

# Leibniz Institute for Baltic Sea Research Warnemünde

## Cruise Report

r/v "Elisabeth Mann Borgese"

Cruise- No. EMB190

This report is based on preliminary data

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1. **Cruise No.** EMB190
2. **Dates of the cruise:** from 24.07.2018 to 05.08.2018
3. **Particulars of the research vessel:**
  - Name: Elisabeth Mann Borgese
  - Nationality: Germany
  - Operating Authority: Baltic Sea Research Institute (BSRI) Warnemünde
4. **Geographical area in which ship has operated:**  
Baltic Sea
5. **Dates and names of ports of call**  
not applicable
6. **Purpose of the cruise**  
BSH Baltic Sea monitoring program, long term observations of IOW, deployment of the profiling mooring GODESS
7. **Crew:**
  - Name of master: Timo Kaufmann
  - Number of crew: 12
8. **Research staff:**
  - Chief scientist: Prof. Dr. Joanna Waniek
  - Scientists: 1
  - Engineers: not applicable
  - Technicians: 8
  - Students: 1
  - Observer: 1
9. **Co-operating institutions:**  
not applicable
10. **Scientific equipment**  
CTD, mooring GODESS, plankton and zooplankton net, Secchi disk
11. **General remarks and preliminary result**

#### 11.1 Objectives

The cruise EMB-190 was carried out as a joined cruise of the environmental monitoring programme of the Federal Maritime and Hydrographic Agency (BSH) and the Baltic Sea long-term observation programme of the Leibniz Institute for Baltic Sea Research Warnemünde (IOW). It was the fourth cruise in 2018 in the series of five expeditions performed each year. The acquired data are used for the regular

national and international assessments of the state of the Baltic Sea, and provide the scientific basis for measures to be taken for the protection of the Baltic Sea ecosystem. A special focus of the cruise was to monitor the consequences of the series of Major Baltic Inflows that occurred between 2014 and 2016 for the environmental conditions of the central Baltic, especially regarding dissolved oxygen concentrations.

### 11.2 Narrative of the cruise

Embarkation of the scientific crew was on 24th July at 7:00 AM. The research campaign started at 8:00 AM in Rostock-Marienehe, with the ship heading north for the first stations until the Cadet Furrow and then to the west to cover stations in Mecklenburg Bay and Kiel Bay. Afterwards we turned to Southeast to reach Lübeck Bay as the next working area. Station work usually comprises hydrographic measurements by means of a CTD and oxygen determinations by Winkler titration, dissolved and particulate nutrient as well as organic carbon determinations on selected stations.

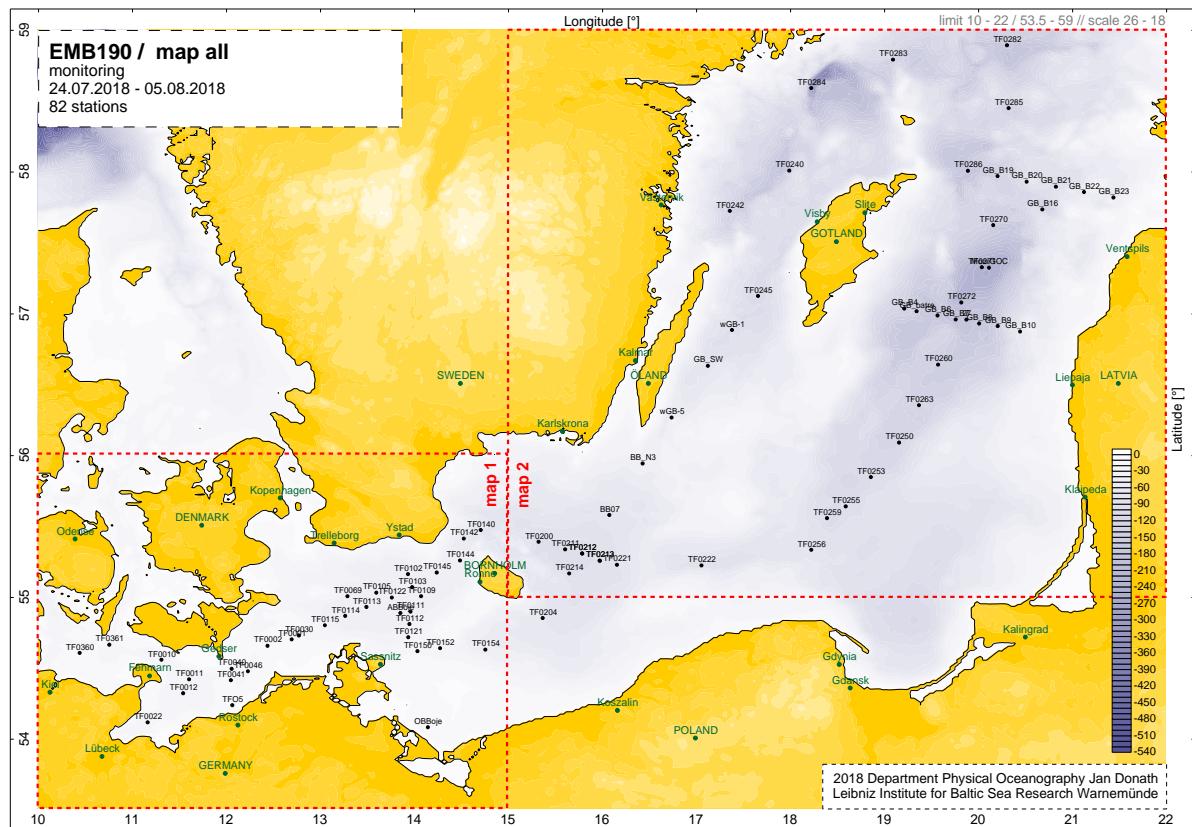


Figure 1: Stations (black crosses) occupied during the cruise EMB190 from 24<sup>th</sup> July– 05<sup>th</sup> August 2018.

After finishing work in the western Baltic Sea the research vessel sailed towards east, with station work in Arkona and Bornholm Basin, and arrived on 29<sup>th</sup> of July in the eastern Gotland Basin. Here first the GODESS mooring was recovered. Stronger winds (5-6BF) and sea with 3 m waves delayed deployment of the mooring until 30<sup>th</sup> of July. In the afternoon on 30<sup>th</sup> of July the GODESS mooring was deployed in the

eastern Gotland Basin and the hydrographic work continued without any difficulties under calm weather conditions (Fig. 1). During the cruise extensive patches of cyanobacteria were seen at surface favoured by the calm sea and warm weather.

On August 5th at 8:00am EMB reached Rostock-Marienehe and the cruise EMB-190 terminated. On Monday, the 6<sup>ed</sup> of August at 08:00 cruise participants started uploading the instruments and equipment as the custom clearance was done on arrival. All gear was of the ship at 11:00am and participants drove to IOW.

### 11.3 Rationale

The cruise EMB190 was carried out in the frame of the Baltic monitoring programme (BMP), and is related to the Baltic long term observation programme of the (IOW). Data collection covered the western and central Baltic from the Kiel Bight to the northern Gotland Basin. The majority of stations are located in the German territorial waters and along the thalweg transect of the Baltic Sea. The thalweg stretches from the Darss sill via the Arkona Sea, the Bornholm Sea, and the eastern Gotland Sea basin to the northern Gotland Sea and the Landsort Deep. Along the southern rim of the eastern Gotland Basin a west to east transect of CTD stations was carried out, in order to gather information about the spatial distribution of the saline water masses of recent MBIs. Additionally, a number of CTD casts were carried out at selected stations in the northern Gotland Sea to figure out the fate of the inflowing water (Fig.1-3, and the list of stations in the Appendix).

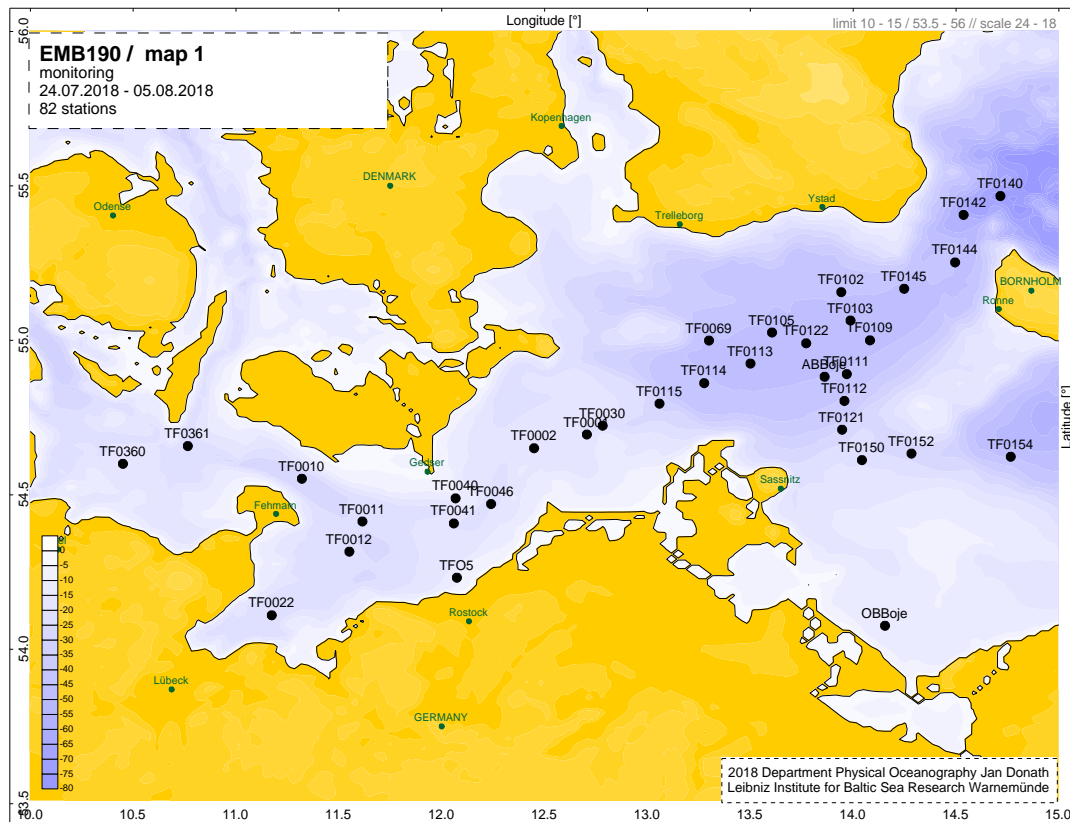


Figure 2: Stations (black dots) in the western Baltic Sea and the Arkona Sea during the cruise EMB 190.

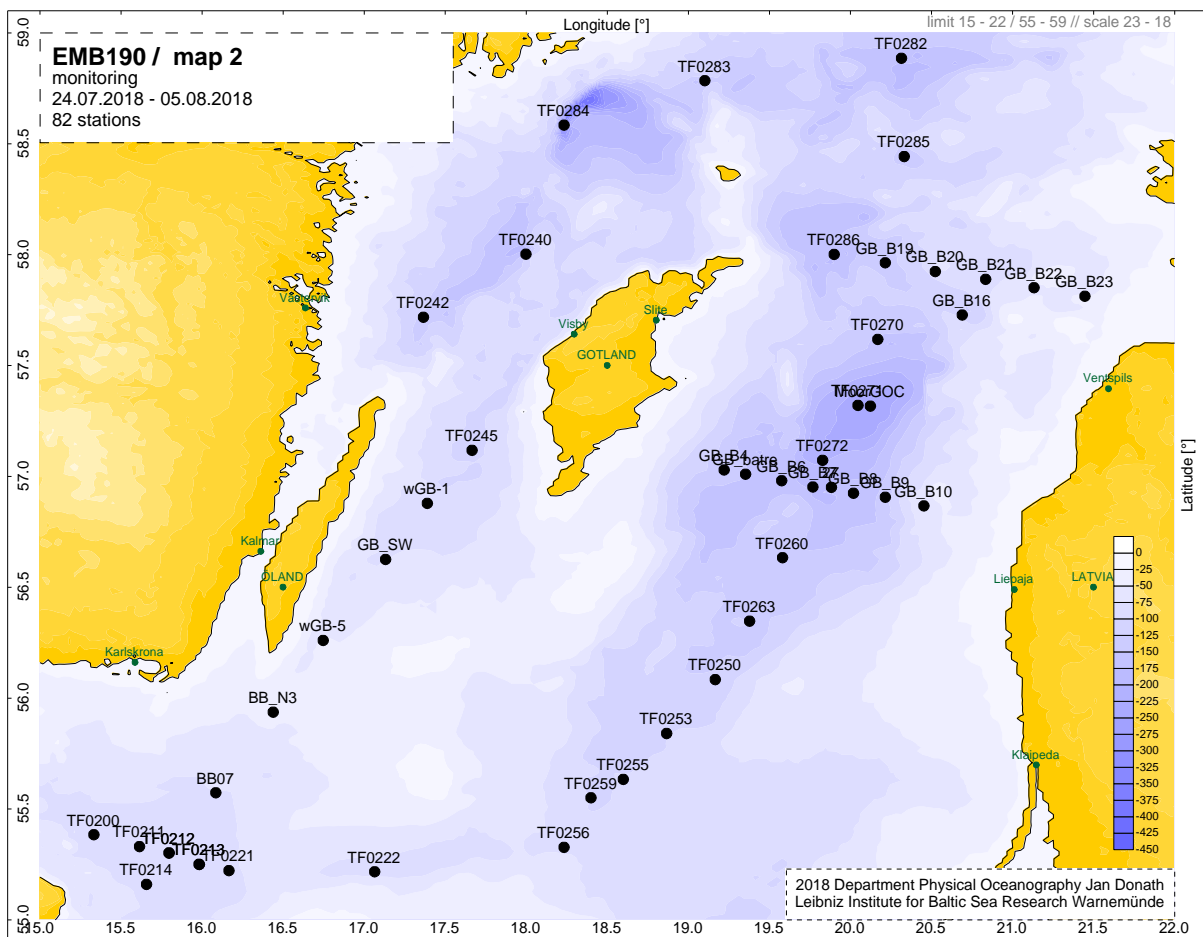


Figure 3: Stations (black dots) in the Bornholm Sea and the Gotland Sea during the cruise EMB190.

