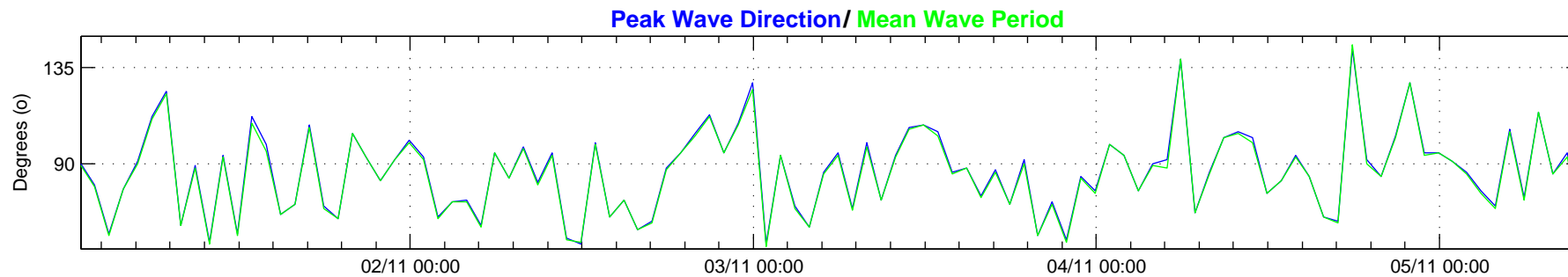
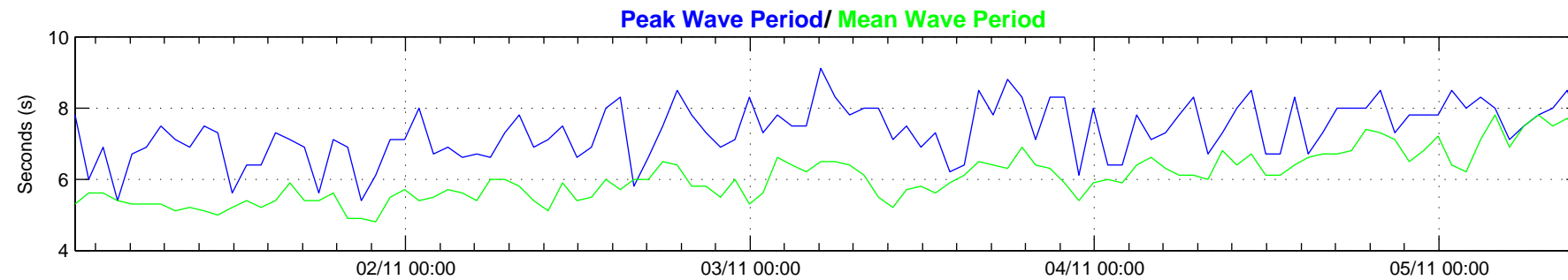
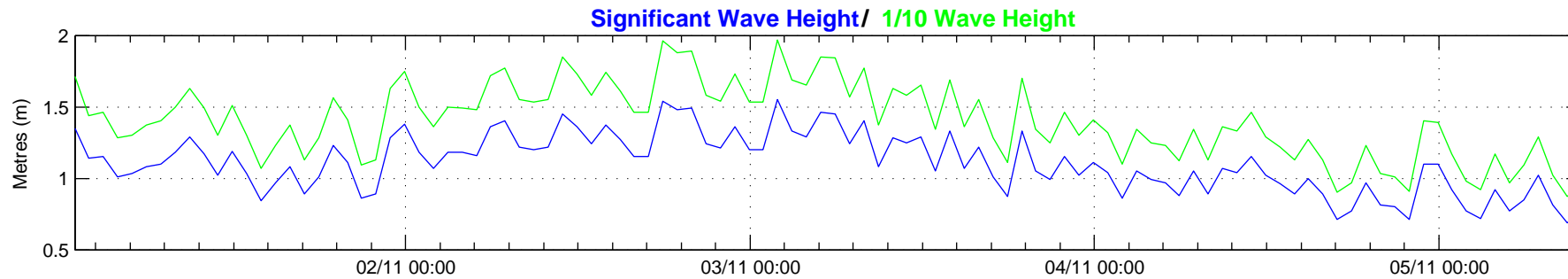
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP3 Period4 [151° 37.728E , 23° 05.407S]  
 Data period: October 2019 (01-Oct-2019 to 31-Oct-2019)  
 Data source: ADCP  
 Data summary: October 2019  
 Number of Records: 744  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 2.03 m	Max Tp: 14.20 s
Mean Hs: 0.98 m	Mean Tp: 6.26 s
StdDev. Hs: 0.36 m	StdDev. Tp: 1.93 s

Wave Summary October 2019





**Data Information:**

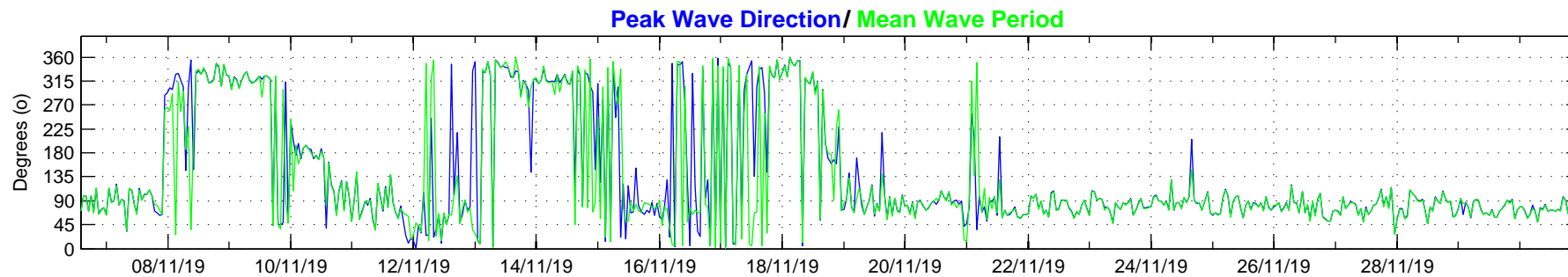
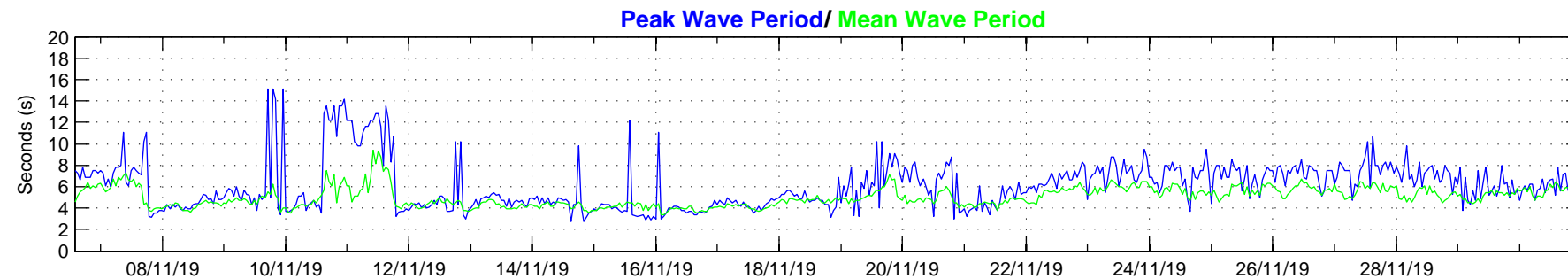
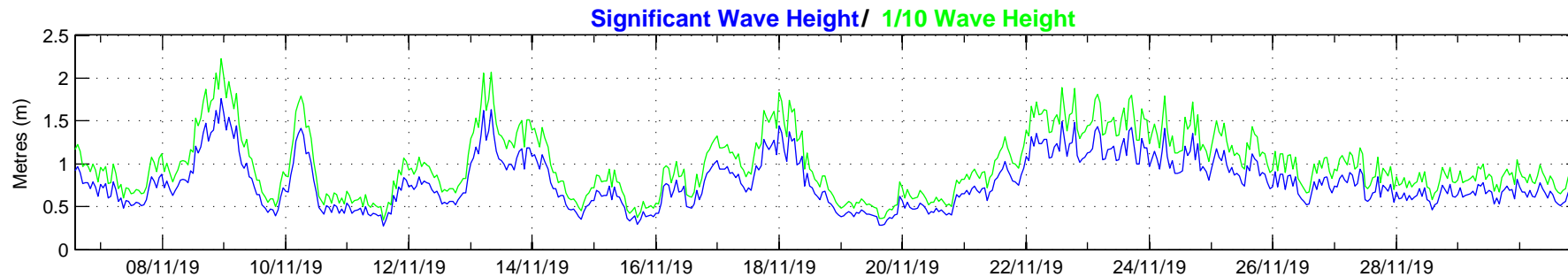
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP3 Period4 [151° 37.728E , 23° 05.407S]  
 Data period: November 2019 (01-Nov-2019 to 05-Nov-2019)  
 Data source: ADCP  
 Data summary: November 2019  
 Number of Records: 106  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 1.55 m	Max Tp: 9.10 s
Mean Hs: 1.10 m	Mean Tp: 7.34 s
StdDev. Hs: 0.20 m	StdDev. Tp: 0.78 s

Wave Summary November 2019





**Data Information:**

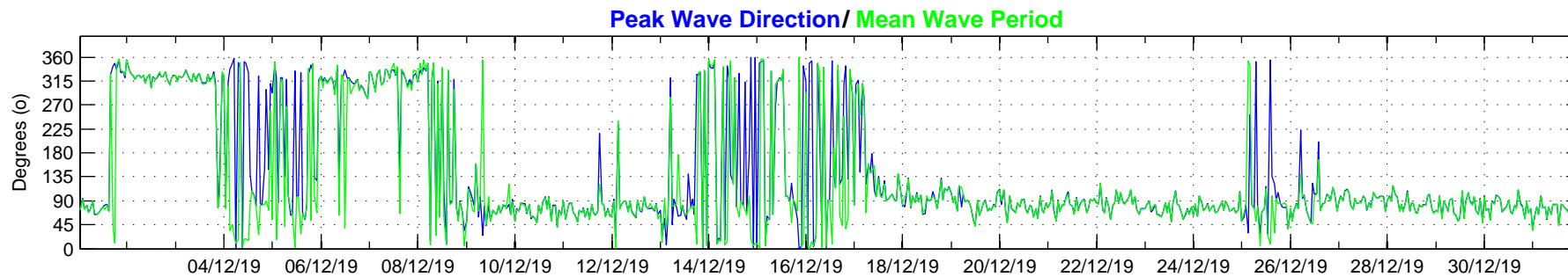
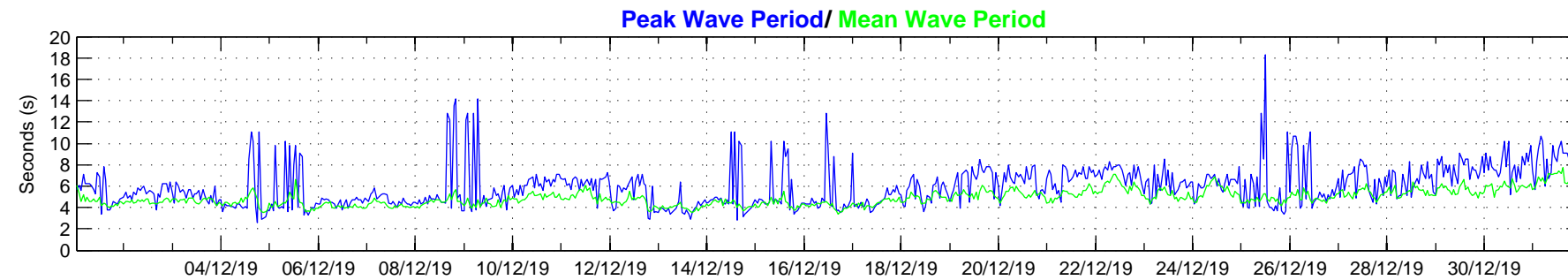
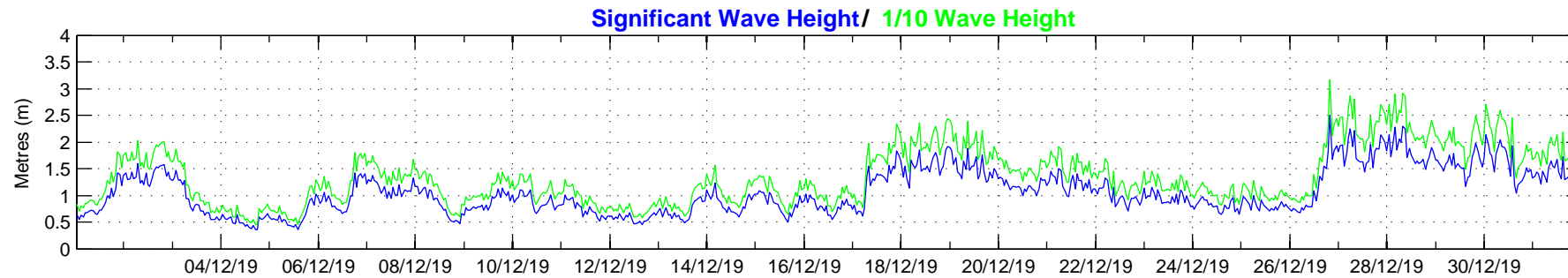
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP3 Period5 [151° 37.744E , 23° 05.410S]  
 Data period: November 2019 (06-Nov-2019 to 30-Nov-2019)  
 Data source: ADCP  
 Data summary: November 2019  
 Number of Records: 587  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 1.76 m	Max Tp: 15.10 s
Mean Hs: 0.78 m	Mean Tp: 6.11 s
StdDev. Hs: 0.29 m	StdDev. Tp: 2.26 s

Wave Summary November 2019





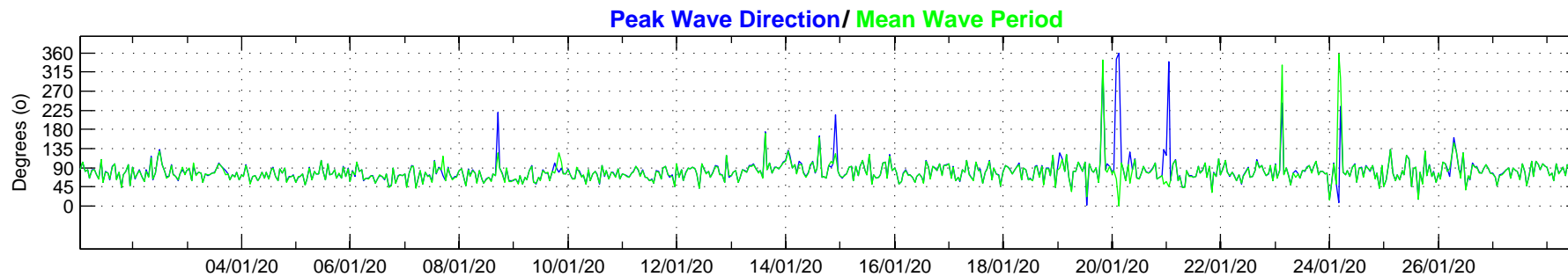
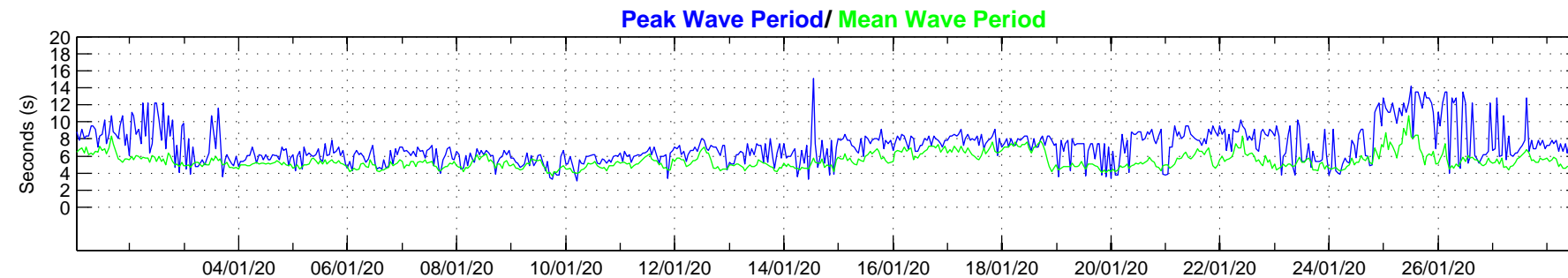
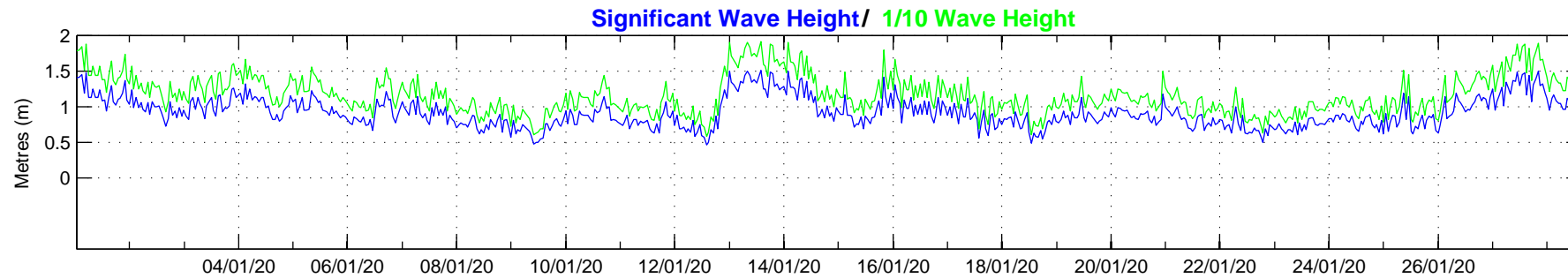
**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP3 Period5 [151° 37.744E , 23° 05.410S]  
 Data period: December 2019 (01-Dec-2019 to 31-Dec-2019)  
 Data source: ADCP  
 Data summary: December 2019  
 Number of Records: 744  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 2.50 m	Max Tp: 18.30 s
Mean Hs: 1.07 m	Mean Tp: 5.97 s
StdDev. Hs: 0.41 m	StdDev. Tp: 1.94 s

Wave Summary December 2019



**Data Information:**

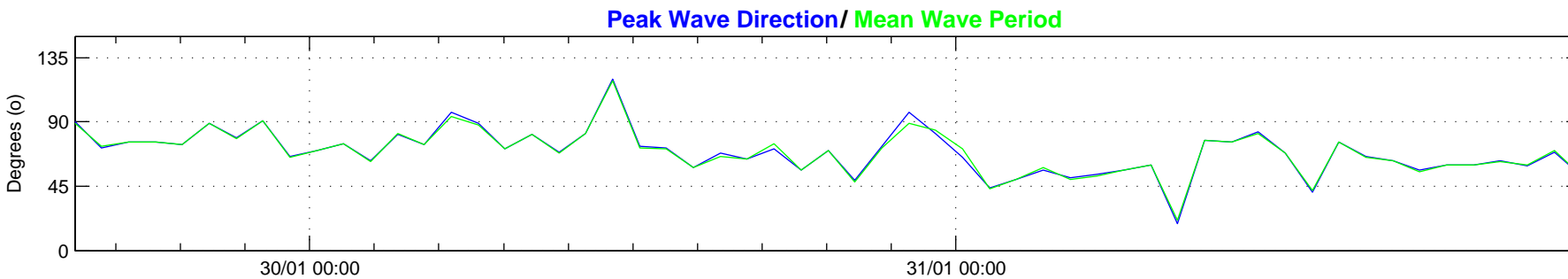
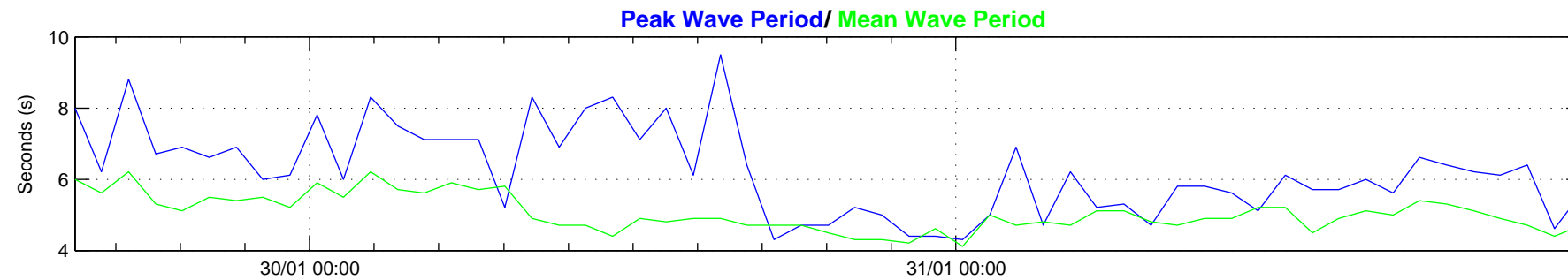
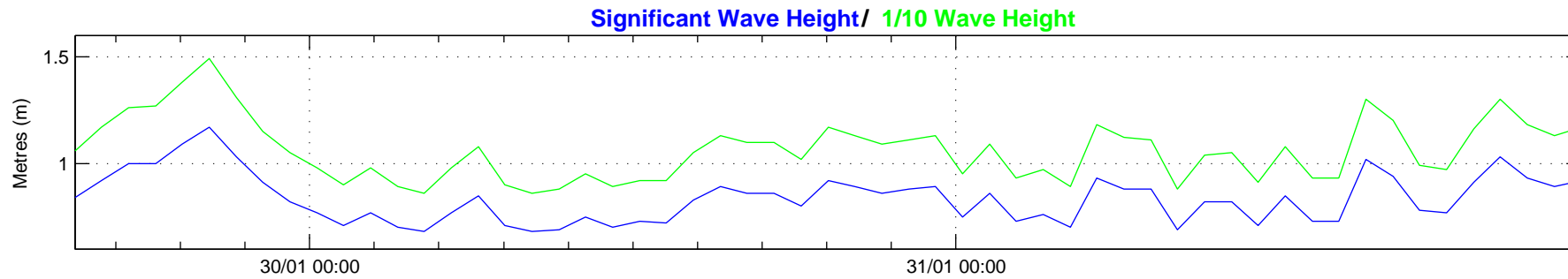
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP3 Period5 [151° 37.744E , 23° 05.410S]  
 Data period: January 2020 (01-Jan-2020 to 28-Jan-2020)  
 Data source: ADCP  
 Data summary: January 2020  
 Number of Records: 663  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 1.51 m	Max Tp: 15.10 s
Mean Hs: 0.91 m	Mean Tp: 7.14 s
StdDev. Hs: 0.22 m	StdDev. Tp: 2.04 s

**Wave Summary January 2020**





**Data Information:**

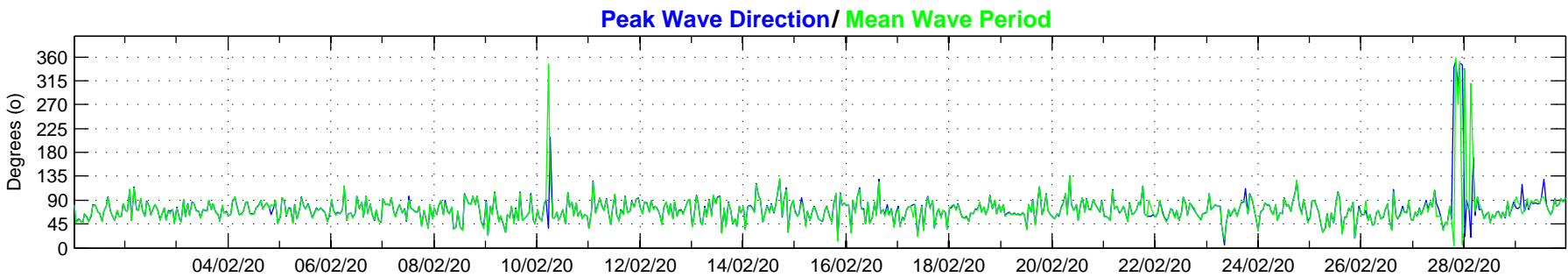
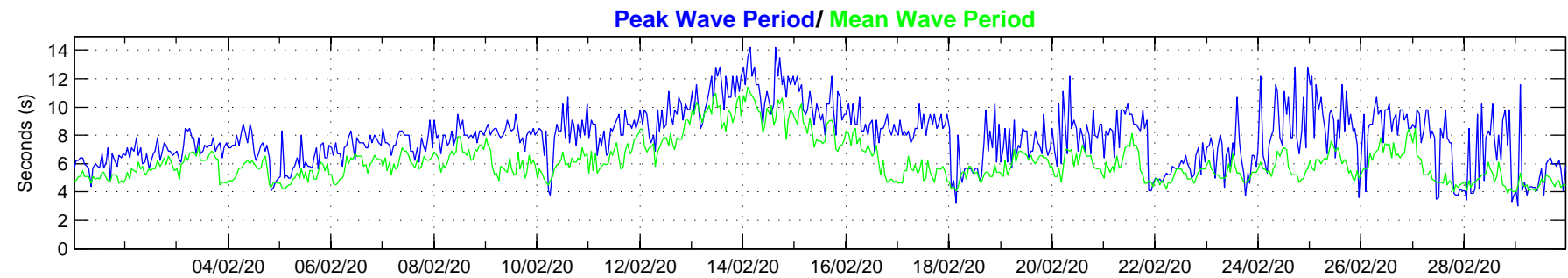
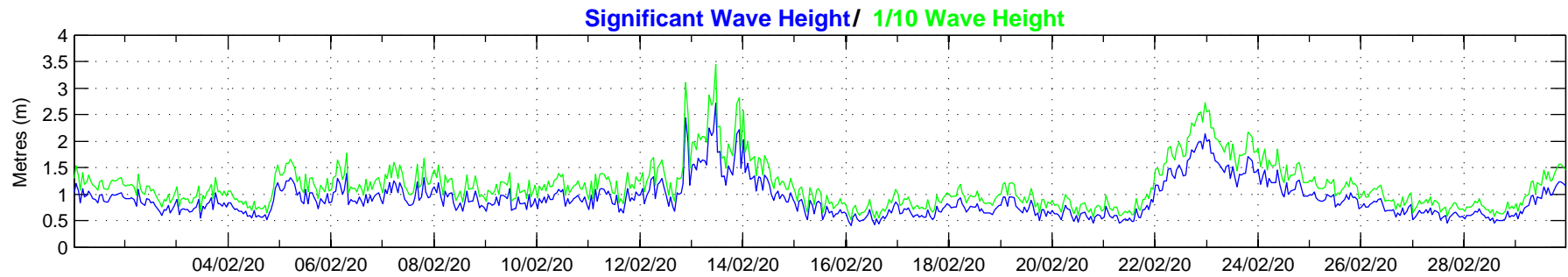
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP3 Period6 [151° 37.766E , 23° 05.414S]  
 Data period: January 2020 (29-Jan-2020 to 31-Jan-2020)  
 Data source: ADCP  
 Data summary: January 2020  
 Number of Records: 57  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 1.17 m	Max Tp: 9.50 s
Mean Hs: 0.84 m	Mean Tp: 6.23 s
StdDev. Hs: 0.11 m	StdDev. Tp: 1.24 s

