S275 Cruise Report

Benjamin Harden

image

Sea Education Association, Woods Hole, Massachusetts

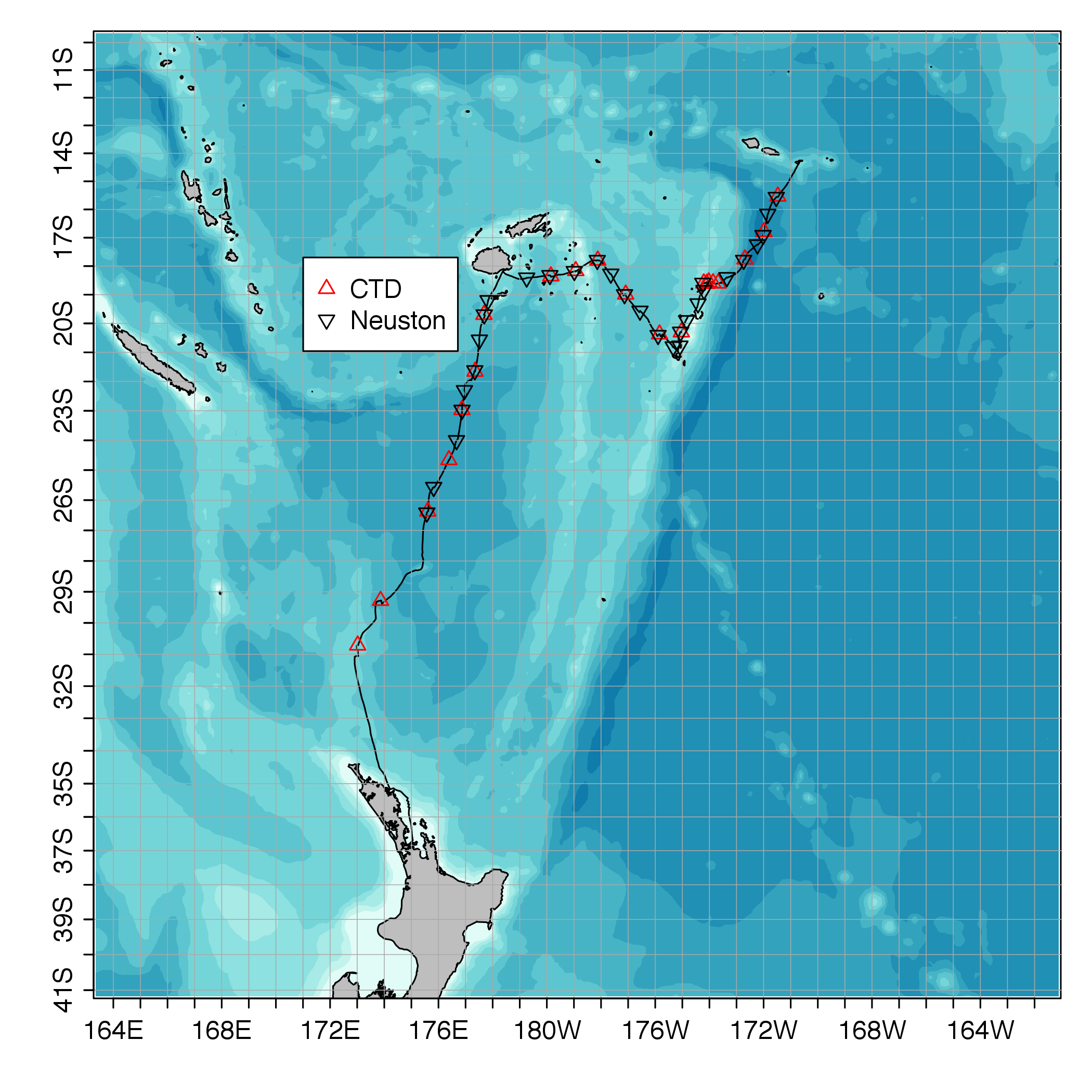
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**To obtain unpublished data, contact the SEA Data Archivist:**  
Data Archivist  
Sea Education Association  
PO Box 6  
Woods Hole, MA 02543  
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**Faculty**  
Jay Amster & Captain  
Jeff Wescott & Chief Anthropologist  
Benjamin Harden & Chief Scientist  
  
**Crew**  
Alison Taylor & Chief Mate  
Rebecca Jackson & 2nd Mate  
Tristan Feldman & 3rd Mate  
Brittany Mauer & 1st Assistant Scientist  
Erin Adams & 2nd Assistant Scientist  
Erin Houlihan & 3rd Assistant Scientist  
Edward Flemming & Chief Engineer  
Michael Rigney & Assistant Engineer  
Sabrina Hutchinson & Steward  
Christian L & Steward-in-training  
  
**Observers**  
Yumi ... (Tonga) & Pago Pago – Suva  
Vani Koroisamanunu (Fiji) & Nuku’alofa – Auckland  
  
**Students**  
Mary Elizabeth Benton & Sewanee: The University of the South  
Nikkol Blair & Colorado College  
Graeme Brown& Colby College  
Claire Caputi & Colby College  
Amanda Carreau& University of Massachusetts, Amherst  
Hannah Chiu & Pitzer College  
Alison Derevensky& Macaulay Honors at CUNY Brooklyn College  
Anna Gaskill &Wellesley College  
Amy Green& Boston University  
Katharine Hall & Sewanee: The University of the South  
Katherine Hodge & University of Chicago  
Arya Jemal & Swarthmore College  
Joshua Jolly & University of Denver  
Kellen McAuliffe& Colgate University  
Faith McKenna& University of Denver  
Henry Oliva& Colby College  
Flannery Raabe& Oberlin College  
Alessandra Rella& Franklin and Marshall College  
Noah Robiner& Carleton College  
Sierra Schmitz& American University  
Sarah Towne& Cornell University

# Data Description

R0.5 

[cruiseTrack]

This report summarizes the science activities aboard the *SSV Robert C. Seamans* during the Sea Education Association’s Fall 2017 semester ”Sustainability in Polynesian Island Cultures and Ecosystems” (SPICE), cruise S275. This cruise departed Pago Pago, in American Samoa on 28th September 2017 and concluded in Auckland on 6th November 2017. En route, the Seamans had port calls in Neiafu in the Vava’u island group and of Tonga (4–7 Oct), in Nuku’alofa the Tongan Capital in the southern Tongatapu island group (11–14th Oct), and in Suva, Fiji (19–23 Oct). On the leg between American Samoa and the Vava’u, we crossed the international date line. The 1st October was skipped and our clocks went from midnight at the end of the 30th September to midnight at the end of the 1st October.

The cruise track spanned a range of oceanographic environments. We transited from the the tropics in American Samoa to the temperate mid-latitudes around New Zealand’s North Island, crossing the western side of the south Pacific Gyre en route. We also had the opportunity to sampled across the transition from near-shore to open ocean as we transited through the Tongan and Fijian region. The winds were predominantly easterly through

The 21 students of S275 were all active and responsible for data collection in the lab. Although this particular semester program is science-lite in it’s focus, students all undertook small research projects pertaining to the ocean data collected. In addition to investigations of physical, chemical and biological properties along the whole cruise track, the two addional key topics of investigation were the Island Mass Effect and Ocean Soundscapes.

To accomplish our science goals our sampling plan included:

* A standard SEA portfolio of noon CTD casts, twice-daily Neuston tows, and continuous measurements from ADCP, Chirp and flow-through system;
* Surface and subsurface samples for extracted chlorophyll-a, Nitrate, Phosphate and pH. This included high-resolution surface stations approaching and/or leaving port to probe run-off, and hydrocasts upstream and downstream of islands to investigate island upwelling;
* Noon hydrophone deployments (outlined below).
* Day-time, hourly 6-minute observations of fauna and debris.
* Occasional midnight CTD casts.
* Occasional Meter-Net tows to approximately 200 m.
* Occasional RBR-CTD towed deployments (outlined below).
* Filtering for Microplastics from water samples.

The winds for this cruise were predominantly from an easterly direction (figure XX) and presented little in the way of obstruction to our movement along the cruise track. The easterlies were maintained all the way to New Zealand easterly. In the previous year (S269), the winds had been from a more south-easterly direction before transitioning to westerlies south of 30degS. As a result, the cruise track heading southward from Fiji this year was much mire direct. S269’s cruise track tended more westward before returning eastward to New Zealand. For the second half of the long passage to New Zealand, the winds were sustained strong with large seas. As a result, we undertook limited sampling south of 30degS, instead opting to make the most of the winds in moving us towards our destination.