### Station work

The station name is complemented for the respective cruise EMB162 by a station number. The station number is based on a consecutive numbering of all stations during the cruise. The station work usually started with a CTD cast and already programmed sampling on standard depth levels. Then other CTD casts followed to meet the water sample requirements on the respective station. Net sampling, depth of visibility determinations by means of a Secchi disk, and phyto/zooplankton net were taken on selected stations (Fig. 1-3).

### CTD and Sampling

The CTD-system "SBE 911plus" (SEABIRD-ELECTRONICS, USA) was used to measure the variables: Pressure, Temperature (2x SBE 3), Conductivity (2x SBE 4), Oxygen concentration (2x SBE 43), Chlorophyll-a fluorescence (683nm), Turbidity, Photosynthetic Active Radiation in water (PAR), and above the sea (SPAR). The Rosette water sampler was equipped with 13 Free Flow bottles of 5 L volume each. The CTD sensors were checked during the cruise by comparison measurements. In detail, for temperature a high precision thermometer SBE RT35 was used. Salinity samples were taken for measurement after the cruise by means of a salinometer. Slope and offset of the oxygen sensors SBE 43 are determined by comparison with Winkler titration.

## **Underway measurements**

The FS Elisabeth Mann Borgese is equipped with sensors to measure weather parameters, surface water properties by means of a surface water pumping system with attached sensors (e.g., thermosalinograph, fluorometer), navigation information, rope length, winch speed etc.

## **Inorganic nutrients**

Nitrate, nitrite, phosphate, and silicate were analysed using standard colorimetric methods by means of an autoanalyser (FlowSys, Alliance-Instruments, Airing, Germany) and Ammonium was determined manually as indophenole blue (Grasshoff et al., 1999) from water filtered through glass-fiber filters GF/F immediately after sampling.

## **Oxygen and Hydrogensulfide**

Oxygen was analysed by Winkler titration and hydrogen sulfide was determined spectrophotometrically by Methylene Blue reaction (Grasshoff et al., 1999). For comparison, H<sub>2</sub>S concentration was transformed to negative oxygen values according to its reduction capacity:  $\text{H}_2\text{S} + 2 \text{O}_2 \rightarrow \text{H}_2\text{SO}_4$ . During CTD casts the SBE 43 oxygen sensor (duplicate installation) recorded oxygen values that are validated by Winkler titration results.

## **Plankton sampling**

Plankton sampling was performed by means of a rosette sampler (combined with CTD) as well as with a small phytoplankton net and the zooplankton nets WP2 and Apstein. Samples were taken in a tight follow up of depths levels in order to get representative data from the euphotic zone. Additionally, samples for microbiological analyses were taken at some stations in the central Baltic, the Gotland Deep and Landsort Deep.

## **Long term investigations of CH<sub>4</sub>, N<sub>2</sub>O and CO<sub>2</sub> distribution**

Sampling for simultaneous CH<sub>4</sub> and N<sub>2</sub>O observation was carried out in frame of an accompanying project for long term data collection. All samples were fixed with 500 µL saturated HgCl<sub>2</sub>-solution to prevent microbiological activity and stored dark. Responsibility for this data lies by Prof. Gregor Rehder.

One complete depth profile was sampled at station TF0271 for the long term data collection of CT, AT, and pH. Also these samples were fixed with 500 µL saturated HgCl<sub>2</sub>-solution to prevent microbiological activity and stored dark (Responsible Scientist: Dr. B. Schneider).

## **Mooring work**

In the eastern Gotland Basin at 57°19.226N, 20°08.004E the profiling mooring GODESS was deployed on 30.07.2018 for a three month period and will collect data by lifting the instruments every 9h between 180 m and 30 m depth.



### Online Photometric Ultraviolet Spectrophotometer (OPUS)

The online photometric ultraviolet spectrophotometer developed by TriOS is an instrument for online measurements with a resolution of 0.8 nm/pixel (Fig. 4a). During the cruise, it was attached to the Rosette water sampler of the research vessel (Fig. 4b) and used for in situ determination of nitrate and hydrogen sulfide, which are both of great importance for the ecological state of the Baltic Sea.

Online control of the OPUS sensor was realized by using a Deep Sea Telemetry system which was integrated into the Rosette water sampler. Measurements were conducted during the downcast every 20 s (lowering speed of the CTD during the downcast was 0.3~m/s). Hydrographic data were collected using a standard CTD probe (SBE911Plus; Sea-Bird Electronics, USA). Concentrations of nitrate and hydrogen sulfide were obtained by traditional laboratory methods and were used for sensor validation.

### Automatic Flow injection system (AFIS) and mini DOT logger

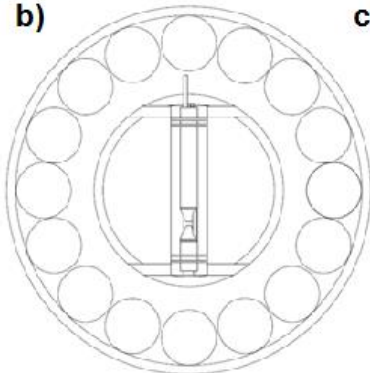
AFIS bottles (custom made) and small oxygen optodes (miniDOT, PME, Vista, CA, USA) which registered O<sub>2</sub> concentration every 30 s have been combined (Fig. 1c,d) to capture the temporal dimension of dissolved oxygen decay that occurs when oxygen-rich water masses (coming from the North Sea) mix with the euxinic deep water of the Baltic Sea.

For this purpose, the Rosette water sampler including the AFIS/miniDOT device was lowered to a depth of 230 m. Subsequently, the bottles were closed and oxygen-rich water was injected into the euxinic deep water of the bottles. Finally, the entire system was left there for several hours while the miniDOTs have measured oxygen decay.

a)



b)



c)



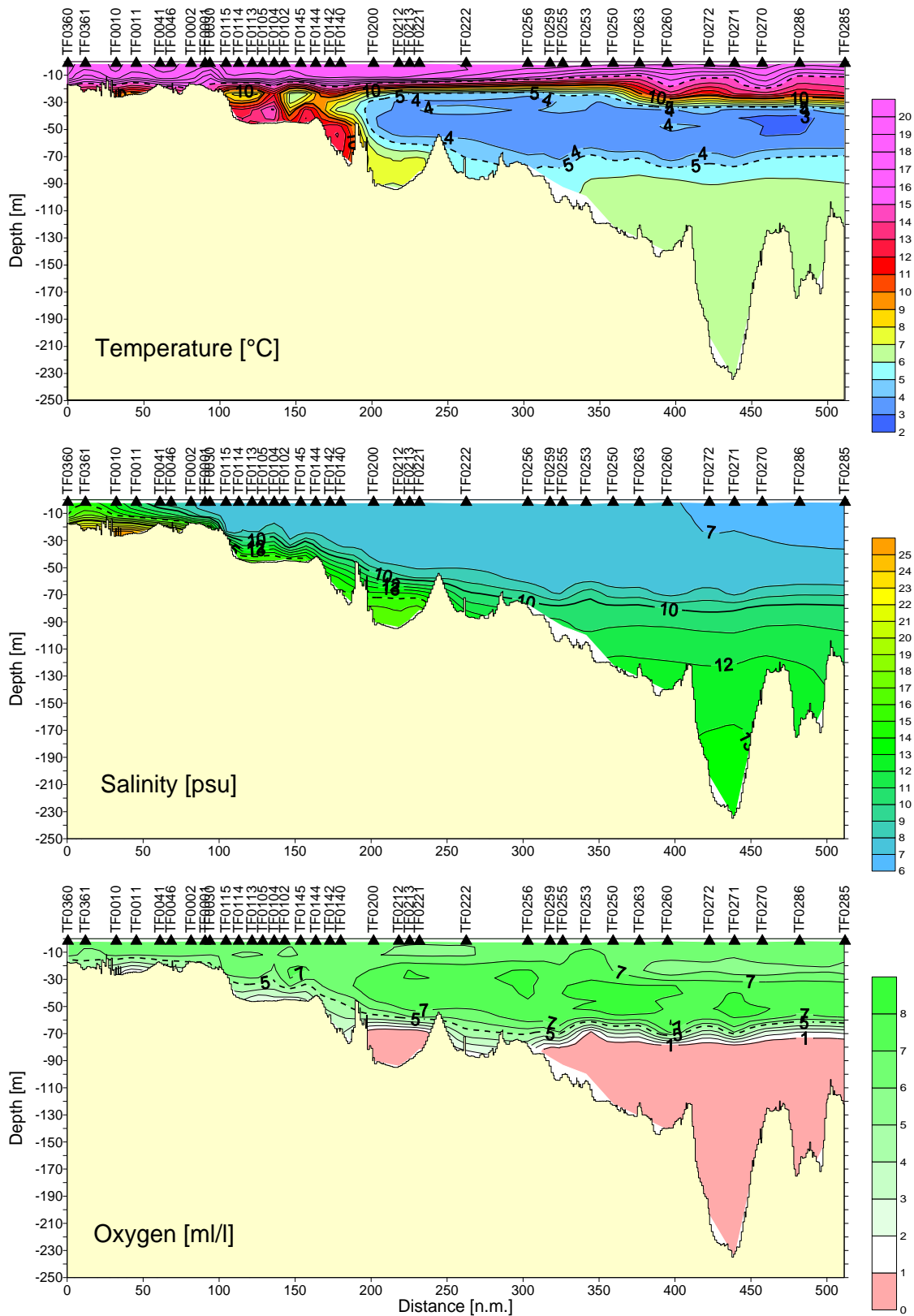
d)



Figure 4: a) Online Photometric Ultraviolet Spectrophotometer (OPUS) build by TriOS GmbH (Oldenburg); b) OPUS was mounted at the bottom of the Rosette water sampler; c) Rosette water sampler equipped with the Automatic Flow Injection System (AFIS); d) mini DOTs were mounted inside the AFIS bottles.

# EMB190 - Monitoring

Kiel Bight - Gotland Sea  
24.07.2018 09:37 - 31.07.2018 12:34 UTC



KBGS.srf

2018 Leibniz Institute for Baltic Sea Research Warnemünde, Department Physical Oceanography Jan Donath

Figure 5: Distribution of temperature, salinity and dissolved oxygen along the thalweg of the Baltic Sea from the Kiel Bight to the eastern Gotland Basin. The figure is based on the preliminary CTD data measured during the EMB190 cruise.



Hydrographic conditions, temperature, salinity and dissolved oxygen registered during the cruise are displayed in Fig. 5 and 6. Temperature distribution along the cruise track show the typical late summer conditions, with relatively warm surface near waters, declining temperatures below, showing signature of the old winter water of the previous year and slightly warmer waters close to the bottom, in Bornholm Basin and the eastern Gotland Basin (Fig. 5). Salinity in the upper surface layer declines towards the eastern Gotland Basin, whereas the salinity changes less in the bottom near layers, and mirrors the conditions after a major inflow event (S-12). Close to the bottom in the Bornholm Basin dissolved oxygen concentrations (<1mm/l) close to zero were registered (Fig. 5). Those conditions were more frequent within the eastern Gotland Basin. In the Gotland Basin even anoxic conditions occurred and dominated the pattern in the water column between 70 m depth and the bottom. Hydrogen sulphide was detected within Bornholm and Gotland Basin (Fig. 6)