**Wave Summary January 2020**





**Data Information:**

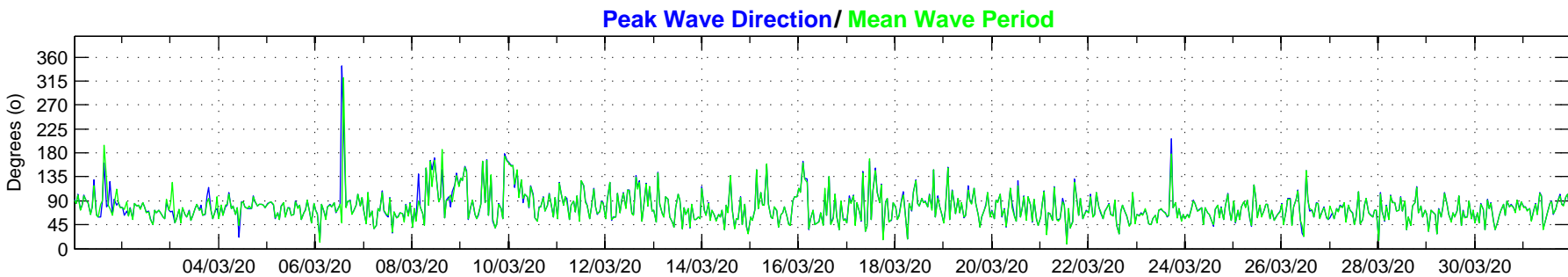
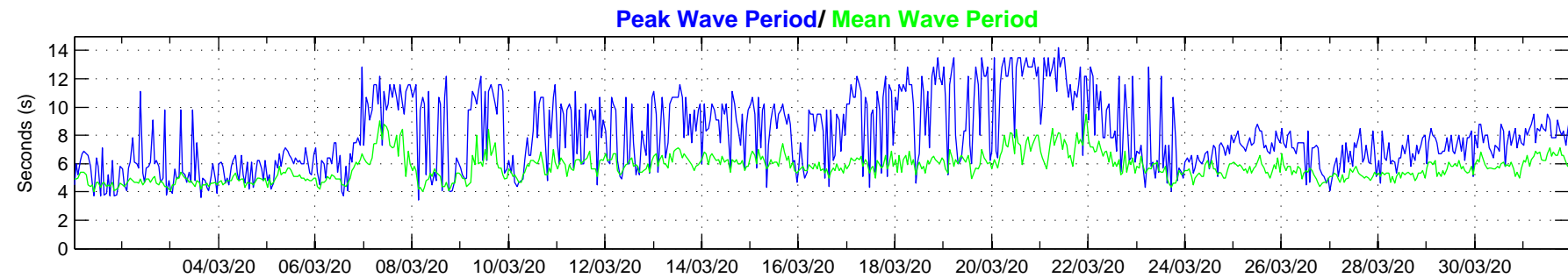
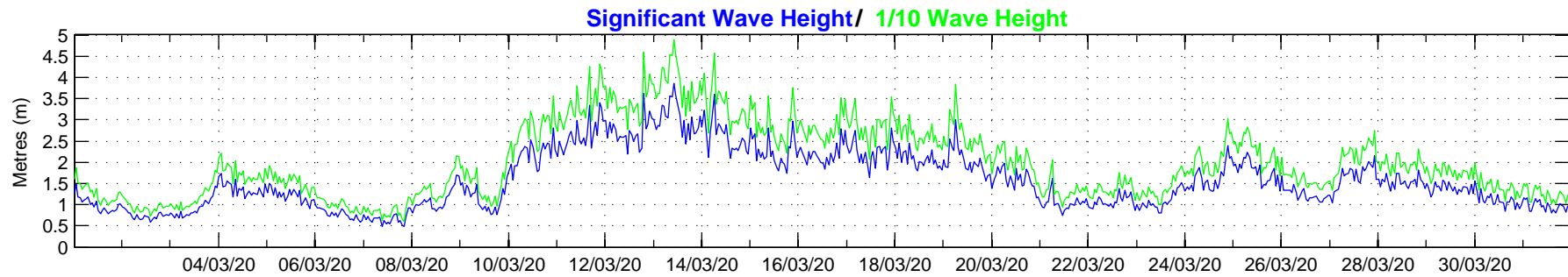
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP3 Period6 [151° 37.766E , 23° 05.414S]  
 Data period: February 2020 (01-Feb-2020 to 29-Feb-2020)  
 Data source: ADCP  
 Data summary: February 2020  
 Number of Records: 696  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 2.72 m	Max Tp: 14.20 s
Mean Hs: 0.91 m	Mean Tp: 7.88 s
StdDev. Hs: 0.33 m	StdDev. Tp: 1.99 s

**Wave Summary February 2020**





**Data Information:**

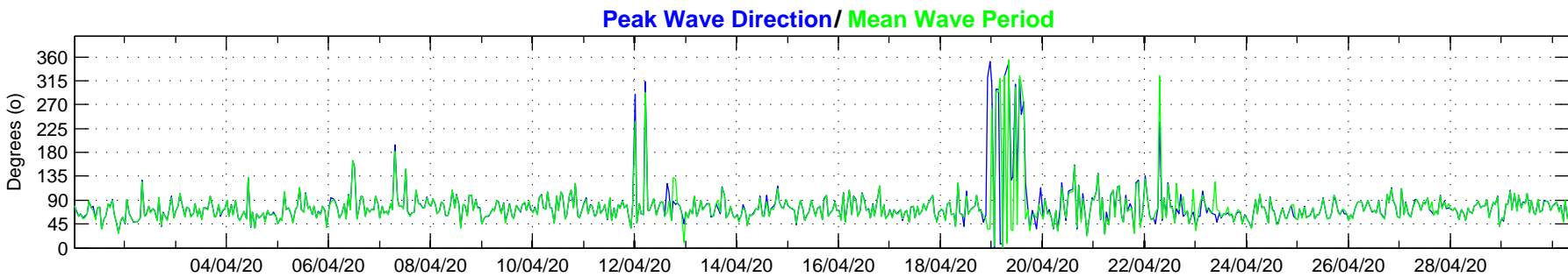
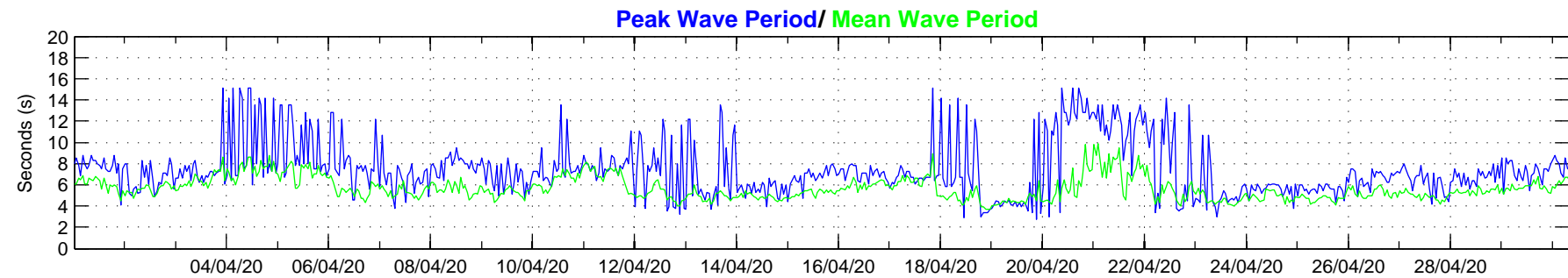
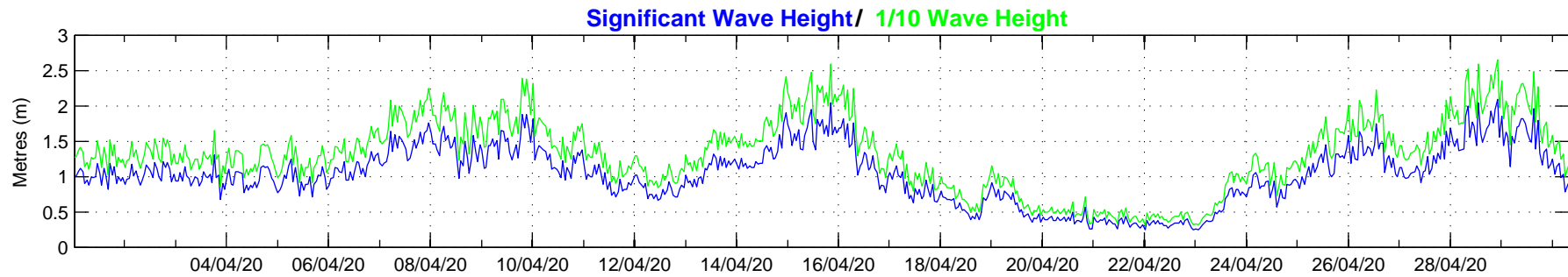
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP3 Period6 [151° 37.766E , 23° 05.414S]  
 Data period: March 2020 (01-Mar-2020 to 31-Mar-2020)  
 Data source: ADCP  
 Data summary: March 2020  
 Number of Records: 744  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 3.86 m      Max Tp: 14.20 s  
 Mean Hs: 1.58 m      Mean Tp: 7.94 s  
 StdDev. Hs: 0.68 m      StdDev. Tp: 2.50 s

**Wave Summary March 2020**





**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP3 Period6 [151° 37.766E , 23° 05.414S]  
 Data period: April 2020 (01-Apr-2020 to 30-Apr-2020)  
 Data source: ADCP  
 Data summary: April 2020  
 Number of Records: 705  
 Missing data (%): 0.00


**Key Data Statistics:**

Max Hs: 2.09 m      Max Tp: 15.10 s  
 Mean Hs: 1.03 m      Mean Tp: 7.42 s  
 StdDev. Hs: 0.40 m      StdDev. Tp: 2.56 s

**Wave Summary April 2020**

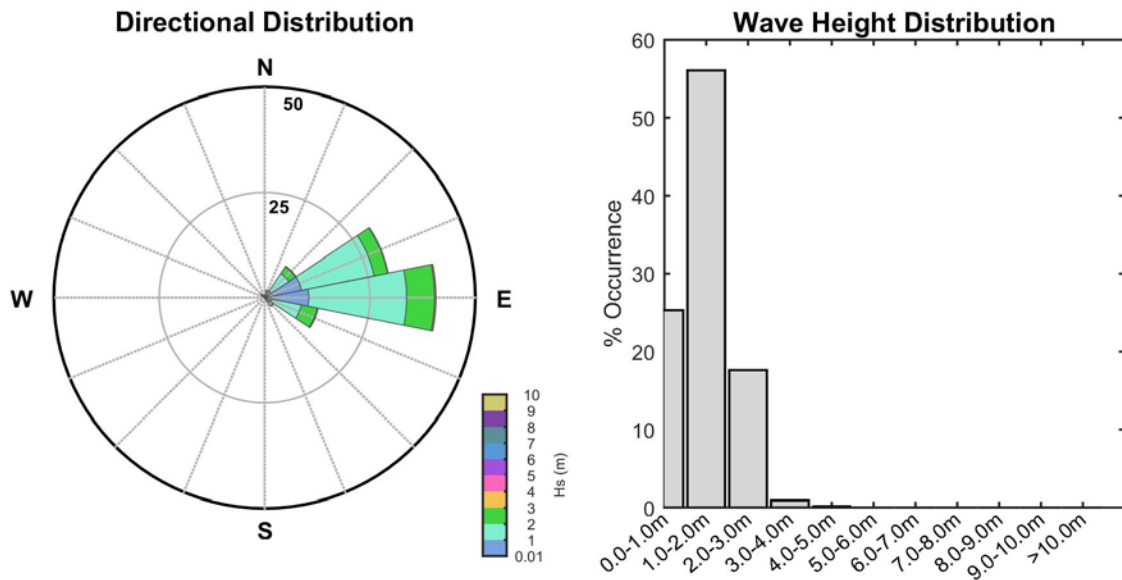






**Appendix G**  
**ADCP1 and ADCP3: Wave Rose, Histogram**  
**and Joint Frequency Table Plots**

## Wave Height for ADCP1 Location: Period 1



**JFT (%) of Hs against Direction for the period 17-Jan-2019 to 14-Mar-2019**

N=1345	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
<b>0-1</b>	-	0.22	1.86	8.92	10.48	1.71	0.07	0.22	-	-	-	-	-	0.07	1.12	0.59	25.28	100.00
<b>1-2</b>	0.30	1.19	5.06	17.55	23.20	7.14	1.19	0.22	-	0.07	0.07	0.07	-	-	-	-	56.06	74.72
<b>2-3</b>	0.15	0.52	1.93	3.27	6.62	3.87	1.19	-	-	-	-	-	-	-	0.07	-	17.62	18.66
<b>3-4</b>	-	-	0.15	0.15	0.30	0.15	0.07	0.07	-	-	-	-	-	-	-	-	0.89	1.04
<b>4-5</b>	-	-	-	-	0.07	0.07	-	-	-	-	-	-	-	-	-	-	0.15	0.15
<b>5-6</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>6-7</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>7-8</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>8-9</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>9-10</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>&gt;10</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	0.45	1.93	9.00	29.89	40.67	12.94	2.53	0.52	-	0.07	0.07	0.07	-	0.07	1.19	0.59		
<b>Cumul.</b>	0.45	2.38	11.38	41.26	81.93	94.87	97.40	97.92	97.92	97.99	98.07	98.14	98.14	98.22	99.41	100.00		

\* denotes values less than 0.01% - denotes no records in bin

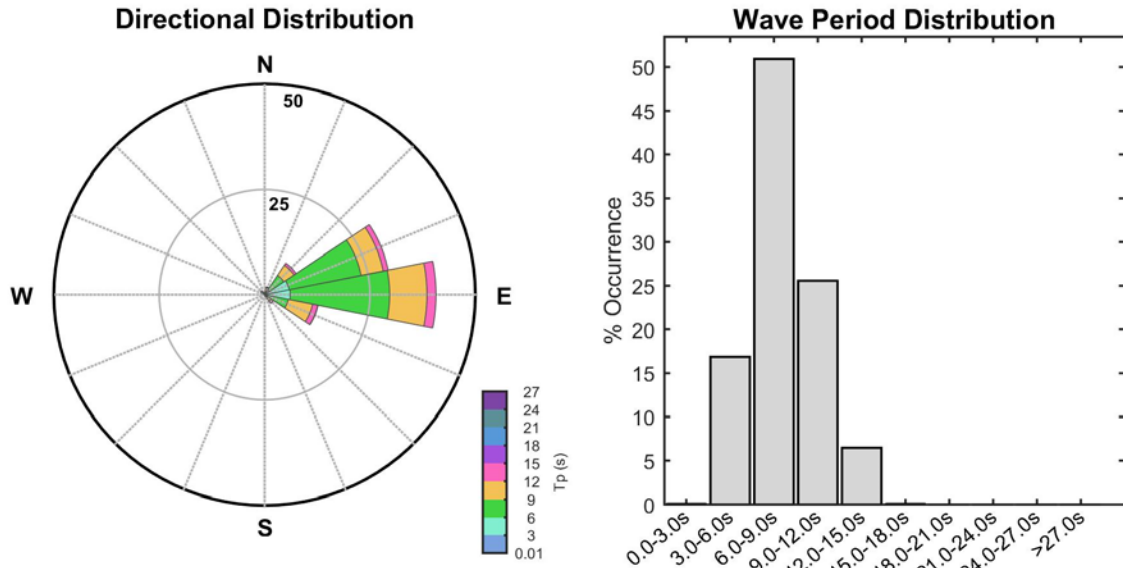
**Data Information:**

Project: 301001-02112  
 Location: ADCP1 Period 1 QAQC [151° 39.588E , 23° 06.017S]  
 Data period: All data (17-Jan-2019 to 14-Mar-2019)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 1345  
 Missing data (%): 0.00  
 Calm (% < 0.01m): 0.00

**Key Data Statistics:**

Max Hs: 4.07 m  
 Mean Hs: 1.46 m  
 StdDev. Hs: 0.59 m

## Wave Period for ADCP1 Location: Period 1



**JFT (%) of Tp against Direction for the period 17-Jan-2019 to 14-Mar-2019**

N=1345	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.	
<b>0-3</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.07	0.07	100.00
<b>3-6</b>	0.22	0.45	1.34	5.95	6.10	0.74	0.30	0.07	-	-	-	-	-	0.07	1.12	0.52	16.88	99.93	
<b>6-9</b>	-	0.37	4.16	17.40	23.57	4.98	0.37	0.07	-	-	-	-	-	-	-	-	50.93	83.05	
<b>9-12</b>	0.22	0.89	2.90	5.35	8.85	5.87	1.19	0.15	-	-	-	0.07	-	-	0.07	-	25.58	32.12	
<b>12-15</b>	-	0.22	0.59	1.19	2.16	1.26	0.67	0.22	-	0.07	0.07	-	-	-	-	-	6.47	6.54	
<b>15-18</b>	-	-	-	-	-	0.07	-	-	-	-	-	-	-	-	-	-	0.07	0.07	
<b>18-21</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>21-24</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>24-27</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>&gt;27</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Total</b>	0.45	1.93	9.00	29.89	40.67	12.94	2.53	0.52	-	0.07	0.07	0.07	-	0.07	1.19	0.59			
<b>Cumul.</b>	0.45	2.38	11.38	41.26	81.93	94.87	97.40	97.92	97.92	97.99	98.07	98.14	98.14	98.22	99.41	100.00			

\* denotes values less than 0.01% - denotes no records in bin

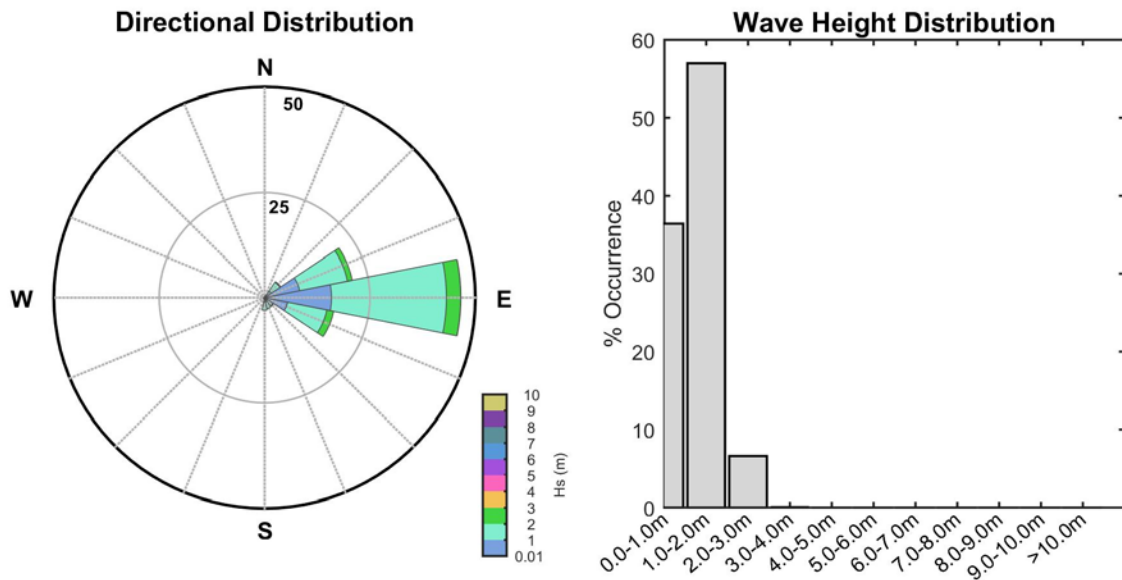
**Data Information:**

Project: 301001-02112  
 Location: ADCP1 Period 1 QAQC [151° 39.588E , 23° 06.017S]  
 Data period: All data (17-Jan-2019 to 14-Mar-2019)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 1345  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Tp: 16.50 s  
 Mean Tp: 8.20 s  
 StdDev. Tp: 2.47 s

## Wave Height for ADCP1 Location: Period 2



**JFT (%) of Hs against Direction for the period 16-Mar-2019 to 13-Jun-2019**

N=2066	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
0-1	0.19	0.39	1.89	8.47	15.88	5.57	0.77	0.92	1.06	0.29	0.15	0.19	0.19	0.15	0.19	0.10	36.40	100.00
1-2	-	0.15	2.52	11.57	27.25	9.49	1.65	1.74	1.98	0.15	0.24	0.05	0.05	-	0.10	0.05	56.97	63.60
2-3	-	0.05	0.19	1.16	3.39	1.65	0.15	-	-	-	-	-	-	-	-	-	6.58	6.63
3-4	-	-	-	-	0.05	-	-	-	-	-	-	-	-	-	-	-	0.05	0.05
4-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
>10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	0.19	0.58	4.60	21.20	46.56	16.70	2.57	2.66	3.05	0.44	0.39	0.24	0.24	0.15	0.29	0.15		
<b>Cumul.</b>	0.19	0.77	5.37	26.57	73.14	89.84	92.40	95.06	98.11	98.55	98.94	99.18	99.42	99.56	99.85	100.00		

\* denotes values less than 0.01% - denotes no records in bin

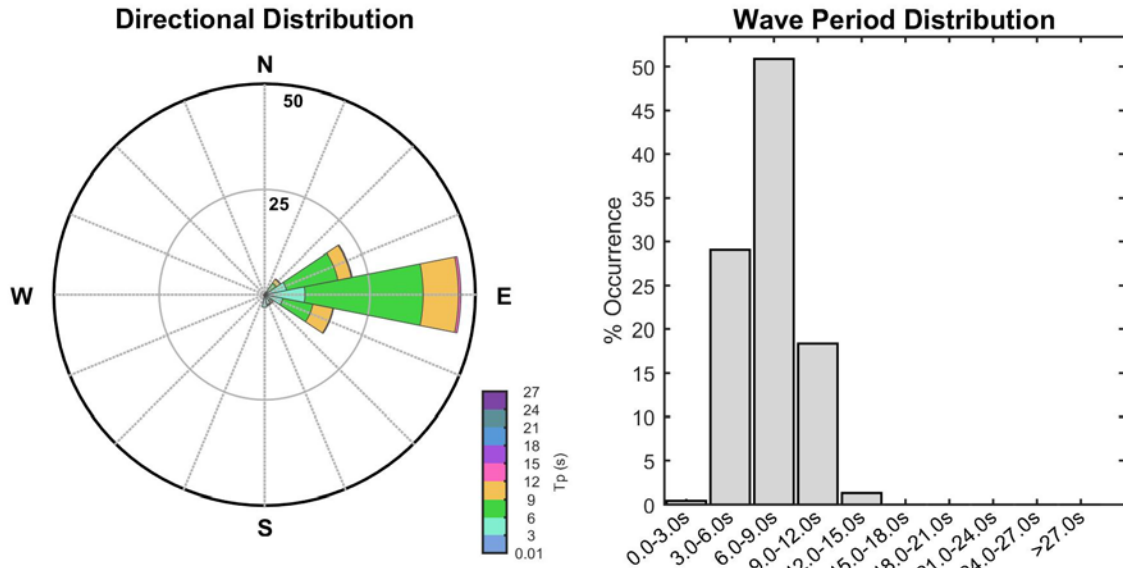
**Data Information:**

Project: 301001-02112  
 Location: ADCP1 Period 2 QAQC [151° 39.597E , 23° 06.030S]  
 Data period: All data (16-Mar-2019 to 13-Jun-2019)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 2066  
 Missing data (%): 0.00  
 Calm (% < 0.01m): 0.00