This summary of the data is not meant to be exhaustive; lengthy data sets from, for example, ADCP, CTDs, or CHIRP, have not been included in their entirety. All data is available and can be requested from the SEA data archivist.

– Ben Harden, Chief Scientist, S275

## Hydrophone Deployments

Part of our standard sampling during this cruise was noon hydrophone deployments. This was motivated partly by our proximity to humpback whale breeding grounds in Tonga and partly by a desire from SEA faculty to expand our capabilities in this area given the relative quite functioning of our vessels.

The hydrophone was streamed from the port-side of the quarter deck while the Seamans was hove-to. Our standard protecol was to make 30-minute recordings on a TASCAM audio recorder. However, some deployments varied in length. During the hydrophne deployment we undertook visual surveys of ships and marine mammals.

Two notable deployments were stations 32 and 13 on the XXX Oct and XXX Oct respectively.

During station XX we were in the shallow breeding grounds of humpback whales in Tonga. During the recording (which was 1hrXXm long) we saw numerious whales displaying a range of behaviours. This recording is our best record of humpback whale song along our cruise track.

During station XX we conducted an experiment into the soundscape of the Seamans itself. We systematically secured machinery aboard the ship to isolate the sounds that each produced. This included a short period (approximately 30 seconds) of black-shop when all engineering equipment was secured.

## RBR-CTD towed deployments

We experimented with deploying the RBR-CTD on a towable wing during this cruise. This was deployed from the BT winch on the starboard quarter and was towed in a saw-tooth configuration while the ship was in transit. The goal of this deployment was to investigate small-scale structures in the vertical and horizontal around island regions that could be indicative of eddy shedding or localized upwelling.

We deployed four times, once in the open ocean between American Samoa and Tonga, twice around the island group of Vava’u (one upstream, one downstream) and once south of Vava’u as we moved from the shallow shelf region (approx. 100m) to the deep ocean.

The salinity data from these casts is suspect in comparison with Seabird CTD data at nearby casts. This is not necessarily surprising. The RBR module is an older model made before the company moved to improve the flow through the induction cell. The flow over the towable wing might also be mixing and trapping water pockets thereby also creating issues with the data collected. The data below is presented as-is.

## Additional Data Notes

* One event file was maintained for the duration of the cruise (ELG 002)
* Please request the end of cruise report for full technical details of ship science operations.

## Figures

CTD Section running along the S275 cruise track - top: map of stations, middle: temperature. bottom: Salinity. Select station numbers are shown with red circles in top panel. All profile locations are shown with gray lines in bottom two panels with select stations numbered. See Tables [hydrowork] and [ctdwork] for full cast details. NB: CTD/Hydrocasts at stations 10-15 have been excluded from this plot. They are the high-res section across the Nomuka Trench plotted in Figure [CTDsectionnomuka].

CTD Section running along the S275 cruise track - top: map of stations, middle: temperature. bottom: Salinity. Select station numbers are shown with red circles in top panel. All profile locations are shown with gray lines in bottom two panels with select stations numbered. See Tables [hydrowork] and [ctdwork] for full cast details. NB: CTD/Hydrocasts at stations 10-15 have been excluded from this plot. They are the high-res section across the Nomuka Trench plotted in Figure [CTDsectionnomuka].

[CTDsection]

As Figure [CTDsection] but for auxiliary CTD data running along the S275 cruise track. Top: Chlorophyll-a Fluormeter. Bottom: Oxygen Concentration.

As Figure [CTDsection] but for auxiliary CTD data running along the S275 cruise track. Top: Chlorophyll-a Fluormeter. Bottom: Oxygen Concentration.

[CTDsection2]

Section across the Nomuka Trench in the Ha’apai region of Tonga. From top: Temperature, Salinity, Chlorophyll-a fluorescence. Bottom track from on-board chirp. Left of figure is the northern end of the transect.

Section across the Nomuka Trench in the Ha’apai region of Tonga. From top: Temperature, Salinity, Chlorophyll-a fluorescence. Bottom track from on-board chirp. Left of figure is the northern end of the transect.

[CTDsectionnomuka]

Underway flow-through data from the S275 cruise track. From top left: Surface water temperature (C), salinity, chlorophyll fluorescence (volts) and CDOM fluorescence (volts) as measured by flow through system sensors.

Underway flow-through data from the S275 cruise track. From top left: Surface water temperature (C), salinity, chlorophyll fluorescence (volts) and CDOM fluorescence (volts) as measured by flow through system sensors.

[hourly]

Surface Station data from along S275 cruise track. From top left: Surface water nitrate concentration (uM), phosphate concentration (uM), chlorophyll concentration (0.45um; ug/L), pH, Alkalinity, and Oxygen Concentration as measured by laboratory analyses on discrete surface station water samples. See Table [surfsamp] for full station details.

Surface Station data from along S275 cruise track. From top left: Surface water nitrate concentration (uM), phosphate concentration (uM), chlorophyll concentration (0.45um; ug/L), pH, Alkalinity, and Oxygen Concentration as measured by laboratory analyses on discrete surface station water samples. See Table [surfsamp] for full station details.

[surfstat]

Top 300 m current vectors (cm/s) for the S275 cruise track as measured by the ship’s ADCP. Lines indicate direction current is flowing towards.

Top 300 m current vectors (cm/s) for the S275 cruise track as measured by the ship’s ADCP. Lines indicate direction current is flowing towards.

[currents]

Wind speed and direction for the S275 cruise track, as measured by the ship’s anemometer. Lines indicate direction that the winds are flowing towards.

Wind speed and direction for the S275 cruise track, as measured by the ship’s anemometer. Lines indicate direction that the winds are flowing towards.

[winds]

Total zooplankton biomass () for neuston tows on cruise S275. Grey circles are night time tows and white are for day time.

Total zooplankton biomass () for neuston tows on cruise S275. Grey circles are night time tows and white are for day time.

[biomass]

## Tables

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Station & Date & Time & Longitude & Latitude & NT & MN & PN & HC & CTD & RBR & SS & General Locale  
Station & Date & Time & Longitude & Latitude & NT & MN & PN & HC & CTD & RBR & SS & General Locale  
 S275-001 & 2017-09-29 & 10:22 & 171°28.6’W & 15°33.2’S & X & & & X & & & 4 & South of American Samoa  
S275-002 & 2017-09-29 & 23:48 & 171°50.8’W & 16°9.9’S & X & & & & & & 5 & South of American Samoa  
S275-003 & 2017-09-30 & 11:02 & 171°59.1’W & 16°47.6’S & & & & X & & & & South of American Samoa  
S275-004 & 2017-09-30 & 15:56 & 172°1.2’W & 16°55.0’S & X & & & & & X & 6 & South of American Samoa  
S275-005 & 2017-09-30 & 23:21 & 172°13.7’W & 17°14.8’S & X & & & & & & 7 & South of American Samoa  
S275-006 & 2017-10-02 & 09:39 & 172°41.4’W & 17°45.3’S & X & & & X & & & 8 & South of American Samoa  
S275-007 & 2017-10-02 & 23:59 & 173°21.4’W & 18°23.8’S & X & & & & & & 9 & South of American Samoa  
S275-008 & 2017-10-03 & 07:30 & 173°40.7’W & 18°36.2’S & & & & X & & & 10 & South of American Samoa  
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S275-012 & 2017-10-03 & 18:11 & 174°8.9’W & 18°35.2’S & & & & & & X & & Tonga Ridge North  
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S275-016 & 2017-10-08 & 11:54 & 174°10.2’W & 18°50.1’S & & & & & & & & Tonga Ridge Hapai  
S275-017 & 2017-10-08 & 13:39 & 174°12.0’W & 18°50.8’S & X & & & & & & 22 & Tonga Ridge Hapai  
S275-018 & 2017-10-08 & 16:22 & 174°16.8’W & 18°59.5’S & & & & & & X & & Tonga Ridge Hapai  
S275-019 & 2017-10-09 & 23:36 & 174°51.3’W & 19°51.3’S & X & & & & & & 25 & Tonga Ridge Hapai  
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S275-025 & 2017-10-16 & 10:12 & 177°5.4’W & 18°59.4’S & X & & & X & & & 46 & Lau Basin  
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Notes: abbreviations for oceanographic equipment deployments are: NT – neuston tow; MN – 1-meter or 2-meter net (oblique tow); PN – phytoplankton net; HC – hydrocast with 12 Niskin bottles, CTD and optical instrumentation; CTD – free CTD with no water samples; RBR - RBR type free CTD with no water samples, SG – shipek grab, SS - Surface Station.