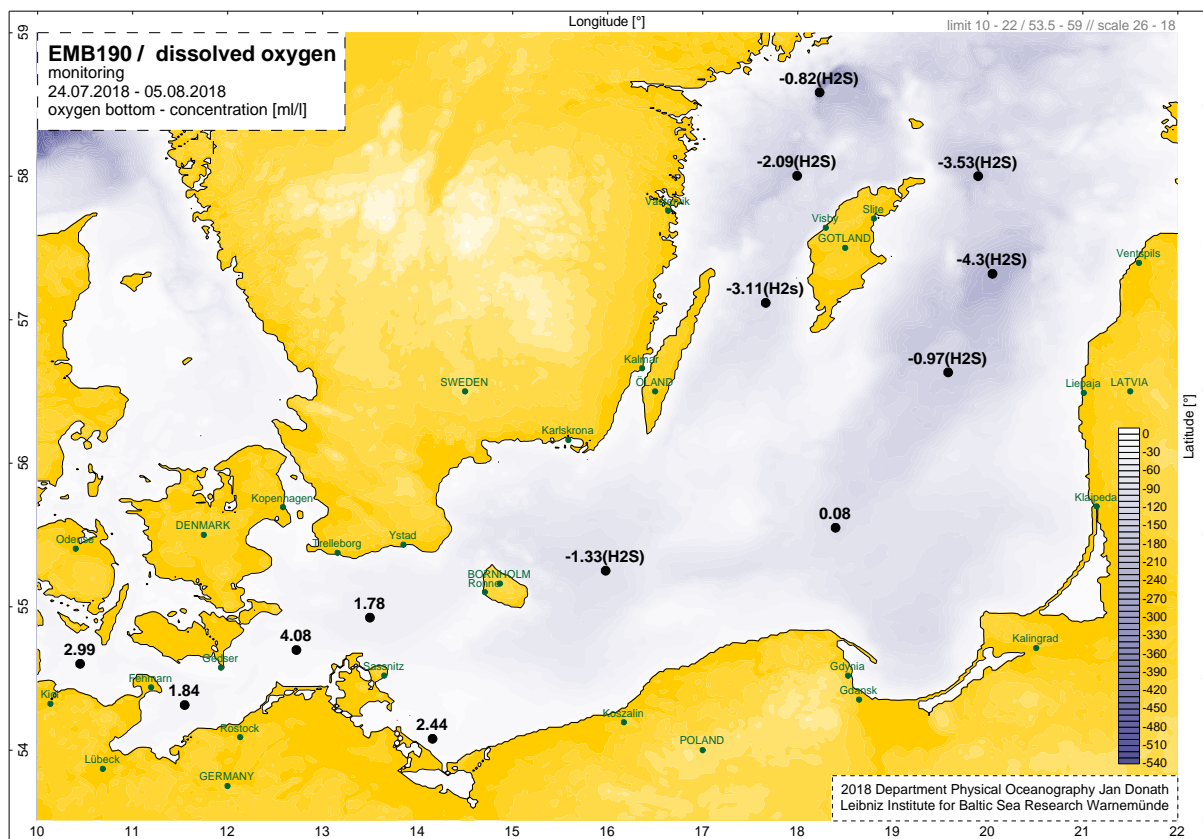
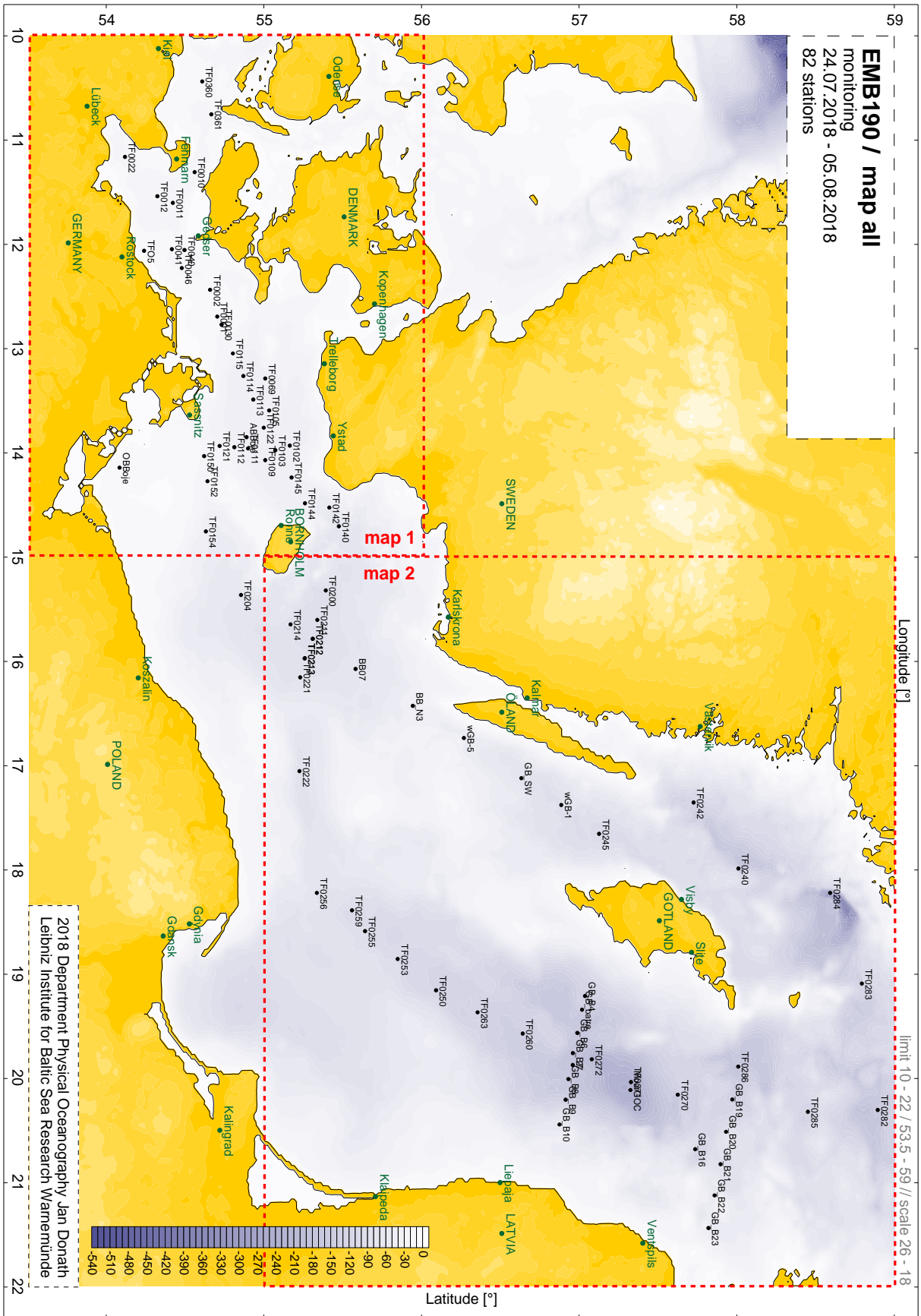


Figure 6: Oxygen concentration (ml/l) in bottom waters of selected Baltic Sea stations (H<sub>2</sub>S is included as negative oxygen concentration) based on Winkler titration.

Appendix: map and list of stations



Activity - Device Operation	Time	Device	Action	Latitude	Longitude	Depth (m)	Speed (kn)	Course	Wind Dir	Wind Vel. m
EMB190_87-4	04.08.2018 18:44	WP-2 Plankton Net	on deck	54° 18,9557' N	011° 32,9777' E	21,3	0	344,9	305	6,8
EMB190_87-4	04.08.2018 18:41	WP-2 Plankton Net	max depth/on ground	54° 18,9325' N	011° 32,9765' E	21,3	1	17,4	309	8,2
EMB190_87-4	04.08.2018 18:38	WP-2 Plankton Net	in the water	54° 18,9132' N	011° 32,9620' E	21,3	0	355,7	319	8,1
EMB190_87-3	04.08.2018 18:31	Plankton Net	on deck	54° 18,9046' N	011° 33,0163' E	21,3	0	246,3	306	7,7
EMB190_87-3	04.08.2018 18:22	Plankton Net	in the water	54° 18,9139' N	011° 33,0814' E	21,3	0	231,2	310	8,3
EMB190_87-2	04.08.2018 18:22	Secchi disk	on deck	54° 18,9147' N	011° 33,0830' E	21,3	0	221,8	316	8,5
EMB190_87-2	04.08.2018 18:21	Secchi disk	in the water	54° 18,9199' N	011° 33,0936' E	21,3	0	229,2	321	8,2
EMB190_87-1	04.08.2018 18:32	CTD	on deck	54° 18,9025' N	011° 33,0075' E	21,3	0	289,8	311	7,6
EMB190_87-1	04.08.2018 18:29	CTD	max depth/on ground	54° 18,9040' N	011° 33,0180' E	21,1	0	267	309	6,3
EMB190_87-1	04.08.2018 18:20	CTD	in the water	54° 18,9227' N	011° 33,1012' E	21,3	1	241,2	307	8,2
EMB190_86-4	04.08.2018 15:37	WP-2 Plankton Net	on deck	54° 28,2008' N	012° 14,5923' E	25,3	0	244,3	274	7,2
EMB190_86-4	04.08.2018 15:33	WP-2 Plankton Net	max depth/on ground	54° 28,1978' N	012° 14,5893' E	25,1	0	288,8	270	7,4
EMB190_86-4	04.08.2018 15:32	WP-2 Plankton Net	in the water	54° 28,1973' N	012° 14,5888' E	25	0	38,4	271	7,7
EMB190_86-4	04.08.2018 15:30	WP-2 Plankton Net	on deck	54° 28,1959' N	012° 14,5961' E	25,1	0	270,7	273	7,8
EMB190_86-4	04.08.2018 15:28	WP-2 Plankton Net	max depth/on ground	54° 28,1953' N	012° 14,5940' E	25,2	0	325,1	281	6,6
EMB190_86-4	04.08.2018 15:25	WP-2 Plankton Net	in the water	54° 28,1947' N	012° 14,5940' E	25,3	0	337,9	274	6,9
EMB190_86-3	04.08.2018 15:14	Plankton Net	on deck	54° 28,1872' N	012° 14,6001' E	25,2	0	35,3	275	6,4
EMB190_86-2	04.08.2018 15:12	Secchi disk	on deck	54° 28,1843' N	012° 14,5915' E	25	0	231	279	6,2
EMB190_86-1	04.08.2018 15:15	CTD	on deck	54° 28,1883' N	012° 14,6028' E	25	0	52,8	281	6,7
EMB190_86-1	04.08.2018 15:12	CTD	max depth/on ground	54° 28,1839' N	012° 14,5918' E	25,1	0	240	275	6,1
EMB190_86-1	04.08.2018 15:09	CTD	in the water	54° 28,1868' N	012° 14,5958' E	25	0	309,6	284	6,4
EMB190_85-6	04.08.2018 12:00	CTD	on deck	54° 43,2446' N	012° 46,9501' E	19,1	0	133,4	282	7,1
EMB190_85-6	04.08.2018 11:56	CTD	max depth/on ground	54° 43,2601' N	012° 46,9486' E	19,1	0	217,5	286	8,1
EMB190_85-6	04.08.2018 11:49	CTD	in the water	54° 43,3017' N	012° 47,0120' E	19,1	1	195,8	283	6,9
EMB190_85-5	04.08.2018 11:16	WP-2 Plankton Net	on deck	54° 43,4472' N	012° 46,9982' E	19,3	0	1,8	267	6,4
EMB190_85-5	04.08.2018 11:13	WP-2 Plankton Net	max depth/on ground	54° 43,4384' N	012° 46,9994' E	19,3	0	14,8	270	6,3

EMB190_85-5	04.08.2018 11:13	WP-2 Plankton Net	in the water	54° 43,4346' N	012° 46,9991' E	19,3	0	21,7	253	5,3
EMB190_85-4	04.08.2018 11:09	WP-2 Plankton Net	on deck	54° 43,4217' N	012° 46,9983' E	19,3	0	343,4	273	6,4
EMB190_85-4	04.08.2018 11:07	WP-2 Plankton Net	max depth/on ground	54° 43,4096' N	012° 47,0003' E	19,4	0	8,5	259	5,3
EMB190_85-4	04.08.2018 11:05	WP-2 Plankton Net	in the water	54° 43,4025' N	012° 47,0002' E	19,2	0	21,6	262	4,5
EMB190_85-3	04.08.2018 11:01	Plankton Net	on deck	54° 43,3869' N	012° 46,9874' E	19,3	0	56,7	270	4,4
EMB190_85-3	04.08.2018 10:48	Plankton Net	in the water	54° 43,3726' N	012° 47,0355' E	19,3	0	218,6	253	2,8
EMB190_85-2	04.08.2018 10:53	Secchi disk	on deck	54° 43,3634' N	012° 47,0009' E	19,3	0	293,3	265	3,6
EMB190_85-2	04.08.2018 10:48	Secchi disk	in the water	54° 43,3758' N	012° 47,0397' E	19,3	0	210,5	259	2,5
EMB190_85-1	04.08.2018 10:56	CTD	on deck	54° 43,3738' N	012° 46,9864' E	19,3	0	341,9	274	5,1
EMB190_85-1	04.08.2018 10:46	CTD	in the water	54° 43,3870' N	012° 47,0455' E	19,4	0	184,9	265	2,8
EMB190_84-5	04.08.2018 06:29	WP-2 Plankton Net	on deck	54° 55,4967' N	013° 30,0409' E	43,9	0	303	315	7,5
EMB190_84-5	04.08.2018 06:25	WP-2 Plankton Net	max depth/on ground	54° 55,5007' N	013° 30,0372' E	43,9	0	259,2	311	7,3
EMB190_84-5	04.08.2018 06:24	WP-2 Plankton Net	in the water	54° 55,5011' N	013° 30,0380' E	43,9	0	302	315	6,8
EMB190_84-4	04.08.2018 06:22	WP-2 Plankton Net	on deck	54° 55,4994' N	013° 30,0363' E	44	0	348,5	312	7,1
EMB190_84-4	04.08.2018 06:19	WP-2 Plankton Net	max depth/on ground	54° 55,5004' N	013° 30,0270' E	43,9	0	125,1	315	8,1
EMB190_84-4	04.08.2018 06:18	WP-2 Plankton Net	in the water	54° 55,5000' N	013° 30,0264' E	43,9	0	160,3	312	8,2
EMB190_84-3	04.08.2018 06:08	Plankton Net	on deck	54° 55,5032' N	013° 30,0025' E	43,9	0	105,7	302	6,6
EMB190_84-3	04.08.2018 06:04	Plankton Net	in the water	54° 55,5096' N	013° 29,9872' E	43,9	0	19,4	302	6,4
EMB190_84-2	04.08.2018 06:02	Secchi disk	on deck	54° 55,5101' N	013° 29,9855' E	43,9	0	72,4	313	7,2
EMB190_84-2	04.08.2018 06:00	Secchi disk	in the water	54° 55,5118' N	013° 29,9791' E	43,9	0	140,2	312	7,5
EMB190_84-1	04.08.2018 06:13	CTD	on deck	54° 55,4985' N	013° 30,0236' E	43,9	0	137,1	312	8,2
EMB190_84-1	04.08.2018 06:09	CTD	max depth/on ground	54° 55,5023' N	013° 30,0095' E	43,9	0	103,2	311	7,3
EMB190_84-1	04.08.2018 06:00	CTD	in the water	54° 55,5116' N	013° 29,9783' E	43,9	0	148,8	307	7,2
EMB190_83-1	03.08.2018 19:44	CTD	on deck	54° 04,4954' N	014° 09,4064' E	11,1	1	130,1	118	2,9
EMB190_83-1	03.08.2018 19:40	CTD	max depth/on ground	54° 04,5227' N	014° 09,3606' E	11,3	1	138,6	117	4
EMB190_83-1	03.08.2018 19:33	CTD	in the water	54° 04,6074' N	014° 09,2892' E	11,3	1	151,8	120	4,8
EMB190_82-1	03.08.2018 16:02	CTD	on deck	54° 38,0117' N	014° 16,9845' E	27,9	0	344,6	246	2,2
EMB190_82-1	03.08.2018 16:00	CTD	max depth/on ground	54° 38,0114' N	014° 16,9891' E	27,9	0	289,6	246	2,5