**Key Data Statistics:**

Max Hs: 3.14 m  
 Mean Hs: 1.25 m  
 StdDev. Hs: 0.50 m

## Wave Period for ADCP1 Location: Period 2



**JFT (%) of Tp against Direction for the period 16-Mar-2019 to 13-Jun-2019**

N=2066	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
<b>0-3</b>	-	0.10	-	-	0.10	0.05	-	0.10	-	-	0.05	0.05	-	-	-	-	0.44	100.00
<b>3-6</b>	0.15	0.19	0.77	5.28	9.49	4.36	1.69	2.32	3.05	0.44	0.34	0.15	0.24	0.15	0.29	0.15	29.04	99.56
<b>6-9</b>	-	0.10	2.57	12.44	28.03	7.26	0.44	0.05	-	-	-	-	-	-	-	-	50.87	70.52
<b>9-12</b>	0.05	0.19	1.11	3.24	8.37	4.84	0.39	0.15	-	-	-	0.05	-	-	-	-	18.39	19.65
<b>12-15</b>	-	-	0.15	0.24	0.58	0.19	0.05	0.05	-	-	-	-	-	-	-	-	1.26	1.26
<b>15-18</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>18-21</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>21-24</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>24-27</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>&gt;27</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	0.19	0.58	4.60	21.20	46.56	16.70	2.57	2.66	3.05	0.44	0.39	0.24	0.24	0.15	0.29	0.15		
<b>Cumul.</b>	0.19	0.77	5.37	26.57	73.14	89.84	92.40	95.06	98.11	98.55	98.94	99.18	99.42	99.56	99.85	100.00		

\* denotes values less than 0.01%      - denotes no records in bin

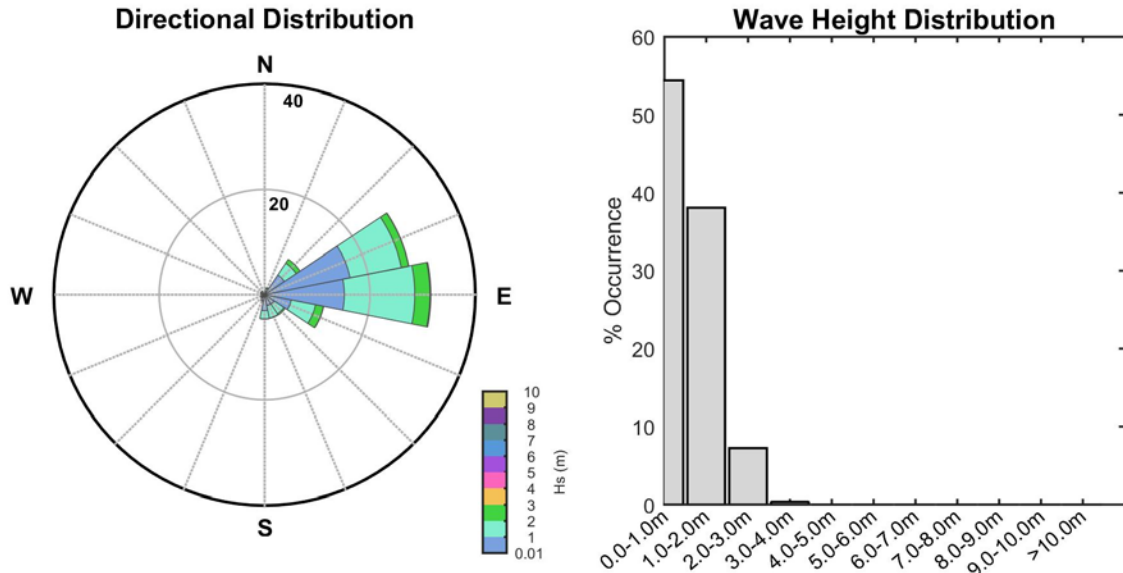
**Data Information:**

Project: 301001-02112  
 Location: ADCP1 Period 2 QAQC [151° 39.597E , 23° 06.030S]  
 Data period: All data (16-Mar-2019 to 13-Jun-2019)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 2066  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Tp: 14.60 s  
 Mean Tp: 7.26 s  
 StdDev. Tp: 2.15 s

### Wave Height for ADCP1 Location: Period 3



**JFT (%) of Hs against Direction for the period 14-Jun-2019 to 25-Aug-2019**

N=1705	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
0-1	0.23	0.65	4.52	16.54	15.13	5.16	2.17	2.11	3.05	1.17	0.65	0.76	0.41	0.70	0.82	0.29	54.37	100.00
1-2	-	0.53	2.70	9.91	13.37	4.69	2.23	2.46	1.58	0.12	0.18	0.06	0.06	0.12	0.06	-	38.06	45.63
2-3	-	0.12	0.88	1.41	2.87	1.52	0.29	0.06	0.06	-	-	-	-	-	-	-	7.21	7.57
3-4	-	0.06	-	0.06	0.18	0.06	-	-	-	-	-	-	-	-	-	-	0.35	0.35
4-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
>10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	0.23	1.35	8.09	27.92	31.55	11.44	4.69	4.63	4.69	1.29	0.82	0.82	0.47	0.82	0.88	0.29		
<b>Cumul.</b>	0.23	1.58	9.68	37.60	69.15	80.59	85.28	89.91	94.60	95.89	96.72	97.54	98.01	98.83	99.71	100.00		

\* denotes values less than 0.01% - denotes no records in bin

**Data Information:**

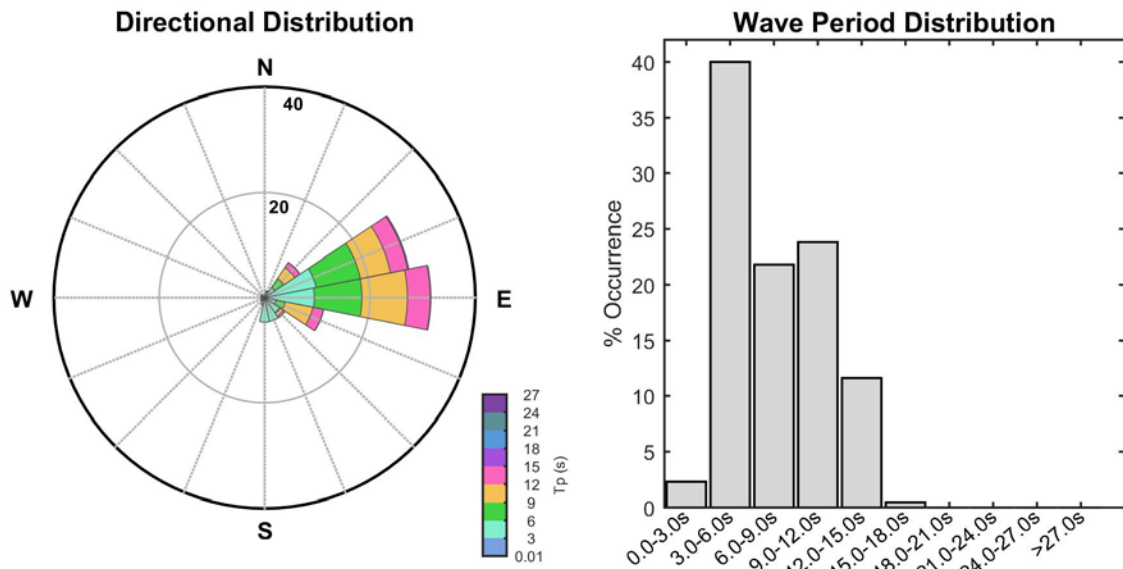
Project: 301001-02112  
 Location: ADCP1 Period 3 QAQC [151° 39.602E , 23° 06.030S]  
 Data period: All data (14-Jun-2019 to 25-Aug-2019)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 1705  
 Missing data (%): 0.00  
 Calm (% < 0.01m): 0.00

**Key Data Statistics:**

Max Hs: 3.70 m  
 Mean Hs: 1.05 m  
 StdDev. Hs: 0.56 m



### Wave Period for ADCP1 Location: Period 3



**JFT (%) of Tp against Direction for the period 14-Jun-2019 to 25-Aug-2019**

N=1705	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
<b>0-3</b>	0.06	0.06	0.18	0.35	0.35	0.06	0.06	0.29	0.23	0.18	0.06	0.12	-	0.12	0.06	0.12	2.29	100.00
<b>3-6</b>	-	0.06	2.17	9.62	9.09	2.17	3.40	4.34	4.46	1.11	0.76	0.70	0.47	0.70	0.82	0.12	40.00	97.71
<b>6-9</b>	-	0.29	2.05	8.56	9.03	1.76	0.12	-	-	-	-	-	-	-	-	-	21.82	57.71
<b>9-12</b>	0.12	0.70	2.52	5.81	8.62	5.34	0.70	-	-	-	-	-	-	-	-	-	23.81	35.89
<b>12-15</b>	0.06	0.23	1.11	3.34	4.34	2.05	0.41	-	-	-	-	-	-	-	-	0.06	11.61	12.08
<b>15-18</b>	-	-	0.06	0.23	0.12	0.06	-	-	-	-	-	-	-	-	-	-	0.47	0.47
<b>18-21</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>21-24</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>24-27</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>&gt;27</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	0.23	1.35	8.09	27.92	31.55	11.44	4.69	4.63	4.69	1.29	0.82	0.82	0.47	0.82	0.88	0.29		
<b>Cumul.</b>	0.23	1.58	9.68	37.60	69.15	80.59	85.28	89.91	94.60	95.89	96.72	97.54	98.01	98.83	99.71	100.00		

\* denotes values less than 0.01% - denotes no records in bin

**Data Information:**

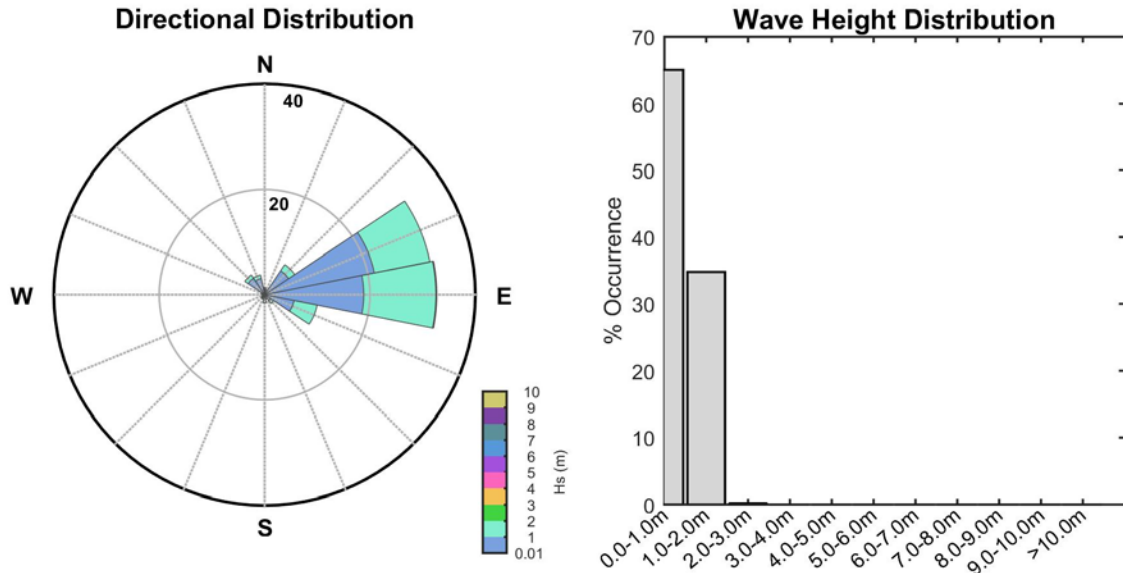
Project: 301001-02112  
 Location: ADCP1 Period 3 QAQC [151° 39.602E , 23° 06.030S]  
 Data period: All data (14-Jun-2019 to 25-Aug-2019)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 1705  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Tp: 17.70 s  
 Mean Tp: 7.78 s  
 StdDev. Tp: 3.43 s



## Wave Period for ADCP3 Location: Period 4



**JFT (%) of Hs against Direction for the period 26-Aug-2019 to 05-Nov-2019**

N=1701	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
0-1	1.29	0.82	5.47	21.22	18.81	5.70	1.35	0.41	0.53	0.65	0.65	0.47	0.18	0.59	3.76	3.12	65.02	100.00
1-2	0.06	0.12	1.41	10.76	13.70	4.47	0.71	0.41	1.06	0.29	0.18	0.06	-	0.12	0.76	0.71	34.80	34.98
2-3	-	-	-	-	0.18	-	-	-	-	-	-	-	-	-	-	-	0.18	0.18
3-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
>10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	1.35	0.94	6.88	31.98	32.69	10.17	2.06	0.82	1.59	0.94	0.82	0.53	0.18	0.71	4.53	3.82		
<b>Cumul.</b>	1.35	2.29	9.17	41.15	73.84	84.01	86.07	86.89	88.48	89.42	90.24	90.77	90.95	91.65	96.18	100.00		

\* denotes values less than 0.01% - denotes no records in bin

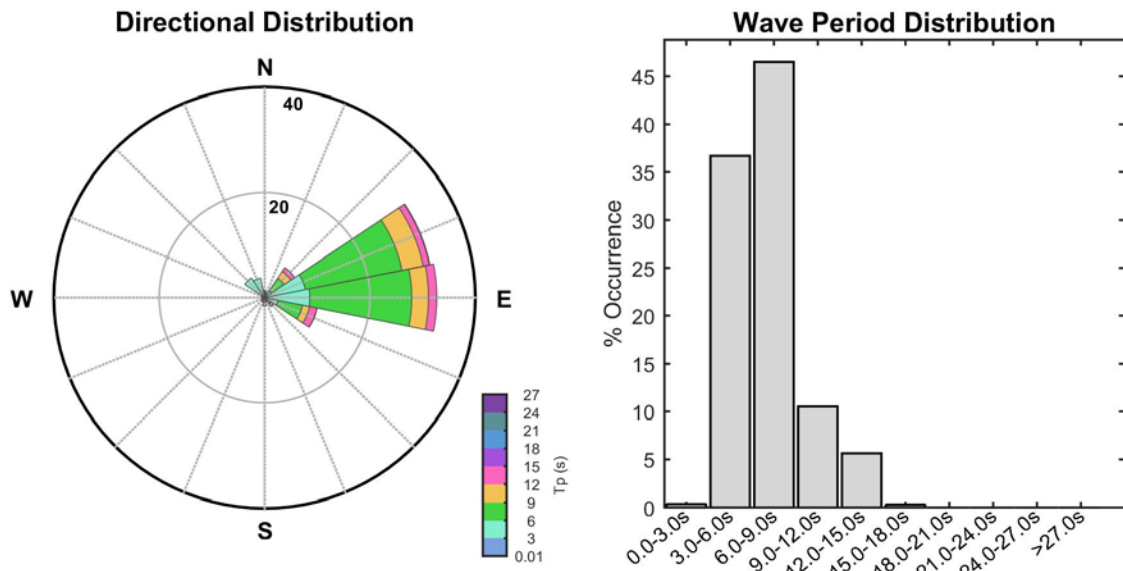
**Data Information:**

Project: 301001-02112  
 Location: ADCP3 Period 4 QAQC [151° 37.728E , 23° 05.407S]  
 Data period: All data (26-Aug-2019 to 05-Nov-2019)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 1701  
 Missing data (%): 0.00  
 Calm (% < 0.01m): 0.00

**Key Data Statistics:**

Max Hs: 2.03 m  
 Mean Hs: 0.90 m  
 StdDev. Hs: 0.32 m

## Wave Height for ADCP3 Location: Period 4



**JFT (%) of Tp against Direction for the period 26-Aug-2019 to 05-Nov-2019**

N=1701	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
<b>0-3</b>	-	-	-	0.06	0.18	-	-	-	-	-	-	-	-	0.06	-	0.06	0.35	100.00
<b>3-6</b>	1.35	0.47	1.53	7.82	8.41	2.65	0.82	0.65	1.59	0.94	0.82	0.53	0.18	0.65	4.53	3.76	36.68	99.65
<b>6-9</b>	-	0.35	2.94	18.69	19.34	4.70	0.47	-	-	-	-	-	-	-	-	-	46.50	62.96
<b>9-12</b>	-	0.06	1.53	4.12	3.17	1.35	0.18	0.12	-	-	-	-	-	-	-	-	10.52	16.46
<b>12-15</b>	-	-	0.88	1.18	1.59	1.41	0.53	0.06	-	-	-	-	-	-	-	-	5.64	5.94
<b>15-18</b>	-	0.06	-	0.12	-	0.06	0.06	-	-	-	-	-	-	-	-	-	0.29	0.29
<b>18-21</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>21-24</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>24-27</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>&gt;27</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	1.35	0.94	6.88	31.98	32.69	10.17	2.06	0.82	1.59	0.94	0.82	0.53	0.18	0.71	4.53	3.82		
<b>Cumul.</b>	1.35	2.29	9.17	41.15	73.84	84.01	86.07	86.89	88.48	89.42	90.24	90.77	90.95	91.65	96.18	100.00		

\* denotes values less than 0.01% - denotes no records in bin

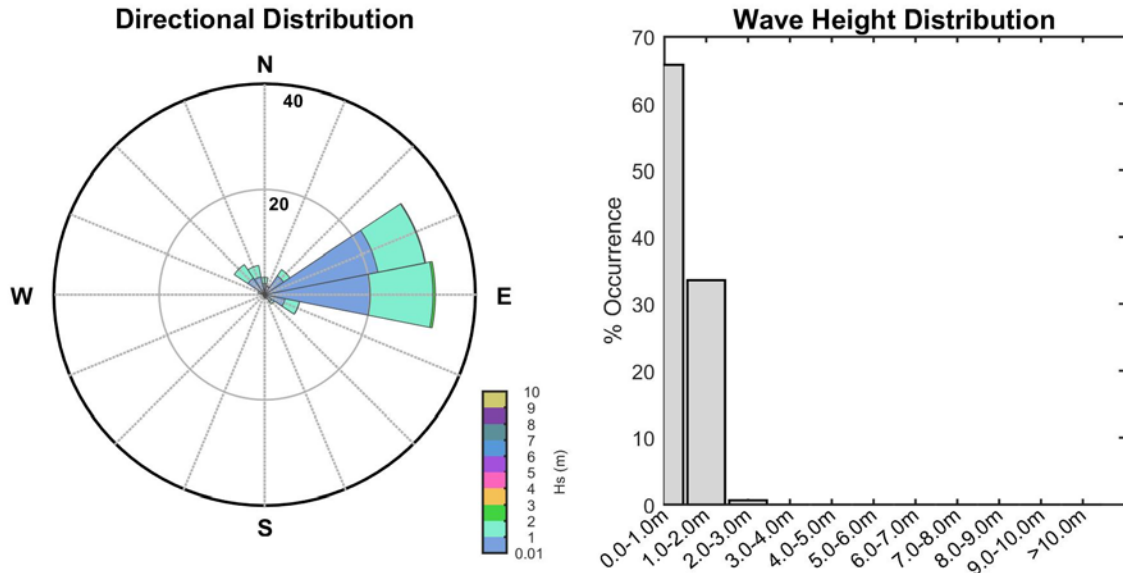
**Data Information:**

Project: 301001-02112  
 Location: ADCP3 Period 4 QAQC [151° 37.728E , 23° 05.407S]  
 Data period: All data (26-Aug-2019 to 05-Nov-2019)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 1701  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Tp: 15.10 s  
 Mean Tp: 6.94 s  
 StdDev. Tp: 2.48 s

## Wave Height for ADCP3 Location: Period 5



**JFT (%) of Hs against Direction for the period 06-Nov-2019 to 28-Jan-2020**

N=1994	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
0-1	2.11	1.61	4.32	21.93	20.02	3.96	1.61	0.70	0.30	0.20	0.45	0.35	0.20	0.75	3.81	3.46	65.78	100.00
1-2	1.20	0.10	1.46	9.08	11.94	2.76	0.55	0.05	0.40	0.20	-	-	-	0.45	3.11	2.26	33.57	34.22
2-3	-	-	-	0.15	0.45	0.05	-	-	-	-	-	-	-	-	-	-	0.65	0.65
3-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
>10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	3.31	1.71	5.77	31.16	32.41	6.77	2.16	0.75	0.70	0.40	0.45	0.35	0.20	1.20	6.92	5.72		
<b>Cumul.</b>	3.31	5.02	10.79	41.95	74.36	81.13	83.29	84.04	84.75	85.15	85.60	85.95	86.15	87.36	94.28	100.00		

\* denotes values less than 0.01% - denotes no records in bin

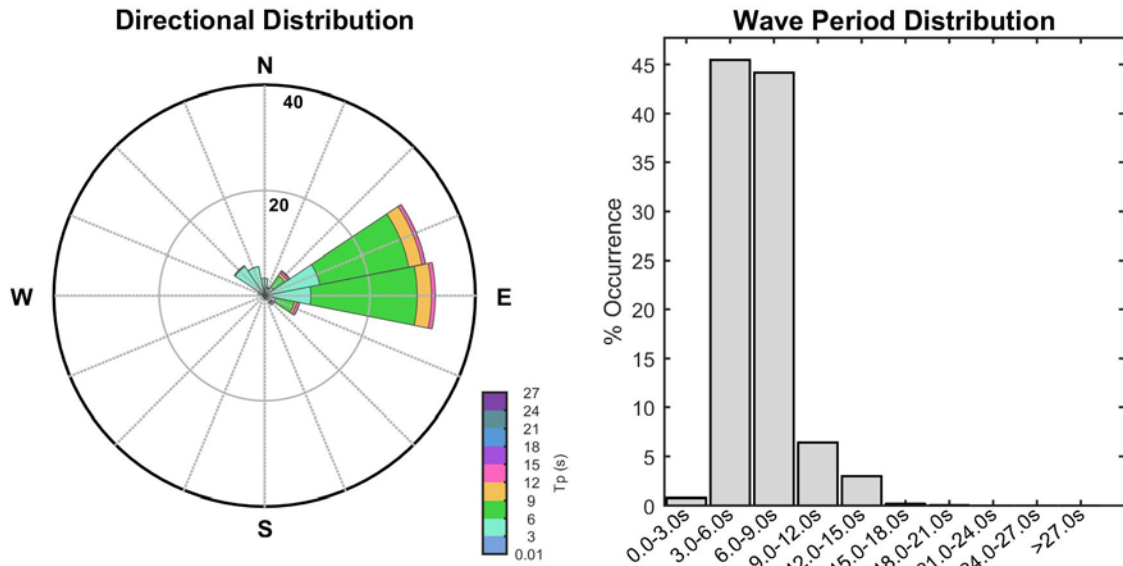
**Data Information:**

Project: 301001-02112  
 Location: ADCP3 Period 5 QAQC [151° 37.744E , 23° 05.410S]  
 Data period: All data (06-Nov-2019 to 28-Jan-2020)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 1994  
 Missing data (%): 0.00  
 Calm (% < 0.01m): 0.05

**Key Data Statistics:**

Max Hs: 2.50 m  
 Mean Hs: 0.93 m  
 StdDev. Hs: 0.34 m

## Wave Period for ADCP3 Location: Period 5



**JFT (%) of Tp against Direction for the period 06-Nov-2019 to 28-Jan-2020**

N=1994	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
0-3	-	-	-	0.25	0.25	0.05	-	0.05	-	-	-	-	-	0.05	-	0.10	0.75	100.00
3-6	3.31	1.51	2.01	10.44	8.53	2.06	1.51	0.55	0.70	0.40	0.45	0.35	0.20	1.15	6.72	5.57	45.46	99.25
6-9	-	0.15	2.61	17.21	20.17	3.66	0.10	-	-	-	-	-	-	-	0.20	0.05	44.15	53.79
9-12	-	-	0.55	2.56	2.71	0.45	0.15	-	-	-	-	-	-	-	-	-	6.42	9.63
12-15	-	0.05	0.45	0.65	0.75	0.50	0.40	0.15	-	-	-	-	-	-	-	-	2.96	3.21
15-18	-	-	0.15	0.05	-	-	-	-	-	-	-	-	-	-	-	-	0.20	0.25
18-21	-	-	-	-	-	0.05	-	-	-	-	-	-	-	-	-	-	0.05	0.05
21-24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	3.31	1.71	5.77	31.16	32.41	6.77	2.16	0.75	0.70	0.40	0.45	0.35	0.20	1.20	6.92	5.72		
<b>Cumul.</b>	3.31	5.02	10.79	41.95	74.36	81.13	83.29	84.04	84.75	85.15	85.60	85.95	86.15	87.36	94.28	100.00		

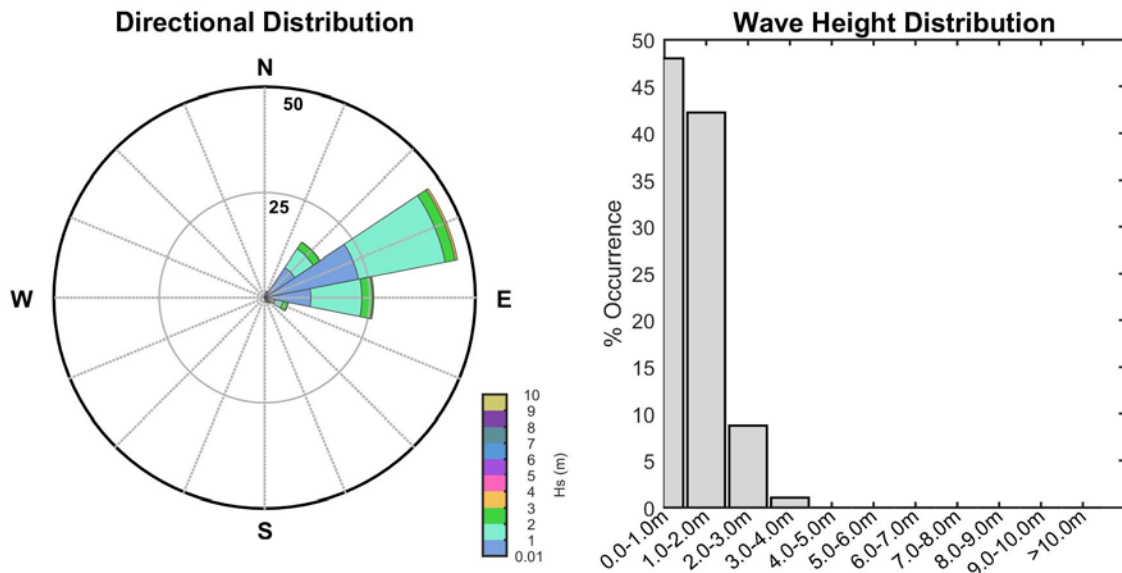
**Data Information:**  
Project Number: 301001-02112  
Location: ADCP3 Period 5 QAQC