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Station & Date & Time & Bottle & Bottle Depth & NO3 & PO4 & Chl-a & Temperature & Salinity  
& & (local) & & [m] & [uM] & [uM] & [mg/L] & [degC] &  
Station & Date & Time & Bottle & Bottle Depth & NO3 & PO4 & Chl-a & Temperature & Salinity  
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S275-020-HC & 2017-10-10 & 09:58 & 11 & 49 & & & 0.119 & 24.3 & 35.35  
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S275-020-HC & 2017-10-10 & 09:58 & 9 & 99 & & & 0.190 & 23.3 & 35.53  
S275-020-HC & 2017-10-10 & 09:58 & 8 & 124 & & & 0.239 & 22.7 & 35.61  
S275-020-HC & 2017-10-10 & 09:58 & 7 & 149 & & & 0.049 & 21.7 & 35.76  
S275-020-HC & 2017-10-10 & 09:58 & 6 & 174 & & & 0.012 & 21.0 & 35.74  
S275-020-HC & 2017-10-10 & 09:58 & 5 & 199 & & & 0.011 & 20.5 & 35.72  
S275-020-HC & 2017-10-10 & 09:58 & 4 & 249 & & & 0.004 & 19.2 & 35.63  
S275-020-HC & 2017-10-10 & 09:58 & 3 & 298 & & & & 17.7 & 35.48  
S275-020-HC & 2017-10-10 & 09:58 & 2 & 397 & & & 0.001 & 14.2 & 35.10  
S275-020-HC & 2017-10-10 & 09:58 & 1 & 596 & & & 0.002 & 7.5 & 34.44  
S275-025-HC & 2017-10-16 & 10:12 & 13 & 0 & -0.12 & 0.03 & 0.082 & 26.8 & 35.17  
S275-025-HC & 2017-10-16 & 10:12 & 12 & 25 & & & 0.047 & 26.5 & 35.19  
S275-025-HC & 2017-10-16 & 10:12 & 11 & 50 & -0.08 & -0.01 & 0.027 & 24.7 & 35.48  
S275-025-HC & 2017-10-16 & 10:12 & 10 & 76 & & & 0.106 & 24.0 & 35.76  
S275-025-HC & 2017-10-16 & 10:12 & 9 & 100 & 0.62 & 0.03 & 0.146 & 23.0 & 35.74  
S275-025-HC & 2017-10-16 & 10:12 & 8 & 124 & & & & 22.5 & 35.87  
S275-025-HC & 2017-10-16 & 10:12 & 7 & 149 & & 0.11 & 0.034 & 22.3 & 35.95  
S275-025-HC & 2017-10-16 & 10:12 & 6 & 174 & & & 0.011 & 21.3 & 35.89  
S275-025-HC & 2017-10-16 & 10:12 & 5 & 200 & 2.78 & 0.06 & 0.002 & 20.1 & 35.76  
S275-025-HC & 2017-10-16 & 10:12 & 4 & 248 & 3.38 & 0.11 & 0.001 & 18.6 & 35.55  
S275-025-HC & 2017-10-16 & 10:12 & 3 & 298 & 3.67 & 0.10 & 0.001 & 17.3 & 35.41  
S275-025-HC & 2017-10-16 & 10:12 & 2 & 397 & 4.64 & 0.23 & & 14.1 & 35.08  
S275-025-HC & 2017-10-16 & 10:12 & 1 & 595 & & & & 7.5 & 34.45  
S275-027-HC & 2017-10-17 & 09:22 & 13 & 0 & 0.00 & 0.02 & 0.099 & 26.9 & 35.13  
S275-027-HC & 2017-10-17 & 09:22 & 12 & 24 & & & 0.100 & 26.6 & 35.13  
S275-027-HC & 2017-10-17 & 09:22 & 11 & 50 & 0.00 & 0.02 & 0.097 & 25.5 & 35.24  
S275-027-HC & 2017-10-17 & 09:22 & 10 & 74 & & & 0.047 & 24.3 & 35.30  
S275-027-HC & 2017-10-17 & 09:22 & 9 & 100 & -0.07 & 0.03 & 0.212 & 23.7 & 35.50  
S275-027-HC & 2017-10-17 & 09:22 & 8 & 124 & & & 0.203 & 23.1 & 35.61  
S275-027-HC & 2017-10-17 & 09:22 & 7 & 149 & 0.37 & 0.04 & 0.068 & 22.4 & 35.70  
S275-027-HC & 2017-10-17 & 09:22 & 6 & 175 & & & 0.054 & 21.9 & 35.76  
S275-027-HC & 2017-10-17 & 09:22 & 5 & 198 & 2.30 & 0.14 & 0.007 & 21.2 & 35.77  
S275-027-HC & 2017-10-17 & 09:22 & 4 & 248 & 2.93 & 0.15 & 0.003 & 19.7 & 35.67  
S275-027-HC & 2017-10-17 & 09:22 & 3 & 299 & 1.03 & 0.08 & 0.003 & 17.7 & 35.49  
S275-027-HC & 2017-10-17 & 09:22 & 2 & 397 & 4.75 & 0.36 & & 13.4 & 34.95  
S275-027-HC & 2017-10-17 & 09:22 & 1 & 596 & & & & 6.9 & 34.39  
S275-028-HC & 2017-10-17 & 21:59 & 13 & 0 & 0.11 & 0.04 & 0.571 & 27.0 & 35.08  
S275-028-HC & 2017-10-17 & 21:59 & 12 & 25 & & & 0.176 & 26.6 & 35.06  
S275-028-HC & 2017-10-17 & 21:59 & 11 & 50 & -0.01 & 0.05 & 0.193 & 26.1 & 35.05  
S275-028-HC & 2017-10-17 & 21:59 & 10 & 75 & & & 0.174 & 24.7 & 35.31  
S275-028-HC & 2017-10-17 & 21:59 & 9 & 99 & 0.79 & 0.11 & 0.095 & 24.1 & 35.64  
S275-028-HC & 2017-10-17 & 21:59 & 8 & 124 & & & 0.128 & 23.3 & 35.74  
S275-028-HC & 2017-10-17 & 21:59 & 7 & 149 & 1.55 & 0.14 & 0.045 & 22.4 & 35.76  
S275-028-HC & 2017-10-17 & 21:59 & 6 & 174 & & & 0.023 & 21.7 & 35.79  
S275-028-HC & 2017-10-17 & 21:59 & 5 & 199 & 2.77 & 0.18 & 0.006 & 21.3 & 35.78  
S275-028-HC & 2017-10-17 & 21:59 & 4 & 248 & 3.40 & 0.16 & 0.003 & 19.5 & 35.64  
S275-028-HC & 2017-10-17 & 21:59 & 3 & 298 & 4.00 & 0.15 & 0.002 & 18.3 & 35.54  
S275-028-HC & 2017-10-17 & 21:59 & 2 & 398 & 4.70 & 0.34 & & 14.3 & 35.08  
S275-028-HC & 2017-10-17 & 21:59 & 1 & 595 & 4.72 & 1.46 & & 7.2 & 34.43  
S275-034-HC & 2017-10-25 & 09:56 & 13 & 0 & 0.21 & 0.09 & 0.053 & &  
S275-034-HC & 2017-10-25 & 09:56 & 12 & 24 & & & 0.048 & 23.4 & 35.78  
S275-034-HC & 2017-10-25 & 09:56 & 11 & 50 & -0.02 & 0.05 & 0.064 & 22.4 & 35.76  
S275-034-HC & 2017-10-25 & 09:56 & 10 & 74 & & & 0.295 & 21.6 & 35.75  
S275-034-HC & 2017-10-25 & 09:56 & 9 & 99 & 2.25 & 0.19 & 0.204 & 20.8 & 35.74  
S275-034-HC & 2017-10-25 & 09:56 & 8 & 124 & & & 0.062 & 20.3 & 35.67  
S275-034-HC & 2017-10-25 & 09:56 & 7 & 150 & 3.30 & 0.22 & 0.011 & 19.6 & 35.64  
S275-034-HC & 2017-10-25 & 09:56 & 6 & 174 & & & 0.007 & 19.1 & 35.60  
S275-034-HC & 2017-10-25 & 09:56 & 5 & 198 & 3.76 & 0.16 & 0.006 & 18.6 & 35.59  
S275-034-HC & 2017-10-25 & 09:56 & 4 & 248 & 3.91 & 0.15 & 0.007 & 17.7 & 35.55  
S275-034-HC & 2017-10-25 & 09:56 & 3 & 298 & 3.92 & 0.25 & 0.022 & 16.6 & 35.45  
S275-034-HC & 2017-10-25 & 09:56 & 2 & 398 & 4.78 & 1.47 & & 13.2 & 35.04  
S275-034-HC & 2017-10-25 & 09:56 & 1 & 596 & & & & 7.9 & 34.49  
S275-036-HC & 2017-10-26 & 10:03 & 13 & 0 & & & & 23.9 & 35.41  
S275-036-HC & 2017-10-26 & 10:03 & 12 & 25 & & & 0.068 & 22.4 & 35.69  
S275-036-HC & 2017-10-26 & 10:03 & 11 & 50 & & & 0.142 & 21.9 & 35.80  
S275-036-HC & 2017-10-26 & 10:03 & 10 & 75 & & & 0.206 & 20.9 & 35.81  
S275-036-HC & 2017-10-26 & 10:03 & 9 & 99 & & & 0.241 & 20.1 & 35.76  
S275-036-HC & 2017-10-26 & 10:03 & 8 & 124 & & & 0.261 & 19.6 & 35.76  
S275-036-HC & 2017-10-26 & 10:03 & 7 & 149 & & & 0.127 & 19.2 & 35.74  
S275-036-HC & 2017-10-26 & 10:03 & 6 & 175 & & & 0.100 & 19.0 & 35.74  
S275-036-HC & 2017-10-26 & 10:03 & 5 & 199 & & & 0.083 & 18.4 & 35.69  
S275-036-HC & 2017-10-26 & 10:03 & 4 & 248 & & & 0.014 & 17.7 & 35.63  
S275-036-HC & 2017-10-26 & 10:03 & 3 & 298 & & & 0.014 & 16.2 & 35.45  
S275-036-HC & 2017-10-26 & 10:03 & 2 & 398 & & & & 13.5 & 35.17  
S275-036-HC & 2017-10-26 & 10:03 & 1 & 596 & & & & 8.7 & 34.59  
S275-038-HC & 2017-10-27 & 10:39 & 13 & 0 & 4.63 & 1.35 & 0.064 & 22.8 & 35.69  
S275-038-HC & 2017-10-27 & 10:39 & 12 & 25 & & & 0.075 & 22.4 & 35.69  
S275-038-HC & 2017-10-27 & 10:39 & 11 & 50 & 0.32 & 0.11 & 0.116 & 21.9 & 35.80  
S275-038-HC & 2017-10-27 & 10:39 & 10 & 75 & & & 0.253 & 20.9 & 35.81  
S275-038-HC & 2017-10-27 & 10:39 & 9 & 99 & 1.43 & 0.06 & 0.337 & 20.1 & 35.76  
S275-038-HC & 2017-10-27 & 10:39 & 8 & 124 & & & 0.169 & 19.6 & 35.76  
S275-038-HC & 2017-10-27 & 10:39 & 7 & 149 & 2.75 & 0.04 & 0.123 & 19.2 & 35.74  
S275-038-HC & 2017-10-27 & 10:39 & 6 & 175 & & & 0.137 & 19.0 & 35.74  
S275-038-HC & 2017-10-27 & 10:39 & 5 & 199 & 3.04 & 0.07 & 0.020 & 18.4 & 35.69  
S275-038-HC & 2017-10-27 & 10:39 & 4 & 248 & 3.64 & 0.14 & 0.007 & 17.7 & 35.63  
S275-038-HC & 2017-10-27 & 10:39 & 3 & 298 & 0.15 & 0.04 & 0.040 & 16.2 & 35.45  
S275-038-HC & 2017-10-27 & 10:39 & 2 & 398 & 4.90 & 0.32 & & 13.5 & 35.17  
S275-038-HC & 2017-10-27 & 10:39 & 1 & 596 & 4.95 & 0.48 & & 8.7 & 34.59  
S275-040\_HC & 2017-10-28 & 10:02 & 13 & 0 & & & 0.055 & &  
S275-040\_HC & 2017-10-28 & 10:02 & 12 & 25 & & & 0.058 & 21.4 & 35.81  
S275-040\_HC & 2017-10-28 & 10:02 & 11 & 50 & & & 0.068 & 20.9 & 35.80  
S275-040\_HC & 2017-10-28 & 10:02 & 10 & 75 & & & 0.116 & 19.9 & 35.76  
S275-040\_HC & 2017-10-28 & 10:02 & 9 & 100 & & & 0.272 & 19.2 & 35.73  
S275-040\_HC & 2017-10-28 & 10:02 & 8 & 125 & & & 0.073 & 18.8 & 35.70  
S275-040\_HC & 2017-10-28 & 10:02 & 7 & 149 & & & 0.046 & 18.4 & 35.66  
S275-040\_HC & 2017-10-28 & 10:02 & 6 & 174 & & & 0.010 & 18.1 & 35.63  
S275-040\_HC & 2017-10-28 & 10:02 & 5 & 199 & & & 0.004 & 17.6 & 35.58  
S275-040\_HC & 2017-10-28 & 10:02 & 4 & 249 & & & 0.002 & 16.5 & 35.43  
S275-040\_HC & 2017-10-28 & 10:02 & 3 & 298 & & & 0.001 & 15.7 & 35.37  
S275-040\_HC & 2017-10-28 & 10:02 & 2 & 398 & & & 0.002 & 13.1 & 35.08  
S275-040\_HC & 2017-10-28 & 10:02 & 1 & 596 & & & 0.002 & 8.7 & 34.59

