

ELISABETH MANN BORGESE-Berichte

Hydrochemical and biological monitoring of the Baltic Sea in the framework of the EU's marine strategy directive (MSFD) and the Baltic Monitoring Programme (BMP) of HELCOM

Cruise No. EMB387

05.02.2026 – 19.02.2026,
Rostock (Germany) – Rostock (Germany)
BMP

Monitoring BSH/IOW - February 2026



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1 Cruise Summary

1.1 Summary in English

The cruise RV ELISABETH MANN BORGESE 387 was carried out in the framework of the monitoring of the COMBINE Program of the Helsinki Commission (HELCOM), of the Bund-Länder-Messprogramm (BLANO) and of the long-term data program of the IOW. A series of regular short-term cruises are conducted by the Leibniz Institute for Baltic Sea Research (IOW) that serve to monitor the hydrographic, chemical and biological situation in the western, central and northern Baltic Sea. The results provide the scientific basis at the assessment of the environmental state of the Baltic Sea and for the understanding of climatic and anthropogenic forcing of environmental changes. The major focus of the cruise was the state of ecosystem during late winter conditions that serves as a base line for the onset of phytoplankton bloom after deep mixing. During the expedition, 100 stations were sampled from the western Baltic Sea to the northern Baltic Sea via the major Basins. The cruise was strongly influenced by freezing temperatures, storms frequently interrupted station work. Despite this, planned program was fully achieved. CTD stations followed the depth and salinity transect into the central Baltic Sea. At selected stations, nutrient concentrations and samples for the description of pelagic biodiversity and for an eDNA bioarchive were taken. Additional work included measurements of contaminants in the water column and the sediment, the deployment of two ARGO floats and the positioning of an ADCP in the entrance of the Slupsk Channel. First results show the lowest surface water temperatures in the recent decade and an unusual strong influence of brackish water in the western Baltic Sea. This was caused by a long period of easterly winds preceding the cruise and allowed the mixing of the water column.

1.2 Zusammenfassung

Die Reise EMB346 erfolgte im Rahmen des COMBINE Programms der Helsinki Kommission (HELCOM), des Bund-Länder-Messprogrammes Nord- und Ostsee (BLANO) und des Langzeitprogramms des Leibniz Institut für Ostseeforschung in der zentralen Ostsee. Sie ist Teil von fünf jährlich durchgeführten Fahrten und beschreibt die hydrographische, chemische und biologische Situation in der westlichen, zentralen und nördlichen Ostsee. Der Schwerpunkt der Februarfahrt lag auf dem Beschreibung der Situation im Spätwinter, die als Referenz für den Beginn der Phytoplanktonblüte nach Tiefenmischung dient. Während der Expedition wurden an 100 Stationen von der westlichen bis zur nördlichen Ostsee Forschungsarbeiten durchgeführt. Die Fahrt war stark durch Frost und häufigen Unterbrechungen der Stationsarbeit durch Stürme geprägt. Trotzdem konnte das geplante Programm vollständig umgesetzt werden. Entlang des Tiefen- und Salzgehaltsprofils in der zentralen Ostsee wurden CTD-Stationen beprobt. An ausgewählten Stationen wurden zusätzlich Nährstoffkonzentrationen gemessen und Proben zur Beschreibung der pelagischen Biodiversität und zum Aufbau eines eDNA-Bioarchivs gewonnen. Weitere Arbeiten umfassten die Messung von Schadstoffen in der Wassersäule und im Sediment, den Einsatz zweier ARGO-Driftbojen und die Positionierung eines ADCP am Eingang des Slupsk-Kanals. Erste Ergebnisse zeigen die niedrigsten Oberflächenwassertemperaturen des letzten Jahrzehnts und einen starken Einfluss von Brackwasser in der westlichen Ostsee. Diese Situation wurde durch eine lange Periode östlicher Winde vor der Forschungsfahrt verursacht und ermöglichte eine tiefe Durchmischung der Wassersäule.

2 Participants

2.1 Principal Investigators

Name	Institution
Dutz, Jörg, Dr.	IOW
Mohrholz, Volker, Dr.	IOW
Kuss, Joachim, Dr.	IOW
Kanwischer, Marion,, Dr.	IOW
Rehder, Gregor, Prof.	IOW

2.2 Scientific Party

Name	Discipline	Institution
Dutz, Jörg, Dr.	Biol. Oceanography / Chief Scientist	IOW
Kreuzer, Lars	Chem. Oceanography / Technician	IOW
Schuffenhauer, Ingo	Phys. Oceanography / Engineer	IOW
Hand, Ines	Chem. Oceanography / Technician	IOW
Brückner, Ann Sophie	Chem. Oceanography / Technician	IOW
Thiele, Oliver	Phys. Oceanography / PhD student	IOW
Köhler, Anne	Biol. Oceanography / Technician	IOW
Langosch, Henrik	Phys. Oceanography / PhD student	UHRO
Jens, Maximilian	Phys. Oceanography / Student	UHRO
Dierken, Madeleine	Chem. Oceanography / Technician	IOW

2.3 Participating Institutions

IOW	Leibniz Institute for Baltic Sea Research Warnemünde
UHRO	University of Rostock

3 Research Program

3.1 Description of the Work Area

The cruise RV ELISABETH MANN BORGESE 387 focused on the investigation of the physical, chemical and biological oceanography of the western and the central Baltic, and covered the areas from the Kiel Bight to the northern Gotland Basin. The majority of stations were located along the Thalweg transect of the Baltic Sea, crossing the Bay of Mecklenburg, the Arkona Sea, the Bornholm Basin, and the Slupsk Furrow towards the Gotland Basin. The transect aimed at describing the hydrochemical conditions in all basins on the pathway of saltwater inflows from the North Atlantic and the change in biodiversity associated with the gradient in salinity from mesohaline to oligohaline surface water (Hernroth & Ackefors 1979, Ojaveer 2010). The deep inflows have been the solely source for ventilation of the deep basins (Matthäus et al. 2008) and generally control the biogeochemical cycling of organic matter in the lower water column and the sediment. Additional CTD casts and chemical measurements were done in the western Gotland Basin, namely the Karlsö Deep.