\* denotes values less than 0.01%      - denotes no records in bin

**Data Information:**  
Project: 301001-02112  
Location: ADCP3 Period 5 QAQC [151° 37.744E , 23° 05.410S]  
Data period: All data (06-Nov-2019 to 28-Jan-2020)  
Data source: ADCP  
Data summary: Complete  
Number of Records: 1994  
Missing data (%): 0.00

**Key Data Statistics:**  
Max Tp: 18.30 s  
Mean Tp: 6.40 s  
StdDev. Tp: 2.13 s

## Wave Height for ADCP3 Location: Period 6



**JFT (%) of Hs against Direction for the period 29-Jan-2020 to 30-Apr-2020**

N=2202	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
0-1	0.36	0.86	8.63	22.71	10.99	2.41	0.82	0.32	0.09	0.05	-	0.14	0.05	0.09	0.32	0.18	48.00	100.00
1-2	0.05	0.50	5.27	20.94	12.08	2.04	0.45	0.73	0.05	0.09	-	-	-	0.05	-	-	42.23	52.00
2-3	-	0.14	1.86	2.45	2.54	1.23	0.41	0.14	-	-	-	-	-	-	-	-	8.76	9.76
3-4	-	-	0.09	0.54	0.27	0.09	-	-	-	-	-	-	-	-	-	-	1.00	1.00
4-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
>10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	0.41	1.50	15.85	46.64	25.89	5.77	1.68	1.18	0.14	0.14	-	0.14	0.05	0.14	0.32	0.18		
<b>Cumul.</b>	0.41	1.91	17.76	64.40	90.28	96.05	97.73	98.91	99.05	99.18	99.18	99.32	99.36	99.50	99.82	100.00		

\* denotes values less than 0.01% - denotes no records in bin

**Data Information:**

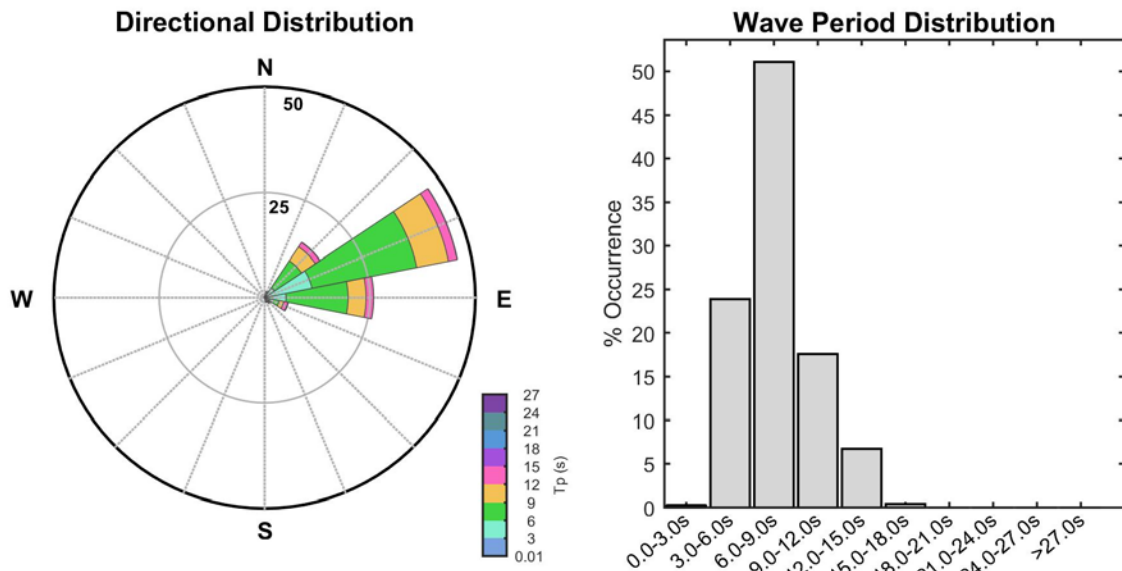
Project: 301001-02112  
 Location: ADCP3 Period 6 QAQC [151° 37.766E , 23° 05.414S]  
 Data period: All data (29-Jan-2020 to 30-Apr-2020)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 2202  
 Missing data (%): 0.00  
 Calm (% < 0.01m): 0.00

**Key Data Statistics:**

Max Hs: 3.86 m  
 Mean Hs: 1.17 m  
 StdDev. Hs: 0.58 m



## Wave Period for ADCP3 Location: Period 6



**JFT (%) of Tp against Direction for the period 29-Jan-2020 to 30-Apr-2020**

N=2202	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
<b>0-3</b>	-	-	0.14	0.14	-	-	-	-	-	-	-	-	-	-	-	-	0.27	100.00
<b>3-6</b>	0.36	0.23	2.68	11.31	5.09	1.18	1.04	0.91	0.14	0.14	-	0.14	0.05	0.14	0.32	0.18	23.89	99.73
<b>6-9</b>	-	0.54	7.72	25.34	14.71	2.36	0.23	0.18	-	-	-	-	-	-	-	-	51.09	75.84
<b>9-12</b>	0.05	0.50	3.95	7.67	4.27	1.09	0.09	-	-	-	-	-	-	-	-	-	17.62	24.75
<b>12-15</b>	-	0.23	1.27	2.09	1.77	1.00	0.27	0.09	-	-	-	-	-	-	-	-	6.72	7.13
<b>15-18</b>	-	-	0.09	0.09	0.05	0.14	0.05	-	-	-	-	-	-	-	-	-	0.41	0.41
<b>18-21</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>21-24</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>24-27</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>&gt;27</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	0.41	1.50	15.85	46.64	25.89	5.77	1.68	1.18	0.14	0.14	-	0.14	0.05	0.14	0.32	0.18		
<b>Cumul.</b>	0.41	1.91	17.76	64.40	90.28	96.05	97.73	98.91	99.05	99.18	99.18	99.32	99.36	99.50	99.82	100.00		

\* denotes values less than 0.01% - denotes no records in bin

**Data Information:**

Project: 301001-02112  
 Location: ADCP3 Period 6 QAQC [151° 37.766E , 23° 05.414S]  
 Data period: All data (29-Jan-2020 to 30-Apr-2020)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 2202  
 Missing data (%): 0.00

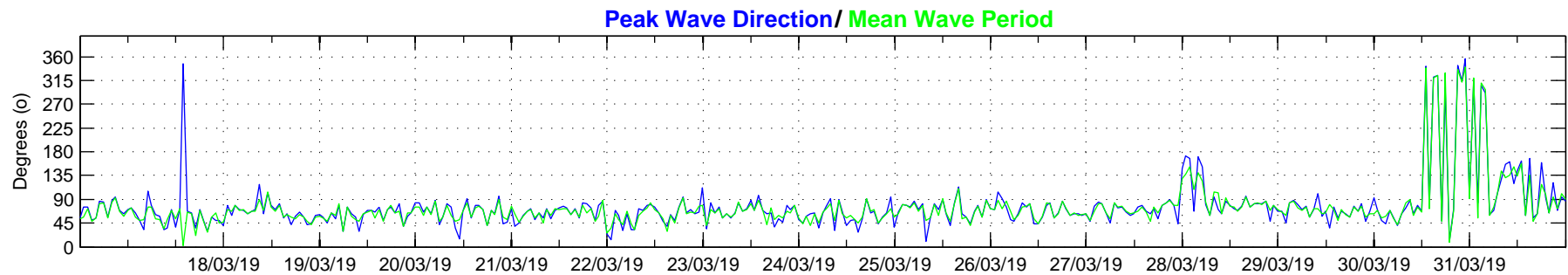
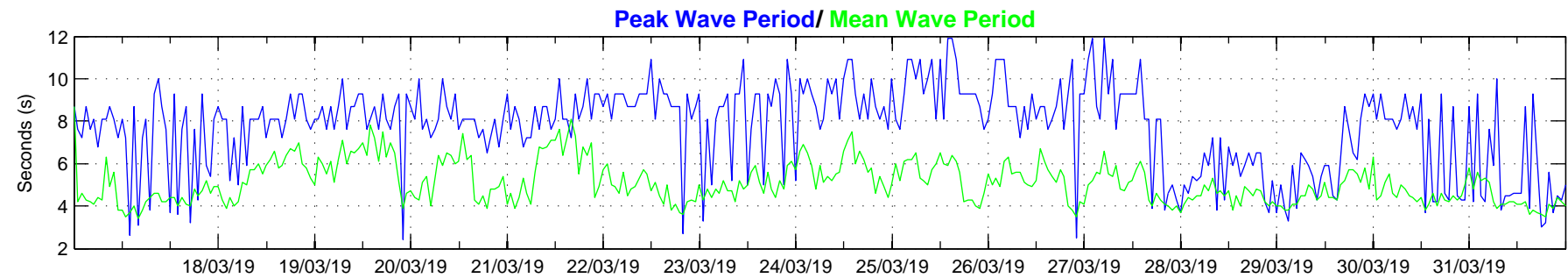
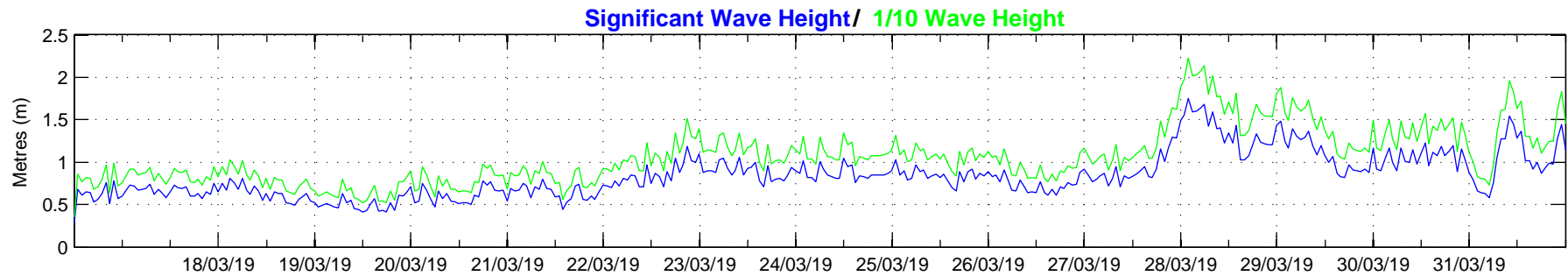
**Key Data Statistics:**

Max Tp: 15.10 s  
 Mean Tp: 7.71 s  
 StdDev. Tp: 2.37 s





**Appendix H**  
**ADCP2: Wave Time Series Plots**



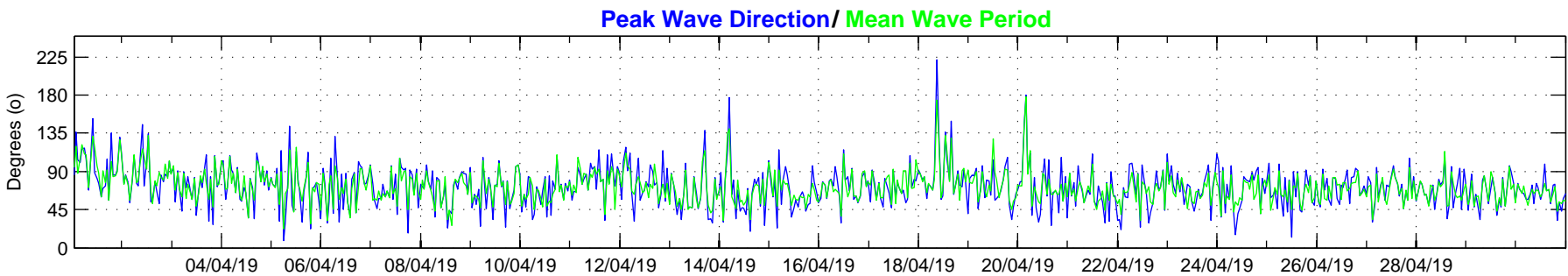
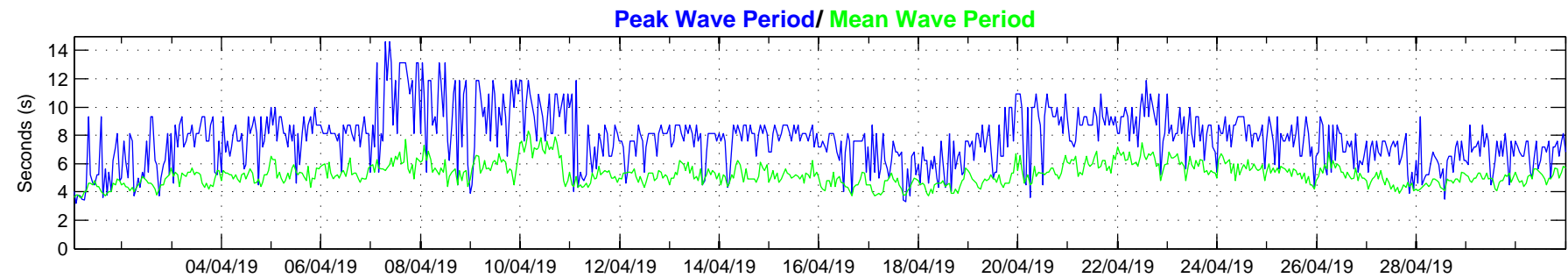
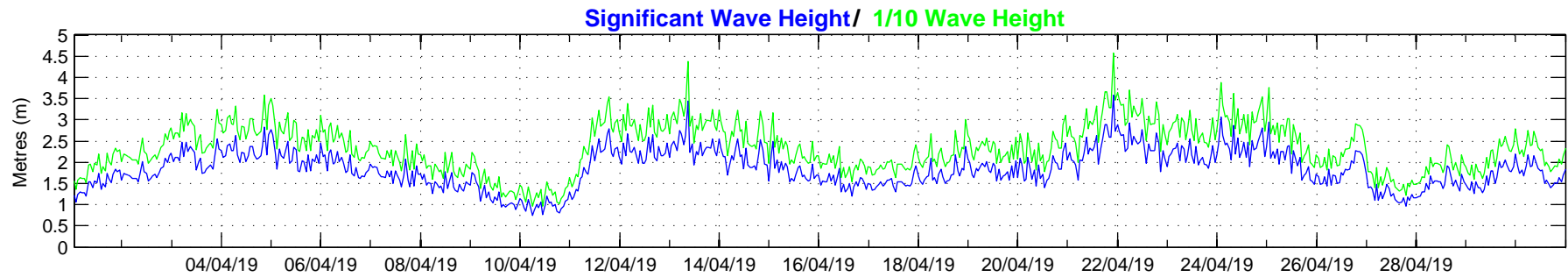
**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period2 [151° 39.132E , 23° 05.730S]  
 Data period: March 2019 (16-Mar-2019 to 31-Mar-2019)  
 Data source: ADCP  
 Data summary: March 2019  
 Number of Records: 373  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 1.75 m	Max Tp: 11.90 s
Mean Hs: 0.84 m	Mean Tp: 7.72 s
StdDev. Hs: 0.26 m	StdDev. Tp: 2.03 s

**Wave Summary March 2019**



**Data Information:**

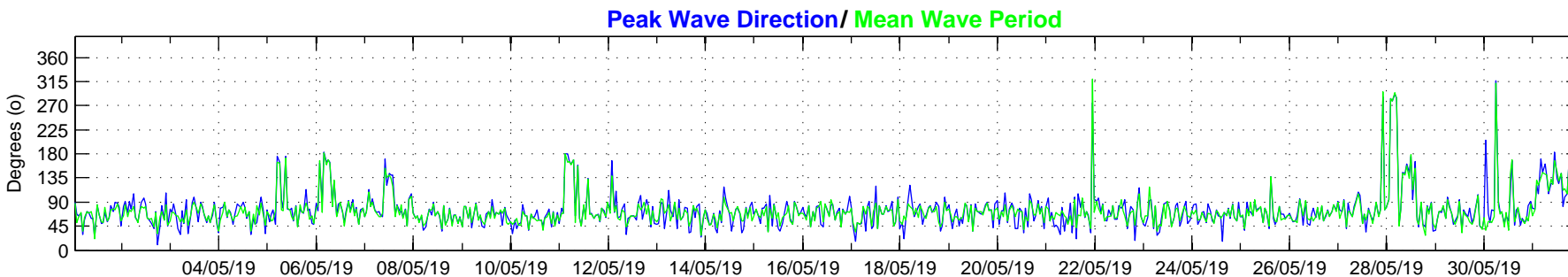
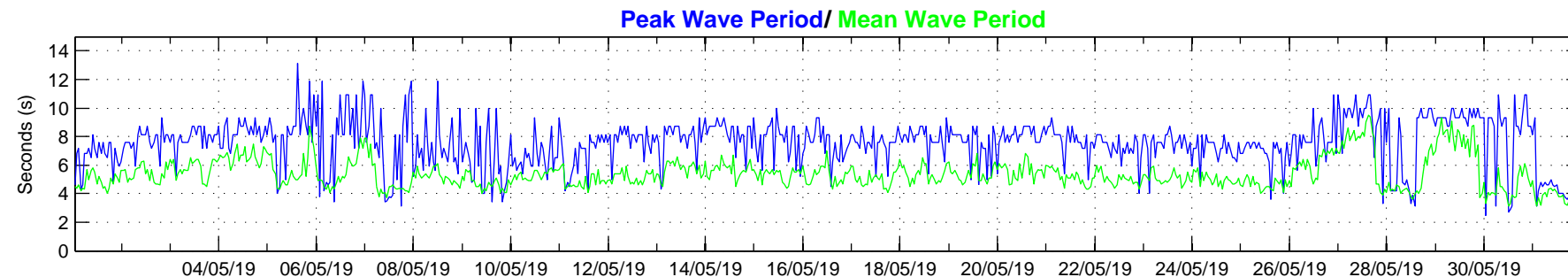
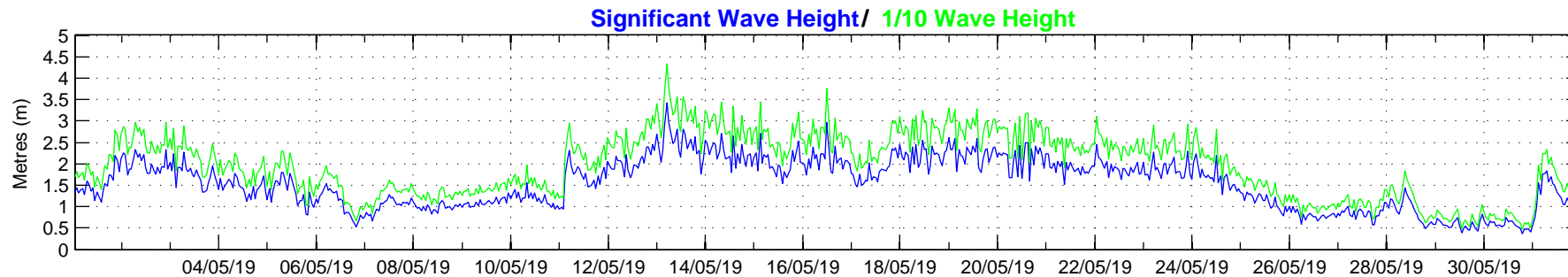
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period2 [151° 39.132E , 23° 05.730S]  
 Data period: April 2019 (01-Apr-2019 to 30-Apr-2019)  
 Data source: ADCP  
 Data summary: April 2019  
 Number of Records: 720  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 3.59 m	Max Tp: 14.60 s
Mean Hs: 1.84 m	Mean Tp: 7.74 s
StdDev. Hs: 0.45 m	StdDev. Tp: 1.95 s

**Wave Summary April 2019**





**Data Information:**

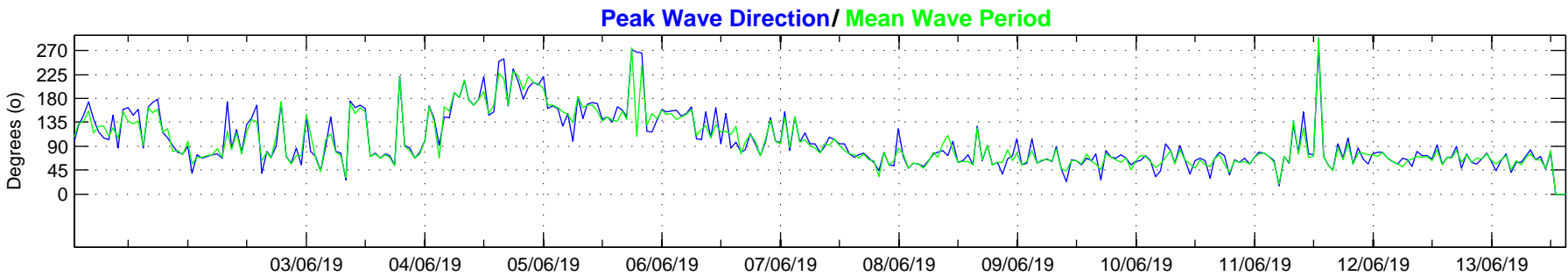
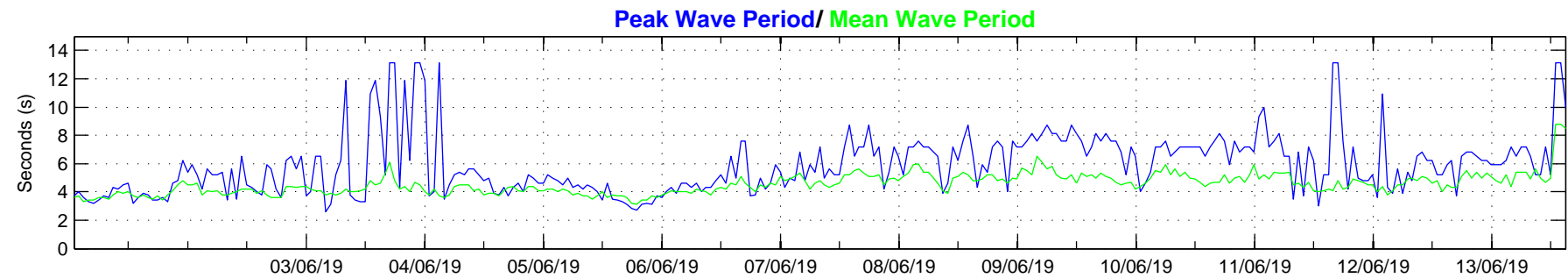
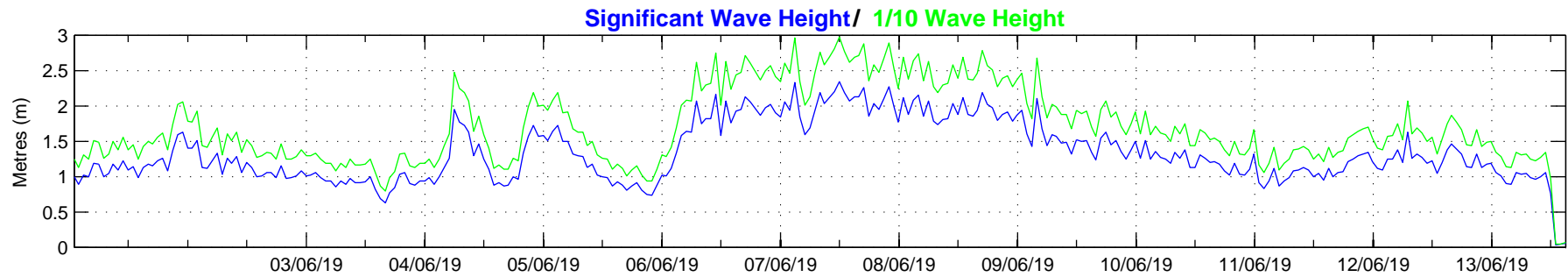
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period2 [151° 39.132E , 23° 05.730S]  
 Data period: May 2019 (01-May-2019 to 31-May-2019)  
 Data source: ADCP  
 Data summary: May 2019  
 Number of Records: 744  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 3.42 m	Max Tp: 13.10 s
Mean Hs: 1.54 m	Mean Tp: 7.54 s
StdDev. Hs: 0.58 m	StdDev. Tp: 1.69 s