Notes: all hydrocasts gathered data from a SeaBird 19PlusV2 CTD (S/N 4043) and four auxiliary instruments (Seapoint Chlorophyll fluorometer (S/N SCF-3149), SeaBird Dissolved Oxygen sensor (model 43; S/N 1518), Biospherical Instruments/SeaBird PAR sensor (S/N 4179), Turbidity Sensor (S/N XXXX). Extracted chlorophyll-a samples were filtered through 0.45 m filters and measured with a Turner Designs Model 10-AU fluorometer. Seawater pH was determined using m-cresol purple indicator dye and spectrophotometry. Nutrients (PO4 and NO3) were assessed with colorometric spectrophotometry. A blank space indicates that no sample was collected for that analysis. DNF indicates a bottle that Did Not Fire.

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Station & Date & Time & Surf. Temperature & Surf. Salinity & Surf. Chl-a Fluoro & Cast Depth  
& & (local) & [degC] & & [Volts] & [m]  
Station & Date & Time & Surf. Temperature & Surf. Salinity & Surf. Chl-a Fluoro & Cast Depth  
& & (local) & [degC] & & [Volts] & [m]  
 S275-001-CTD & 2017-09-29 & 10:22 & 27.8 & 35.47 & 2.70 & 838  
S275-003-CTD & 2017-09-30 & 11:02 & 28.0 & 35.25 & 2.44 & 988  
S275-004-RBR & 2017-09-30 & 17:53 & 27.9 & 35.15 & 2.68 & 120  
S275-006-CTD & 2017-10-02 & 09:39 & 27.4 & 35.26 & 2.47 & 867  
S275-009-RBR & 2017-10-03 & 09:41 & 26.8 & 35.21 & 2.49 & 135  
S275-012-RBR & 2017-10-03 & 18:11 & 26.9 & 35.20 & 2.83 & 86  
S275-018-RBR & 2017-10-08 & 16:22 & 27.4 & 35.24 & 3.21 & 145  
S275-023-CTD & 2017-10-15 & 09:38 & 26.2 & 35.11 & 3.38 & 870  
S275-029-CTD & 2017-10-18 & 09:45 & 26.9 & 35.10 & 3.16 & 908  
S275-032-CTD & 2017-10-24 & 09:37 & 25.7 & 35.05 & 3.60 & 985  
S275-042-CTD & 2017-10-30 & 09:32 & 20.0 & 35.78 & 3.79 & 1931  
S275-043-CTD & 2017-10-31 & 08:31 & 20.2 & 35.85 & 6.80 & 525