3.2 Aims of the Cruise

The cruise contributes to the international environmental monitoring program of the Helsinki Commission (HELCOM) carried out by the Leibniz-Institute for Baltic Sea Research in Warnemünde (IOW). Within the German Exclusive Economic Zone (EEZ), monitoring is conducted on behalf of the Federal Maritime and Hydrographic Agency (BSH). In the central Baltic Proper, long-term data is collected by the Leibniz Institute for Baltic Sea Research Warnemünde (IOW). The data acquired are used for the regular national and international assessments of the state of the Baltic Sea (e.g. HELCOM 2018) and the assessment of long-term trends in the hydrographical and biological data. It provides the scientific basis for measures to be taken for the protection of the Baltic Sea ecosystem. The monitoring program was initiated in 1979 and run by the IOW's predecessor institute and is continued by the IOW since 1992 in the framework of the COMBINE Program of the Helsinki Commission (HELCOM).

3.3 Agenda of the Cruise

The major focus of the cruise in February was the state of ecosystem during late winter conditions. This serves as a base line for the onset of phytoplankton bloom after the deep mixing in winter. The work enclosed the environmental monitoring program in the western Baltic Sea on behalf of the BSH (Kiel Bight-Arkona Basin, Fig. 3.1). The second focus was the IOW's Baltic Sea long term observation program in the central Baltic Sea (Fig. 3.1), that included sampling along the Thalweg-stations. Data acquisition was carried out using the following devices and measuring platforms. At stations and transects the CTD SBE 911+ with rosette water sampler (CTD), Secchi disk, phytoplankton- and zooplankton nets were deployed. In addition, continuous underway measurements of the surface water properties and seawater pH were done. An overview of the sampled stations is provided in Table 7.1.

A special focus was on the state of the deep-water stagnation in the western and central Baltic basins. Due to a persisting high-pressure weather system across northern Europe easterly winds lowered the general water level of the Baltic Sea to expected -50 to -70 cm MSL (mean sea level) prior to the cruise. This is an extreme low MSL which could represent the preparation for an intensive Major Baltic Inflow (MBI) in case westerly winds would prevail during the cruise and in the following period. In order to investigate the potential pre-inflow situation, the hydrography in the western Baltic Sea was intensively sampled. In addition, a temporary mooring was deployed at the entrance to the Slupsk Channel to enable the measurements of the propagation and mixing of inflowing and ambient water.

Standard measurements:

The work on the stations usually started with a CTD cast and programmed sampling during the down cast on standard depth levels for chemical and biological parameters. Manual releases of go-flow bottles in near-bottom waters and close to the sea surface completed the sampling. At key stations in the Kiel Bight, Bay of Mecklenburg, Arkona Sea, Bornholm Deep and the Gotland Deep, multiple CTD casts followed the demand for additional water sample requirements.

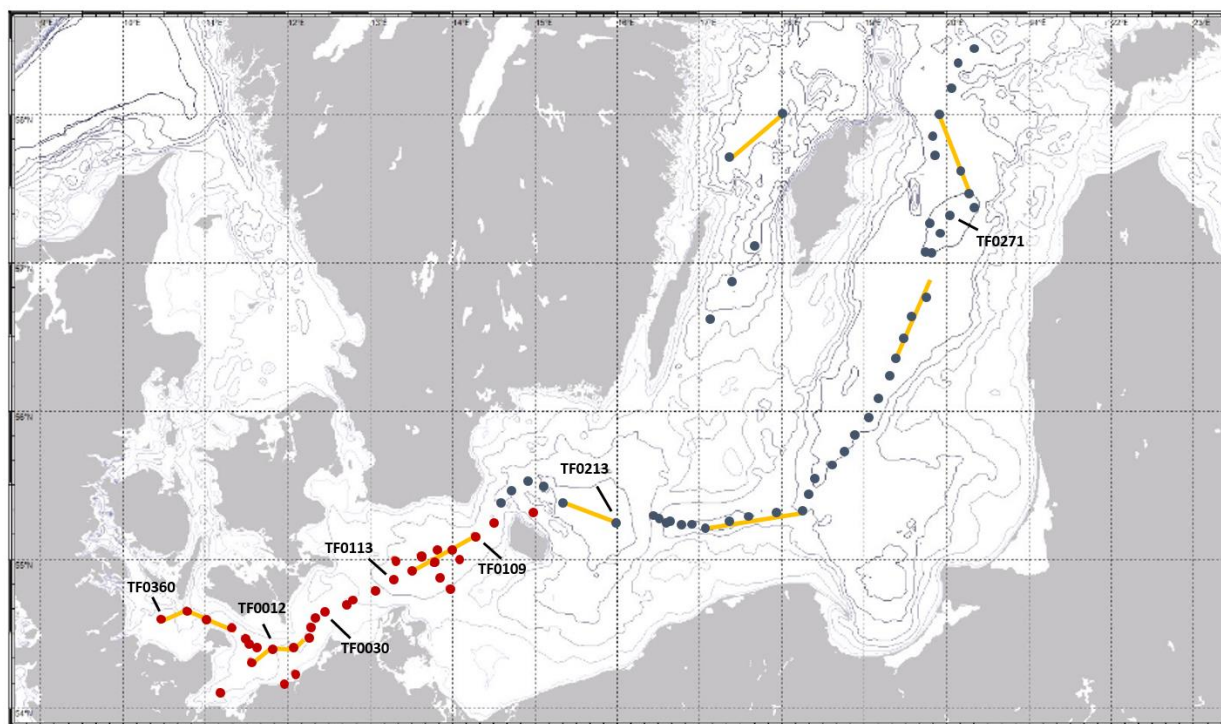


Fig. 3.1 Track chart of RV ELISABETH MANN BORGESE Cruise 387 providing the location of the stations of hydrographical, chemical and biological measurements (red BSH, IOW) and the location of the transects for the measurement of organic contaminants in seawater (yellow).

A detailed list of all CTD measurements are given in Table 7.2 in the annex. At these key stations, water sampling was carried out for dissolved oxygen, basic dissolved inorganic nutrients, total nutrient concentrations, as well as net sampling for phytoplankton and zooplankton species composition and abundance. Moreover, determinations of chlorophyll and the depth of visibility by means of a Secchi disk were conducted. For the detailed list of sampling see Table 7.1 in the annex.

Additional program:

- Sampling for the establishment of an eDNA bioarchive in the Kiel Bight, the Bay of Mecklenburg and the Arkona Sea (responsible scientist Prof. M. Labrenz, IOW)
- Transects for the analysis of legacy pollutants and contaminants of emerging concern in seawater and sediment (responsible scientist Dr. M. Kanwischer, IOW)
- Measurements of methane, carbon dioxide and nitrogen dioxide in seawater (responsible scientist Prof. G. Rehder, IOW)
- Sampling for the investigation of the long-term changes in the population dynamics of key copepod species in the Bornholm Basin (responsible scientist Dr. J. Dutz, IOW).