**Wave Summary May 2019**





**Data Information:**

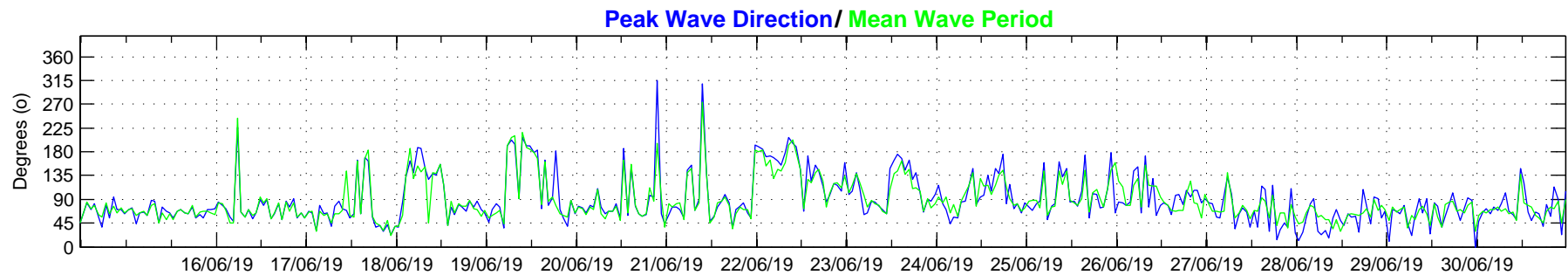
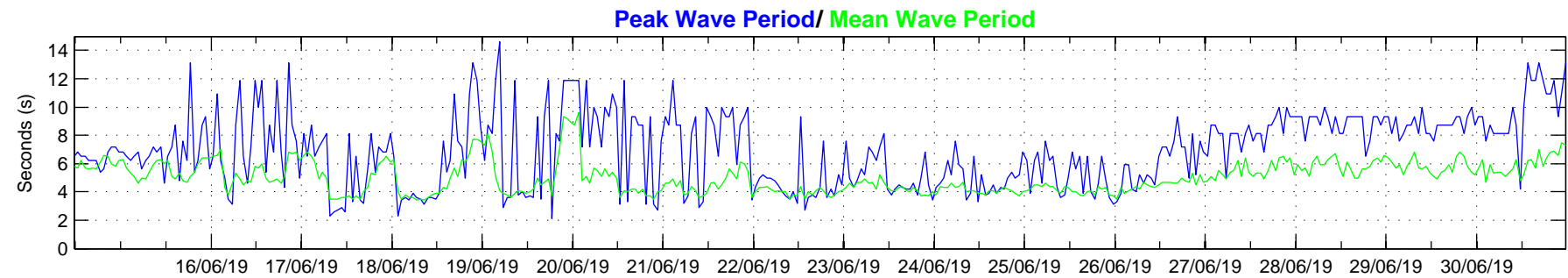
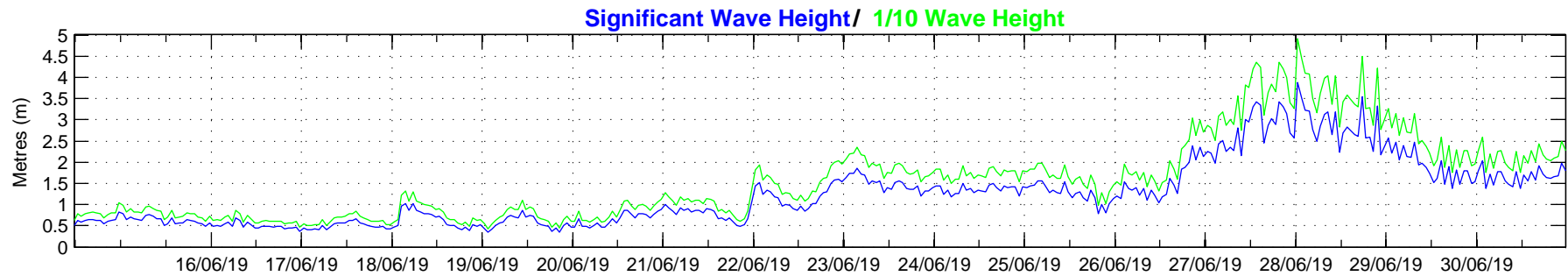
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period2 [151° 39.132E , 23° 05.730S]  
 Data period: June 2019 (01-Jun-2019 to 13-Jun-2019)  
 Data source: ADCP  
 Data summary: June 2019  
 Number of Records: 303  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 2.34 m	Max Tp: 13.10 s
Mean Hs: 1.34 m	Mean Tp: 5.91 s
StdDev. Hs: 0.42 m	StdDev. Tp: 2.16 s

**Wave Summary June 2019**





**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period3 [151° 39.140E , 23° 05.734S]  
 Data period: June 2019 (14-Jun-2019 to 30-Jun-2019)  
 Data source: ADCP  
 Data summary: June 2019  
 Number of Records: 397  
 Missing data (%): 0.00

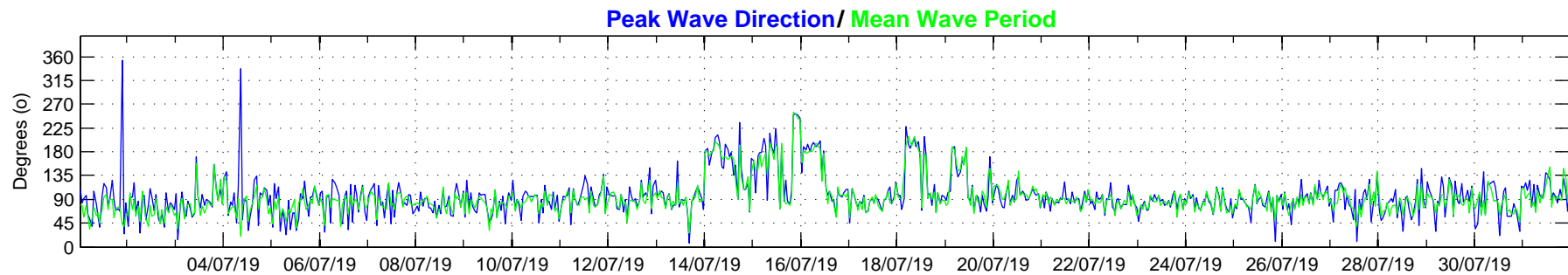
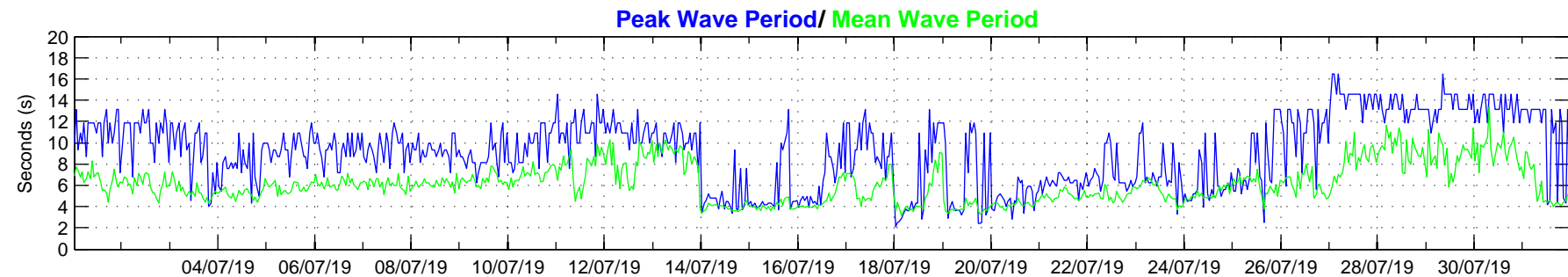
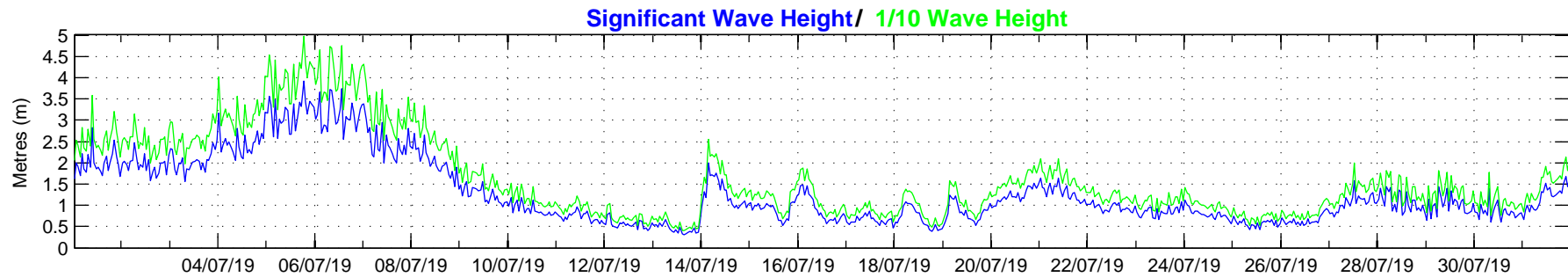
**Key Data Statistics:**

Max Hs: 3.87 m	Max Tp: 14.60 s
Mean Hs: 1.25 m	Mean Tp: 6.94 s
StdDev. Hs: 0.76 m	StdDev. Tp: 2.60 s

**Wave Summary June 2019**







**Data Information:**

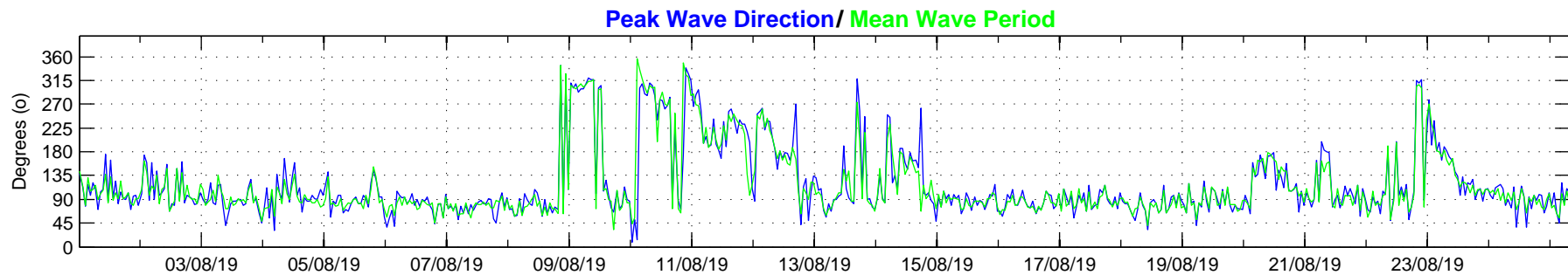
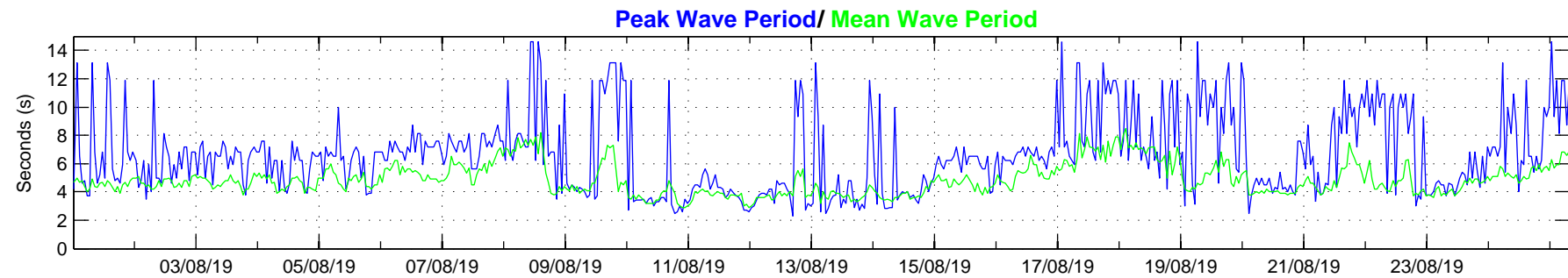
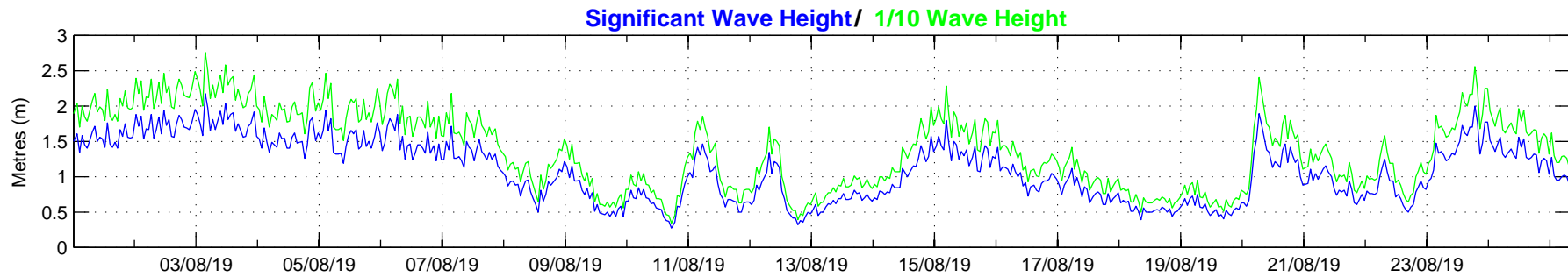
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period3 [151° 39.140E , 23° 05.734S]  
 Data period: July 2019 (01-Jul-2019 to 31-Jul-2019)  
 Data source: ADCP  
 Data summary: July 2019  
 Number of Records: 744  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 3.92 m      Max Tp: 16.50 s  
 Mean Hs: 1.29 m      Mean Tp: 9.17 s  
 StdDev. Hs: 0.76 m      StdDev. Tp: 3.25 s

**Wave Summary July 2019**





**Data Information:**

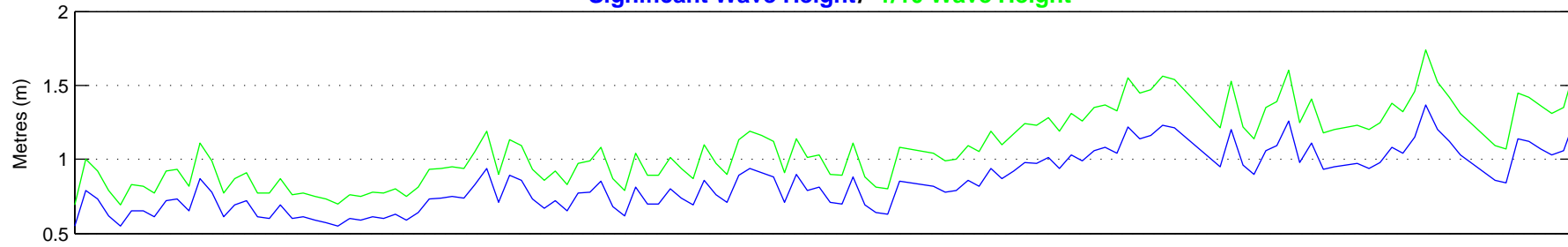
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period3 [151° 39.140E , 23° 05.734S]  
 Data period: August 2019 (01-Aug-2019 to 25-Aug-2019)  
 Data source: ADCP  
 Data summary: August 2019  
 Number of Records: 584  
 Missing data (%): 0.00

**Key Data Statistics:**

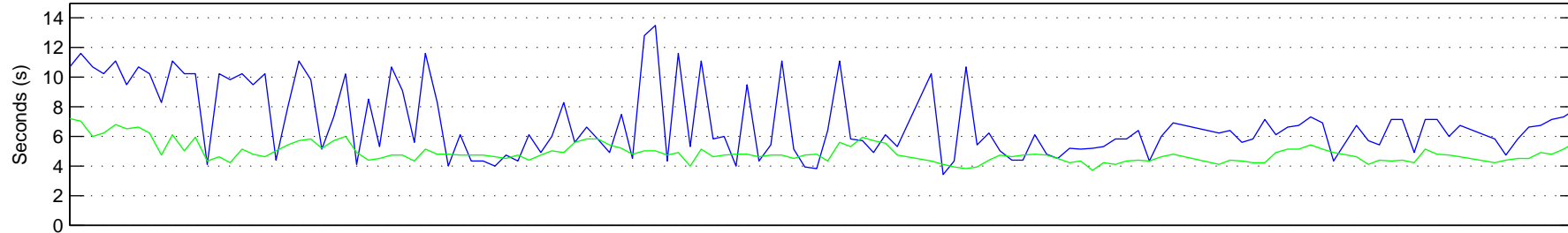
Max Hs: 2.17 m	Max Tp: 14.60 s
Mean Hs: 1.09 m	Mean Tp: 6.63 s
StdDev. Hs: 0.42 m	StdDev. Tp: 2.82 s

**Wave Summary August 2019**

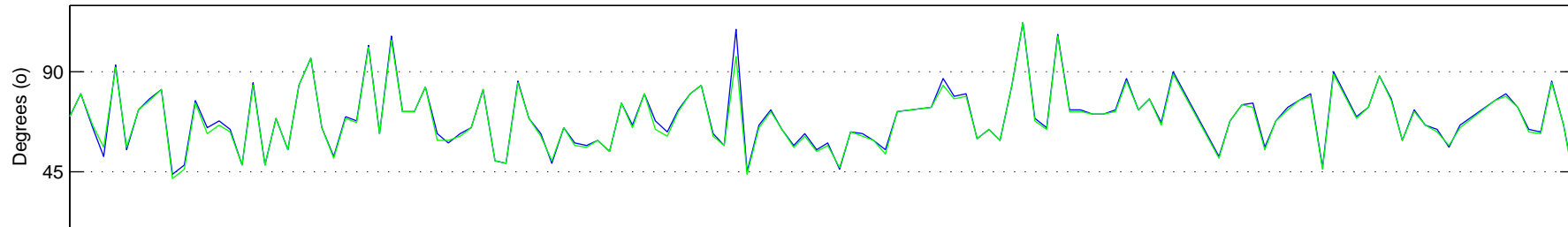
Significant Wave Height/ 1/10 Wave Height



Peak Wave Period/ Mean Wave Period



Peak Wave Direction/ Mean Wave Period



**Data Information:**

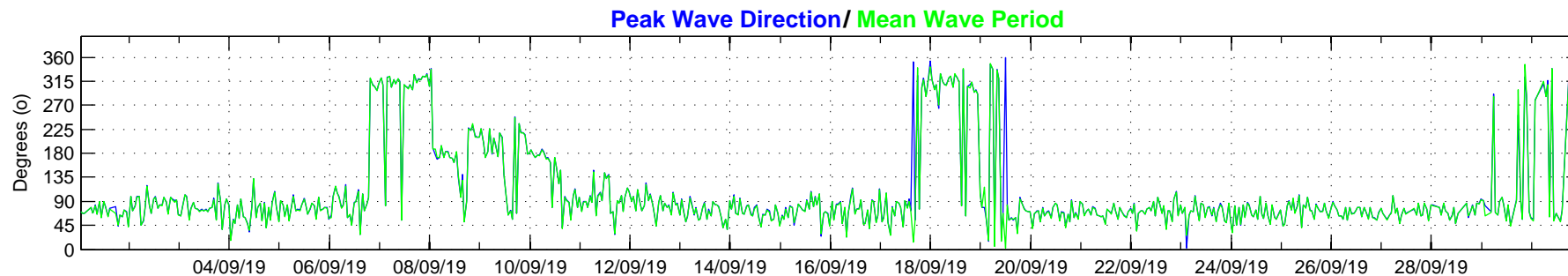
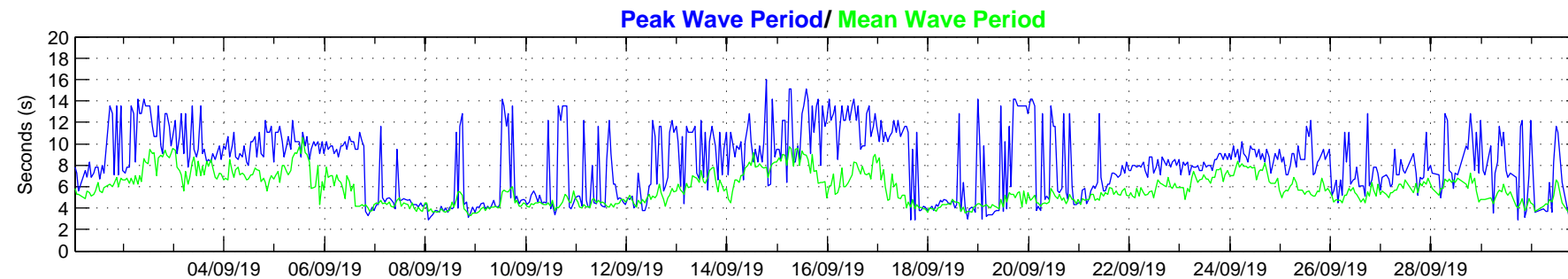
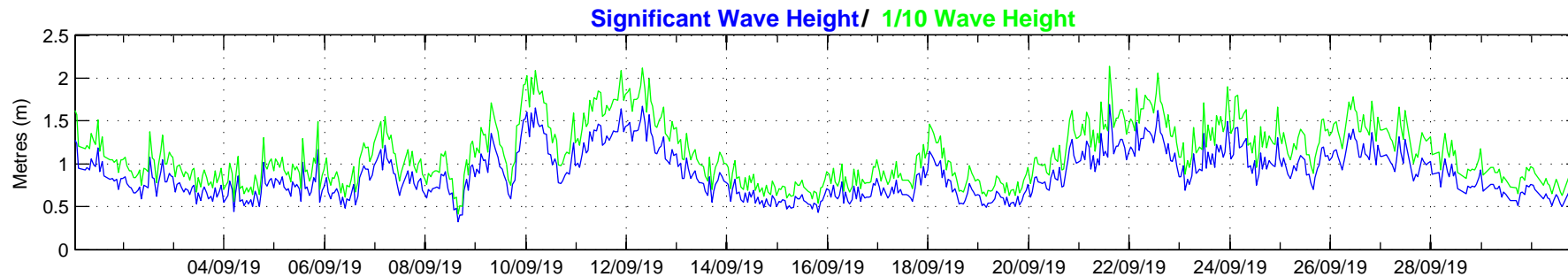
Project: 301001-02112 Douglas Shoal Remediation Project  
Location: ADCP2 Period4 [151° 39.135E , 23° 05.715S]  
Data period: August 2019 (26-Aug-2019 to 31-Aug-2019)  
Data source: ADCP  
Data summary: August 2019  
Number of Records: 124  
Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 1.37 m	Max Tp: 13.50 s
Mean Hs: 0.85 m	Mean Tp: 6.95 s
StdDev. Hs: 0.19 m	StdDev. Tp: 2.42 s

**Wave Summary August 2019**





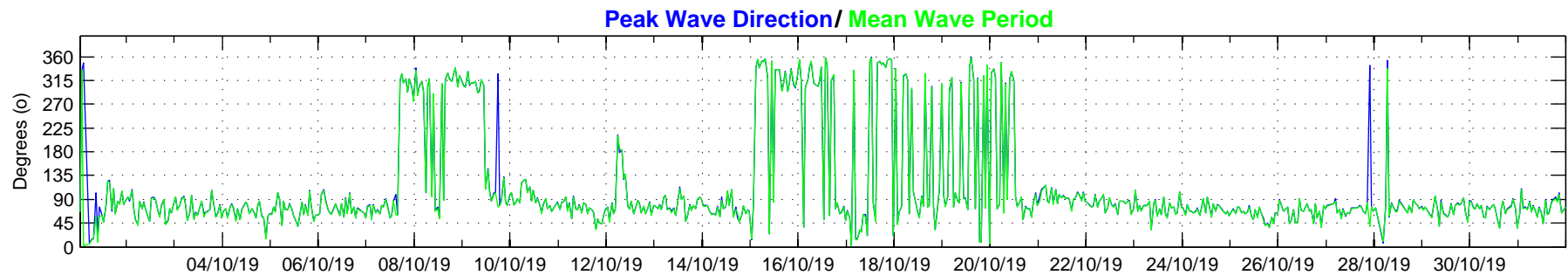
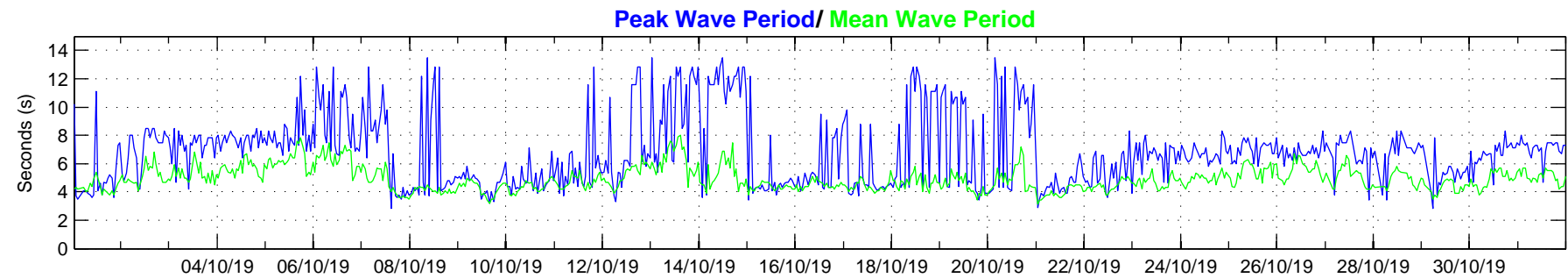
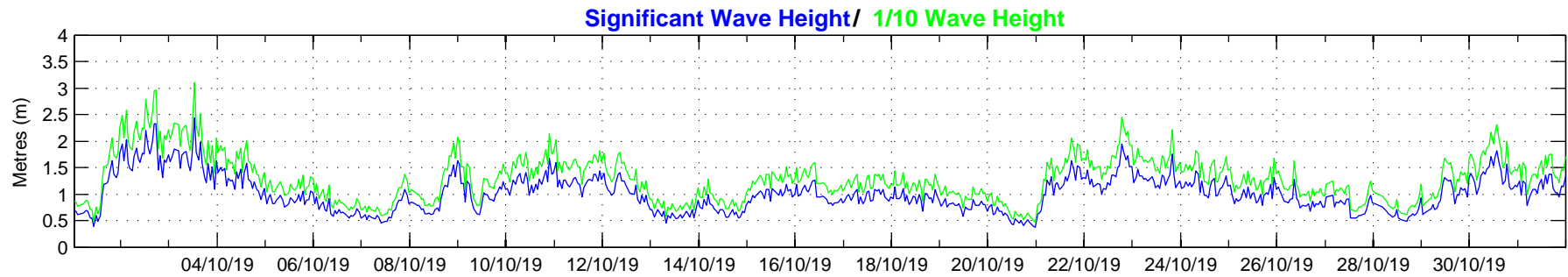
**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period4 [151° 39.135E , 23° 05.715S]  
 Data period: September 2019 (01-Sep-2019 to 30-Sep-2019)  
 Data source: ADCP  
 Data summary: September 2019  
 Number of Records: 698  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 1.69 m	Max Tp: 16.00 s
Mean Hs: 0.88 m	Mean Tp: 8.19 s
StdDev. Hs: 0.27 m	StdDev. Tp: 3.12 s