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Station & Date & Time & Longitude & Latitude & Temperature & Salinity & Chl-a & NO3 & PO4 & pH  
& & (local) & & & [degC] &  
Station & Date & Time & Longitude & Latitude & Temperature & Salinity & Chl-a & NO3 & PO4 & pH  
& & (local) & & & [degC] &  
 SS-001 & 2017-09-28 & 18:41 & 170°49.6’ W & 14°34.6’ S & 28.6 & 35.42 & 0.044 & 0.727 & 0.135 &  
SS-002 & 2017-09-28 & 22:52 & 171°1.9’ W & 14°55.8’ S & 28.5 & 35.37 & 0.046 & & &  
SS-003 & 2017-09-29 & 03:50 & 171°15.2’ W & 15°15.7’ S & 28.1 & 35.31 & 0.057 & & &  
SS-004 & 2017-09-29 & 12:48 & 171°32.4’ W & 15°34.4’ S & 27.9 & 35.50 & 0.010 & 0.356 & 0.142 &  
SS-005 & 2017-09-30 & 00:00 & 171°51.0’ W & 16°10.4’ S & 27.8 & 35.48 & 0.042 & & & 8.226  
SS-006 & 2017-09-30 & 16:11 & 172°1.5’ W & 16°55.5’ S & 27.9 & 35.16 & 0.063 & 0.445 & 0.113 & 8.303  
SS-007 & 2017-09-30 & 23:41 & 172°14.4’ W & 17°15.0’ S & 27.2 & 35.34 & 0.027 & & & 8.143  
SS-008 & 2017-10-02 & 12:09 & 172°44.6’ W & 17°48.2’ S & 27.5 & 35.27 & 0.015 & 0.294 & & 8.298  
SS-009 & 2017-10-03 & 00:16 & 173°22.0’ W & 18°24.2’ S & 27.3 & 35.33 & 0.044 & & & 8.180  
SS-010 & 2017-10-03 & 08:02 & 173°41.5’ W & 18°36.3’ S & 26.9 & 35.26 & 0.083 & 0.318 & 0.231 & 8.333  
SS-011 & 2017-10-03 & 11:40 & 173°52.1’ W & 18°35.6’ S & 27.0 & 35.27 & 0.108 & 0.322 & 0.049 & 8.316  
SS-012 & 2017-10-03 & 15:44 & 174°1.6’ W & 18°33.7’ S & 26.9 & 35.22 & 0.103 & 0.414 & 0.100 & 8.199  
SS-013 & 2017-10-03 & 20:33 & 174°12.8’ W & 18°35.8’ S & 27.0 & 35.25 & 0.076 & 0.342 & 0.009 & 8.243  
SS-014 & 2017-10-03 & 23:58 & 174°14.9’ W & 18°36.0’ S & 27.1 & 35.34 & 0.023 & & & 8.254  
SS-015 & 2017-10-07 & 15:53 & 173°59.3’ W & 18°39.3’ S & 27.5 & 34.98 & 0.431 & 0.057 & 0.049 & 8.169  
SS-016 & 2017-10-07 & 16:17 & 174°0.6’ W & 18°39.4’ S & 27.3 & 35.04 & 0.133 & 0.335 & 0.714 &  
SS-017 & 2017-10-07 & 16:28 & 174°1.7’ W & 18°40.2’ S & 27.4 & 35.08 & 0.167 & 0.404 & 0.034 &  
SS-018 & 2017-10-08 & 07:36 & 174°3.5’ W & 18°40.6’ S & 27.0 & 35.22 & 0.046 & 0.359 & 0.085 &  
SS-019 & 2017-10-08 & 08:01 & 174°6.0’ W & 18°41.5’ S & 26.9 & 35.24 & 0.081 & 0.353 & 0.150 &  
SS-020 & 2017-10-08 & 08:24 & 174°7.0’ W & 18°43.2’ S & 27.0 & 35.27 & 0.140 & 0.363 & 0.110 &  
SS-021 & 2017-10-08 & 10:43 & 174°8.5’ W & 18°47.2’ S & 27.1 & 35.21 & 0.160 & 0.339 & 0.095 &  
SS-022 & 2017-10-08 & 13:20 & 174°11.7’ W & 18°50.4’ S & 27.2 & 35.20 & 0.175 & 0.394 & 0.140 &  
SS-023 & 2017-10-08 & 18:35 & 174°19.8’ W & 18°57.4’ S & 27.3 & 35.24 & 0.237 & 0.394 & 0.125 &  
SS-024 & 2017-10-08 & 23:49 & 174°25.3’ W & 19°19.2’ S & 26.3 & 35.18 & 0.696 & & &  
SS-025 & 2017-10-09 & 23:56 & 174°50.9’ W & 19°51.7’ S & 25.9 & 35.17 & 0.250 & & & 8.223  
SS-026 & 2017-10-10 & 10:31 & 175°2.6’ W & 20°18.1’ S & 26.0 & 35.19 & 0.271 & 0.411 & 0.059 & 8.052  
SS-027 & 2017-10-10 & 12:25 & 175°4.3’ W & 20°18.2’ S & 26.3 & 35.18 & 0.320 & 0.342 & 0.090 & 8.188  
SS-028 & 2017-10-10 & 23:51 & 175°5.3’ W & 20°46.8’ S & 25.7 & 35.24 & 0.118 & & & 8.296  
SS-029 & 2017-10-13 & 09:42 & 175°11.8’ W & 21°7.8’ S & & & 0.128 & 0.717 & 0.120 &  
SS-030 & 2017-10-13 & 09:00 & 175°10.4’ W & 21°9.5’ S & & & 2.036 & 0.203 & 0.139 &  
SS-031 & 2017-10-13 & 09:30 & 175°9.9’ W & 21°9.3’ S & & & 1.706 & 0.123 & 0.119 &  
SS-032 & 2017-10-13 & 10:00 & 175°9.8’ W & 21°9.6’ S & & & 2.378 & 0.223 & 0.158 &  
SS-033 & 2017-10-14 & 18:07 & 175°11.8’ W & 21°7.8’ S & 26.0 & 35.34 & 0.223 & 0.054 & 0.116 &  
SS-034 & 2017-10-14 & 18:49 & 175°12.6’ W & 21°6.4’ S & 25.8 & 35.32 & 0.140 & 0.000 & 0.103 &  
SS-035 & 2017-10-14 & 18:59 & 175°13.0’ W & 21°3.5’ S & 25.7 & 35.35 & 0.171 & 0.000 & 0.054 &  
SS-036 & 2017-10-14 & 19:22 & 175°13.0’ W & 21°3.5’ S & 25.7 & 35.28 & 0.234 & 0.000 & 0.038 &  
SS-037 & 2017-10-14 & 19:46 & 175°13.0’ W & 21°3.5’ S & 25.4 & 35.35 & 0.237 & 0.169 & 0.009 &  
SS-038 & 2017-10-14 & 20:14 & 175°11.5’ W & 21°1.9’ S & 25.3 & 35.30 & 0.146 & 0.000 & 0.000 &  
SS-039 & 2017-10-14 & 20:46 & 175°10.4’ W & 20°59.8’ S & 25.6 & 35.16 & 0.199 & 0.000 & 0.022 &  
SS-040 & 2017-10-14 & 21:12 & 175°10.5’ W & 20°57.4’ S & 25.9 & 35.15 & 0.201 & 0.000 & 0.077 &  
SS-041 & 2017-10-14 & 21:42 & 175°17.4’ W & 20°55.6’ S & 26.0 & 35.13 & 0.131 & 0.000 & 0.025 & 8.166  
SS-042 & 2017-10-14 & 23:39 & 175°19.3’ W & 20°53.8’ S & 25.7 & 35.20 & 0.132 & & &  
SS-043 & 2017-10-15 & 12:16 & 175°54.1’ W & 20°25.2’ S & 26.4 & 35.12 & 0.078 & 0.000 & 0.025 & 8.122  
SS-044 & 2017-10-15 & 18:27 & 176°13.8’ W & 19°56.2’ S & 26.6 & 35.13 & & & &  
SS-045 & 2017-10-15 & 23:42 & 176°34.2’ W & 19°34.2’ S & 26.9 & 35.10 & 0.085 & & & 8.108  
SS-046 & 2017-10-16 & 10:23 & 177°5.7’ W & 18°59.6’ S & 26.7 & 35.20 & 0.082 & 0.000 & & 8.191  
SS-047 & 2017-10-17 & 00:02 & 177°39.1’ W & 18°16.5’ S & 26.8 & 35.17 & 0.055 & & &  
SS-048 & 2017-10-17 & 09:33 & 178°7.4’ W & 17°47.9’ S & 26.9 & 35.13 & 0.099 & 0.004 & & 8.215  
SS-049 & 2017-10-17 & 10:47 & 178°8.7’ W & 17°47.8’ S & 26.9 & 35.13 & & & &  
SS-050 & 2017-10-17 & 22:10 & 178°56.9’ W & 18°10.5’ S & 27.0 & 35.08 & 0.571 & 0.114 & & 8.301  
SS-051 & 2017-10-18 & 12:15 & 179°54.1’ W & 18°19.6’ S & 27.0 & 35.09 & 0.097 & & & 8.182  
SS-052 & 2017-10-18 & 23:40 & 179°15.1’ E & 18°24.9’ S & 27.0 & 35.06 & 0.158 & & & 8.187  
SS-053 & 2017-10-23 & 08:57 & 178°25.5’ E & 18°7.9’ S & & & 1.350 & & 0.074 &  
SS-054 & 2017-10-23 & 10:10 & 178°24.3’ E & 18°7.9’ S & 26.0 & 33.04 & 1.156 & 0.000 & 0.129 &  
SS-055 & 2017-10-23 & 10:15 & 178°23.9’ E & 18°8.3’ S & 26.1 & 33.03 & 0.829 & 0.000 & 0.139 &  
SS-056 & 2017-10-23 & 10:21 & 178°23.6’ E & 18°9.1’ S & 26.0 & 32.85 & 1.207 & 0.000 & 0.100 &  
SS-057 & 2017-10-23 & 10:29 & 178°23.2’ E & 18°10.1’ S & 26.2 & 33.51 & 0.986 & 0.000 & 0.071 &  
SS-058 & 2017-10-23 & 10:39 & 178°22.5’ E & 18°11.0’ S & 26.3 & 34.40 & 0.355 & 0.000 & 0.132 &  
SS-059 & 2017-10-23 & 10:50 & 178°21.9’ E & 18°12.0’ S & 26.5 & 34.67 & 0.269 & 0.000 & 0.139 &  
SS-060 & 2017-10-23 & 11:18 & 178°20.8’ E & 18°14.0’ S & 26.5 & 34.61 & 0.245 & 0.001 & 0.190 &  
SS-061 & 2017-10-23 & 23:53 & 177°49.3’ E & 19°12.2’ S & 26.3 & 34.90 & 0.071 & & & 8.168  
SS-062 & 2017-10-24 & 12:31 & 177°41.8’ E & 19°42.2’ S & 25.9 & 35.05 & 0.078 & 0.062 & 0.087 & 7.715  
SS-063 & 2017-10-24 & 23:03 & 177°30.7’ E & 20°34.5’ S & 25.6 & 35.16 & 0.291 & & & 8.162  
SS-064 & 2017-10-25 & 10:25 & 177°20.9’ E & 21°39.1’ S & 24.9 & 35.42 & 0.053 & 0.212 & & 8.200  
SS-065 & 2017-10-25 & 23:43 & 176°57.5’ E & 22°18.8’ S & 23.7 & 35.53 & 0.087 & & & 8.279  
SS-066 & 2017-10-26 & 10:34 & 176°52.3’ E & 22°58.1’ S & 23.9 & 35.41 & & 0.000 & 0.190 & 8.137  
SS-067 & 2017-10-26 & 23:18 & 176°39.5’ E & 24°0.8’ S & 24.1 & 35.27 & 0.084 & & & 8.215  
SS-068 & 2017-10-27 & 11:13 & 176°22.8’ E & 24°39.8’ S & 22.8 & 35.69 & 0.064 & 4.629 & & 8.099  
SS-069 & 2017-10-28 & 23:45 & 175°48.7’ E & 25°34.6’ S & 22.8 & 35.70 & 0.060 & 0.001 & & 8.045  
SS-070 & 2017-10-28 & 10:30 & 175°35.8’ E & 26°22.9’ S & 22.4 & 35.70 & & & & 8.198  
SS-071 & 2017-10-30 & 13:22 & 173°44.2’ E & 29°18.9’ S & 20.1 & 35.70 & 0.078 & 0.000 & &  
SS-072 & 2017-10-30 & 23:40 & 173°28.1’ E & 30°6.0’ S & 19.6 & 35.80 & 0.088 & & &  
SS-073 & 2017-10-31 & 12:17 & 173°7.9’ E & 30°58.9’ S & 19.6 & 35.80 & 0.103 & & &