Responsible marine research was conducted regarding sampling and use of biological material. Pelagic sampling was limited to the needs for analyses and experiments. Nets were carefully rinsed with freshwater in between net hauls to avoid transfer of organisms to non-native areas. Residual material from sediment coring was deployed at sampling sites.

4 Narrative of the Cruise

The loading of the equipment and the installation of sampling devices in preparation for the cruise EMB387 took place on the 04th of February from 09:00 to 15:00. The procedures were slowed down by very cold weather (-2.7°C) and slippery ice conditions. During the day, the installation of a new software for the wave compensation of the CTD took place. This allowed only the preliminary placement of the equipment like Multicorer, Argo-floats and Scanfish on deck but the laboratories were fully equipped. During the night, three scientists stayed on board and celebrated the 40th birthday of a party member. After all cruise participants had boarded in the morning of the 5th of February, the safety briefing took place. RV ELISABETH MANN BORGESE departed with a delay of five hours due to rough weather conditions in the Bay of Mecklenburg that were predicted to improve rapidly during the course of the day. At 14:00 the ship left the harbor of Marienehe at windy and cloudy weather (7.3–8.4 m/s south-east, -2.3°C air temperature, 998,7 hPa). Shortly after the ship passed by Warnemünde, the CTD was successfully tested at station TFO5. Here, water samples were taken for the analyses of eDNA, proteomics and organic contaminants. Afterwards the ship sailed as planned westwards into the Kiel Bight.

In the evening, the ship arrived at station TF0010 in the Fehmarn Belt. After a CTD cast, sediment samples for measurements of contaminants were taken by a van Veen grab. The first of nine intended transects for the determination of organic pollutants (T1) by continuous filtering of surface seawater was also started upon departure from this station under clean ship conditions. The filtering devices were run for approximately six hours and stopped at arrival at station TF0360 in the night. In between, two CTD stations were conducted (TF0014, TF0361). At station TF0360 in the Kiel Bight, hydrographical and chemical conditions were determined by water samples. Additional samples were taken for the subsequent analysis of the phyto- and zooplankton composition in the laboratory. 1000L-IBC tanks were filled with surface seawater for later use in experimental studies. The working conditions were difficult due to snow fall and freezing conditions (wind 7.5 m/s south-west, -0.5°C air temperature, 995.7 hPa). In the night, another CTD station again in the Fehmarn Belt was sampled (TF0013).

RV ELISABETH MANN BORGESE arrived in the morning of the 6th of February at the southernmost station of the Bay of Mecklenburg (TF0022). Here, samples for eDNA and proteomics were taken. Afterwards the ship headed direction northeast in order to conduct a series of CTD stations (TF 0017, TF0041) and stations for chemical/biological measurements in the framework of the BSH monitoring (TF0012, TF0046). The measurements of organic contaminants continued with multicorer samples at stations TF0012 and a second transect of continuous water filtering from station TF0012 to TF0030. In the night, the measurements continued at the Darss Sill and the entrance to the Arkona Sea (TF0083, TF0033, TF0002, TF0001, TF0030, TF0115, TF0114). This region is one of the major areas that control the inflow of saline water into the Baltic Proper. Due to continuous east winds in the preceding 2 weeks, the hydrography was strongly influenced by brackish water conditions without the usual residual more saline water at the bottom in the Arkona Sea. The working conditions were difficult with continuous snowfall and minus degrees (11.7 m/s north-east, -0.2-0.5 °C air temperature, 998.6 hPa).

In the early morning of the 07th of February, the work continued in the western area of the Arkona Sea. The wind had increased (14.4-16.2 m/s north-east, 1.5 °C air temperature, 1006.6

hPa) and swell with 2-3 m waves made the work difficult. While all planned work could be conducted at station TF0113 (CTD, nets and start of the *in-situ* pump on transect 3), the program of the following stations had to be reduced due to the worsening of the weather conditions and too serious working conditions. Therefore, it was decided together with the ship's command to reduce the sampling in the Arkona Sea to station TF0122 and TF0109 before the ship took shelter in the slipstream of the island of Bornholm. Coring for the organic contaminants with the Multicorer had to be omitted at these stations. Strong ice condition in the more sheltered Pomeranian Bight prevented the ship from continuing the sampling at an alternative, more southern route.

The work was resumed in the night from the 8th to the 9th of February with a series of CTD measurements and nutrient analyses from the eastern Arkona Sea into the Bornholm Basin (TF0145Dk, TF0144, TF0142Dk, TF0140, TF0206, TF0207). A transect of continuous water sampling for contaminants in particulate and dissolved matter (transect 4) was conducted from station TF0200 to TF0213. In addition to the regular measurements of hydrographical and chemical conditions, plankton samples were taken for monitoring purposes at Station TF0213. In addition, three Apstein (50 µm) and WP-2 (100 µm) nets, respectively, were taken to support the analysis of the long-term changes in the population dynamics of key copepod species in the Bornholm Basin by quantitative samples for nauplii and copepodites. The hydrographical measurements showed a vertically mixed water column (salinity 7.6, temperature 2.3 °C) over a steep halocline. The bottom water was anoxic. Finally, an ARGO float equipped with CTD, oxygen and CO₂ sensors was deployed at the station in order to continuously record the environmental conditions in the Basin over the whole year. Afterwards, RV ELISABETH MANN BORGESE headed towards the eastern edge of the basin in order to determine the environmental conditions at the entrance of the Slupsk Channel (TF0226, TF0224). Here, a mooring equipped with ADCP, MicroCat and PME miniDOT was deployed at station SC1_W to record potential inflows of saline water over the Slupsk Channel into the Gotland Basin. During the night, hydrographical measurements along the Slupsk Channel followed (TF0229, TF0222, TF0266, TF0267, TF0268, TF0256). *In-situ* pumping of water to determine organic contaminants was conducted between station TF0222 and TF0257 (transect 6). The weather calmed considerably during the crossing of the Bornholm Basin but it remained cold (7.2–7.5 m/s north-east, -2.0 °C air temperature, 1013.7 hPa).

In the morning of the 10th of February, station work in the Gotland Basin started with a series of hydrographical measurements along the southern slope (TF0257, TF0259, TF0258, TF0253, TF0265). Additional samples for phytoplankton abundance, nutrient concentrations and oxygen conditions at depth were taken at station TF0259. Calm weather was prevailing during the work (1.1-3.7 m/s north-east, -1.5 °C air temperature, 1006.8 hPa). The work continued with hydrographical stations in the central Gotland Basin (TF0250, TF0262, TF0263, TF0261, TF0260, TF0274, TF0273, TF0272, Gotland SW and TF0275). The seventh *in-situ* transect of pumping of water to determine organic contaminants was conducted between station TF0263 and TF0273. During the night, the second Argo float was deployed in the central basin (Argo ZGB).