**Wave Summary September 2019**



**Data Information:**

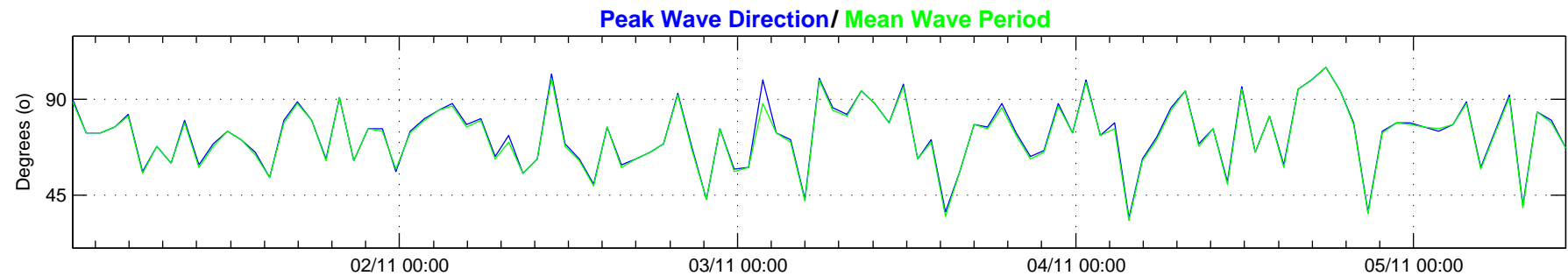
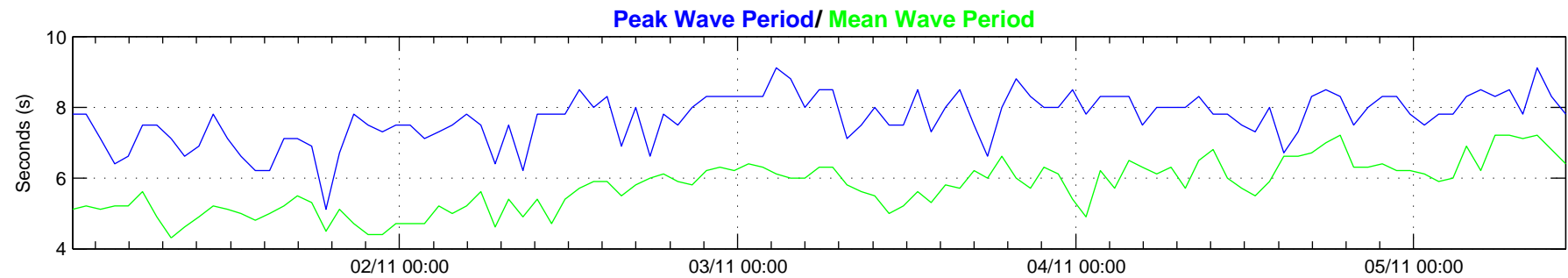
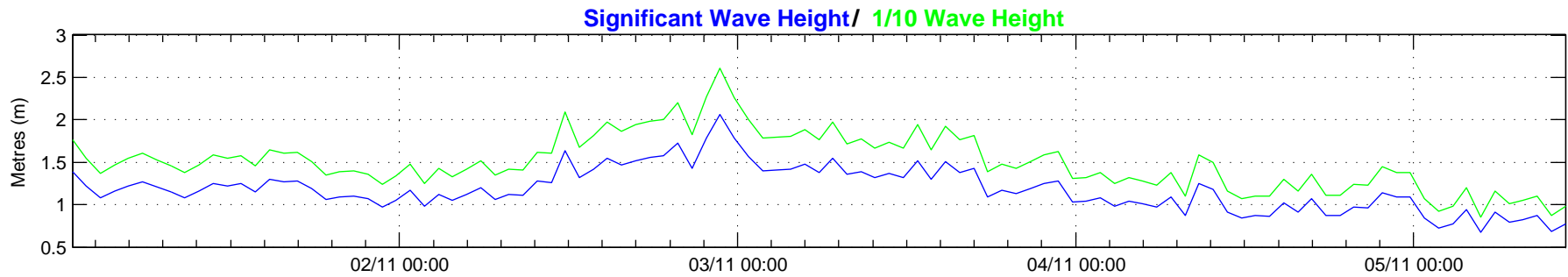
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period4 [151° 39.135E , 23° 05.715S]  
 Data period: October 2019 (01-Oct-2019 to 31-Oct-2019)  
 Data source: ADCP  
 Data summary: October 2019  
 Number of Records: 729  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 2.44 m	Max Tp: 13.50 s
Mean Hs: 1.02 m	Mean Tp: 6.81 s
StdDev. Hs: 0.34 m	StdDev. Tp: 2.46 s

**Wave Summary October 2019**





**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period4 [151° 39.135E , 23° 05.715S]  
 Data period: November 2019 (01-Nov-2019 to 05-Nov-2019)  
 Data source: ADCP  
 Data summary: November 2019  
 Number of Records: 107  
 Missing data (%): 0.00

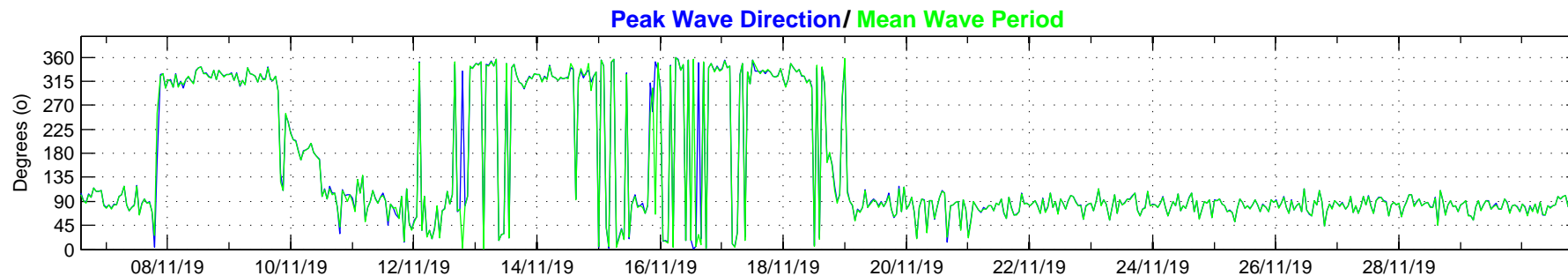
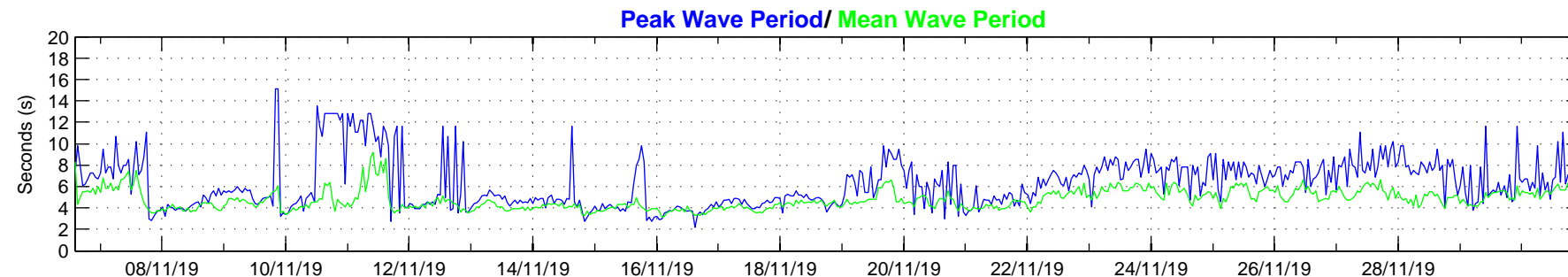
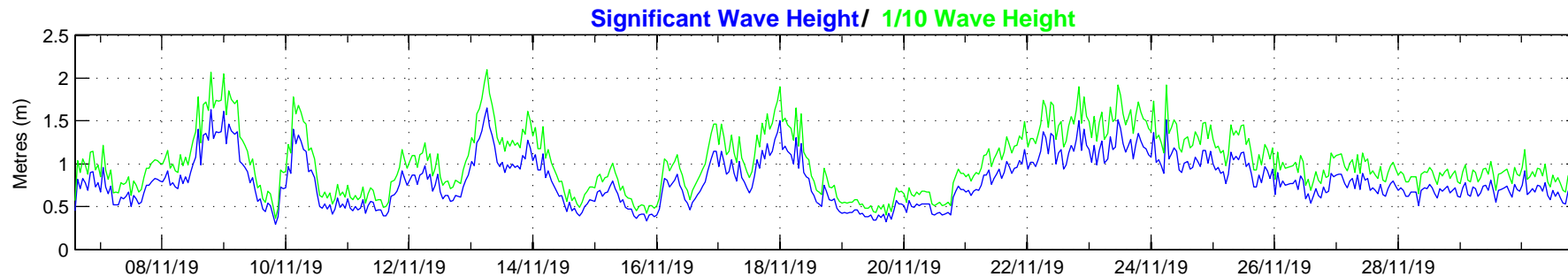
**Key Data Statistics:**

Max Hs: 2.06 m	Max Tp: 9.10 s
Mean Hs: 1.18 m	Mean Tp: 7.70 s
StdDev. Hs: 0.26 m	StdDev. Tp: 0.69 s

**Wave Summary November 2019**







**Data Information:**

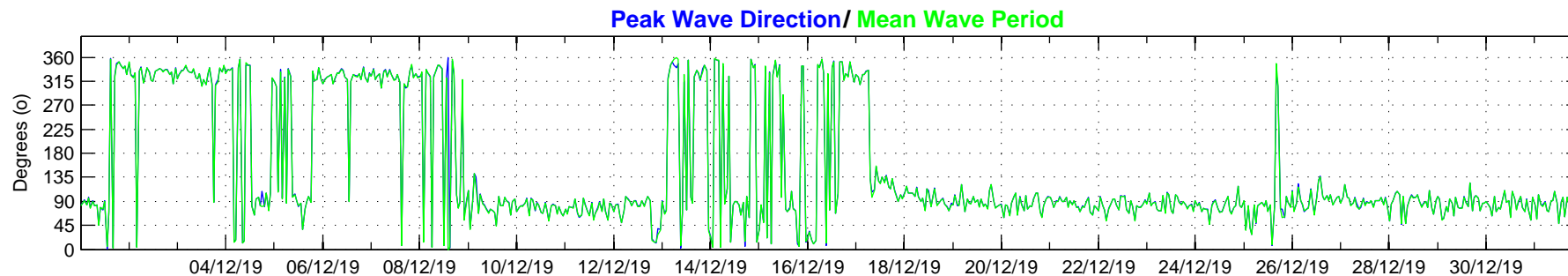
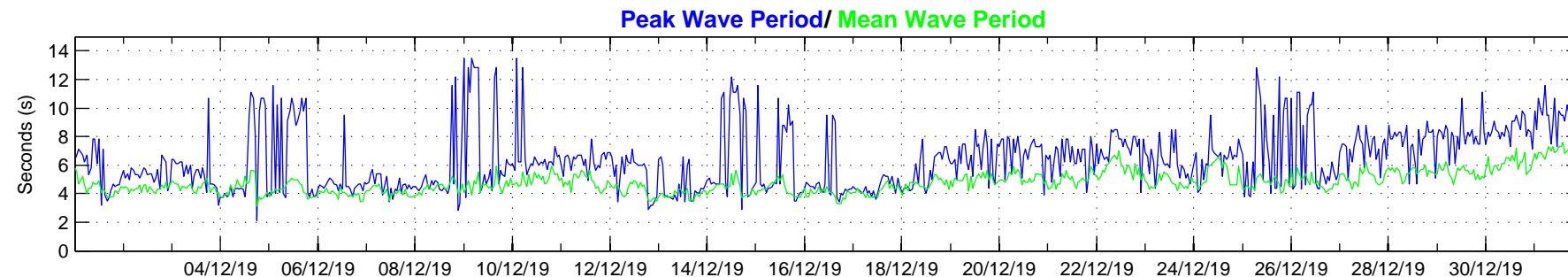
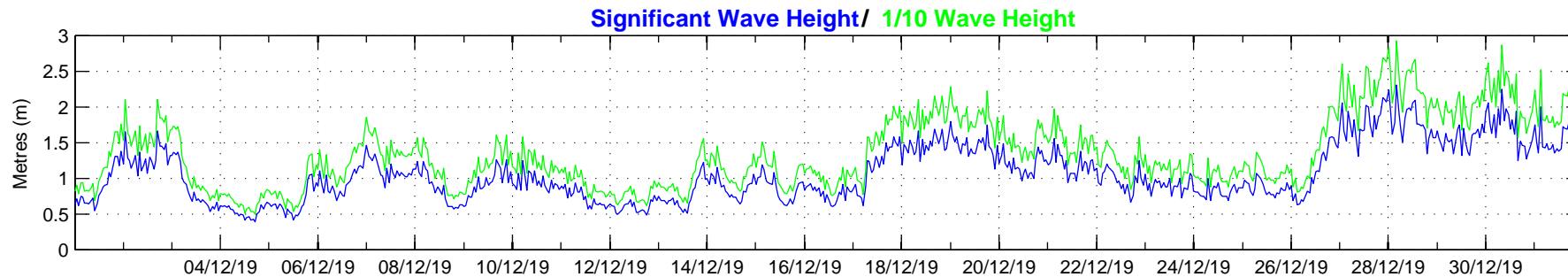
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period5 [151° 39.131E , 23° 05.721S]  
 Data period: November 2019 (06-Nov-2019 to 30-Nov-2019)  
 Data source: ADCP  
 Data summary: November 2019  
 Number of Records: 586  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 1.65 m	Max Tp: 15.10 s
Mean Hs: 0.80 m	Mean Tp: 6.31 s
StdDev. Hs: 0.27 m	StdDev. Tp: 2.33 s

**Wave Summary November 2019**





**Data Information:**

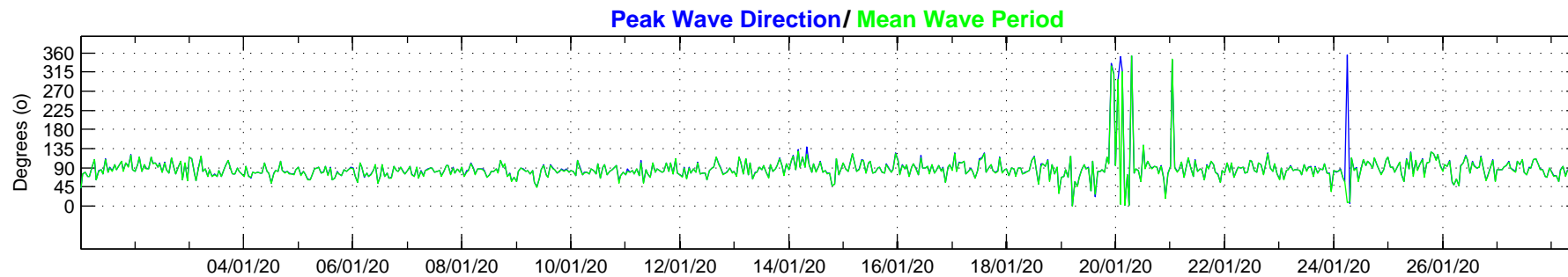
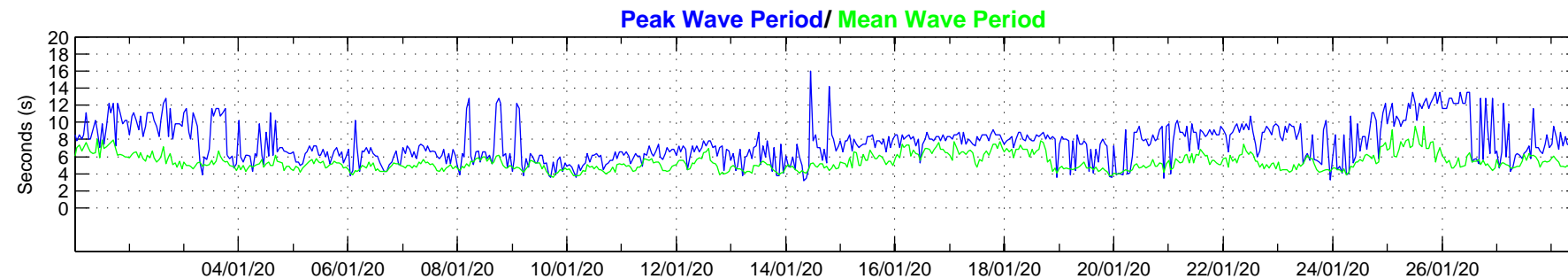
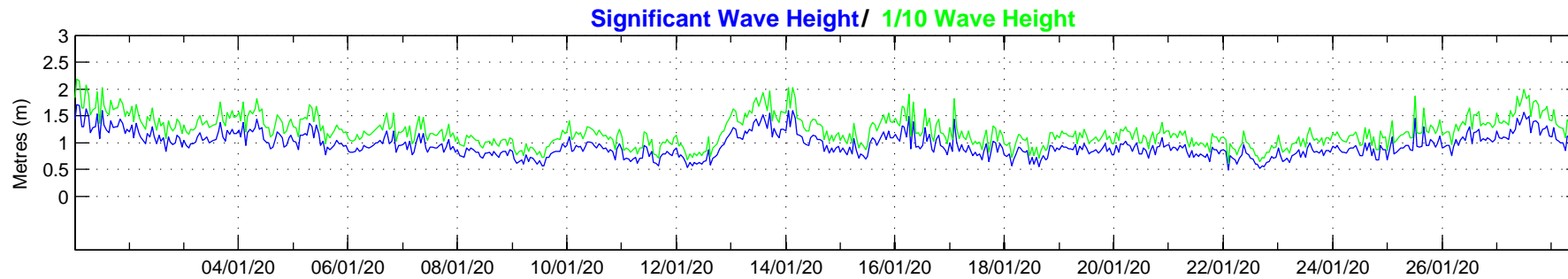
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period5 [151° 39.131E , 23° 05.721S]  
 Data period: December 2019 (01-Dec-2019 to 31-Dec-2019)  
 Data source: ADCP  
 Data summary: December 2019  
 Number of Records: 743  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 2.30 m	Max Tp: 13.50 s
Mean Hs: 1.06 m	Mean Tp: 6.39 s
StdDev. Hs: 0.39 m	StdDev. Tp: 2.16 s

Wave Summary December 2019





**Data Information:**

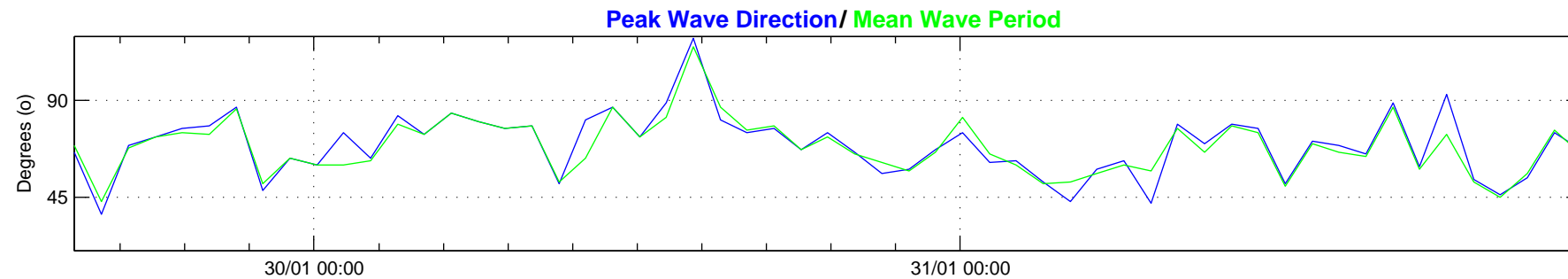
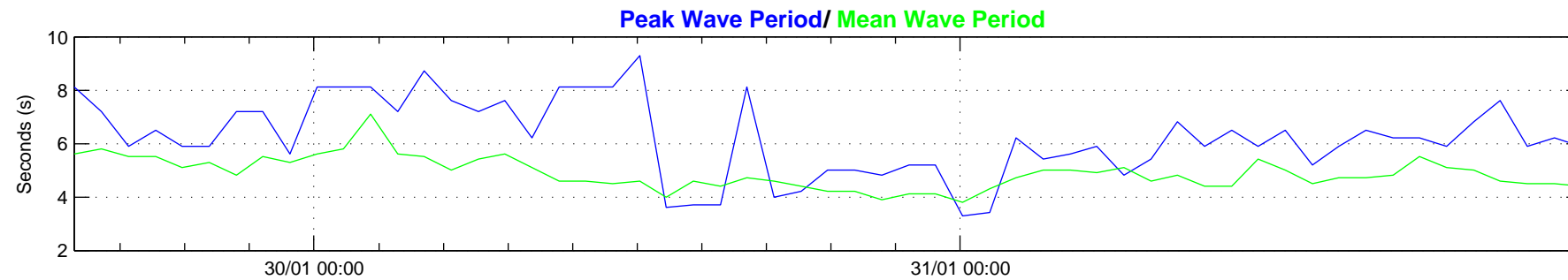
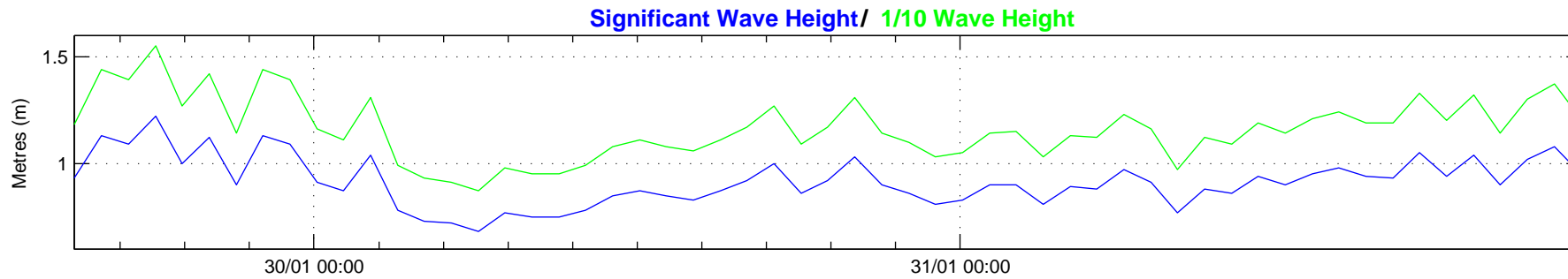
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period5 [151° 39.131E , 23° 05.721S]  
 Data period: January 2020 (01-Jan-2020 to 28-Jan-2020)  
 Data source: ADCP  
 Data summary: January 2020  
 Number of Records: 662  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 1.71 m	Max Tp: 16.00 s
Mean Hs: 0.95 m	Mean Tp: 7.57 s
StdDev. Hs: 0.24 m	StdDev. Tp: 2.27 s