Notes: extracted chlorophyll-a samples were filtered through 0.45 m filters and measured with a Turner Designs Model 10-AU fluorometer. Seawater pH was determined using m-cresol purple indicator dye and spectrophotometry. Nutrients (PO4 and NO3) were assessed with colorometric spectrophotometry.

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Station & Date & Time & Moon Phase & Temperature & Salinity & Chl-a & Tow Area & Zooplankton & Zooplankton  
& & (local) & [% full] & [degC] & & Fluoroesence & [] & Biovolume & Density  
& & & & & & [Volts] & & [mL] & []  
Station & Date & Time & Moon Phase & Temperature & Salinity & Chl-a & Tow Area & Zooplankton & Zooplankton  
& & (local) & [% full] & [degC] & & Fluoroesence & [] & Biovolume & Density  
& & & & & & [Volts] & & [mL] & []  
 S275-001-NT & 2017-09-29 & 12:34 & 63 & 27.9 & 35.50 & 2.43 & 2439 & 2.0 & 0.82  
S275-002-NT & 2017-09-29 & 23:48 & 63 & 27.8 & 35.50 & 2.69 & 2260 & 5.5 & 2.43  
S275-004-NT & 2017-09-30 & 15:56 & 72 & 27.9 & 35.15 & 2.59 & 1526 & 3.0 & 1.97  
S275-005-NT & 2017-09-30 & 23:21 & 72 & 27.2 & 35.34 & 2.56 & 1992 & 9.5 & 4.77  
S275-006-NT & 2017-10-02 & 11:50 & 88 & 27.5 & 35.27 & 2.35 & 2147 & 1.6 & 0.75  
S275-007-NT & 2017-10-02 & 23:59 & 88 & 27.3 & 35.30 & 2.66 & 2218 & 6.0 & 2.71  
S275-014-NT & 2017-10-03 & 23:34 & 94 & 27.1 & 35.34 & 2.57 & 984 & 8.0 & 8.13  
S275-017-NT & 2017-10-08 & 13:39 & 90 & 27.2 & 35.20 & 3.07 & 1701 & 19.5 & 11.46  
S275-018-NT & 2017-10-08 & 23:36 & 90 & 26.4 & 35.20 & 4.12 & 1597 & 67.0 & 41.96  
S275-019-NT & 2017-10-09 & 23:36 & 82 & 25.9 & 35.17 & 4.25 & 1593 & 35.0 & 21.97  
S275-020-NT & 2017-10-10 & 12:10 & 73 & 26.3 & 35.20 & 3.47 & 1883 & 47.0 & 24.96  
S275-021-NT & 2017-10-10 & 23:36 & 73 & 25.8 & 35.20 & 3.34 & 1256 & 24.5 & 19.51  
S275-022-NT & 2017-10-14 & 23:35 & 29 & 25.7 & 35.20 & 3.46 & 1712 & 40.0 & 23.37  
S275-023-NT & 2017-10-15 & 11:58 & 23 & 26.4 & 35.10 & 2.98 & 2008 & 13.0 & 6.47  
S275-024-NT & 2017-10-15 & 23:26 & 19 & 26.9 & 35.09 & 3.10 & 2141 & 19.5 & 9.11  
S275-025-NT & 2017-10-16 & 12:11 & 12 & 26.9 & 35.20 & 2.61 & 1565 & 3.5 & 2.24  
S275-026-NT & 2017-10-16 & 23:37 & 12 & 26.8 & 35.16 & 2.73 & 1444 & 9.4 & 6.51  
S275-027-NT & 2017-10-17 & 10:37 & 6 & 26.9 & 35.13 & 3.11 & 1481 & 13.0 & 8.78  
S275-028-NT & 2017-10-17 & 23:29 & 6 & 26.9 & 35.06 & 4.10 & 1697 & 136.0 & 80.15  
S275-029-NT & 2017-10-18 & 11:52 & 2 & 26.9 & 35.10 & 2.84 & 1516 & 24.0 & 15.83  
S275-030-NT & 2017-10-18 & 23:31 & 2 & 27.0 & 35.06 & 3.04 & 1550 & 39.0 & 25.15  
S275-031-NT & 2017-10-23 & 23:47 & 13 & 26.3 & 34.90 & 2.84 & 1492 & 62.0 & 41.56  
S275-032-NT & 2017-10-24 & 12:20 & 20 & 25.9 & 35.05 & 2.65 & 1928 & 73.0 & 37.86  
S275-033-NT & 2017-10-24 & 22:58 & 20 & 25.6 & 35.15 & 2.92 & 2142 & 101.0 & 47.15  
S275-034-NT & 2017-10-25 & 11:58 & 28 & 24.9 & 35.40 & 2.72 & 1199 & &  
S275-035-NT & 2017-10-25 & 23:29 & 28 & 23.8 & 35.50 & 3.14 & 1610 & 110.0 & 68.34  
S275-036-NT & 2017-10-26 & 11:17 & 37 & 23.9 & 35.38 & 3.14 & 1925 & 117.0 & 60.78  
S275-037-NT & 2017-10-26 & 22:56 & 37 & 24.3 & 35.27 & 3.06 & 1883 & 30.0 & 15.93  
S275-038-NT & 2017-10-27 & 11:47 & 46 & 22.8 & 35.69 & 2.72 & 1776 & 13.0 & 7.32  
S275-039-NT & 2017-10-27 & 23:29 & 46 & 22.7 & 35.70 & 2.95 & 2269 & 16.0 & 7.05  
S275-040-NT & 2017-10-27 & 11:58 & 56 & 22.1 & 35.70 & 2.80 & 2466 & 63.0 & 25.55