The ship arrived at the central station TF0271 of the Gotland Basin in the early morning of the 11th of February. Here, a series of intense hydrographical, chemical and biological measurements were started. In total five CTD casts were done for the vertical profiles of temperature, salinity,

oxygen, hydrogen sulfide, pH, CO₂, turbidity, phytoplankton and Chla. At the redoxcline, samples were taken in 10m intervals from 60-120 m for molecular analyses. Finally, two *in-situ* pumps were deployed for 6 hours at the surface and at 225 m to determine the concentrations of organic contaminants. The work took about 11 hours. Afterwards, the ship headed northwards to finish the south-north cross section across the Gotland Basin. Moderate winds from north determined the weather conditions during the whole day (7.6-7.7 m/s north, -2.0 °C air temperature, 991.8 hPa).

The hydrographical and chemical measurements continued during the evening and night of the 11th and 12th of February, respectively. Due to a bad weather forecast for the 13th of February, the south-north cross section was sampled on ten stations from station GotlandNE to station TF0285. Then the ship sailed to the harbor of Visby in order to weather the expected storms with predicted wind speeds of >18 m/s and wave heights of >3.5 m. The hydrographical measurements (GotlandNE, TF0276, TF0270, TF0287, TF0290, TF0286, TF0277, TF0278, TF0285) were completed with measurements of nutrient and oxygen concentrations at three stations (TF0270, TF0286, TF0285). The eighth *in-situ* transect for measurements of organic contaminants was run from station TF0270 to station TF0286. The weather conditions during the stations work were characterized by moderate winds (7.6-7.7 m/s north, -2.0 °C air temperature, 991.8 hPa). At 08:00 in the morning, RV ELISABETH MANN BORGESE sailed to Visby. During the travel, the wind turned southeast and the wind speed increased. The ship arrived at the harbor at 18:00.

The work was resumed in the morning of the 14th February when the storm with wind speeds up to 19.6 m/s had passed the island of Gotland in southern direction. We sailed northwards to conduct our first measurements at station TF0240 in the western Gotland Basin. Due to time constraints related to depression center that was expected to pass the Baltic Sea during the next week, it was decided to skip the planned work on stations TF0279 to wGB-3 in the northern Gotland Basin. At station TF0240, nutrient and oxygen concentrations in the water column were determined in addition to the hydrography. The ninth transect of measurements of concentrations of organic contaminants was started when the ship left the station. Strong wind and cold temperatures prevailed during the morning (12.3-15.5 m/s north-east, -2.2 °C air temperature, 1009.5 hPa). A series of stations of hydrographical measurements followed at stations TF0242, TF0245, wGB-1 and wGB-SW during the night. At station TF0245 – the Karlsö Deep – usually anoxic bottom water is present, but our measurements showed a mixed vertical water column up to a depth of 70m and a higher salinity water below that untypically contained residues of oxygen (13 µmol O₂/L).

The further planning of the station work during the cruise was influenced by the forecast of two low-pressure cells passing the western and central Baltic Sea during the beginning of the week. Because of prospects of strong winds and high waves that were expected to considerably limit the working time, it was decided to prefer those important stations in the Arkona Basin that were still lacking due to bad weather at the beginning of the cruise. Therefore, RV ELISABETH MANN BORGESE sailed during the night to station TF0213 in the Bornholm Basin and afterwards to the Arkona Sea. In the morning of the 15th of February, a series of phyto- and zooplankton nets (Apstein 20 µm, Apstein 55 µm WP-2 100 µm) followed the CTD cast at station TF0213. Oxygen and nutrient profiles were determined from water bottle samples. The profiles showed a large mixed water layer of 55 m and an oxygenated bottom layer of low

salinity (up to 15 PSU). When the station was completed, the ship sailed directly to the Arkona Sea. Here, work for the BSH monitoring program was conducted including CD measurements, secchi depth and plankton nets at station TF0109. Sediment samples were obtained for the determination of organic pollutants with a MultiCorer. Then, we sailed westwards to station ABBoje where a CTD profile was taken for comparison with the long-term mooring anchored at this station. At station TF0112, profiles of hydrography, nutrients and oxygen were run in addition to sampling of water for eDNA analyses in surface and bottom waters. Afterwards, RV ELISABETH MANN BORGESE sailed to Rügen in order to find shelter from the expected rising wind speed and build-up of waves in the Arkona Sea (forecast of wind speeds >16m/s and 2.5-3m wave height) that hindered further station work.

The bad weather and working conditions lasted throughout the 16th of February. Work was resumed in the morning of the 17th of February. The ship sailed from the shelter position at the island of Rügen to the Arkona Sea to continue the hydro-chemical measurements along the IOW Thalweg. The wind was still strongly blowing from northeast and ice was frequently observed in the beginning (15.2-16.3 m/s north-east, -2.7 °C air temperature, 1004.6 hPa). The station started at TF0122 with a CTD cast in the middle of the Arkona Sea followed by stations in the Swedish part of the Arkona Sea where additionally nutrients and oxygen in the water column were determined (TF0103, TF0104, TF0105). At all stations, the water column was vertically mixed down close the bottom with a salinity of 8.3, but a narrow layer with a salinity of up to 22 was present that increased in magnitude from station TF0104 to TF0103 at the bottom. In the afternoon, the weather had calmed down, but it was still very cold (4.8-4.1 m/s south-west, -2.4 °C air temperature, 1006.5 hPa). In addition, the water temperature had decreased below 1°C at the surface. The last MultiCorer cast was conducted at station TF0069 to determine organic contaminant concentrations at the sediment surface. Despite the bad weather conditions, all planned MultiCorer stations were sampled except at the Pomeranian Bight where a thick ice sheet prevented sampling. During the evening, RV ELISABETH MANN BORGESE sailed further west to conduct a second transect over the Darss Sill. At station TF0113, the CTD cast showed the presence of bottom water with a salinity of >23 below a depth of 35 m indicating that saline water had passed the sills and entered the Arkona Basin in the west. Plankton nets were taken additionally in order to investigate possible biodiversity changes. The transect continued with a series of CTD stations (TF0114, TF0115, TF0030, TF0001, TF0002, TF0033). These showed that the signal of inflowing water vanished as depth decreased and that the bottom water with high salinity in the western Baltic Sea originated likely from an inflow via the Drogden Sill.