**Wave Summary January 2020**





**Data Information:**

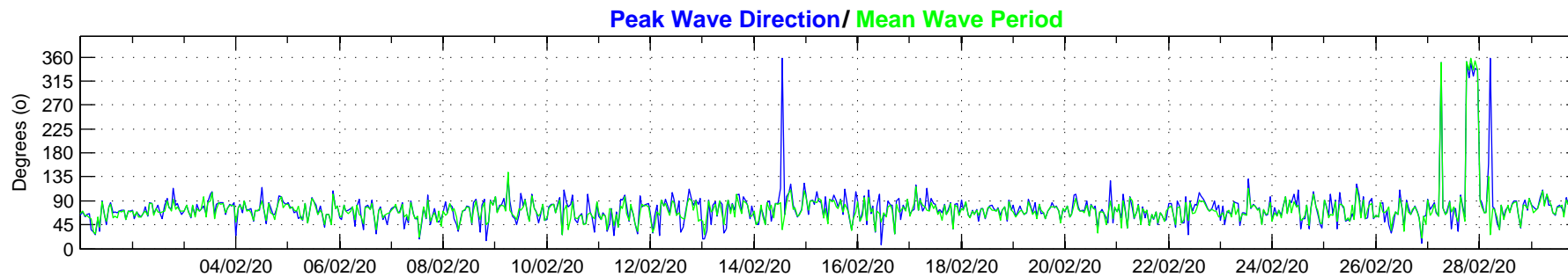
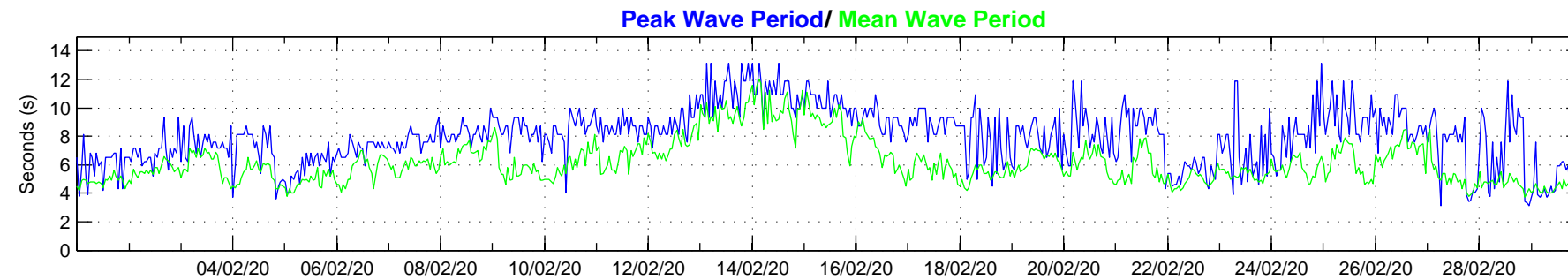
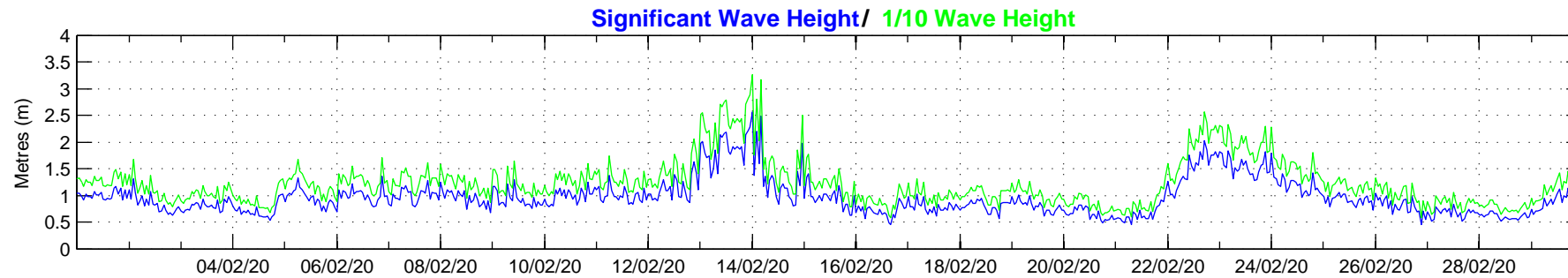
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period6 [151° 39.185E , 23° 05.741S]  
 Data period: January 2020 (29-Jan-2020 to 31-Jan-2020)  
 Data source: ADCP  
 Data summary: January 2020  
 Number of Records: 57  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 1.22 m	Max Tp: 9.30 s
Mean Hs: 0.92 m	Mean Tp: 6.22 s
StdDev. Hs: 0.12 m	StdDev. Tp: 1.43 s

**Wave Summary January 2020**





**Data Information:**

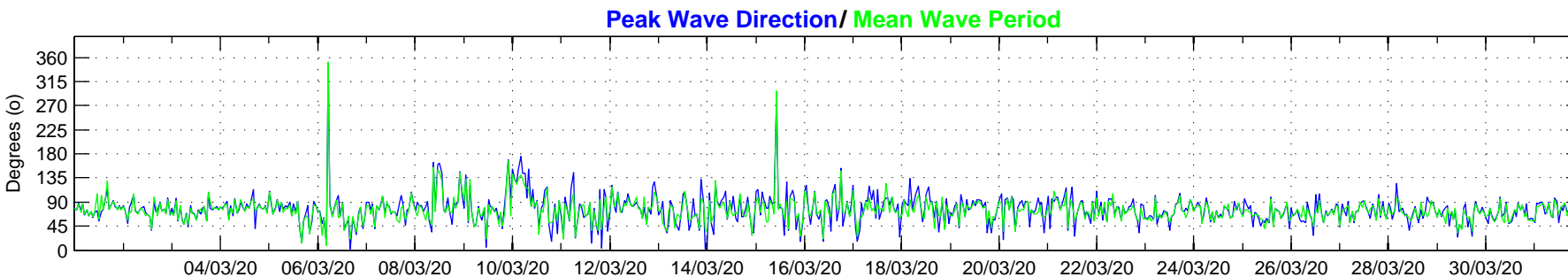
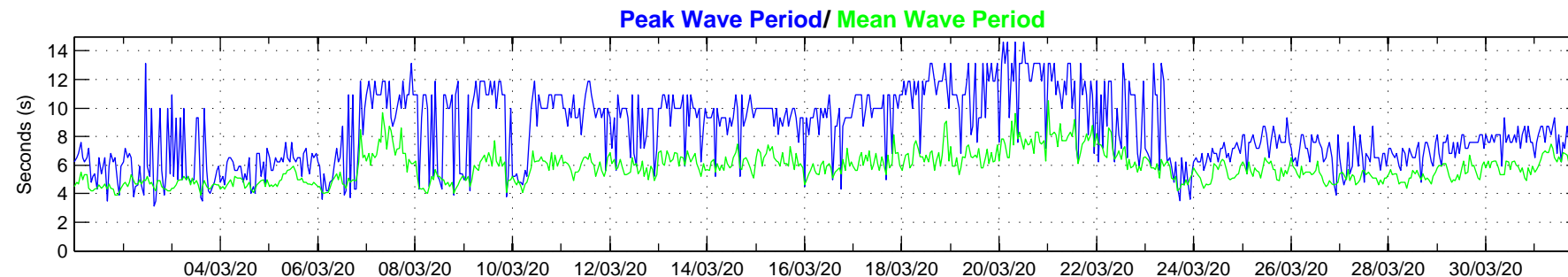
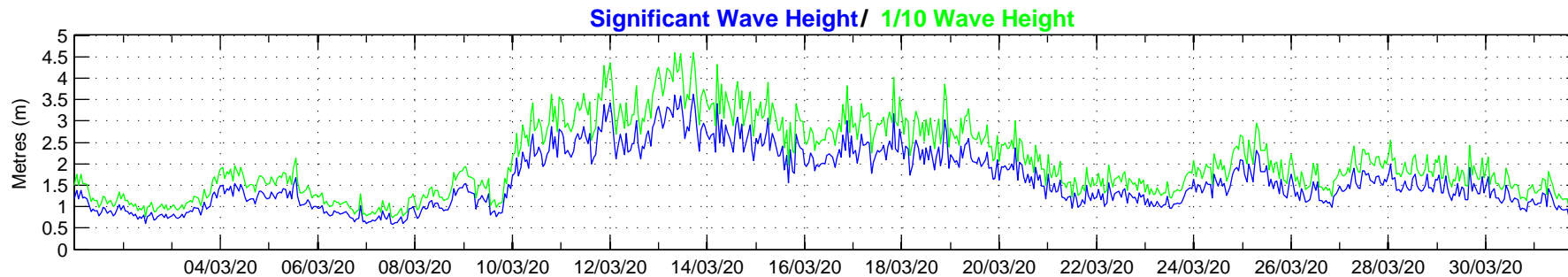
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period6 [151° 39.185E , 23° 05.741S]  
 Data period: February 2020 (01-Feb-2020 to 29-Feb-2020)  
 Data source: ADCP  
 Data summary: February 2020  
 Number of Records: 696  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 2.57 m	Max Tp: 13.10 s
Mean Hs: 0.97 m	Mean Tp: 8.00 s
StdDev. Hs: 0.33 m	StdDev. Tp: 1.98 s

**Wave Summary February 2020**





**Data Information:**

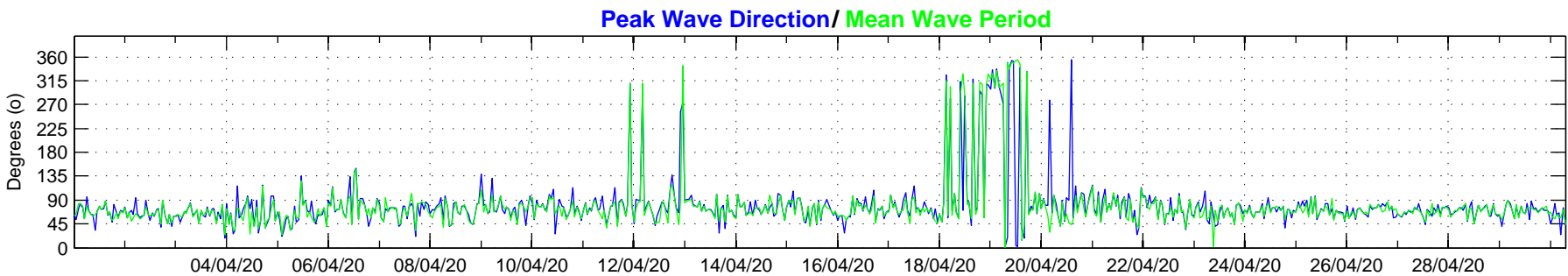
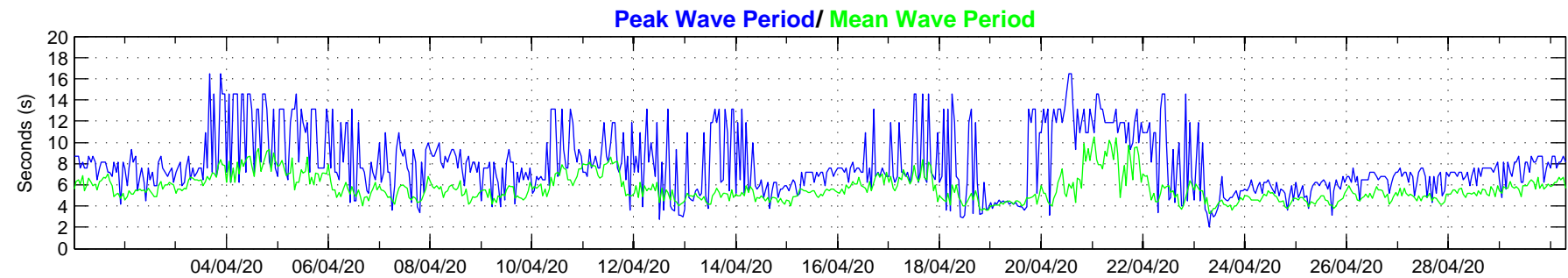
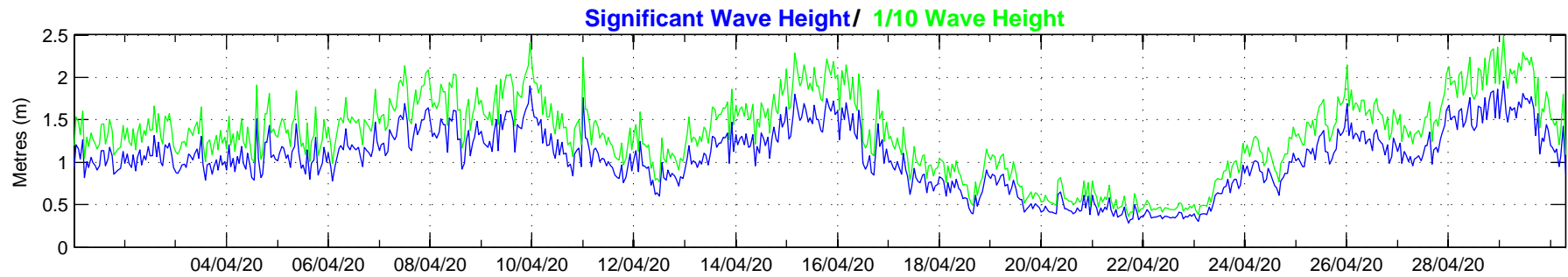
Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period6 [151° 39.185E , 23° 05.741S]  
 Data period: March 2020 (01-Mar-2020 to 31-Mar-2020)  
 Data source: ADCP  
 Data summary: March 2020  
 Number of Records: 744  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Hs: 3.62 m	Max Tp: 14.60 s
Mean Hs: 1.62 m	Mean Tp: 8.39 s
StdDev. Hs: 0.67 m	StdDev. Tp: 2.49 s

**Wave Summary March 2020**





**Data Information:**

Project: 301001-02112 Douglas Shoal Remediation Project  
 Location: ADCP2 Period6 [151° 39.185E , 23° 05.741S]  
 Data period: April 2020 (01-Apr-2020 to 30-Apr-2020)  
 Data source: ADCP  
 Data summary: April 2020  
 Number of Records: 704  
 Missing data (%): 0.00


**Key Data Statistics:**

Max Hs: 1.96 m	Max Tp: 16.50 s
Mean Hs: 1.05 m	Mean Tp: 7.92 s
StdDev. Hs: 0.36 m	StdDev. Tp: 2.94 s

**Wave Summary April 2020**

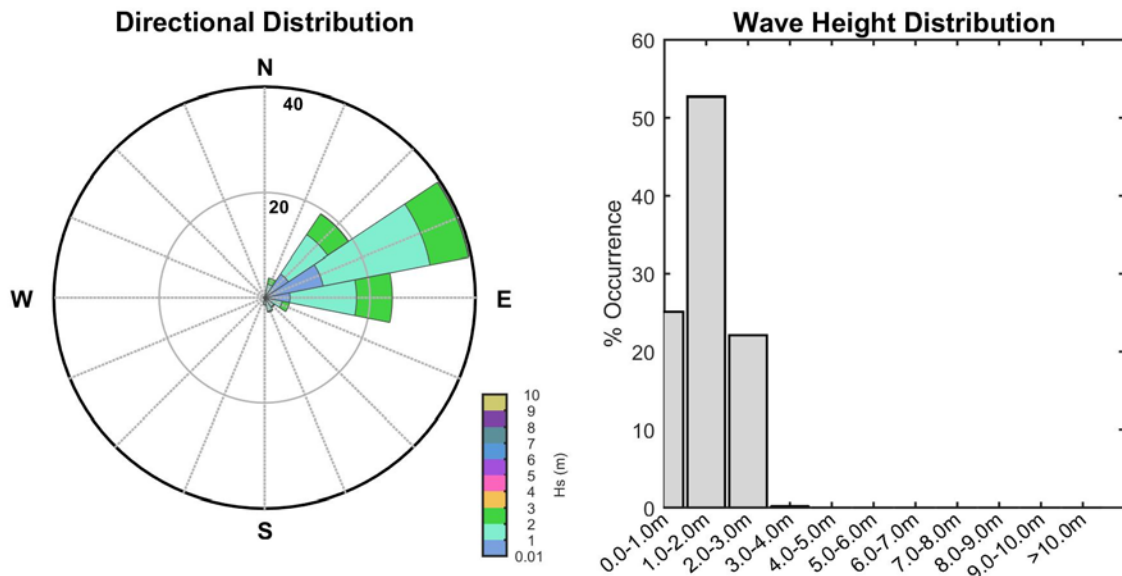






**Appendix I**  
**ADCP2: Wave Rose, Histogram and Joint  
Frequency Table Plots**

## Wave Height for ADCP2 Location: Period 2



**JFT (%) of Hs against Direction for the period 16-Mar-2019 to 13-Jun-2019**

N=2140	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
0-1	0.05	0.80	5.43	11.32	4.82	0.80	0.42	0.61	0.09	0.09	0.05	0.09	0.14	0.14	0.14	0.09	25.08	100.00
1-2	0.14	1.82	8.94	20.68	12.63	2.62	1.68	2.06	1.22	0.19	0.23	-	0.14	0.14	0.14	0.05	52.69	74.92
2-3	0.05	1.22	4.73	7.44	6.79	1.40	0.19	0.19	0.05	-	-	-	-	-	-	-	22.04	22.23
3-4	-	-	0.09	0.09	-	-	-	-	-	-	-	-	-	-	-	-	0.19	0.19
4-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
>10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	0.23	3.84	19.19	39.54	24.24	4.82	2.29	2.85	1.36	0.28	0.28	0.09	0.28	0.28	0.28	0.14		
<b>Cumul.</b>	0.23	4.07	23.26	62.80	87.04	91.86	94.15	97.01	98.36	98.64	98.92	99.02	99.30	99.58	99.86	100.00		

\* denotes values less than 0.01%      - denotes no records in bin

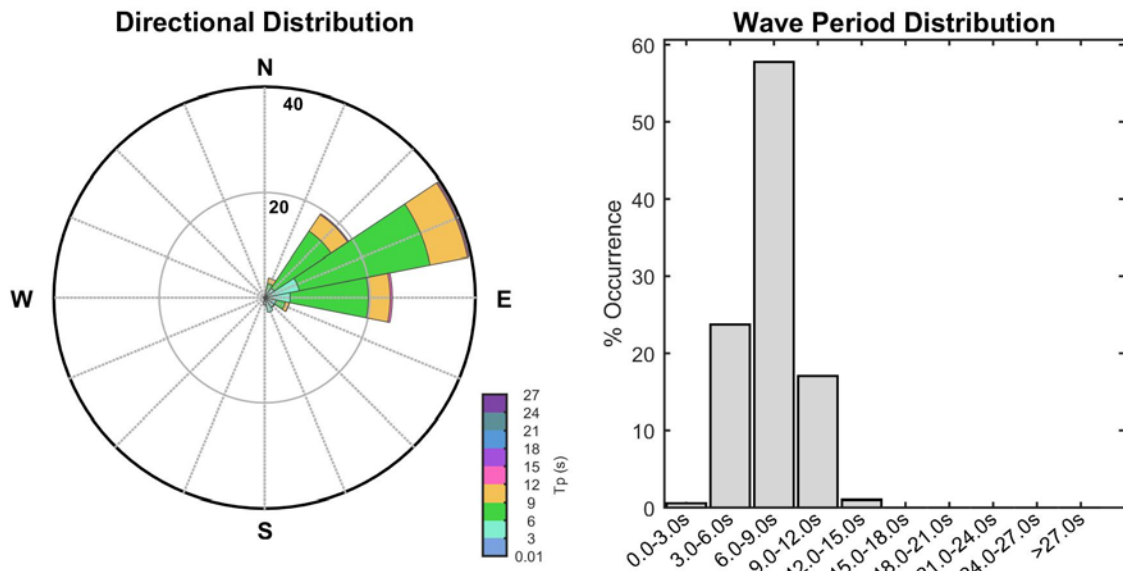
**Data Information:**

Project: 301001-02112  
 Location: ADCP2 Period 2 QAQC [151° 39.132E , 23° 05.730S]  
 Data period: All data (16-Mar-2019 to 13-Jun-2019)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 2140  
 Missing data (%): 0.00  
 Calm (% < 0.01m): 0.00

**Key Data Statistics:**

Max Hs: 3.59 m  
 Mean Hs: 1.49 m  
 StdDev. Hs: 0.58 m

## Wave Period for ADCP2 Location: Period 2



**JFT (%) of Tp against Direction for the period 16-Mar-2019 to 13-Jun-2019**

N=2140	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
<b>0-3</b>	-	-	0.05	0.19	0.05	0.05	-	0.05	-	0.05	-	-	0.14	-	-	-	0.56	100.00
<b>3-6</b>	0.09	0.14	2.15	6.50	4.82	2.20	2.20	2.81	1.36	0.23	0.28	0.09	0.09	0.28	0.28	0.14	23.68	99.44
<b>6-9</b>	0.09	2.62	12.96	25.32	14.83	1.78	0.09	-	-	-	-	-	0.05	-	-	-	57.74	75.76
<b>9-12</b>	0.05	1.08	3.79	7.25	4.12	0.75	-	-	-	-	-	-	-	-	-	-	17.03	18.02
<b>12-15</b>	-	-	0.23	0.28	0.42	0.05	-	-	-	-	-	-	-	-	-	-	0.98	0.98
<b>15-18</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>18-21</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>21-24</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>24-27</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>&gt;27</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	0.23	3.84	19.19	39.54	24.24	4.82	2.29	2.85	1.36	0.28	0.28	0.09	0.28	0.28	0.28	0.14		
<b>Cumul.</b>	0.23	4.07	23.26	62.80	87.04	91.86	94.15	97.01	98.36	98.64	98.92	99.02	99.30	99.58	99.86	100.00		

\* denotes values less than 0.01% - denotes no records in bin

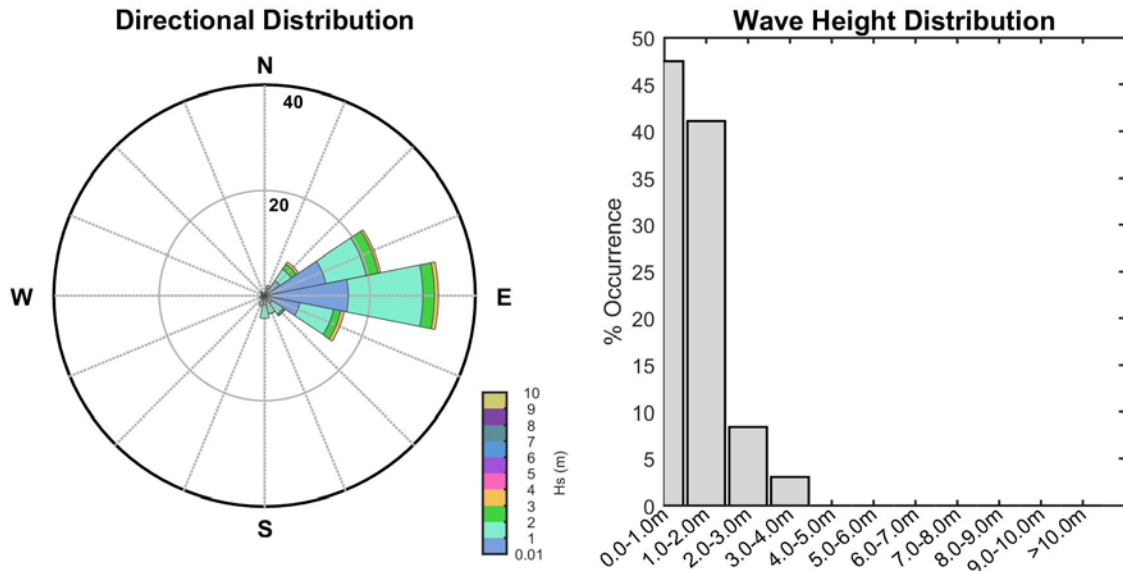
**Data Information:**

Project: 301001-02112  
 Location: ADCP2 Period 2 QAQC [151° 39.132E , 23° 05.730S]  
 Data period: All data (16-Mar-2019 to 13-Jun-2019)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 2140  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Tp: 14.60 s  
 Mean Tp: 7.41 s  
 StdDev. Tp: 2.01 s

## Wave Height for ADCP2 Location: Period 3



**JFT (%) of Hs against Direction for the period 14-Jun-2019 to 25-Aug-2019**

N=1725	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
0-1	0.17	0.46	3.48	11.83	15.88	6.84	1.74	1.04	1.74	0.99	0.46	0.70	0.46	0.64	0.87	0.17	47.48	100.00
1-2	0.12	0.29	2.61	7.83	14.14	6.49	2.49	2.49	2.61	1.04	0.17	0.41	0.17	0.06	0.17	-	41.10	52.52
2-3	0.12	0.75	1.16	2.32	2.20	1.39	0.35	0.06	-	-	-	-	-	-	-	0.06	8.41	11.42
3-4	-	0.46	0.52	0.46	0.75	0.70	0.12	-	-	-	-	-	-	-	-	-	3.01	3.01
4-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
>10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	0.41	1.97	7.77	22.43	32.99	15.42	4.70	3.59	4.35	2.03	0.64	1.10	0.64	0.70	1.04	0.23		
<b>Cumul</b>	0.41	2.38	10.14	32.58	65.57	80.99	85.68	89.28	93.62	95.65	96.29	97.39	98.03	98.72	99.77	100.00		

\* denotes values less than 0.01%      - denotes no records in bin

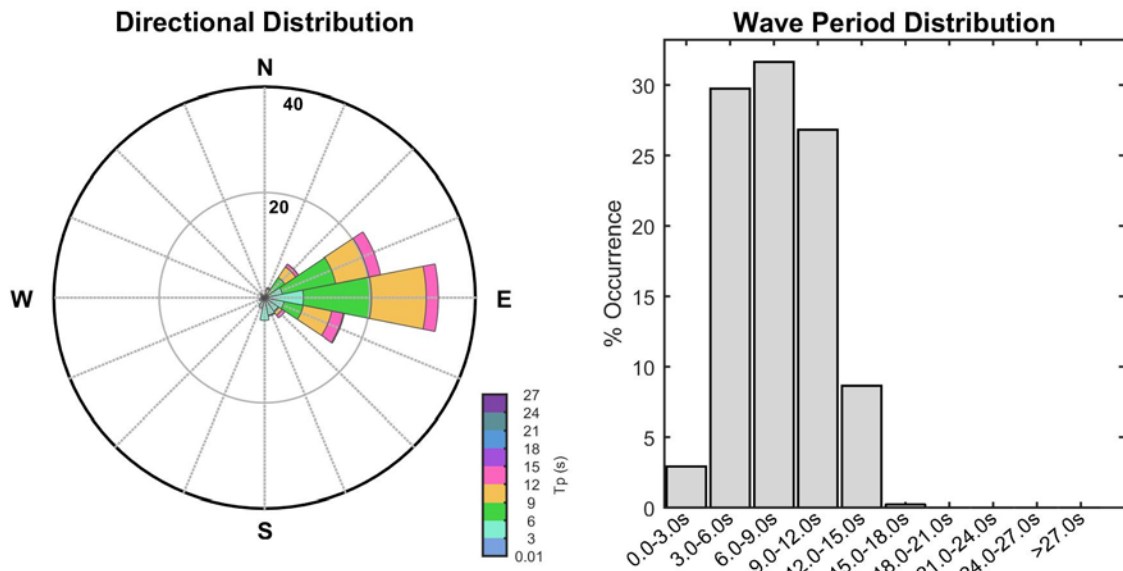
**Data Information:**

Project: 301001-02112  
 Location: ADCP2 Period 3 QAQC [151° 39.140E , 23° 05.734S]  
 Data period: All data (14-Jun-2019 to 25-Aug-2019)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 1725  
 Missing data (%): 0.00  
 Calm (% < 0.01m): 0.00