EMB190_82-1	03.08.2018 15:52	CTD	in the water	54° 37,9846' N	014° 17,0929' E	28	1	286,4	225	2,8
EMB190_81-1	03.08.2018 13:44	CTD	on deck	54° 37,3746' N	014° 45,9906' E	44,6	0	61,7	252	4,3
EMB190_81-1	03.08.2018 13:42	CTD	max depth/on ground	54° 37,3720' N	014° 45,9893' E	44,6	0	340,2	249	5
EMB190_81-1	03.08.2018 13:34	CTD	in the water	54° 37,3823' N	014° 45,9953' E	44,6	0	216	252	3,8
EMB190_80-1	03.08.2018 11:12	CTD	on deck	54° 50,6887' N	015° 22,5144' E	68,6	1	235,5	245	6,3
EMB190_80-1	03.08.2018 11:07	CTD	max depth/on ground	54° 50,6973' N	015° 22,5345' E	68,6	0	251	249	5,8
EMB190_80-1	03.08.2018 10:58	CTD	in the water	54° 50,7426' N	015° 22,6301' E	68,6	1	240,4	250	6,4
EMB190_79-1	03.08.2018 07:55	CTD	on deck	55° 18,1303' N	015° 47,7623' E	94,6	0	26,4	319	5,2
EMB190_79-1	03.08.2018 07:50	CTD	max depth/on ground	55° 18,1244' N	015° 47,7863' E	94,8	1	255,6	323	5,7
EMB190_79-1	03.08.2018 07:37	CTD	in the water	55° 18,0776' N	015° 47,8454' E	94,6	1	307,9	316	6
EMB190_78-6	03.08.2018 06:34	CTD	on deck	55° 14,9985' N	015° 58,9495' E	88,9	0	191,7	330	5,3
EMB190_78-6	03.08.2018 01:46	CTD	max depth/on ground	55° 14,9875' N	015° 59,0002' E	88,9	0	357,2	324	5,3
EMB190_78-6	03.08.2018 01:23	CTD	in the water	55° 14,9825' N	015° 59,0404' E	89,1	0	218,9	318	6,1
EMB190_78-5	03.08.2018 00:45	WP-2 Plankton Net	on deck	55° 14,9861' N	015° 59,0284' E	88,9	0	330,3	327	6,3
EMB190_78-5	03.08.2018 00:42	WP-2 Plankton Net	max depth/on ground	55° 14,9852' N	015° 59,0334' E	89,3	0	174,9	336	7,6
EMB190_78-5	03.08.2018 00:35	WP-2 Plankton Net	in the water	55° 14,9810' N	015° 59,0342' E	89	0	175,2	333	6
EMB190_78-4	03.08.2018 00:34	WP-2 Plankton Net	on deck	55° 14,9809' N	015° 59,0340' E	88,9	0	1,3	328	6
EMB190_78-4	03.08.2018 00:29	WP-2 Plankton Net	max depth/on ground	55° 14,9855' N	015° 59,0312' E	88,9	0	170,6	332	6,6
EMB190_78-4	03.08.2018 00:26	WP-2 Plankton Net	in the water	55° 14,9951' N	015° 59,0069' E	88,9	1	101,1	332	6,3
EMB190_78-3	03.08.2018 00:25	WP-2 Plankton Net	on deck	55° 14,9972' N	015° 59,0001' E	88,9	0	124,8	324	5,6
EMB190_78-3	03.08.2018 00:24	WP-2 Plankton Net	max depth/on ground	55° 14,9986' N	015° 58,9943' E	88,9	0	59,8	324	5,4
EMB190_78-3	03.08.2018 00:22	WP-2 Plankton Net	in the water	55° 14,9942' N	015° 58,9970' E	89,1	1	329,1	327	5,7
EMB190_78-2	03.08.2018 00:06	Plankton Net	on deck	55° 14,9788' N	015° 59,0373' E	88,8	0	181,1	327	6,4
EMB190_78-2	03.08.2018 00:00	Plankton Net	in the water	55° 14,9741' N	015° 59,0480' E	88,9	0	326	325	6,4
EMB190_78-1	03.08.2018 00:14	CTD	on deck	55° 14,9882' N	015° 59,0012' E	89,1	0	55,4	329	5,8
EMB190_78-1	03.08.2018 00:09	CTD	max depth/on ground	55° 14,9804' N	015° 59,0204' E	89,2	0	285,9	334	6
EMB190_78-1	02.08.2018 23:57	CTD	in the water	55° 14,9728' N	015° 59,0528' E	89	0	164,3	318	6,9

EMB190_77-1	02.08.2018 18:05	CTD	on deck	55° 34,4119' N	016° 05,1435' E	75,7	1	46,7	246	10,5
EMB190_77-1	02.08.2018 17:45	CTD	max depth/on ground	55° 34,3891' N	016° 05,1175' E	76,1	0	36,8	260	9,8
EMB190_77-1	02.08.2018 17:35	CTD	in the water	55° 34,4044' N	016° 05,1850' E	76,1	0	222,8	259	8,7
EMB190_76-1	02.08.2018 14:53	CTD	on deck	55° 56,1695' N	016° 26,3650' E	44,8	0	228,3	262	8,1
EMB190_76-1	02.08.2018 14:50	CTD	max depth/on ground	55° 56,1686' N	016° 26,3682' E	45	0	280,1	256	8,1
EMB190_76-1	02.08.2018 14:45	CTD	in the water	55° 56,1830' N	016° 26,3749' E	45	0	103,9	263	8,3
EMB190_75-1	02.08.2018 11:57	CTD	on deck	56° 15,5241' N	016° 44,7901' E	45,5	1	212,4	242	7,7
EMB190_75-1	02.08.2018 11:53	CTD	max depth/on ground	56° 15,5585' N	016° 44,8382' E	44,6	1	205,6	242	7,7
EMB190_75-1	02.08.2018 11:46	CTD	in the water	56° 15,5749' N	016° 44,9164' E	41,4	1	233,9	244	6,7
EMB190_74-1	02.08.2018 08:19	CTD	on deck	56° 37,4939' N	017° 07,7903' E	76,1	0	263,7	233	1
EMB190_74-1	02.08.2018 08:15	CTD	max depth/on ground	56° 37,4900' N	017° 07,8097' E	76,8	0	295,7	193	0,4
EMB190_74-1	02.08.2018 08:04	CTD	in the water	56° 37,4835' N	017° 07,9775' E	77,1	1	255,2	226	1
EMB190_73-1	02.08.2018 06:15	CTD	on deck	56° 52,6301' N	017° 23,3742' E	95	0	218,6	226	6,1
EMB190_73-1	02.08.2018 06:12	CTD	max depth/on ground	56° 52,6396' N	017° 23,3857' E	95	0	234,3	227	6,5
EMB190_73-1	02.08.2018 05:57	CTD	in the water	56° 52,6715' N	017° 23,5293' E	94,3	1	236,1	217	5,2
EMB190_72-1	02.08.2018 04:17	CTD	on deck	57° 07,0094' N	017° 40,0024' E	110	0	174	175	4,1
EMB190_72-1	02.08.2018 04:12	CTD	max depth/on ground	57° 07,0132' N	017° 40,0038' E	110	0	205,2	179	3,6
EMB190_72-1	02.08.2018 04:00	CTD	in the water	57° 07,0358' N	017° 39,9938' E	110	1	183,5	168	3,5
EMB190_71-1	02.08.2018 00:20	CTD	on deck	57° 43,0112' N	017° 21,8138' E	137	1	251,9	146	3,6
EMB190_71-1	02.08.2018 00:14	CTD	max depth/on ground	57° 43,0128' N	017° 21,8747' E	138	0	266,4	143	3,6
EMB190_71-1	02.08.2018 00:00	CTD	in the water	57° 43,0192' N	017° 22,0085' E	141	0	327,3	139	3
EMB190_71-1	01.08.2018 20:59	CTD	in the water	57° 52,4864' N	017° 43,4058' E	168	11	229	189	5
EMB190_70-1	01.08.2018 19:47	CTD	on deck	58° 00,1845' N	017° 59,7441' E	174	1	329,1	143	4,4
EMB190_70-1	01.08.2018 19:44	CTD	max depth/on ground	58° 00,1511' N	017° 59,7846' E	172	1	330,8	137	4,4
EMB190_70-1	01.08.2018 19:26	CTD	in the water	57° 59,9602' N	018° 00,0279' E	166	1	351	124	5,3
EMB190_69-9	01.08.2018 15:08	CTD	on deck	58° 34,9786' N	018° 14,0068' E	453	0	28,2	131	2,3
EMB190_69-9	01.08.2018 12:45	CTD	max depth/on	58° 34,9928' N	018° 14,0215' E	453	0	167,1	147	3,5

			ground							
EMB190_69-9	01.08.2018 12:24	CTD	in the water	58° 35,0154' N	018° 14,0062' E	453	0	233,5	128	4
EMB190_69-8	01.08.2018 11:25	CTD	on deck	58° 35,0000' N	018° 14,0064' E	453	0	266,4	136	3,5
EMB190_69-8	01.08.2018 11:20	CTD	max depth/on ground	58° 34,9988' N	018° 14,0024' E	453	0	210	140	3,7
EMB190_69-8	01.08.2018 11:08	CTD	in the water	58° 35,0131' N	018° 14,0211' E	453	0	35	141	2,7
EMB190_69-7	01.08.2018 10:54	CTD	on deck	58° 35,0129' N	018° 14,0224' E	453	0	180,3	140	3,4
EMB190_69-7	01.08.2018 10:49	CTD	max depth/on ground	58° 35,0086' N	018° 14,0200' E	453	0	72	129	3,7
EMB190_69-7	01.08.2018 10:33	CTD	max depth/on ground	58° 35,0073' N	018° 14,0184' E	453	0	96,1	147	4,7
EMB190_69-6	01.08.2018 10:12	CTD	in the water	58° 35,0073' N	018° 14,0045' E	453	0	64	141	4,5
EMB190_69-6	01.08.2018 09:11	CTD	on deck	58° 35,0559' N	018° 14,1144' E	453	0	317,6	135	4
EMB190_69-6	01.08.2018 04:13	CTD	max depth/on ground	58° 34,9991' N	018° 13,9838' E	453	0	347,3	134	4,8
EMB190_69-6	01.08.2018 03:53	CTD	in the water	58° 35,0017' N	018° 13,9919' E	453	0	323,5	145	5,7
EMB190_69-5	01.08.2018 03:37	CTD	on deck	58° 35,0150' N	018° 14,0308' E	453	0	277,6	146	4,4
EMB190_69-5	01.08.2018 03:34	CTD	max depth/on ground	58° 35,0127' N	018° 14,0110' E	453	0	115,9	139	4,7
EMB190_69-5	01.08.2018 03:27	CTD	in the water	58° 35,0060' N	018° 13,9903' E	453	0	264,3	132	5,8
EMB190_69-4	01.08.2018 02:29	CTD	on deck	58° 34,9955' N	018° 13,9745' E	453	0	150	177	2,8
EMB190_69-4	01.08.2018 02:26	CTD	max depth/on ground	58° 34,9959' N	018° 13,9687' E	453	0	135,2	176	3
EMB190_69-4	01.08.2018 02:20	CTD	in the water	58° 34,9960' N	018° 13,9668' E	453	0	273,7	170	3,3
EMB190_69-3	01.08.2018 01:58	CTD	on deck	58° 34,9770' N	018° 13,9926' E	453	0	27,4	169	2,7
EMB190_69-3	01.08.2018 01:53	CTD	max depth/on ground	58° 34,9704' N	018° 13,9747' E	453	0	44,8	163	2,9
EMB190_69-3	01.08.2018 01:45	CTD	in the water	58° 34,9543' N	018° 13,9662' E	453	0	341,7	163	3,2
EMB190_69-2	01.08.2018 01:28	CTD	on deck	58° 34,9780' N	018° 13,9946' E	453	0	242,6	148	4,4
EMB190_69-2	01.08.2018 01:23	CTD	max depth/on ground	58° 34,9689' N	018° 14,0058' E	453	0	96,5	163	2,9
EMB190_69-2	01.08.2018 01:09	CTD	in the water	58° 34,9856' N	018° 14,0112' E	453	0	117,2	151	4,5
EMB190_69-1	01.08.2018 00:44	CTD	on deck	58° 34,9644' N	018° 14,0124' E	453	1	123,8	158	5
EMB190_69-1	01.08.2018 00:33	CTD	max depth/on ground	58° 34,9800' N	018° 14,0196' E	453	0	250,7	155	4,6