In the night and early morning of the 18th of February the transect continued into the Mecklenburg Bight ((TF0046, TF041, TF0017, TF0012) with further CTD casts and plankton sampling for the BSH. Afterwards, RV ELISABETH MANN BORGESE sailed in the Fehmarn Belt. Here vertical profiling with CTD casts were done in order to verify model predictions that indicated inflowing saline water via the Belt Sea (TF00011, TF0013, TF0010, TF0014). The measurements, however, showed that a mixture of brackish water and Belt Sea water with a salinity of 12 had replaced the saline water that is usually present during winter (salinity >18). Only residuals of this water were present at the bottom of the Fehmarn Belt and the Bay of Mecklenburg. Following these measurements, RV ELISABETH MANN BORGESE returned to Rostock. Due to serious ice conditions in the harbor in Rostock-Marienehe, unloading of the ship took place in Warnemünde.

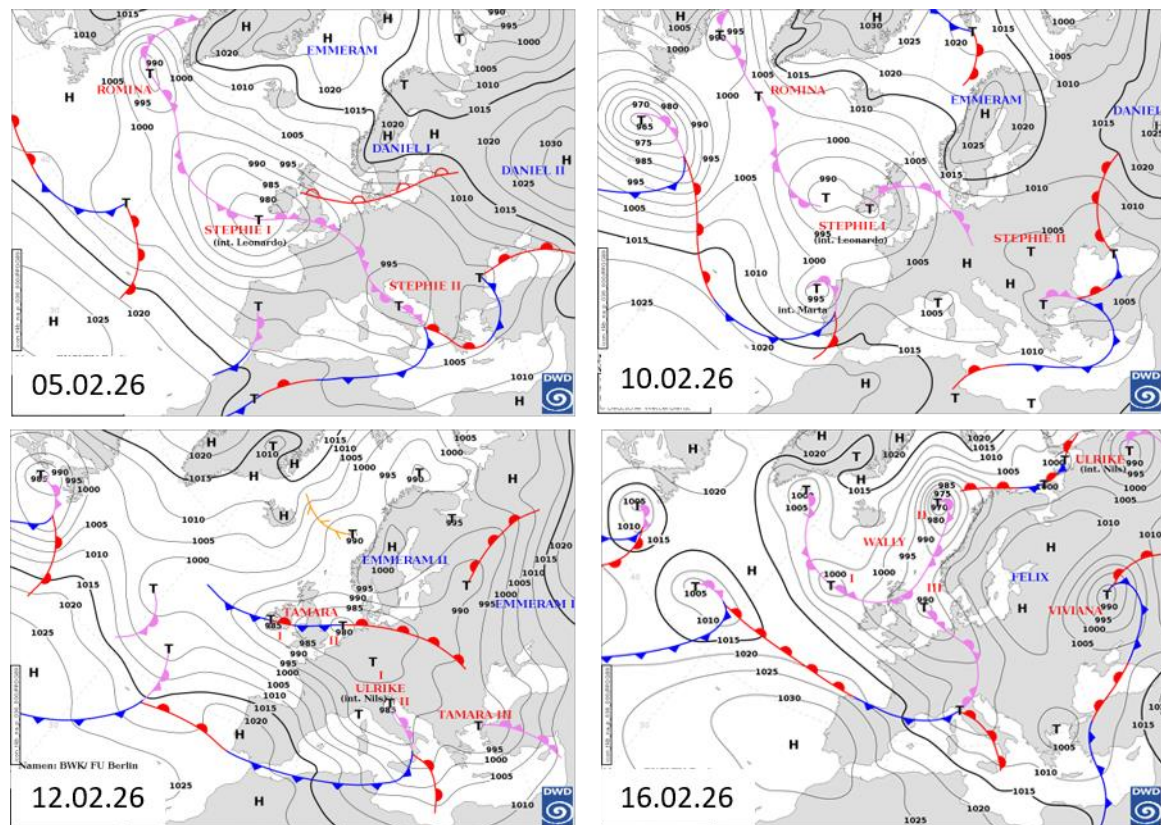


Fig. 5.1 Weather conditions during the cruise EMB387 during the period 05.02.2026 to 19.02.2026. All figures provided the Deutscher Wetterdienst (www.dwd.de).

5 Preliminary Results

The following results are only preliminary and not comprehensive, since they are based in most cases on raw data that requires validation or are descriptive. Their presentation aims at providing a first overview and general evaluation of the hydrographic and chemical data. A final assessment requires the advanced analysis of data, particularly regarding the biological data, which is time consuming.

5.1 Meteorological Conditions

The working conditions during the cruise were strongly influenced by the weather and especially by storms that caused several interruptions of the work program as described in the narrative of the cruise. In addition, very low temperatures around and below the freezing point prevailed before and during the cruise. This caused severe ice conditions in coastal areas that made the departure and arrival difficult. While the help of an ice breaker was necessary for leaving the harbor at Marienehe, disembarkation took place in Warnemünde since the harbor could not be entered.

The start of the cruise was delayed by about six hours because the offshore sailing conditions were still unfavorable due to a storm that had passed the western Baltic Sea the day before (Fig 5.1). The weather conditions calmed down and allowed the station work in the Kiel Bight and the Arkona Sea including the coring with the Multicorer. Unfortunately, the work was soon interrupted by another depression center arriving from southwest in the Baltic Sea with winds of 14.4-16.2 m/s and swell with 2-3 m waves in the period 7th-8th of February. The lacking station work was compensated by sampling during the return journey. The following period was rather

calm until the 13th of February when a further depression center with predicted wind speeds of >18 m/s and wave heights of >3.5 m was crossing the Baltic Sea. Because of time constraints, the station work in the northern Gotland Basin had to be omitted. The harsh weather conditions calmed during the night, and we resumed the work in the western Gotland Basin with a south going transect. Unfortunately, the further weather forecast predicted two low-pressure cells passing the western and central Baltic Sea during the 16-17th of February. It was decided to skip most of the station work in the Bornholm Basin and head towards the island of Rügen where the storm passed and work was resumed in calming conditions.