Notes: tow area calculated using distance (meters) between successive minutes’ GPS positions. Neuston net opening 1.0m wide by 0.5m tall, with a 333 m mesh net. Zooplankton density recorded as wet volume displacement per tow area ().

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Station & Phyl & Lept & Halo & Myct & Plastic Pellets & Plastic Pieces & Tar & Nekton 2cm & Gelatinous 2cm  
& [#] & [#] & [#] & [#] & [#] & [#] & [#] & [mL] & [mL]  
Station & Phyl & Lept & Halo & Myct & Plastic Pellets & Plastic Pieces & Tar & Nekton > 2cm & Gelatinous > 2cm  
& [#] & [#] & [#] & [#] & [#] & [#] & [#] & [mL] & [mL]  
 S275-001-NT & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0.0 & 0.0  
S275-002-NT & 0 & 0 & 2 & 4 & 0 & 5 & 0 & &  
S275-004-NT & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0.0 & 0.0  
S275-005-NT & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0.0 & 0.0  
S275-006-NT & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0.0 & 4.0  
S275-007-NT & 0 & 0 & 1 & 0 & 0 & 3 & 0 & 0.0 & 1.0  
S275-014-NT & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0.0 & 0.0  
S275-017-NT & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0.0 & 0.0  
S275-018-NT & 0 & 0 & 0 & 3 & 0 & 1 & 0 & 3.1 & 0.0  
S275-019-NT & 0 & 0 & 4 & 2 & 0 & 0 & 0 & 0.3 & 0.9  
S275-020-NT & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0.0 & 0.0  
S275-021-NT & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0.1 & 0.0  
S275-022-NT & 0 & 0 & 3 & 31 & 0 & 0 & 0 & 2.0 & 5.0  
S275-023-NT & 0 & 0 & 0 & 0 & 0 & 2 & 0 & 0.0 & 0.0  
S275-024-NT & 0 & 0 & 0 & 8 & 0 & 0 & 0 & 0.8 & 4.2  
S275-025-NT & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0.0 & 0.0  
S275-026-NT & 0 & 0 & 0 & 9 & 0 & 0 & 0 & 1.5 & 1.2  
S275-027-NT & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0.0 & 0.5  
S275-028-NT & 0 & 0 & 0 & 2 & 0 & 0 & 0 & 1.3 & 0.0  
S275-029-NT & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 0.0 & 0.0  
S275-030-NT & 0 & 1 & 3 & 9 & 0 & 0 & 0 & 3.2 & 15.0  
S275-031-NT & 0 & 0 & 0 & 10 & 0 & 0 & 0 & 4.0 & 2.0  
S275-032-NT & 0 & 0 & 0 & 0 & 0 & 32 & 0 & 0.1 & 1.7  
S275-033-NT & 0 & 0 & 8 & 13 & 0 & 2 & 0 & 1.4 & 6.2  
S275-034-NT & 0 & 0 & 8 & 0 & 0 & 2 & 0 & 0.0 & 0.0  
S275-035-NT & 0 & 0 & 128 & 46 & 0 & 3 & 0 & 7.8 & 30.0  
S275-036-NT & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0.5 & 1.0  
S275-037-NT & 1 & 0 & 119 & 7 & 0 & 0 & 0 & 3.0 & 6.6  
S275-038-NT & 0 & 0 & 3 & 0 & 0 & 3 & 0 & 0.1 & 0.0  
S275-039-NT & 4 & 0 & 11 & 15 & 0 & 0 & 0 & 6.2 & 5.4  
S275-040-NT & 0 & 0 & 3 & 0 & 0 & 0 & 0 & 2.7 & 9.0

Notes: Eel larvae (leptocephali - lept), spiny lobster larvae (phyllosoma - phyl), marine water striders (halobates - halo) and Lantern fish (myctophids - myct) sorted from net contents and counted. Micronekton and gelatinous micronekton removed using a 333 m mesh sieve; biovolume (ml) recorded. Qualitative descriptions of micronekton removed from zooplankton biomass are available. Floating plastic and tar removed from net contents, sorted and recorded as numbers collected per tow.

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Station & Date & Time & Cnid & Siph & Cten & Pter & Nud & Other & Poly & Chaet & Cop & Gam & Hyp & Crab  
& & [local] & & & & & & Snail & & & & & & Larv.  
Station & Date & Time & Cnid & Siph & Cten & Pter & Nud & Other & Poly & Chaet & Cop & Gam & Hyp & Crab  
& & [local] & & & & & & Snail & & & & & & Larv.  
 S275-001-NT & 2017-09-29 & 12:34 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0  
S275-002-NT & 2017-09-29 & 23:48 & 0 & 0 & 0 & 3 & 0 & 0 & 0 & 0 & 87 & 3 & 2 & 1  
S275-004-NT & 2017-09-30 & 15:56 & 0 & 0 & 0 & 2 & 0 & 5 & 0 & 0 & 88 & 0 & 3 & 0  
S275-005-NT & 2017-09-30 & 23:21 & 0 & 0 & 0 & 1 & 0 & 2 & 0 & 7 & 66 & 11 & 8 & 4  
S275-006-NT & 2017-10-02 & 11:50 & 1 & 0 & 0 & 1 & 0 & 3 & 0 & 0 & 72 & 4 & 0 & 0  
S275-007-NT & 2017-10-02 & 23:59 & 0 & 0 & 0 & 3 & 0 & 2 & 0 & 0 & 33 & 7 & 3 & 1  
S275-014-NT & 2017-10-03 & 23:34 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 75 & 0 & 7 & 1  
S275-017-NT & 2017-10-08 & 13:39 & 0 & 0 & 0 & 2 & 0 & 1 & 0 & 0 & 19 & 4 & 1 & 0  
S275-018-NT & 2017-10-08 & 23:36 & 0 & 2 & 0 & 1 & 0 & 0 & 0 & 0 & 53 & 0 & 11 & 9  
S275-019-NT & 2017-10-09 & 23:36 & 0 & 1 & 0 & 3 & 0 & 0 & 0 & 0 & 70 & 3 & 3 & 7  
S275-020-NT & 2017-10-10 & 12:10 & 0 & 0 & 0 & 7 & 0 & 7 & 0 & 2 & 72 & 0 & 0 & 4  
S275-021-NT & 2017-10-10 & 23:36 & 3 & 0 & 0 & 1 & 0 & 0 & 1 & 1 & 39 & 8 & 8 & 6  
S275-022-NT & 2017-10-14 & 23:35 & 0 & 1 & 0 & 2 & 0 & 3 & 0 & 0 & 58 & 0 & 1 & 0  
S275-023-NT & 2017-10-15 & 11:58 & 0 & 0 & 0 & 25 & 0 & 0 & 0 & 0 & 71 & 0 & 0 & 0  
S275-024-NT & 2017-10-15 & 23:26 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 81 & 6 & 1 & 2  
S275-025-NT & 2017-10-16 & 12:11 & 6 & 2 & 0 & 6 & 0 & 32 & 0 & 0 & 44 & 2 & 2 & 0  
S275-026-NT & 2017-10-16 & 23:37 & 0 & 2 & 0 & 1 & 0 & 8 & 0 & 1 & 66 & 0 & 1 & 6  
S275-027-NT & 2017-10-17 & 10:37 & 0 & 0 & 0 & 5 & 0 & 38 & 0 & 1 & 50 & 2 & 1 & 1  
S275-028-NT & 2017-10-17 & 23:29 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 59 & 12 & 3 & 7  
S275-029-NT & 2017-10-18 & 11:52 & 0 & 0 & 0 & 0 & 0 & 12 & 0 & 0 & 71 & 0 & 0 & 1  
S275-030-NT & 2017-10-18 & 23:31 & 0 & 0 & 0 & 3 & 0 & 4 & 0 & 0 & 69 & 1 & 1 & 1  
S275-031-NT & 2017-10-23 & 23:47 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 52 & 6 & 1 & 15  
S275-032-NT & 2017-10-24 & 12:20 & 0 & 6 & 17 & 0 & 0 & 1 & 0 & 0 & 32 & 1 & 4 & 3  
S275-033-NT & 2017-10-24 & 22:58 & 0 & 0 & 0 & 4 & 0 & 2 & 0 & 0 & 74 & 0 & 2 & 1  
S275-034-NT & 2017-10-25 & 11:58 & 0 & 10 & 3 & 3 & 0 & 1 & 0 & 0 & 65 & 1 & 2 & 0  
S275-035-NT & 2017-10-25 & 23:29 & 0 & 0 & 0 & 4 & 0 & 0 & 0 & 0 & 55 & 0 & 3 & 0  
S275-036-NT & 2017-10-26 & 11:17 & 0 & 0 & 0 & 2 & 0 & 0 & 0 & 0 & 41 & 0 & 0 & 0  
S275-037-NT & 2017-10-26 & 22:56 & 1 & 1 & 0 & 2 & 0 & 2 & 0 & 0 & 48 & 3 & 9 & 0  
S275-038-NT & 2017-10-27 & 11:47 & 0 & 0 & 0 & 1 & 0 & 3 & 0 & 0 & 48 & 4 & 0 & 0  
S275-039-NT & 2017-10-27 & 23:29 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 93 & 0 & 0 & 0  
S275-040-NT & 2017-10-27 & 11:58 & 0 & 1 & 0 & 2 & 0 & 4 & 4 & 22 & 59 & 3 & 2 & 0