EMB190_69-1	01.08.2018 00:00	CTD	in the water	58° 35,0231' N	018° 14,0532' E	453	0	178,6	149	4,7
EMB190_68-1	31.07.2018 19:23	CTD	on deck	58° 47,0579' N	019° 06,1453' E	119	1	274,2	152	7,2
EMB190_68-1	31.07.2018 19:16	CTD	max depth/on ground	58° 47,0625' N	019° 06,1973' E	120	0	112,4	149	7
EMB190_68-1	31.07.2018 19:02	CTD	in the water	58° 47,0270' N	019° 05,9852' E	120	1	59,3	154	7,8
EMB190_67-1	31.07.2018 15:32	CTD	on deck	58° 53,0629' N	020° 18,9522' E	161	1	113,8	157	4,7
EMB190_67-1	31.07.2018 15:27	CTD	max depth/on ground	58° 53,0776' N	020° 18,9333' E	161	0	187	157	4,4
EMB190_67-1	31.07.2018 15:14	CTD	in the water	58° 53,0655' N	020° 18,8896' E	163	2	337,1	154	3,6
EMB190_66-1	31.07.2018 12:45	CTD	on deck	58° 26,5055' N	020° 19,9691' E	122	0	214,6	128	2,6
EMB190_66-1	31.07.2018 12:41	CTD	max depth/on ground	58° 26,5133' N	020° 19,9594' E	122	0	287,4	132	3,9
EMB190_66-1	31.07.2018 12:30	CTD	in the water	58° 26,5319' N	020° 19,9584' E	122	0	196,9	118	2,3
EMB190_65-2	31.07.2018 09:39	CTD	on deck	58° 00,0015' N	019° 53,9801' E	196	0	337,2	116	3,7
EMB190_65-2	31.07.2018 09:32	CTD	max depth/on ground	58° 00,0005' N	019° 53,9976' E	196	0	208,2	110	3
EMB190_65-2	31.07.2018 09:13	CTD	in the water	58° 00,0056' N	019° 54,0223' E	196	0	330,4	116	3,1
EMB190_65-1	31.07.2018 08:42	CTD	on deck	58° 00,0179' N	019° 53,9811' E	196	0	230,9	112	2,6
EMB190_65-1	31.07.2018 08:36	CTD	max depth/on ground	58° 00,0213' N	019° 53,9837' E	196	0	108	109	3,1
EMB190_65-1	31.07.2018 08:18	CTD	in the water	58° 00,0231' N	019° 53,9991' E	196	0	313,2	113	3,8
EMB190_64-1	31.07.2018 06:37	CTD	on deck	57° 57,6757' N	020° 12,8889' E	125	0	169,6	123	2,7
EMB190_64-1	31.07.2018 06:31	CTD	max depth/on ground	57° 57,7025' N	020° 12,9065' E	125	0	168,6	109	2,7
EMB190_64-1	31.07.2018 06:18	CTD	in the water	57° 57,8120' N	020° 12,9658' E	125	1	225,9	117	3,8
EMB190_63-1	31.07.2018 04:50	CTD	on deck	57° 55,3771' N	020° 31,4301' E	98,6	0	162,1	204	2,2
EMB190_63-1	31.07.2018 04:47	CTD	max depth/on ground	57° 55,3775' N	020° 31,4323' E	98,6	0	252,6	204	3
EMB190_63-1	31.07.2018 04:33	CTD	in the water	57° 55,4205' N	020° 31,5211' E	97,9	1	221,5	209	3,1
EMB190_62-1	31.07.2018 03:11	CTD	on deck	57° 53,2953' N	020° 50,0630' E	89,6	0	225,9	180	3,8
EMB190_62-1	31.07.2018 03:08	CTD	max depth/on ground	57° 53,2935' N	020° 50,0716' E	89,3	0	316,8	194	3,6
EMB190_62-1	31.07.2018 02:55	CTD	in the water	57° 53,2983' N	020° 50,0702' E	88,8	0	219,7	173	3,6
EMB190_61-1	31.07.2018 01:31	CTD	on deck	57° 51,0117' N	021° 08,0050' E	76,1	0	280,2	135	5
EMB190_61-1	31.07.2018 01:27	CTD	max depth/on	57° 51,0147' N	021° 08,0130' E	76,1	0	243,2	141	3,9

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EMB190_61-1	31.07.2018 01:20	CTD	in the water	57° 51,0222' N	021° 08,0230' E	76,4	1	188,8	145	4,1	
EMB190_60-1	31.07.2018 00:14	CTD	on deck	57° 48,7127' N	021° 26,8476' E	54,6	0	124,5	150	3,2	
EMB190_60-1	31.07.2018 00:09	CTD	max depth/on ground	57° 48,7148' N	021° 26,8342' E	54,6	0	258,6	161	2,6	
EMB190_60-1	31.07.2018 00:01	CTD	in the water	57° 48,7289' N	021° 26,7905' E	55	1	142,4	157	3,6	
EMB190_59-1	30.07.2018 18:29	CTD	on deck	57° 43,6805' N	020° 41,5041' E	136	1	86,4	135	5,4	
EMB190_59-1	30.07.2018 18:22	CTD	max depth/on ground	57° 43,6767' N	020° 41,4481' E	135	0	62,5	143	4,3	
EMB190_59-1	30.07.2018 18:08	CTD	in the water	57° 43,6288' N	020° 41,3613' E	136	1	62,7	141	2,4	
EMB190_58-1	30.07.2018 16:18	CTD	on deck	57° 36,9684' N	020° 10,2135' E	144	0	274,8	141	6,9	
EMB190_58-1	30.07.2018 16:13	CTD	max depth/on ground	57° 36,9819' N	020° 10,2542' E	144	0	206,4	149	7,2	
EMB190_58-1	30.07.2018 16:00	CTD	in the water	57° 37,0102' N	020° 10,0465' E	144	1	56,7	151	7,3	
EMB190_57-2	30.07.2018 13:26	Plankton Net	on deck	57° 18,9936' N	020° 08,2533' E	244	3	101	205	2,1	
EMB190_57-2	30.07.2018 13:23	Plankton Net	in the water	57° 19,0093' N	020° 08,1920' E	244	0	160	212	3,8	
EMB190_57-1	30.07.2018 12:31	CTD	on deck	57° 18,9974' N	020° 07,4932' E	246	0	336,4	183	4,2	
EMB190_57-1	30.07.2018 12:16	CTD	max depth/on ground	57° 18,9797' N	020° 07,4696' E	246	0	97,3	185	4,7	
EMB190_57-1	30.07.2018 11:59	CTD	in the water	57° 19,0147' N	020° 07,4158' E	246	0	189,3	170	5,3	
EMB190_56-1	30.07.2018 07:29	CTD	on deck	56° 52,0236' N	020° 27,3180' E	59,3	0	89,9	178	4,3	
EMB190_56-1	30.07.2018 07:26	CTD	max depth/on ground	56° 52,0195' N	020° 27,3082' E	59,3	0	125,3	181	4	
EMB190_56-1	30.07.2018 07:16	CTD	in the water	56° 52,0031' N	020° 27,2109' E	59,6	1	100,3	181	6,1	
EMB190_55-1	30.07.2018 06:20	CTD	on deck	56° 54,3540' N	020° 13,0264' E	145	0	145,1	171	3,6	
EMB190_55-1	30.07.2018 06:14	CTD	max depth/on ground	56° 54,3423' N	020° 13,0045' E	145	0	29,2	185	5,1	
EMB190_55-1	30.07.2018 05:57	CTD	in the water	56° 54,3359' N	020° 12,9010' E	146	1	106,8	168	5,4	
EMB190_54-1	30.07.2018 05:05	CTD	on deck	56° 55,3834' N	020° 01,1771' E	167	0	312	146	3,9	
EMB190_54-1	30.07.2018 05:00	CTD	max depth/on ground	56° 55,3928' N	020° 01,1773' E	166	0	245,4	159	5,1	
EMB190_54-1	30.07.2018 04:45	CTD	in the water	56° 55,3856' N	020° 01,1505' E	166	1	51,3	151	6,1	
EMB190_53-1	30.07.2018 04:06	CTD	on deck	56° 57,0031' N	019° 52,9974' E	178	0	291,7	139	7,7	
EMB190_53-1	30.07.2018 04:01	CTD	max depth/on ground	56° 57,0029' N	019° 53,0025' E	178	0	284,8	145	7,6	

EMB190_53-1	30.07.2018 03:46	CTD	in the water	56° 57,0011' N	019° 52,9813' E	178	0	86,8	138	8,6
EMB190_52-1	30.07.2018 03:15	CTD	on deck	56° 57,0850' N	019° 46,1457' E	184	0	1,8	121	7,5
EMB190_52-1	30.07.2018 03:10	CTD	max depth/on ground	56° 57,0820' N	019° 46,1540' E	184	0	75,8	127	6,3
EMB190_52-1	30.07.2018 03:00	CTD	in the water	56° 57,1015' N	019° 46,1576' E	184	0	144,7	117	4,2
EMB190_51-1	30.07.2018 02:16	CTD	max depth/on ground	56° 58,8096' N	019° 34,6299' E	168	0	99,5	137	3,7
EMB190_51-1	30.07.2018 02:02	CTD	in the water	56° 58,8006' N	019° 34,5972' E	168	0	52,7	131	2,9
EMB190_50-1	30.07.2018 01:15	CTD	on deck	57° 00,5727' N	019° 21,2243' E	178	1	72,5	144	4,2
EMB190_50-1	30.07.2018 01:09	CTD	max depth/on ground	57° 00,5658' N	019° 21,2104' E	177	0	17,9	132	3,3
EMB190_50-1	30.07.2018 00:58	CTD	in the water	57° 00,5721' N	019° 21,2308' E	177	0	247,3	164	2,6
EMB190_49-1	30.07.2018 00:23	CTD	on deck	57° 01,6481' N	019° 13,2738' E	162	0	235,9	137	1,6
EMB190_49-1	30.07.2018 00:17	CTD	max depth/on ground	57° 01,6800' N	019° 13,3048' E	160	0	167,3	151	1,5
EMB190_49-1	30.07.2018 00:07	CTD	in the water	57° 01,7097' N	019° 13,2832' E	162	0	142,7	131	2,4
EMB190_48-16	29.07.2018 15:20	CTD	on deck	57° 19,2010' N	020° 03,0019' E	241	0	335,3	88	3,7
EMB190_48-16	29.07.2018 15:08	CTD	max depth/on ground	57° 19,1984' N	020° 02,9986' E	241	0	133,7	99	3,1
EMB190_48-16	29.07.2018 13:40	CTD	in the water	57° 19,1850' N	020° 03,0030' E	241	0	231,6	125	3,9
EMB190_48-15	29.07.2018 13:10	CTD	on deck	57° 19,2212' N	020° 02,8709' E	241	0	354,9	127	7,2
EMB190_48-15	29.07.2018 13:02	CTD	max depth/on ground	57° 19,2111' N	020° 02,8350' E	241	0	117,5	124	8,3
EMB190_48-15	29.07.2018 12:55	CTD	in the water	57° 19,2120' N	020° 02,8112' E	241	1	122,2	126	5,9
EMB190_48-14	29.07.2018 12:11	CTD	on deck	57° 19,1684' N	020° 07,8654' E	245	0	195,8	112	8,4
EMB190_48-14	29.07.2018 11:55	CTD	max depth/on ground	57° 19,1910' N	020° 07,8900' E	244	1	111,2	117	5,5
EMB190_48-14	29.07.2018 11:44	CTD	in the water	57° 19,2323' N	020° 07,8285' E	244	1	154,6	116	4,6
EMB190_48-13	29.07.2018 11:17	CTD	on deck	57° 19,2743' N	020° 08,1509' E	244	0	21,1	122	8,6
EMB190_48-13	29.07.2018 11:01	CTD	max depth/on ground	57° 19,2655' N	020° 08,1323' E	244	0	1,4	128	8,9
EMB190_48-13	29.07.2018 10:43	CTD	in the water	57° 19,2052' N	020° 08,0719' E	244	0	103,1	129	9,2
EMB190_48-12	29.07.2018 07:08	CTD	on deck	57° 19,2101' N	020° 03,1548' E	241	1	64,4	136	9,1
EMB190_48-12	29.07.2018 03:22	CTD	max depth/on ground	57° 19,1588' N	020° 03,0610' E	242	0	77,8	136	10,2

EMB190_48-12	29.07.2018 03:04	CTD	in the water	57° 19,1614' N	020° 03,0132' E	242	0	41,6	135	7,7
EMB190_48-11	29.07.2018 02:48	CTD	on deck	57° 19,1531' N	020° 03,1448' E	241	0	244,3	135	8,1
EMB190_48-11	29.07.2018 02:44	CTD	max depth/on ground	57° 19,1661' N	020° 03,1236' E	241	0	151,7	134	8,3
EMB190_48-11	29.07.2018 02:40	CTD	in the water	57° 19,1677' N	020° 03,1220' E	241	0	231,2	144	9,8
EMB190_48-10	29.07.2018 01:57	CTD	on deck	57° 19,1720' N	020° 03,1291' E	241	1	174,2	143	8
EMB190_48-10	29.07.2018 01:53	CTD	max depth/on ground	57° 19,1677' N	020° 03,0984' E	241	0	53	142	8,6
EMB190_48-10	29.07.2018 01:48	CTD	in the water	57° 19,1650' N	020° 03,0785' E	241	1	247,7	134	7,9
EMB190_48-9	29.07.2018 01:19	CTD	on deck	57° 19,1854' N	020° 03,0346' E	241	1	35,3	145	10,3
EMB190_48-9	29.07.2018 01:13	CTD	max depth/on ground	57° 19,1942' N	020° 02,9910' E	241	0	165,7	142	9,1
EMB190_48-9	29.07.2018 01:01	CTD	in the water	57° 19,2100' N	020° 02,9265' E	242	0	46,8	144	8,9
EMB190_48-8	29.07.2018 00:32	CTD	on deck	57° 19,2014' N	020° 03,1383' E	241	1	126,4	143	10,1
EMB190_48-8	29.07.2018 00:23	CTD	max depth/on ground	57° 19,2075' N	020° 03,0765' E	242	0	311,3	138	9,7
EMB190_48-8	29.07.2018 00:05	CTD	in the water	57° 19,2095' N	020° 02,9407' E	242	0	89,8	133	10,5
EMB190_48-7	28.07.2018 18:53	CTD	on deck	57° 19,2267' N	020° 03,0290' E	241	0	246	122	5,8
EMB190_48-7	28.07.2018 16:40	CTD	max depth/on ground	57° 19,1989' N	020° 03,0145' E	240	0	224,7	65	7,5
EMB190_48-7	28.07.2018 16:19	CTD	in the water	57° 19,2081' N	020° 03,0175' E	241	0	216,7	64	7,5
EMB190_48-6	28.07.2018 15:18	CTD	on deck	57° 19,2048' N	020° 02,9918' E	241	0	70,6	67	8,7
EMB190_48-6	28.07.2018 15:11	CTD	max depth/on ground	57° 19,2006' N	020° 03,0005' E	241	0	92,1	68	8,3
EMB190_48-6	28.07.2018 14:53	CTD	in the water	57° 19,1866' N	020° 03,0127' E	242	0	254,3	70	8,9
EMB190_48-5	28.07.2018 14:49	CTD	on deck	57° 19,1996' N	020° 03,0277' E	241	0	73,5	71	7,8
EMB190_48-5	28.07.2018 14:34	CTD	max depth/on ground	57° 19,2080' N	020° 03,0211' E	241	0	31,1	65	8,5
EMB190_48-5	28.07.2018 14:17	CTD	in the water	57° 19,2019' N	020° 03,0108' E	241	0	271,7	63	9,6
EMB190_48-4	28.07.2018 13:08	CTD	on deck	57° 19,2064' N	020° 02,9970' E	241	0	288,2	65	10,7
EMB190_48-4	28.07.2018 13:03	CTD	max depth/on ground	57° 19,1984' N	020° 02,9922' E	241	0	315,6	70	11,3
EMB190_48-4	28.07.2018 12:57	CTD	in the water	57° 19,1924' N	020° 03,0083' E	241	1	62	68	10,3
EMB190_48-3	28.07.2018 12:30	Secchi disk	on deck	57° 19,1769' N	020° 02,8782' E	241	0	87,6	67	9,4
EMB190_48-3	28.07.2018 12:23	Secchi disk	in the water	57° 19,1909' N	020° 02,8667' E	241	0	109,6	75	9,6