5.2 Observations at Main Stations

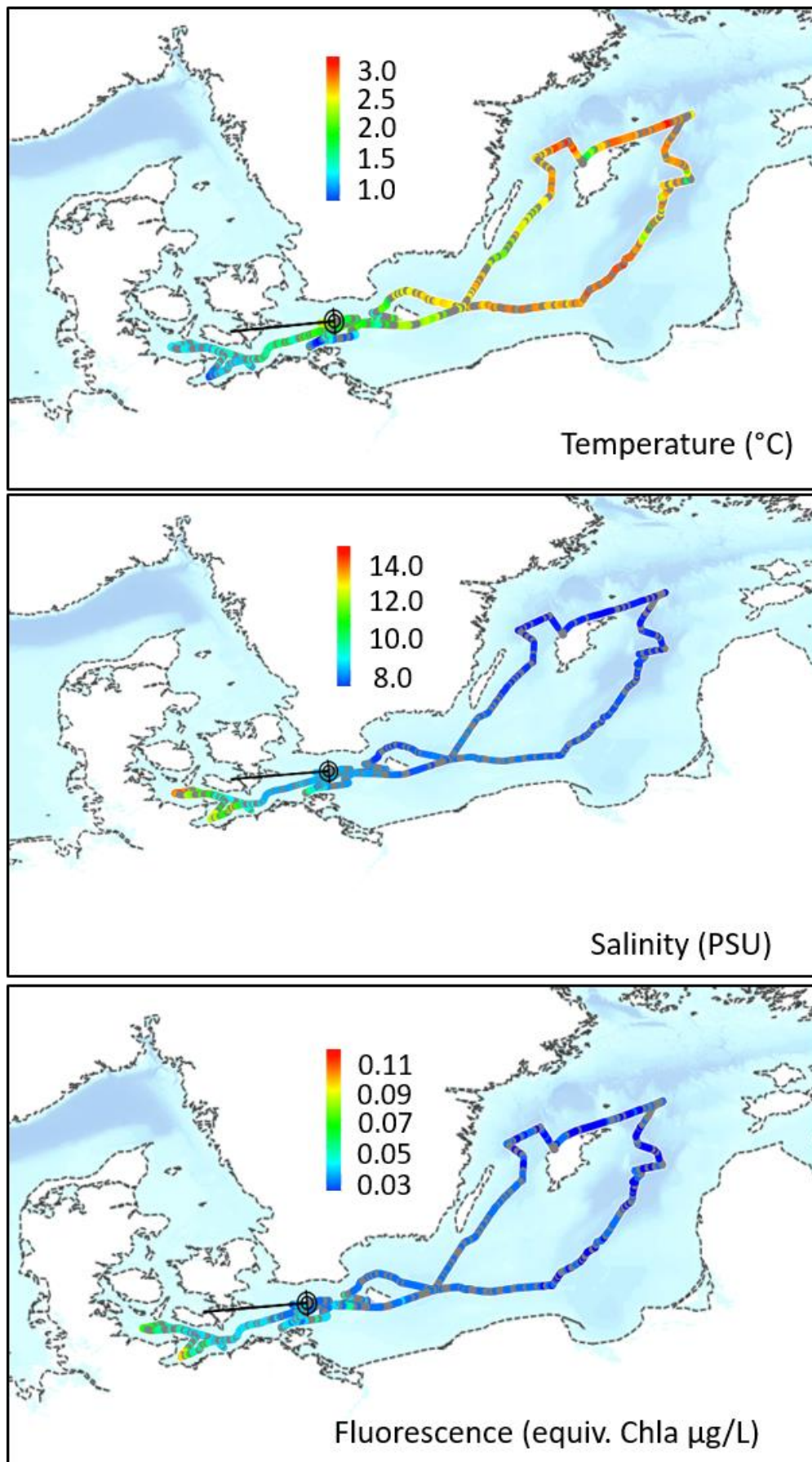
5.2.1 CTD Measurements

The most important hydrographic and chemical parameters at the main stations of the investigation are summarized in Figures 5.2 and 5.3 as well as Tables 5.1 and 5.2. The position for these stations is provided in Figure 3.1.

The surface temperature (SST) and salinity (SSS) showed a west-east gradient typical for the Baltic Sea with usually warmer surface temperatures and decreasing salinity towards the central Baltic Proper (Fig. 5.2, Tab. 5.1). As expected from the early timing of the cruise, winter surface water temperatures were low and ranged from 0-3°C. However, the surface temperature with values < 1 °C in the western Baltic Sea was rather low compared to winter values in the recent decade - similar values were the last time observed in winter 2010/2011. This applies as well to the surface temperatures in the central Baltic Sea with a temperature of 2.6°C in the Bornholm Basin that was further decreasing to 2.4 °C during the cruise. In addition, the salinity in the surface water of the western Baltic Sea (Kiel Bight, Bay of Mecklenburg) was also low. During winter, the salinity is usually enhanced with values exceeding 18 at the surface due to a strong influence of water from the Kattegat/Skagerrak region associated with the westerly winds (Lenz 1977). In 2026, however, a persistent high pressure wind system across northern Europe generated easterly winds that caused a decrease of the general water level of the Baltic Sea and a spread of Baltic Sea water far into the Belt Sea. As expected, the fluorescence levels were generally low. The slightly enhanced fluorescence in the Kiel Bight compared to the other areas indicate the early onset of the spring bloom in this area.

The strong influence of Baltic water in the Kiel Bight and Bay of Mecklenburg is also depicted in the vertical distribution of hydrographical parameters (Fig. 5.3, Tab. 5.2). The water column was vertically mixed with temperatures smaller than 1°C and a small salinity gradient that did not exceed 15PSU. The profiles further indicated deep mixing down to 55m in the Baltic Proper. The profiles from the Arkona Sea indicate that Baltic Sea water with low salinity had completely replaced the bottom water of usually higher salinity. A narrow water layer of salinity up to 24 PSU at the bottom reflected a small inflow event via the Drogden Sill since similar water masses were not observed on and west from the Darss Sill.

Nearly the entire central Baltic was covered by anoxic bottom waters, enriched with free hydrogen sulfide (Gotland, Farö, Tab. 5.2). This is related to lacking deep-water inflows in recent years. The deep water in the Bornholm Basin was slightly hypoxic (< 20 µmol O₂/L). In contrast, the deep water in the Stolpe channel displayed oxygen levels above 50 µmol O₂/L, probably reflecting the deeper mixing the water column due to low temperatures.

**Fig. 5.2**

Distribution of temperature ($^{\circ}\text{C}$), salinity (PSU) and oxygen concentrations (ml/L) along the Thalweg transect of the Baltic Sea from the Kiel Bight to the eastern Gotland Basin. The figure is based on the preliminary CTD data collected during the cruise EMB387 from the 05.02. -19.02.2026.