**Key Data Statistics:**

Max Hs: 3.92 m  
 Mean Hs: 1.21 m  
 StdDev. Hs: 0.67 m

## Wave Period for ADCP2 Location: Period 3



**JFT (%) of Tp against Direction for the period 14-Jun-2019 to 25-Aug-2019**

N=1725	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
<b>0-3</b>	0.06	-	0.12	0.70	0.70	0.23	0.12	-	0.23	0.17	0.06	0.23	0.06	-	0.17	0.06	2.90	100.00
<b>3-6</b>	-	0.06	0.64	2.72	6.67	3.54	3.01	3.42	4.12	1.86	0.58	0.87	0.58	0.70	0.87	0.12	29.74	97.10
<b>6-9</b>	0.06	0.58	3.88	10.32	12.93	3.71	0.12	-	-	-	-	-	-	-	-	0.06	31.65	67.36
<b>9-12</b>	0.12	1.10	2.43	6.43	10.38	5.51	0.75	0.12	-	-	-	-	-	-	-	-	26.84	35.71
<b>12-15</b>	0.17	0.23	0.64	2.26	2.32	2.26	0.70	0.06	-	-	-	-	-	-	-	-	8.64	8.87
<b>15-18</b>	-	-	0.06	-	-	0.17	-	-	-	-	-	-	-	-	-	-	0.23	0.23
<b>18-21</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>21-24</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>24-27</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>&gt;27</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	0.41	1.97	7.77	22.43	32.99	15.42	4.70	3.59	4.35	2.03	0.64	1.10	0.64	0.70	1.04	0.23		
<b>Cumul.</b>	0.41	2.38	10.14	32.58	65.57	80.99	85.68	89.28	93.62	95.65	96.29	97.39	98.03	98.72	99.77	100.00		

\* denotes values less than 0.01% - denotes no records in bin

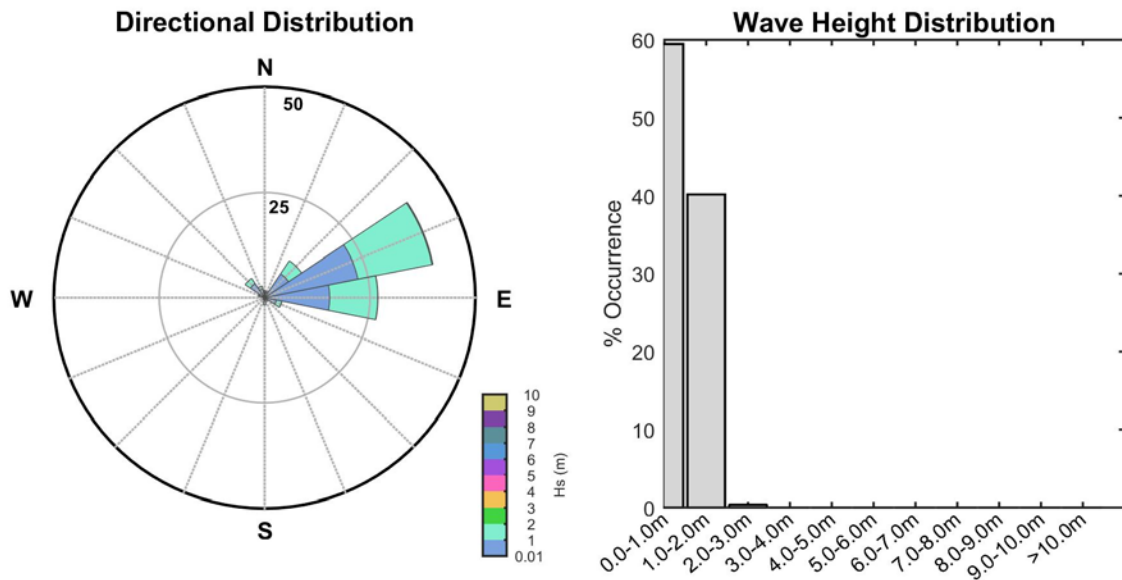
**Data Information:**

Project: 301001-02112  
 Location: ADCP2 Period 3 QAQC [151° 39.140E , 23° 05.734S]  
 Data period: All data (14-Jun-2019 to 25-Aug-2019)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 1725  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Tp: 16.50 s  
 Mean Tp: 7.80 s  
 StdDev. Tp: 3.20 s

## Wave Height for ADCP2 Location: Period 4



**JFT (%) of Hs against Direction for the period 26-Aug-2019 to 05-Nov-2019**

N=1658	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
0-1	1.09	1.21	6.82	22.56	15.44	2.83	0.36	0.18	0.66	0.30	0.30	0.12	0.18	1.27	4.04	2.11	59.47	100.00
1-2	0.60	0.36	3.74	17.91	11.40	1.33	0.60	0.18	1.03	0.24	0.30	-	-	0.24	1.51	0.72	40.17	40.53
2-3	-	-	-	0.24	0.06	0.06	-	-	-	-	-	-	-	-	-	-	0.36	0.36
3-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
>10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	1.69	1.57	10.55	40.71	26.90	4.22	0.97	0.36	1.69	0.54	0.60	0.12	0.18	1.51	5.55	2.83		
<b>Cumul.</b>	1.69	3.26	13.81	54.52	81.42	85.65	86.61	86.97	88.66	89.20	89.81	89.93	90.11	91.62	97.17	100.00		

\* denotes values less than 0.01% - denotes no records in bin

**Data Information:**

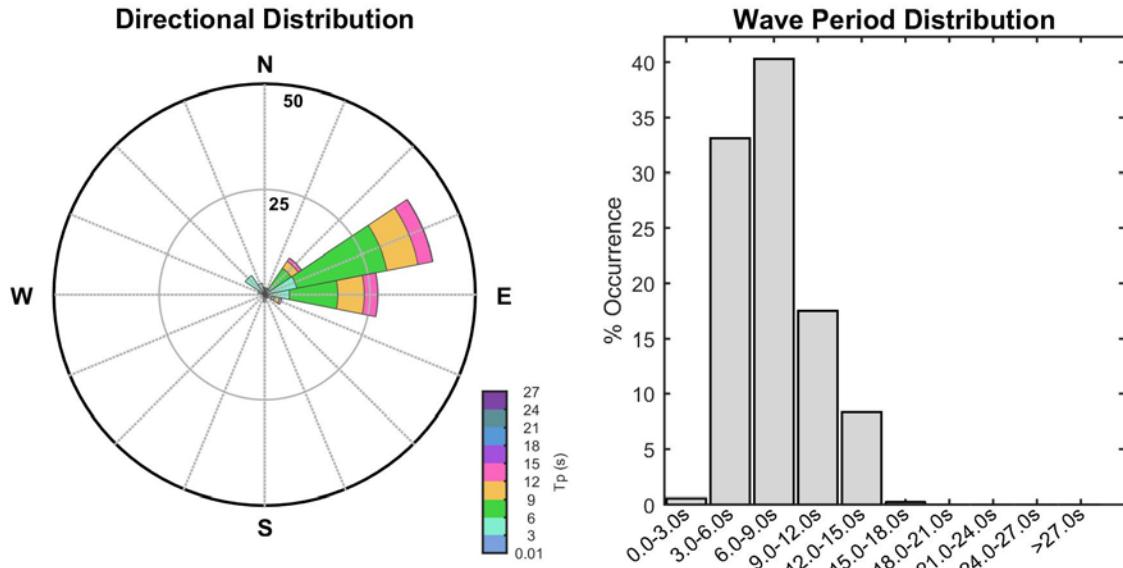
Project: 301001-02112  
 Location: ADCP2 Period 4 QAQC [151° 39.135E , 23° 05.715S]  
 Data period: All data (26-Aug-2019 to 05-Nov-2019)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 1658  
 Missing data (%): 0.00  
 Calm (% < 0.01m): 0.00

**Key Data Statistics:**

Max Hs: 2.44 m  
 Mean Hs: 0.96 m  
 StdDev. Hs: 0.31 m



## Wave Period for ADCP2 Location: Period 4



**JFT (%) of Tp against Direction for the period 26-Aug-2019 to 05-Nov-2019**

N=1658	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
<b>0-3</b>	0.06	-	-	0.06	0.18	-	-	-	0.06	-	-	0.06	-	-	0.12	-	0.54	100.00
<b>3-6</b>	1.57	0.84	1.51	7.72	5.73	1.75	0.84	0.36	1.63	0.54	0.60	0.06	0.18	1.51	5.43	2.83	33.11	99.46
<b>6-9</b>	0.06	0.18	6.09	21.77	11.46	0.66	0.06	-	-	-	-	-	-	-	-	-	40.29	66.34
<b>9-12</b>	-	0.36	1.99	7.54	6.27	1.27	0.06	-	-	-	-	-	-	-	-	-	17.49	26.06
<b>12-15</b>	-	0.18	0.90	3.50	3.20	0.54	-	-	-	-	-	-	-	-	-	-	8.32	8.56
<b>15-18</b>	-	-	0.06	0.12	0.06	-	-	-	-	-	-	-	-	-	-	-	0.24	0.24
<b>18-21</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>21-24</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>24-27</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>&gt;27</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	1.69	1.57	10.55	40.71	26.90	4.22	0.97	0.36	1.69	0.54	0.60	0.12	0.18	1.51	5.55	2.83		
<b>Cumul.</b>	1.69	3.26	13.81	54.52	81.42	85.65	86.61	86.97	88.66	89.20	89.81	89.93	90.11	91.62	97.17	100.00		

\* denotes values less than 0.01% - denotes no records in bin

**Data Information:**

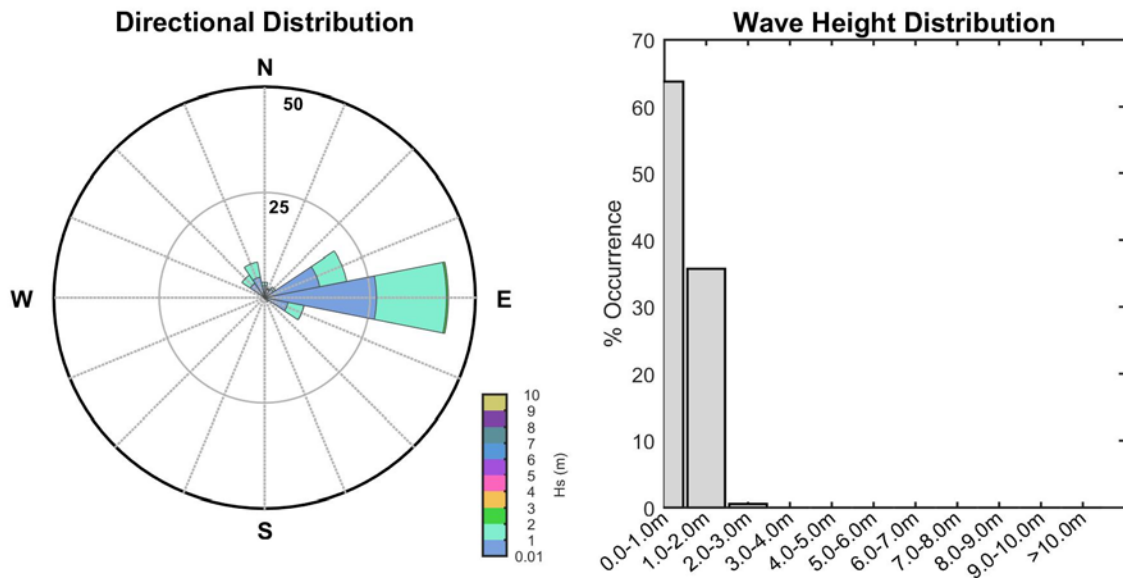
Project: 301001-02112  
 Location: ADCP2 Period 4 QAQC [151° 39.135E , 23° 05.715S]  
 Data period: All data (26-Aug-2019 to 05-Nov-2019)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 1658  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Tp: 16.00 s  
 Mean Tp: 7.46 s  
 StdDev. Tp: 2.77 s



## Wave Height for ADCP2 Location: Period 5



**JFT (%) of Hs against Direction for the period 06-Nov-2019 to 28-Jan-2020**

N=1991	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
0-1	2.87	2.01	2.51	13.32	26.55	5.68	0.55	0.15	0.20	0.10	0.05	0.15	0.05	0.35	4.12	5.03	63.70	100.00
1-2	0.85	0.25	0.55	6.54	16.59	3.82	0.65	0.10	0.20	0.05	-	-	-	0.10	2.36	3.67	35.75	36.30
2-3	-	-	0.05	-	0.45	0.05	-	-	-	-	-	-	-	-	-	-	0.55	0.55
3-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
>10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	3.72	2.26	3.12	19.86	43.59	9.55	1.21	0.25	0.40	0.15	0.05	0.15	0.05	0.45	6.49	8.70		
<b>Cumul.</b>	3.72	5.98	9.10	28.96	72.55	82.10	83.31	83.56	83.96	84.11	84.16	84.31	84.36	84.82	91.30	100.00		

\* denotes values less than 0.01%      - denotes no records in bin

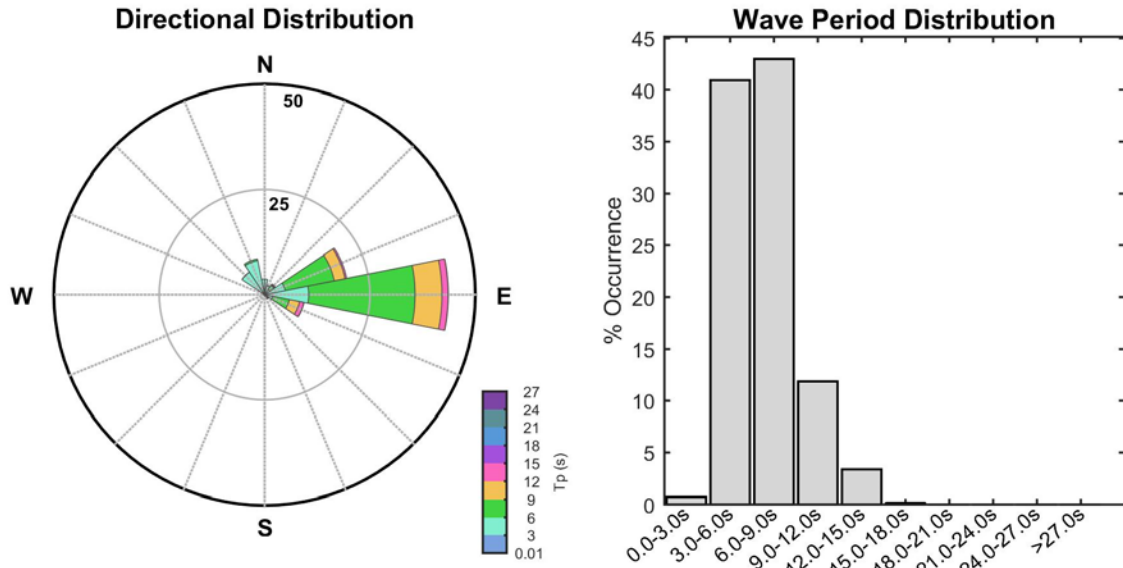
**Data Information:**

Project: 301001-02112  
 Location: ADCP2 Period 5 QAQC [151° 39.131E , 23° 05.721S]  
 Data period: All data (06-Nov-2019 to 28-Jan-2020)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 1991  
 Missing data (%): 0.00  
 Calm (% < 0.01m): 0.10

**Key Data Statistics:**

Max Hs: 2.30 m  
 Mean Hs: 0.95 m  
 StdDev. Hs: 0.32 m

## Wave Period for ADCP2 Location: Period 5



**JFT (%) of Tp against Direction for the period 06-Nov-2019 to 28-Jan-2020**

N=1991	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
<b>0-3</b>	0.20	0.20	-	0.05	-	0.05	-	0.05	-	-	-	-	0.05	-	0.05	0.05	0.70	100.00
<b>3-6</b>	3.52	2.01	1.51	4.93	10.46	1.91	0.55	0.20	0.40	0.15	0.05	0.15	-	0.45	6.39	8.25	40.93	99.30
<b>6-9</b>	-	-	1.16	11.87	25.24	4.02	0.25	-	-	-	-	-	-	-	0.05	0.40	42.99	58.37
<b>9-12</b>	-	-	0.20	2.61	6.39	2.46	0.20	-	-	-	-	-	-	-	-	-	11.87	15.38
<b>12-15</b>	-	0.05	0.25	0.40	1.46	1.06	0.15	-	-	-	-	-	-	-	-	-	3.37	3.52
<b>15-18</b>	-	-	-	-	0.05	0.05	0.05	-	-	-	-	-	-	-	-	-	0.15	0.15
<b>18-21</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>21-24</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>24-27</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>&gt;27</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	3.72	2.26	3.12	19.86	43.59	9.55	1.21	0.25	0.40	0.15	0.05	0.15	0.05	0.45	6.49	8.70		
<b>Cumul.</b>	3.72	5.98	9.10	28.96	72.55	82.10	83.31	83.56	83.96	84.11	84.16	84.31	84.36	84.82	91.30	100.00		

\* denotes values less than 0.01% - denotes no records in bin

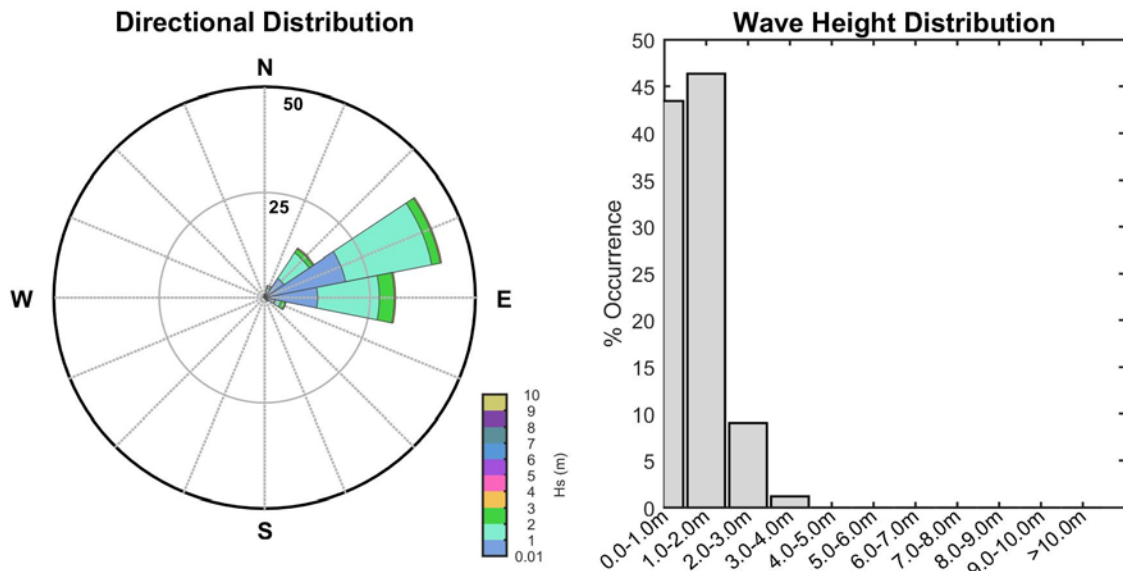
**Data Information:**

Project: 301001-02112  
 Location: ADCP2 Period 5 QAQC [151° 39.131E , 23° 05.721S]  
 Data period: All data (06-Nov-2019 to 28-Jan-2020)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 1991  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Tp: 16.00 s  
 Mean Tp: 6.77 s  
 StdDev. Tp: 2.31 s

## Wave Height for ADCP2 Location: Period 6



**JFT (%) of Hs against Direction for the period 29-Jan-2020 to 30-Apr-2020**

N=2201	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
0-1	0.64	0.95	5.54	19.58	12.59	2.54	0.23	0.14	-	-	-	0.05	0.18	0.32	0.36	0.36	43.48	100.00
1-2	0.09	1.36	7.18	20.81	14.63	1.41	0.45	0.27	0.09	-	-	-	-	-	0.05	-	46.34	56.52
2-3	0.14	0.64	1.09	2.09	3.54	1.09	0.36	0.05	-	-	-	-	-	0.05	-	-	9.04	10.18
3-4	-	0.05	0.32	0.32	0.32	0.14	-	-	-	-	-	-	-	-	-	-	1.14	1.14
4-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
>10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	0.86	3.00	14.13	42.80	31.08	5.18	1.04	0.45	0.09	-	-	0.05	0.18	0.36	0.41	0.36		
<b>Cumul.</b>	0.86	3.86	17.99	60.79	91.87	97.05	98.09	98.55	98.64	98.64	98.64	98.68	98.86	99.23	99.64	100.00		

\* denotes values less than 0.01% - denotes no records in bin

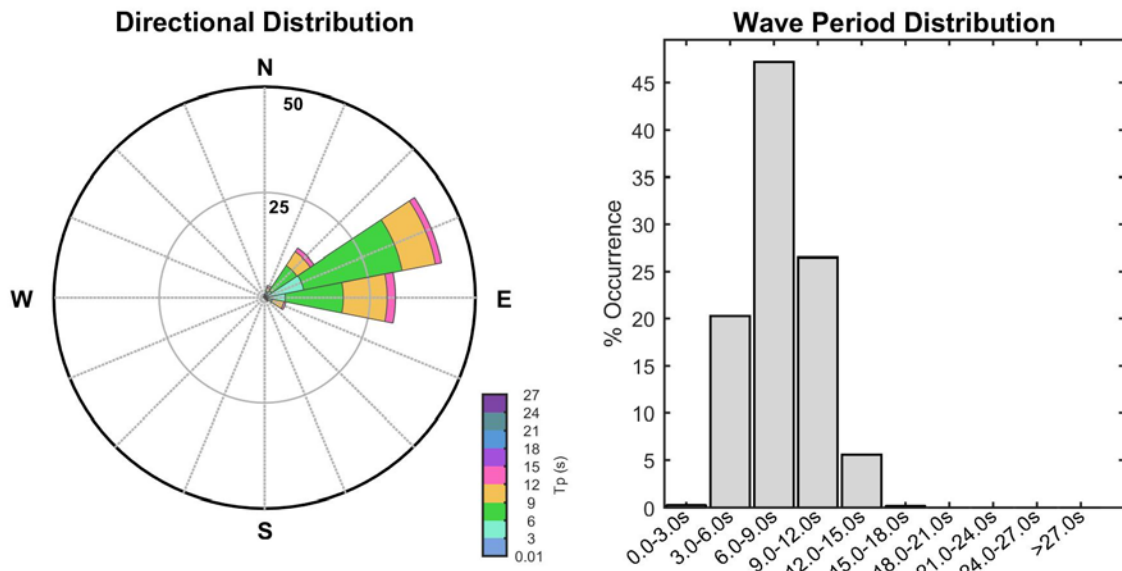
**Data Information:**

Project: 301001-02112  
 Location: ADCP2 Period 6 QAQC [151° 39.185E , 23° 05.741S]  
 Data period: All data (29-Jan-2020 to 30-Apr-2020)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 2201  
 Missing data (%): 0.00  
 Calm (% < 0.01m): 0.00

**Key Data Statistics:**

Max Hs: 3.62 m  
 Mean Hs: 1.21 m  
 StdDev. Hs: 0.56 m

## Wave Period for ADCP2 Location: Period 6



**JFT (%) of Tp against Direction for the period 29-Jan-2020 to 30-Apr-2020**

N=2201	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Cumul.
<b>0-3</b>	-	-	0.05	0.14	-	-	-	-	-	-	-	-	0.05	-	0.05	-	0.27	100.00
<b>3-6</b>	0.50	0.36	1.95	9.31	4.91	0.82	0.68	0.41	0.09	-	-	0.05	0.14	0.32	0.36	0.36	20.26	99.73
<b>6-9</b>	0.09	1.09	7.22	23.81	13.77	1.00	0.18	0.05	-	-	-	-	-	-	-	-	47.21	79.46
<b>9-12</b>	0.23	0.95	3.82	8.04	10.40	2.86	0.14	-	-	-	-	-	-	0.05	-	-	26.49	32.26
<b>12-15</b>	-	0.59	1.04	1.45	1.95	0.50	0.05	-	-	-	-	-	-	-	-	-	5.59	5.77
<b>15-18</b>	0.05	-	0.05	0.05	0.05	-	-	-	-	-	-	-	-	-	-	-	0.18	0.18
<b>18-21</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>21-24</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>24-27</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>&gt;27</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	0.86	3.00	14.13	42.80	31.08	5.18	1.04	0.45	0.09	-	-	0.05	0.18	0.36	0.41	0.36		
<b>Cumul.</b>	0.86	3.86	17.99	60.79	91.87	97.05	98.09	98.55	98.64	98.64	98.64	98.68	98.86	99.23	99.64	100.00		

\* denotes values less than 0.01%      - denotes no records in bin

**Data Information:**

Project: 301001-02112  
 Location: ADCP2 Period 6 QAQC [151° 39.185E , 23° 05.741S]  
 Data period: All data (29-Jan-2020 to 30-Apr-2020)  
 Data source: ADCP  
 Data summary: Complete  
 Number of Records: 2201  
 Missing data (%): 0.00

**Key Data Statistics:**

Max Tp: 16.50 s  
 Mean Tp: 8.06 s  
 StdDev. Tp: 2.51 s