EMB190_48-2	28.07.2018 12:56	Plankton Net	on deck	57° 19,1818' N	020° 02,9741' E	241	1	81,2	63	10,7
EMB190_48-2	28.07.2018 12:20	Plankton Net	in the water	57° 19,1683' N	020° 02,8838' E	241	0	306,4	69	8,5
EMB190_48-1	28.07.2018 12:50	CTD	on deck	57° 19,1920' N	020° 02,9627' E	241	0	24,1	66	10,4
EMB190_48-1	28.07.2018 12:41	CTD	max depth/on ground	57° 19,1908' N	020° 02,9466' E	241	1	69,8	70	10
EMB190_48-1	28.07.2018 12:19	CTD	in the water	57° 19,1623' N	020° 02,8891' E	241	0	29,7	70	9,2
EMB190_47-1	28.07.2018 10:11	CTD	on deck	57° 04,3175' N	019° 49,8101' E	210	0	104,1	63	6,7
EMB190_47-1	28.07.2018 10:03	CTD	max depth/on ground	57° 04,3104' N	019° 49,7877' E	210	0	262,1	60	6,6
EMB190_47-1	28.07.2018 09:46	CTD	in the water	57° 04,2991' N	019° 49,7490' E	209	0	354,6	62	7,7
EMB190_46-2	28.07.2018 06:43	Plankton Net	on deck	56° 37,9851' N	019° 34,9249' E	145	0	89,9	88	8,8
EMB190_46-2	28.07.2018 06:38	Plankton Net	in the water	56° 37,9912' N	019° 34,9377' E	144	0	188,1	89	7,4
EMB190_46-1	28.07.2018 06:56	CTD	on deck	56° 37,9971' N	019° 34,9163' E	144	0	60,3	89	6,8
EMB190_46-1	28.07.2018 06:50	CTD	max depth/on ground	56° 37,9887' N	019° 34,9203' E	144	0	246,4	92	7,9
EMB190_46-1	28.07.2018 06:36	CTD	in the water	56° 37,9907' N	019° 34,9258' E	144	0	26,1	88	9,8
EMB190_45-2	28.07.2018 04:44	CTD	on deck	56° 20,8033' N	019° 22,6956' E	134	0	250,7	51	5,6
EMB190_45-2	28.07.2018 04:33	CTD	max depth/on ground	56° 20,8023' N	019° 22,7163' E	134	0	269,7	53	5,8
EMB190_45-2	28.07.2018 04:33	CTD	in the water	56° 20,8026' N	019° 22,7171' E	134	0	231,3	50	5,8
EMB190_45-1	28.07.2018 04:24	CTD	on deck	56° 20,7914' N	019° 22,7259' E	134	0	287,3	40	5,2
EMB190_45-1	28.07.2018 04:18	CTD	max depth/on ground	56° 20,7879' N	019° 22,7374' E	134	0	344,4	58	5,6
EMB190_45-1	28.07.2018 04:03	CTD	in the water	56° 20,7702' N	019° 22,6098' E	134	2	53,6	66	3,5
EMB190_44-1	28.07.2018 02:20	CTD	information	56° 04,9769' N	019° 10,0189' E	124	0	288,8	82	6,5
EMB190_44-1	28.07.2018 02:14	CTD	max depth/on ground	56° 04,9827' N	019° 10,0220' E	124	1	183,1	81	6,7
EMB190_44-1	28.07.2018 02:03	CTD	in the water	56° 05,0022' N	019° 09,9962' E	124	1	50,8	75	5,7
EMB190_43-1	28.07.2018 00:18	CTD	on deck	55° 50,4021' N	018° 52,0026' E	102	1	35,4	65	7,1
EMB190_43-1	28.07.2018 00:12	CTD	max depth/on ground	55° 50,3999' N	018° 51,9880' E	101	0	114,2	72	7,6
EMB190_43-1	28.07.2018 00:00	CTD	in the water	55° 50,4003' N	018° 51,9736' E	101	1	41,1	68	7,9
EMB190_42-1	27.07.2018 19:45	CTD	on deck	55° 37,9983' N	018° 35,9864' E	95,1	0	214,3	45	8,6
EMB190_42-1	27.07.2018 19:40	CTD	max depth/on ground	55° 37,9866' N	018° 35,9768' E	95,4	0	44,9	43	8,8

EMB190_42-1	27.07.2018 19:30	CTD	in the water	55° 37,9995' N	018° 35,9928' E	94,7	0	238,5	41	8,3
EMB190_41-4	27.07.2018 18:35	CTD	on deck	55° 33,0700' N	018° 24,1330' E	89,5	5	50,9	34	9,2
EMB190_41-4	27.07.2018 18:29	CTD	max depth/on ground	55° 33,0110' N	018° 23,9850' E	89,3	0	105,2	33	7,3
EMB190_41-4	27.07.2018 18:19	CTD	in the water	55° 33,0089' N	018° 23,9906' E	89,3	0	56,7	35	8,9
EMB190_41-3	27.07.2018 17:53	Plankton Net	on deck	55° 33,0098' N	018° 24,0092' E	89,3	0	135,6	26	8,5
EMB190_41-3	27.07.2018 17:49	Plankton Net	in the water	55° 33,0109' N	018° 24,0141' E	89,3	0	210,3	25	7,6
EMB190_41-2	27.07.2018 17:49	Secchi disk	on deck	55° 33,0103' N	018° 24,0148' E	89,3	0	40,6	29	8,3
EMB190_41-2	27.07.2018 17:48	Secchi disk	in the water	55° 33,0102' N	018° 24,0151' E	89,3	0	26,8	29	7,9
EMB190_41-1	27.07.2018 18:04	CTD	on deck	55° 33,0025' N	018° 23,9967' E	89,1	0	194,5	31	9
EMB190_41-1	27.07.2018 18:00	CTD	max depth/on ground	55° 33,0018' N	018° 24,0103' E	89,3	0	301,9	25	8,3
EMB190_41-1	27.07.2018 17:46	CTD	in the water	55° 33,0071' N	018° 24,0149' E	89,3	0	56	26	7,8
EMB190_40-1	27.07.2018 16:17	CTD	on deck	55° 19,6102' N	018° 14,0656' E	76,3	0	335,3	34	9,4
EMB190_40-1	27.07.2018 16:11	CTD	max depth/on ground	55° 19,6121' N	018° 14,0673' E	76,4	0	18,8	28	7,8
EMB190_40-1	27.07.2018 16:00	CTD	information	55° 19,6170' N	018° 14,0752' E	77,1	1	306,6	30	9,6
EMB190_39-1	27.07.2018 11:58	CTD	on deck	55° 12,9994' N	017° 03,9894' E	90,7	2	75	63	9
EMB190_39-1	27.07.2018 11:40	CTD	max depth/on ground	55° 12,9838' N	017° 03,9038' E	90,4	0	349,1	63	8,2
EMB190_39-1	27.07.2018 11:40	CTD	in the water	55° 12,9823' N	017° 03,9040' E	90,7	1	9,3	65	9,3
EMB190_38-1	27.07.2018 08:33	CTD	on deck	55° 13,3037' N	016° 09,9775' E	82	0	54,5	68	7,1
EMB190_38-1	27.07.2018 08:28	CTD	max depth/on ground	55° 13,3034' N	016° 09,9968' E	81,9	0	51,4	63	7,2
EMB190_38-1	27.07.2018 08:18	CTD	in the water	55° 13,2830' N	016° 09,9640' E	81,8	0	4,6	63	7,4
EMB190_37-14	27.07.2018 07:48	Apstein Net	information	55° 14,1554' N	016° 03,7288' E	86,1	11	106,8	63	9,9
EMB190_37-14	27.07.2018 07:25	Apstein Net	on deck	55° 15,0257' N	015° 58,8384' E	89,1	0	227,7	57	7,2
EMB190_37-14	27.07.2018 07:17	Apstein Net	max depth/on ground	55° 15,0190' N	015° 58,8646' E	89,3	0	308,1	57	7,7
EMB190_37-14	27.07.2018 07:16	Apstein Net	in the water	55° 15,0182' N	015° 58,8668' E	89,3	0	2,9	56	7,7
EMB190_37-13	27.07.2018 07:15	Apstein Net	on deck	55° 15,0174' N	015° 58,8694' E	89,4	0	17,3	59	8,4
EMB190_37-13	27.07.2018 07:09	Apstein Net	max depth/on ground	55° 15,0107' N	015° 58,8788' E	89,3	0	278	50	7,5
EMB190_37-13	27.07.2018 07:08	Apstein Net	in the water	55° 15,0099' N	015° 58,8826' E	89,3	0	293,2	52	8

EMB190_37-12	27.07.2018 07:00	Apstein Net	on deck	55° 15,0066' N	015° 58,9044' E	88,9	0	265,8	50	7,6
EMB190_37-12	27.07.2018 06:57	Apstein Net	max depth/on ground	55° 15,0085' N	015° 58,9106' E	89,5	0	215,8	49	7,8
EMB190_37-12	27.07.2018 06:55	Apstein Net	in the water	55° 15,0157' N	015° 58,9288' E	89,5	0	229,9	52	8,2
EMB190_37-11	27.07.2018 06:40	CTD	on deck	55° 15,0094' N	015° 58,9564' E	89	0	233,6	49	7,5
EMB190_37-11	27.07.2018 06:36	CTD	max depth/on ground	55° 15,0150' N	015° 58,9556' E	89,2	0	144	46	6,6
EMB190_37-11	27.07.2018 06:24	CTD	in the water	55° 15,0116' N	015° 58,9321' E	89,3	0	106,5	41	7,5
EMB190_37-10	27.07.2018 06:17	WP-2 Plankton Net	on deck	55° 15,0080' N	015° 58,9206' E	89,3	0	93,4	46	7,2
EMB190_37-10	27.07.2018 06:14	WP-2 Plankton Net	max depth/on ground	55° 15,0135' N	015° 58,9289' E	89,3	0	226,1	44	5,8
EMB190_37-10	27.07.2018 06:11	WP-2 Plankton Net	in the water	55° 15,0164' N	015° 58,9419' E	89,3	0	27,5	44	6,3
EMB190_37-9	27.07.2018 06:08	WP-2 Plankton Net	on deck	55° 15,0080' N	015° 58,9313' E	89,5	0	49,6	46	6,8
EMB190_37-9	27.07.2018 06:05	WP-2 Plankton Net	max depth/on ground	55° 15,0010' N	015° 58,8960' E	89,3	0	132,1	46	7,7
EMB190_37-9	27.07.2018 06:01	WP-2 Plankton Net	in the water	55° 15,0127' N	015° 58,8826' E	89,3	0	138,3	47	6,1
EMB190_37-8	27.07.2018 05:59	WP-2 Plankton Net	on deck	55° 15,0170' N	015° 58,8773' E	89,3	0	224	52	6,9
EMB190_37-8	27.07.2018 05:57	WP-2 Plankton Net	max depth/on ground	55° 15,0139' N	015° 58,8746' E	89,5	0	50,6	47	7,3
EMB190_37-8	27.07.2018 05:55	WP-2 Plankton Net	in the water	55° 15,0112' N	015° 58,8823' E	89,3	0	235,3	50	7
EMB190_37-7	27.07.2018 05:49	WP-2 Plankton Net	on deck	55° 15,0246' N	015° 58,9013' E	89,3	0	257,5	45	6,2
EMB190_37-7	27.07.2018 05:44	WP-2 Plankton Net	max depth/on ground	55° 15,0256' N	015° 58,9006' E	89,4	0	91,6	45	7,1
EMB190_37-7	27.07.2018 05:40	WP-2 Plankton Net	in the water	55° 15,0472' N	015° 58,8748' E	89,3	0	213,9	47	7,3
EMB190_37-6	27.07.2018 05:39	WP-2 Plankton Net	on deck	55° 15,0498' N	015° 58,8785' E	89,3	0	214,6	43	6,6
EMB190_37-6	27.07.2018 05:33	WP-2 Plankton Net	max depth/on ground	55° 15,0407' N	015° 58,9072' E	89,2	0	314,4	41	6,7
EMB190_37-6	27.07.2018 05:31	WP-2 Plankton Net	in the water	55° 15,0281' N	015° 58,9299' E	89	1	291,2	45	6,6
EMB190_37-5	27.07.2018 05:30	WP-2 Plankton Net	on deck	55° 15,0248' N	015° 58,9371' E	89	0	340,1	47	6,6
EMB190_37-5	27.07.2018 05:24	WP-2 Plankton Net	max depth/on ground	55° 14,9892' N	015° 58,9489' E	89,3	0	53	40	6,5
EMB190_37-5	27.07.2018 05:22	WP-2 Plankton Net	in the water	55° 14,9943' N	015° 58,9217' E	89,3	0	126,6	42	9
EMB190_37-4	27.07.2018 05:02	Plankton Net	on deck	55° 15,0467' N	015° 58,8969' E	89,3	1	11	40	7,6
EMB190_37-4	27.07.2018 05:00	Plankton Net	in the water	55° 15,0249' N	015° 58,9217' E	89,3	1	294	40	7,1
EMB190_37-3	27.07.2018 05:00	Plankton Net	on deck	55° 15,0249' N	015° 58,9217' E	89,3	1	294	40	7,1