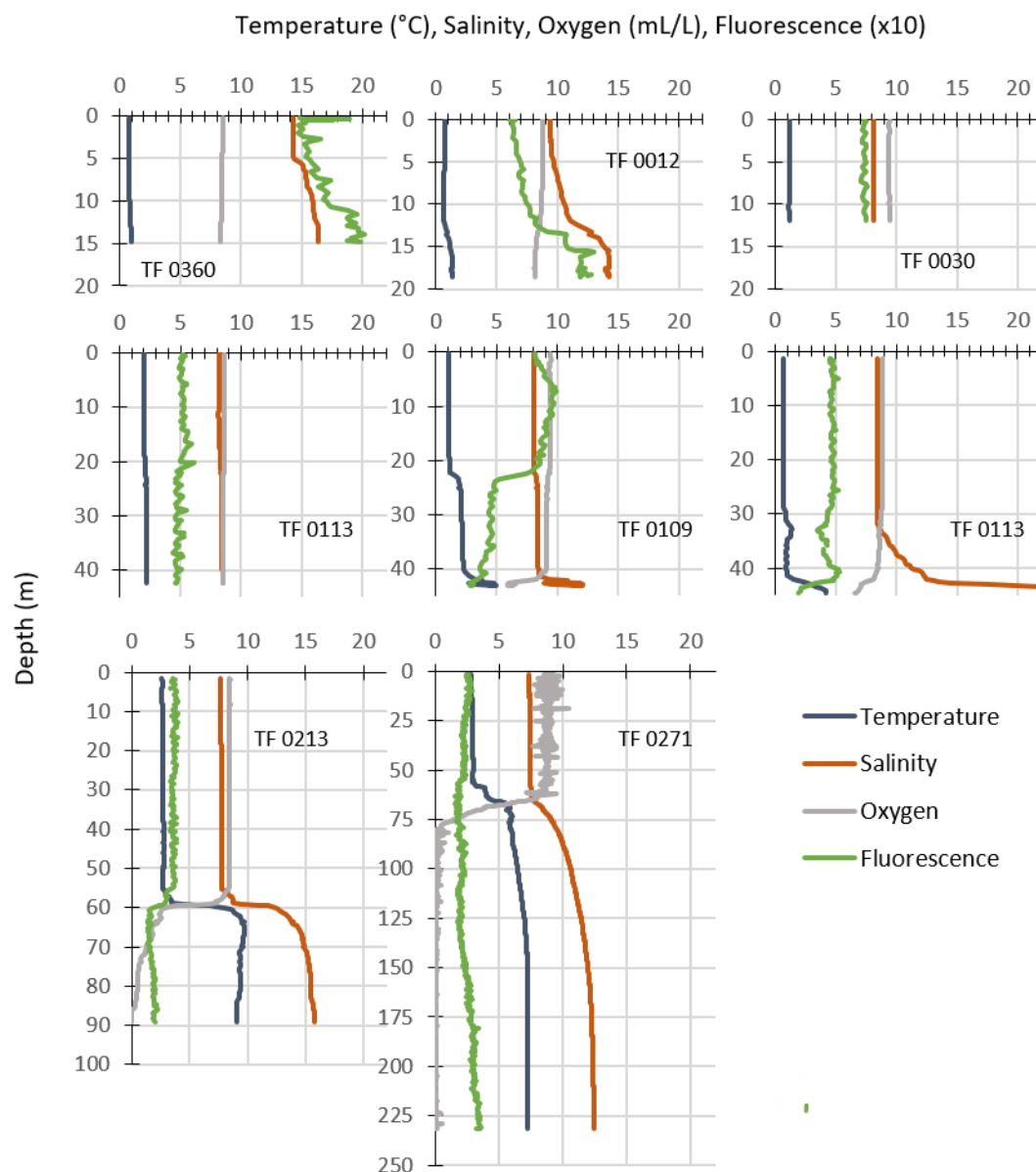


Fig. 5.3 Distribution of seawater density (g/kg), chlorophyll fluorescence and turbidity (NTU) along the Thalweg transect of the Baltic Sea from the Kiel Bight to the eastern Gotland Basin. The figure is based on the preliminary CTD data collected during the cruise EMB387 from the 05.02. -19.02.2026. Note that the profiles at station TF0113 originate from different dates (07.02.26, 17.02.26) and indicate a small inflow event into the Arkona Sea via the Drogden Sill visible by the enhanced salinity at the bottom of the basin.

Table 5.1 Surface water layer (about 3 m depth) - hydrographic and hydrochemical properties at main stations.

Area	Station No. IOW	Temp °C	Sal. g/kg	O ₂ (sensor) mL/L	O ₂ (titration) µmol /L	PO ₄ [µM]	NO ₃ [µM]	SiO ₄ [µM]
Kiel Bight	TF0360	0.72	14.23	8.32	402.0	0.67	2.48	16.4
Bay of Mecklenburg	TF0012	0.72	11.29	8.65	407.0	0.73	2.46	18.0
Darss Sill	TF0030	1.17	8.15	8.79	413.0	0.72	3.69	19.4
Arkona Basin	TF0113	2.00	8.15	8.59	405.0	0.72	2.73	19.0
Bornholm Deep	TF0213		7.88		396.0	0.76	2.89	19.4
Stolpe Channel	TF0222	2.63	7.99	8.30	388.0	0.75	2.84	18.8
SE Gotland Basin	TF0259	3.10	7.58	8.17	383.0	0.69	2.77	17.9
Gotland Deep	TF0271	2.78	7.37	8.22	391.0	0.73	3.53	20.4
Farö Deep	TF0286	2.92	7.25	8.19	390.0	0.69	3.72	19.7
Landsort Deep	TF0284	--	-	-	-	-	-	-

Table 5.2 Deep water layer - hydrographic and hydrochemical properties at main stations. Hydrogen sulphide was converted into negative oxygen equivalents (Conversion factors: µmol l⁻¹ H₂S * -0.0448 = negative oxygen equivalent ml l⁻¹ O₂).