Notes: abbreviations for zooplankton categories: Cnid – cnidarian medusa; Siph – siphonophore bracts and floats; Cten – ctenophores; Pter – pteropods; Nud - nudibranchs; Other Snail – pelagic snails; Ceph – cephalopods; Poly – polychaetes; Chaet – chaetognaths; Cop – copepods; Gam Amp – gammarid amphipods; Hyp Amp – hyperiid amphipods; Crab (larv) – Crab zoea and megalops.

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Station & Date & Time & Shr & Lob & Mys & Euph & Stom & Ostr & Iso & Salp & Fish & Fish & Other & Shannon-Weiner  
& & [local] & Larv. & Larv. & & & Larv. & & & & Larv. & Eggs & & Diversity Index  
Station & Date & Time & Shr & Lob & Mys & Euph & Stom & Ostr & Iso & Salp & Fish & Fish & Other & Shannon-Weiner  
& & [local] & Larv. & Larv. & & & Larv. & & & & Larv. & Eggs & & Diversity Index  
 S275-001-NT & 2017-09-29 & 12:34 & 2 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & 14 & 0.48  
S275-002-NT & 2017-09-29 & 23:48 & 0 & 0 & 0 & 5 & 0 & 1 & 0 & 0 & 1 & 0 & 0 & 0.31  
S275-004-NT & 2017-09-30 & 15:56 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 2 & 0 & 0 & 0.23  
S275-005-NT & 2017-09-30 & 23:21 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0.54  
S275-006-NT & 2017-10-02 & 11:50 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 3 & 0 & 1 & 0.29  
S275-007-NT & 2017-10-02 & 23:59 & 0 & 0 & 4 & 7 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0.65  
S275-014-NT & 2017-10-03 & 23:34 & 0 & 0 & 0 & 14 & 0 & 0 & 0 & 0 & 0 & 0 & 3 & 0.37  
S275-017-NT & 2017-10-08 & 13:39 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & 2 & 0.69  
S275-018-NT & 2017-10-08 & 23:36 & 0 & & 9 & 8 & 0 & 2 & 2 & 0 & 0 & 0 & 3 & 0.70  
S275-019-NT & 2017-10-09 & 23:36 & 0 & 0 & 7 & 2 & 1 & 2 & 0 & 0 & 0 & 1 & 0 & 0.54  
S275-020-NT & 2017-10-10 & 12:10 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 4 & 0 & 2 & 0.50  
S275-021-NT & 2017-10-10 & 23:36 & 3 & 0 & 0 & 0 & 1 & 15 & 7 & 0 & 0 & 4 & 3 & 0.90  
S275-022-NT & 2017-10-14 & 23:35 & 0 & 0 & 22 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 13 & 0.52  
S275-023-NT & 2017-10-15 & 11:58 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 2 & 2 & 0 & 0.32  
S275-024-NT & 2017-10-15 & 23:26 & 0 & 0 & 7 & 0 & 0 & 2 & 0 & 0 & 0 & 0 & 0 & 0.34  
S275-025-NT & 2017-10-16 & 12:11 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 4 & 1 & 0 & 0.66  
S275-026-NT & 2017-10-16 & 23:37 & 0 & 0 & 0 & 9 & 0 & 0 & 0 & 1 & 1 & 0 & 7 & 0.61  
S275-027-NT & 2017-10-17 & 10:37 & 0 & 0 & 0 & 0 & 0 & 2 & 0 & 0 & 0 & 0 & 0 & 0.50  
S275-028-NT & 2017-10-17 & 23:29 & 1 & 0 & 3 & 9 & 0 & 0 & 3 & 0 & 0 & 0 & 0 & 0.63  
S275-029-NT & 2017-10-18 & 11:52 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 15 & 0.40  
S275-030-NT & 2017-10-18 & 23:31 & 0 & 0 & 3 & 13 & 0 & 0 & 0 & 2 & 0 & 0 & 2 & 0.52  
S275-031-NT & 2017-10-23 & 23:47 & 5 & 0 & 11 & 1 & 0 & 0 & 0 & 0 & 1 & 0 & 8 & 0.66  
S275-032-NT & 2017-10-24 & 12:20 & 0 & 0 & 5 & 0 & 0 & 1 & 0 & 11 & 1 & 0 & 18 & 0.93  
S275-033-NT & 2017-10-24 & 22:58 & 1 & 0 & 3 & 3 & 0 & 2 & 0 & 3 & 0 & 0 & 4 & 0.52  
S275-034-NT & 2017-10-25 & 11:58 & 0 & 0 & 5 & 0 & 0 & 0 & 0 & 2 & 2 & 0 & 6 & 0.59  
S275-035-NT & 2017-10-25 & 23:29 & 1 & 0 & 11 & 1 & 0 & 0 & 0 & 23 & 0 & 0 & 2 & 0.58  
S275-036-NT & 2017-10-26 & 11:17 & 0 & 0 & 0 & 0 & 0 & 7 & 1 & 49 & 0 & 0 & 0 & 0.45  
S275-037-NT & 2017-10-26 & 22:56 & 0 & 0 & 19 & 9 & 0 & 0 & 0 & 4 & 2 & 0 & 2 & 0.75  
S275-038-NT & 2017-10-27 & 11:47 & 0 & 0 & 0 & 2 & 0 & 0 & 0 & 41 & 0 & 1 & 0 & 0.49  
S275-039-NT & 2017-10-27 & 23:29 & 6 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0.12  
S275-040-NT & 2017-10-27 & 11:58 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 2 & 0 & 0 & 1 & 0.60

Notes: abbreviations for zooplankton categories: Shr Larv, – shrimp larval stage; Lob Larv. – lobster larval stage; Mys – mysids; Euph – euphausiids; Stom Larv. – stomatopod larval stage; Ost – ostracods; Clad – cladocerans; Iso – isopods; Salp – salps and doliolids; Fish Larv. - larval fish; Other - Other categories not listed individually in Tables [100count1] or [100count2].