EMB190_37-3	27.07.2018 04:58	Plankton Net	in the water	55° 15,0185' N	015° 58,9455' E	89,4	1	308,6	36	7
EMB190_37-2	27.07.2018 04:56	Secchi disk	on deck	55° 15,0143' N	015° 58,9622' E	88,9	0	301,2	35	7,1
EMB190_37-2	27.07.2018 04:56	Secchi disk	in the water	55° 15,0120' N	015° 58,9666' E	89,3	0	319,3	40	6,8
EMB190_37-1	27.07.2018 05:11	CTD	on deck	55° 15,0025' N	015° 58,9099' E	89,3	1	89,7	43	8,8
EMB190_37-1	27.07.2018 05:06	CTD	max depth/on ground	55° 15,0450' N	015° 58,8873' E	89,3	1	194,5	35	8,6
EMB190_37-1	27.07.2018 04:54	CTD	in the water	55° 15,0005' N	015° 58,9567' E	89,3	1	67,5	39	7,1
EMB190_36-1	27.07.2018 03:57	CTD	on deck	55° 18,1400' N	015° 47,7413' E	94,5	1	311,6	38	9,1
EMB190_36-1	27.07.2018 03:51	CTD	max depth/on ground	55° 18,1007' N	015° 47,8583' E	94,6	0	335,2	43	8,5
EMB190_36-1	27.07.2018 03:40	CTD	in the water	55° 18,0728' N	015° 47,7400' E	94,6	1	37,8	40	6,8
EMB190_35-1	27.07.2018 02:38	CTD	on deck	55° 09,6032' N	015° 39,2902' E	93,7	1	308,4	40	8,7
EMB190_35-1	27.07.2018 02:34	CTD	max depth/on ground	55° 09,5807' N	015° 39,3633' E	93,3	1	285,1	41	7,3
EMB190_35-1	27.07.2018 02:22	CTD	in the water	55° 09,5942' N	015° 39,5500' E	93,2	1	265,9	34	7
EMB190_34-1	27.07.2018 00:16	CTD	on deck	55° 19,8091' N	015° 36,8995' E	95	0	128,3	50	3,4
EMB190_34-1	27.07.2018 00:12	CTD	max depth/on ground	55° 19,8113' N	015° 36,8805' E	94,6	0	167,7	55	4,5
EMB190_34-1	27.07.2018 00:00	CTD	in the water	55° 19,8096' N	015° 36,8425' E	94,8	0	97,7	60	5,2
EMB190_33-1	26.07.2018 18:56	CTD	on deck	55° 22,9662' N	015° 20,0415' E	90,7	0	101,4	80	7
EMB190_33-1	26.07.2018 18:52	CTD	max depth/on ground	55° 22,9910' N	015° 20,0148' E	91	1	166,3	74	9,4
EMB190_33-1	26.07.2018 18:38	CTD	in the water	55° 23,0100' N	015° 19,9316' E	90,6	1	90,7	77	6,5
EMB190_32-1	26.07.2018 16:29	CTD	on deck	55° 28,0412' N	014° 42,9865' E	67,1	0	229,7	111	5,9
EMB190_32-1	26.07.2018 16:24	CTD	max depth/on ground	55° 28,0235' N	014° 43,0227' E	67,1	0	1,4	110	5,7
EMB190_32-1	26.07.2018 16:14	CTD	in the water	55° 28,0068' N	014° 43,0027' E	66,8	0	277	112	7,2
EMB190_31-1	26.07.2018 15:17	CTD	on deck	55° 24,3269' N	014° 32,2367' E	57,5	0	242,7	105	7
EMB190_31-1	26.07.2018 15:12	CTD	max depth/on ground	55° 24,3341' N	014° 32,2673' E	57,9	0	221	106	5,4
EMB190_31-1	26.07.2018 15:04	CTD	in the water	55° 24,3292' N	014° 32,2139' E	57,5	0	9,8	106	6,3
EMB190_30-1	26.07.2018 13:42	CTD	on deck	55° 15,1620' N	014° 29,8131' E	42,1	0	35	55	5,7
EMB190_30-1	26.07.2018 13:37	CTD	max depth/on ground	55° 15,1348' N	014° 29,7811' E	41,8	1	4,7	52	4,4
EMB190_30-1	26.07.2018 13:30	CTD	in the water	55° 15,1104' N	014° 29,7307' E	41,8	0	61,9	60	5,3

EMB190_29-1	26.07.2018 12:24	CTD	on deck	55° 09,9936' N	014° 14,9497' E	43,9	0	60,4	55	4,2
EMB190_29-1	26.07.2018 12:20	CTD	max depth/on ground	55° 09,9910' N	014° 14,9337' E	43,9	0	96	52	4,3
EMB190_29-1	26.07.2018 12:09	CTD	in the water	55° 09,9751' N	014° 14,9658' E	43,9	0	271,2	67	5,1
EMB190_28-4	26.07.2018 10:59	WP-2 Plankton Net	on deck	55° 00,0365' N	014° 04,9993' E	45,4	0	209,2	32	4,7
EMB190_28-4	26.07.2018 10:54	WP-2 Plankton Net	max depth/on ground	55° 00,0252' N	014° 05,0096' E	45	1	354,4	27	4,1
EMB190_28-4	26.07.2018 10:48	WP-2 Plankton Net	max depth/on ground	55° 00,0064' N	014° 04,9880' E	45	0	113,2	30	5,7
EMB190_28-4	26.07.2018 10:45	WP-2 Plankton Net	in the water	55° 00,0050' N	014° 04,9892' E	45	0	343	26	4,3
EMB190_28-3	26.07.2018 10:46	Secchi disk	on deck	55° 00,0056' N	014° 04,9892' E	45	0	189,7	25	5,3
EMB190_28-3	26.07.2018 10:32	Secchi disk	in the water	54° 59,9747' N	014° 04,9353' E	45	0	105,6	28	6,2
EMB190_28-2	26.07.2018 10:45	Plankton Net	on deck	55° 00,0041' N	014° 04,9891' E	45,4	0	263,9	25	4,8
EMB190_28-2	26.07.2018 10:31	Plankton Net	in the water	54° 59,9751' N	014° 04,9317' E	45	0	112,4	29	5,7
EMB190_28-1	26.07.2018 10:40	CTD	on deck	54° 59,9951' N	014° 04,9728' E	45,1	0	87,7	32	4,8
EMB190_28-1	26.07.2018 10:36	CTD	max depth/on ground	54° 59,9813' N	014° 04,9591' E	45,1	0	42,4	27	5
EMB190_28-1	26.07.2018 10:30	CTD	in the water	54° 59,9777' N	014° 04,9227' E	45,1	0	116,1	29	6,7
EMB190_27-1	26.07.2018 09:45	CTD	on deck	55° 03,7973' N	013° 59,2564' E	44,3	0	70,7	54	5,5
EMB190_27-1	26.07.2018 09:44	CTD	max depth/on ground	55° 03,7980' N	013° 59,2529' E	44,3	0	169,8	59	6,4
EMB190_27-1	26.07.2018 09:36	CTD	in the water	55° 03,8487' N	013° 59,2677' E	43,9	1	159,7	58	5,9
EMB190_26-1	26.07.2018 08:54	CTD	on deck	55° 09,3833' N	013° 56,5255' E	42,1	2	162,6	81	2,2
EMB190_26-1	26.07.2018 08:47	CTD	max depth/on ground	55° 09,3673' N	013° 56,5290' E	42,1	0	320,3	89	2,6
EMB190_26-1	26.07.2018 08:37	CTD	in the water	55° 09,2844' N	013° 56,5156' E	42,1	1	68,5	55	1,4
EMB190_25-1	26.07.2018 07:50	CTD	on deck	55° 04,0909' N	013° 48,7798' E	43,1	0	150,1	27	3,1
EMB190_25-1	26.07.2018 07:45	CTD	max depth/on ground	55° 04,1076' N	013° 48,7670' E	43,1	0	183,6	21	2,9
EMB190_25-1	26.07.2018 07:33	CTD	in the water	55° 04,0600' N	013° 48,5950' E	43,2	2	68,9	20	4,2
EMB190_24-1	26.07.2018 06:39	CTD	on deck	55° 01,4934' N	013° 36,3579' E	43,6	0	203,7	23	5,7
EMB190_24-1	26.07.2018 06:36	CTD	max depth/on ground	55° 01,4986' N	013° 36,3680' E	43,6	0	311,1	24	5,1
EMB190_24-1	26.07.2018 06:27	CTD	in the water	55° 01,4997' N	013° 36,3716' E	43,6	1	32,4	24	6,2
EMB190_23-1	26.07.2018 05:40	CTD	on deck	54° 59,4071' N	013° 46,3968' E	44,1	0	89,7	31	5,4

EMB190_23-1	26.07.2018 05:37	CTD	max depth/on ground	54° 59,4095' N	013° 46,3720' E	44,3	0	92,9	28	4
EMB190_23-1	26.07.2018 05:27	CTD	in the water	54° 59,4124' N	013° 46,2650' E	44,2	1	74	18	4,7
EMB190_22-1	26.07.2018 04:20	CTD	on deck	54° 52,8670' N	013° 51,7226' E	42,8	0	212,9	245	2,6
EMB190_22-1	26.07.2018 04:17	CTD	max depth/on ground	54° 52,8813' N	013° 51,7275' E	42,5	0	167,2	219	2
EMB190_22-1	26.07.2018 04:07	CTD	in the water	54° 52,9059' N	013° 51,6978' E	42,5	0	163,1	199	1,8
EMB190_21-1	26.07.2018 03:16	CTD	on deck	54° 53,4420' N	013° 58,3077' E	41,8	1	76,5	194	4,1
EMB190_21-1	26.07.2018 03:13	CTD	max depth/on ground	54° 53,4286' N	013° 58,2503' E	41,8	1	71,5	185	4,5
EMB190_21-1	26.07.2018 03:06	CTD	in the water	54° 53,4014' N	013° 58,1433' E	41,8	1	44	212	1,6
EMB190_20-1	26.07.2018 02:20	CTD	on deck	54° 48,2396' N	013° 57,4904' E	37,5	0	31,6	171	4,6
EMB190_20-1	26.07.2018 02:16	CTD	max depth/on ground	54° 48,2151' N	013° 57,4797' E	37,6	0	8,4	162	4,6
EMB190_20-1	26.07.2018 02:10	CTD	in the water	54° 48,1821' N	013° 57,4847' E	37,4	0	10,8	166	3
EMB190_19-1	26.07.2018 01:21	CTD	on deck	54° 42,6506' N	013° 56,8503' E	27	1	18,4	154	2,7
EMB190_19-1	26.07.2018 01:16	CTD	max depth/on ground	54° 42,6319' N	013° 56,8230' E	27	0	54,1	142	2,7
EMB190_19-1	26.07.2018 01:09	CTD	in the water	54° 42,6161' N	013° 56,7947' E	26,9	0	321,7	144	3,1
EMB190_18-2	26.07.2018 00:10	CTD	on deck	54° 36,7029' N	014° 02,6224' E	18,6	0	138	173	1,6
EMB190_18-2	26.07.2018 00:06	CTD	max depth/on ground	54° 36,7103' N	014° 02,6126' E	18,5	0	161,7	167	1,9
EMB190_18-2	26.07.2018 00:00	CTD	in the water	54° 36,7118' N	014° 02,6063' E	18,5	0	352,8	169	2
EMB190_17-6	25.07.2018 19:50	CTD	on deck	54° 55,5079' N	013° 30,0094' E	44	0	124,7	196	1,5
EMB190_17-6	25.07.2018 19:46	CTD	max depth/on ground	54° 55,5146' N	013° 29,9960' E	44,3	0	148	183	1,2
EMB190_17-6	25.07.2018 19:37	CTD	in the water	54° 55,5104' N	013° 30,0179' E	44,2	0	291,7	237	1,1
EMB190_17-5	25.07.2018 19:28	WP-2 Plankton Net	on deck	54° 55,5061' N	013° 30,0228' E	44,3	0	2,9	261	2,5
EMB190_17-5	25.07.2018 19:24	WP-2 Plankton Net	max depth/on ground	54° 55,5040' N	013° 30,0256' E	44,3	0	25,2	263	2,5
EMB190_17-5	25.07.2018 19:22	WP-2 Plankton Net	in the water	54° 55,5033' N	013° 30,0230' E	44,3	0	96,2	271	3
EMB190_17-4	25.07.2018 19:21	WP-2 Plankton Net	on deck	54° 55,5029' N	013° 30,0235' E	43,9	0	256	272	2,7
EMB190_17-4	25.07.2018 19:19	WP-2 Plankton Net	max depth/on ground	54° 55,5008' N	013° 30,0285' E	44,4	0	281,2	270	2,6
EMB190_17-4	25.07.2018 19:17	WP-2 Plankton Net	in the water	54° 55,4984' N	013° 30,0355' E	43,9	0	294,3	266	2,9

EMB190_17-3	25.07.2018 19:08	Plankton Net	on deck	54° 55,4858' N	013° 30,0436' E	44,3	0	340,2	262	2,9
EMB190_17-3	25.07.2018 19:00	Plankton Net	in the water	54° 55,4536' N	013° 30,0852' E	44,3	0	340,2	254	2
EMB190_17-2	25.07.2018 19:00	Secchi disk	on deck	54° 55,4528' N	013° 30,0853' E	44,3	0	353,9	249	1,9
EMB190_17-2	25.07.2018 18:57	Secchi disk	in the water	54° 55,4428' N	013° 30,0824' E	44,1	0	22,2	255	1,7
EMB190_17-1	25.07.2018 19:10	CTD	on deck	54° 55,4887' N	013° 30,0405' E	44	0	303,7	263	2,9
EMB190_17-1	25.07.2018 19:06	CTD	max depth/on ground	54° 55,4814' N	013° 30,0484' E	44,2	0	338,5	269	2,9
EMB190_17-1	25.07.2018 18:56	CTD	in the water	54° 55,4322' N	013° 30,0698' E	44,3	1	41,9	261	1,8
EMB190_16-1	25.07.2018 17:45	CTD	on deck	54° 59,9257' N	013° 17,9758' E	43,5	0	91,8	267	2,9
EMB190_16-1	25.07.2018 17:40	CTD	max depth/on ground	54° 59,9300' N	013° 17,9659' E	43,2	0	187	275	2,2
EMB190_16-1	25.07.2018 17:30	CTD	in the water	54° 59,9619' N	013° 17,9709' E	43,6	0	226	266	2,9
EMB190_15-1	25.07.2018 15:23	CTD	on deck	54° 51,6631' N	013° 16,5636' E	88,6	0	313,3	81	1
EMB190_15-1	25.07.2018 15:20	CTD	max depth/on ground	54° 51,6588' N	013° 16,5746' E	88,7	0	328,7	82	1
EMB190_15-1	25.07.2018 15:12	CTD	in the water	54° 51,6222' N	013° 16,6271' E	88,4	1	350	0	0,6
EMB190_14-1	25.07.2018 13:57	CTD	on deck	54° 47,6748' N	013° 03,5444' E	26,9	0	274,6	353	2,9
EMB190_14-1	25.07.2018 13:54	CTD	max depth/on ground	54° 47,6749' N	013° 03,5567' E	26,9	0	212,7	344	2,7
EMB190_14-1	25.07.2018 13:48	CTD	in the water	54° 47,6993' N	013° 03,5588' E	26,9	0	201,6	332	3,4
EMB190_13-4	25.07.2018 12:38	WP-2 Plankton Net	on deck	54° 43,3987' N	012° 46,9691' E	19,4	0	44,4	129	1
EMB190_13-4	25.07.2018 12:35	WP-2 Plankton Net	max depth/on ground	54° 43,3960' N	012° 46,9620' E	19,4	0	54,8	156	0,9
EMB190_13-4	25.07.2018 12:33	WP-2 Plankton Net	in the water	54° 43,3960' N	012° 46,9646' E	19,4	0	233	200	0,3
EMB190_13-3	25.07.2018 12:27	Plankton Net	on deck	54° 43,3918' N	012° 46,9632' E	19,4	0	58,6	184	0,5
EMB190_13-3	25.07.2018 12:19	Plankton Net	in the water	54° 43,3925' N	012° 46,9716' E	19,4	0	238,9	46	0,1
EMB190_13-2	25.07.2018 12:26	Secchi disk	on deck	54° 43,3906' N	012° 46,9619' E	19,4	0	54,7	183	0,3
EMB190_13-2	25.07.2018 12:19	Secchi disk	in the water	54° 43,3926' N	012° 46,9718' E	19,4	0	223,3	197	0,5
EMB190_13-1	25.07.2018 12:27	CTD	on deck	54° 43,3923' N	012° 46,9640' E	19,4	0	46,2	168	0,3
EMB190_13-1	25.07.2018 12:24	CTD	max depth/on ground	54° 43,3888' N	012° 46,9609' E	19,4	0	22	245	0,3
EMB190_13-1	25.07.2018 12:16	CTD	in the water	54° 43,3922' N	012° 46,9696' E	19,4	0	80,6	204	0,1
EMB190_12-1	25.07.2018 10:40	CTD	on deck	54° 41,6613' N	012° 42,3495' E	17,7	0	220,4	40	1,4
EMB190_12-1	25.07.2018 10:36	CTD	max depth/on	54° 41,6695' N	012° 42,3641' E	17,7	0	191,2	26	1,3

			ground								
EMB190_12-1	25.07.2018 10:28	CTD	in the water	54° 41,7208' N	012° 42,3542' E	17,9	0	136	15	2,2	
EMB190_11-1	25.07.2018 08:56	CTD	on deck	54° 39,0469' N	012° 27,0063' E	14,5	0	355,7	336	1,6	
EMB190_11-1	25.07.2018 08:53	CTD	max depth/on ground	54° 39,0341' N	012° 27,0050' E	14,4	0	18	350	1,8	
EMB190_11-1	25.07.2018 08:44	CTD	in the water	54° 38,9829' N	012° 26,9403' E	14,5	1	35,2	12	1,8	
EMB190_10-5	25.07.2018 06:58	WP-2 Plankton Net	on deck	54° 28,1735' N	012° 14,5417' E	25,1	0	191,8	312	1,3	
EMB190_10-5	25.07.2018 06:55	WP-2 Plankton Net	max depth/on ground	54° 28,1805' N	012° 14,5453' E	25,3	0	224,4	322	2	
EMB190_10-5	25.07.2018 06:53	WP-2 Plankton Net	in the water	54° 28,1836' N	012° 14,5529' E	25,2	0	256,7	319	1,7	
EMB190_10-4	25.07.2018 06:50	WP-2 Plankton Net	on deck	54° 28,1892' N	012° 14,5553' E	25,1	0	178,1	321	1,5	
EMB190_10-4	25.07.2018 06:49	WP-2 Plankton Net	max depth/on ground	54° 28,1913' N	012° 14,5534' E	25,1	0	137,1	321	1,4	
EMB190_10-4	25.07.2018 06:48	WP-2 Plankton Net	in the water	54° 28,1934' N	012° 14,5495' E	25,3	0	164,6	307	1,8	
EMB190_10-3	25.07.2018 06:34	Plankton Net	on deck	54° 28,1986' N	012° 14,4676' E	25,3	0	74,5	306	1,8	
EMB190_10-3	25.07.2018 06:32	Plankton Net	in the water	54° 28,1956' N	012° 14,4515' E	25,3	0	72,3	311	1,8	
EMB190_10-2	25.07.2018 06:32	Secchi disk	on deck	54° 28,1951' N	012° 14,4490' E	25,3	0	71,5	307	1,9	
EMB190_10-2	25.07.2018 06:28	Secchi disk	in the water	54° 28,1833' N	012° 14,4019' E	25,1	1	67,8	314	1,8	
EMB190_10-1	25.07.2018 06:38	CTD	on deck	54° 28,2036' N	012° 14,5005' E	25,3	0	76,2	315	1,9	
EMB190_10-1	25.07.2018 06:35	CTD	max depth/on ground	54° 28,2000' N	012° 14,4761' E	25,2	0	80,5	307	1,9	
EMB190_10-1	25.07.2018 06:26	CTD	in the water	54° 28,1725' N	012° 14,3720' E	24,8	1	51,2	306	1,6	
EMB190_9-1	25.07.2018 05:36	CTD	on deck	54° 29,2863' N	012° 04,1766' E	9,2	1	96,6	289	1,1	
EMB190_9-1	25.07.2018 05:33	CTD	max depth/on ground	54° 29,2905' N	012° 04,0975' E	9,6	1	90,4	285	0,8	
EMB190_9-1	25.07.2018 05:24	CTD	in the water	54° 29,3162' N	012° 03,9635' E	8,9	1	113,2	293	0,6	
EMB190_8-1	25.07.2018 04:39	CTD	on deck	54° 24,4148' N	012° 03,5356' E	15,6	0	339,3	326	2,7	
EMB190_8-1	25.07.2018 04:36	CTD	max depth/on ground	54° 24,4128' N	012° 03,5427' E	15,6	0	290,8	325	2,8	
EMB190_8-1	25.07.2018 04:27	CTD	in the water	54° 24,4009' N	012° 03,5922' E	15,7	0	316,3	328	1,6	
EMB190_7-4	25.07.2018 02:32	WP-2 Plankton Net	on deck	54° 18,9047' N	011° 33,0390' E	21,4	0	256,5	11	2,5	
EMB190_7-4	25.07.2018 02:27	WP-2 Plankton Net	max depth/on ground	54° 18,9179' N	011° 33,0767' E	21,4	0	234,5	356	2,3	
EMB190_7-4	25.07.2018 02:26	WP-2 Plankton Net	in the water	54° 18,9218' N	011° 33,0886' E	21,4	0	234,7	355	2,3	

EMB190_7-3	25.07.2018 02:12	Plankton Net	on deck	54° 18,9480' N	011° 33,1340' E	21,4	0	67,7	342	1,8
EMB190_7-3	25.07.2018 02:11	Plankton Net	in the water	54° 18,9452' N	011° 33,1227' E	21,3	0	69,3	341	1,6
EMB190_7-2	25.07.2018 02:09	Plankton Net	on deck	54° 18,9412' N	011° 33,1013' E	21,4	1	72,2	335	1,6
EMB190_7-2	25.07.2018 02:06	Plankton Net	in the water	54° 18,9336' N	011° 33,0667' E	21,3	0	59,9	343	1,6
EMB190_7-1	25.07.2018 02:15	CTD	on deck	54° 18,9537' N	011° 33,1541' E	21,3	0	74,5	346	2,5
EMB190_7-1	25.07.2018 02:12	CTD	max depth/on ground	54° 18,9484' N	011° 33,1361' E	21,4	0	69,4	343	1,8
EMB190_7-1	25.07.2018 02:05	CTD	in the water	54° 18,9288' N	011° 33,0581' E	21,4	1	41,1	346	1,6
EMB190_6-2	25.07.2018 00:10	Secchi disk	on deck	54° 06,5797' N	011° 10,4952' E	20	0	80,6	13	1
EMB190_6-2	25.07.2018 00:03	Secchi disk	in the water	54° 06,5729' N	011° 10,4591' E	20	0	75,3	356	1,6
EMB190_6-1	25.07.2018 00:19	CTD	on deck	54° 06,6377' N	011° 10,6423' E	20	5	46,1	30	1
EMB190_6-1	25.07.2018 00:09	CTD	max depth/on ground	54° 06,5787' N	011° 10,4883' E	20	0	82,8	16	1
EMB190_6-1	25.07.2018 00:00	CTD	in the water	54° 06,5687' N	011° 10,4334' E	19,9	0	67,6	7	1,5
EMB190_18-1	25.07.2018 20:22	CTD	in the water	54° 55,4461' N	013° 30,1162' E	44	7	136,6	165	2,1
EMB190_18-1	24.07.2018 19:50	CTD	on deck	54° 32,9030' N	011° 12,3692' E	22,6	6	96,1	169	4,1
EMB190_5-4	24.07.2018 15:19	WP-2 Plankton Net	on deck	54° 36,0658' N	010° 27,0115' E	14,9	0	319,1	97	3,2
EMB190_5-4	24.07.2018 15:15	WP-2 Plankton Net	max depth/on ground	54° 36,0589' N	010° 27,0061' E	14,9	0	19,2	81	3
EMB190_5-4	24.07.2018 15:13	WP-2 Plankton Net	in the water	54° 36,0515' N	010° 27,0075' E	14,9	0	337,1	76	2,7
EMB190_5-3	24.07.2018 14:49	Plankton Net	in the water	54° 35,9898' N	010° 27,0545' E	14,8	0	110	69	3,9
EMB190_5-3	24.07.2018 14:49	Plankton Net	on deck	54° 35,9891' N	010° 27,0497' E	14,8	0	93,5	69	3,9
EMB190_5-2	24.07.2018 14:49	Secchi disk	on deck	54° 35,9897' N	010° 27,0533' E	14,8	0	94,5	68	3,8
EMB190_5-2	24.07.2018 14:48	Secchi disk	in the water	54° 35,9887' N	010° 27,0465' E	14,8	0	74,7	67	3,9
EMB190_5-1	24.07.2018 15:00	CTD	on deck	54° 36,0171' N	010° 27,0745' E	14,9	0	38,3	67	3,6
EMB190_5-1	24.07.2018 14:56	CTD	max depth/on ground	54° 35,9981' N	010° 27,0619' E	14,9	0	2	69	3,7
EMB190_5-1	24.07.2018 14:48	CTD	in the water	54° 35,9887' N	010° 27,0464' E	14,8	0	68,2	70	3,7
EMB190_4-2	24.07.2018 13:25	Secchi disk	on deck	54° 39,4597' N	010° 45,9921' E	19,9	0	16,8	93	0,5
EMB190_4-2	24.07.2018 13:22	Secchi disk	in the water	54° 39,4460' N	010° 45,9828' E	20	0	75,6	116	0,5
EMB190_4-1	24.07.2018 13:30	CTD	on deck	54° 39,4864' N	010° 46,0022' E	19,4	0	13,2	78	0,5
EMB190_4-1	24.07.2018 13:25	CTD	max depth/on ground	54° 39,4593' N	010° 45,9920' E	19,9	0	14,9	93	0,5

EMB190_4-1	24.07.2018 13:18	CTD	in the water	54° 39,4650' N	010° 45,9817' E	19,4	1	182,5	83	1
EMB190_3-1	24.07.2018 11:18	CTD	on deck	54° 33,1037' N	011° 19,2328' E	24,8	2	295,8	316	2
EMB190_3-1	24.07.2018 11:11	CTD	max depth/on ground	54° 33,0958' N	011° 19,2528' E	24,9	0	53,1	313	2,7
EMB190_3-1	24.07.2018 11:04	CTD	in the water	54° 33,0911' N	011° 19,2414' E	24,7	0	238,9	296	0,8
EMB190_2-1	24.07.2018 09:43	CTD	on deck	54° 24,7913' N	011° 36,8600' E	21,6	0	280,7	266	1
EMB190_2-1	24.07.2018 09:39	CTD	max depth/on ground	54° 24,7900' N	011° 36,8796' E	21,6	0	286,1	261	1,7
EMB190_2-1	24.07.2018 09:27	CTD	in the water	54° 24,8045' N	011° 37,0482' E	21,6	1	249	202	0,9
EMB190_1-2	24.07.2018 07:21	Secchi disk	on deck	54° 13,8411' N	012° 04,4505' E	9,3	0	193,5	267	3,2
EMB190_1-2	24.07.2018 07:19	Secchi disk	in the water	54° 13,8520' N	012° 04,4588' E	9,4	0	204,5	265	3,3
EMB190_1-1	24.07.2018 07:28	CTD	on deck	54° 13,8189' N	012° 04,4498' E	9,3	0	147	271	3,3
EMB190_1-1	24.07.2018 07:21	CTD	max depth/on ground	54° 13,8425' N	012° 04,4513' E	9,3	0	197,4	266	3,5
EMB190_1-1	24.07.2018 07:13	CTD	in the water	54° 13,8967' N	012° 04,5044' E	9,2	1	209	258	4,6