Area	Station No. IOW	Temp °C	Sal. g/kg	O ₂ (sensor) mL/L	O ₂ (titration) µmol/L	PO ₄ [µM]	NO ₃ [µM]	SiO ₄ [µM]
Kiel Bight	TF0360	0.91	16.33	8.18	398.0	0.64	2.32	15.1
Bay of Mecklenburg	TF0012	2.82	16.11	7.26	344.0	0.81	3.20	18.4
Darss Sill	TF0030	1.14	8.15	8.79	411.0	0.71	3.61	19.3
Arkona Basin	TF0113	2.22	8.46	8.52	397.0	0.69	2.33	17.9
Bornholm Deep	TF0213		17.81	12.44	21.0	2.11	5.88	58.0
Stolpe Channel	TF0222	8.62	13.81	1.67	85.0	1.79	6.20	49.8
SE Gotland Basin	TF0259	6.60	10.79	-	-10.4	3.27	0	57.0
Gotland Deep	TF0271	7.28	12.45	-	-608.1	6.25	0	114.0
Farö Deep	TF0286	7.20	11.89	-	-276.5	4.65	0	83.5
Landsort Deep.	TF0284	-	-	-	-	-	-	-

5.2.2 Nutrients and Chlorophyll

The surface water still exhibited relatively high nutrient concentrations before the start of the spring bloom (Tab. 5.1). Relatively uniform nitrate concentrations in the range of 2.3–3.8 $\mu\text{mol/L}$ and phosphate concentrations of 0.57–0.81 $\mu\text{mol/L}$ were measured across the entire study area, presumably due to the prolonged outflow of the brackish Baltic Sea water. An influence of the North Sea water was not visible. The fluorescence in the surface was rather low, which reflects the nutrient situation and reflects the pre-spring bloom period (Fig. 5.2). Only in the Kiel Bight, fluorescence values were enhanced which suggests that here an early onset of the spring bloom took place. This situation is common, though (Wasmund et al. 1998).

5.3 Establishment of an eDNA-Archive and Metaproteogenomic Analyses

In order to establish a bio-archive of microorganisms and metazoans in the Baltic Sea, biomass was collected by filtering seawater either through a 0.2 μm or a 0.45 μm filter to obtain bacterial and metazoan DNA (CREATE project), respectively. All samples were taken in the western Baltic Sea (Kiel Bight, Bay of Mecklenburg, Arkona Sea, Tab. 5.3) and were directly frozen and stored at $-20\text{ }^{\circ}\text{C}$ until further processing like DNA extraction and sequencing in the laboratory.

For metaproteogenomic analyses, surface water samples of 60 L were collected by the CTD-Rosette system. Subsequently, the water was filtered through 10 μm , 3 μm and 0.2 μm filters, respectively. These were stored at $-80\text{ }^{\circ}\text{C}$. Macro- and microalgae, found on the 10 μm and 3 μm filters and bacteria derived from the 0.2 μm filter are, thus, available for metagenomic and metaproteomic analyses and furthermore for the determination of bacterial metabolic activity. These samples can be used to (1) better assess the health of waters through the integration of molecularly based microbial and eukaryotic characteristics, and (2) provide future generations with the opportunity to access a molecular archive to answer a wide variety of scientific questions in the Baltic Sea. The eDNA samples will be extracted and sequenced (16S/18S rRNA Gen Illumina) during the course of the year.

Table 5.3 Position of sampling stations in the western Baltic Sea for eDNA sampling to establish a micro-biological DNA archive together with the associated parameters (T temperature, S salinity, Chl. Chlorophylla, PP: Phytoplankton, ZP Zooplankton, MZB Macrozoobenthos).

Station	Lat_dec	Long_dec	Depth (m)	Associated parameters
TF0014	54,594	11,013	24	T, S
TF0010	54,551	11,319	25	T, S, oxygen, nutrients, MZB
TF0012	54,315	11,550	22	T, S oxygen, nutrients, Chl., PP, ZP, MZB
TF05	54,232	12,072	9	T, S oxygen, nutrients,
TF0046	54,469	12,239	25	T, S oxygen, nutrients, Chl., PP, ZP, MZB
TF0002	54,649	12,449	15	T, S oxygen, nutrients,
TF0001	54,696	12,697	18	T, S oxygen, nutrients,
TF0030	54,724	12,782	20	T, S Chl., PP, MZB
TF0115	54,794	13,057	27	T, S oxygen, nutrients,
TF0113	54,925	13,500	45	T, S oxygen, nutrients, Chl., PP, MZB
TF0112	54,803	13,958	38	T, S oxygen, nutrients,

(Responsible scientists: Prof. Dr. Matthias Labrenz, IOW).

5.4 Analysis of Legacy Pollutants and Contaminants of Emerging Concern

During the cruise EMB387 water and sediment samples were obtained for the analysis of the following legacy pollutants: polychlorinated biphenyls PCBICES, hexachlorobenzene HCB, DDT and 2 of its metabolites, polycyclic aromatic hydrocarbons EPA-PAH. These analyses were done as part of the contract work with the Federal Maritime Agency (BSH) within the German EEZ and beyond this as part of the IOW long-term observation program.

In addition to the station work, contaminants were also determined during continuous sampling of surface water on diverse transects in the western and central Baltic Sea (Fig. 3.1). Surface water from about 5 m below the surface was pumped through a clean seawater pipe through a GF/F filter and subsequently through an XAD2-resin packed column. At station 271 surface and deep water was similarly sampled with an *in-situ* pump system at to the respective water depth. Finally, sediment samples were obtained from several sites in the German EEZ with the help of either a grab sampler or a MultiCorer (Tab. 5.4).

Moreover, water samples were obtained for the analysis of a number of compounds from the group of **contaminants of emerging concern** (pharmaceuticals, estrogens) as part of R&D with the Federal Maritime Agency. Surface water samples were obtained with carousel water sampler and transferred to amber glass bottles (Tab. 5.5). The samples were with internal standard solution. All obtained samples were stored on board and transported to the IOW laboratories for further preparation and analysis

Table 5.4 Water and sediment sampling for the analysis legacy pollutants as part of the contract work with the Federal Maritime Agency in the German EEZ and as part of the IOW long-term observation program in the central Baltic Sea.

Area, site	Transect and sample type	Gear	Framework
Kiel Bight - Fehmarn Belt	transect 1 2 samples, each ca. 400 L	Pump system	contract work for BSH
Mecklenburg Bight - Darss Sill	Transect 2 ca. 400 L	Pump system	contract work for BSH
Arkona Sea	Transect 3; ca. 400 L	Pump system	contract work for BSH
Bornholm Sea	transect 4 2 samples, each ca. 400 L	Pump system	IOW long-term observation
Central Baltic Sea	Transect 6; ca. 400 L	Pump system	IOW long-term observation
Eastern Gotland Sea (south)	Transect 7; ca. 400 L	Pump system	IOW long-term observation
Eastern Gotland Sea (north)	Transect 8; ca. 400 L	Pump system	IOW long-term observation
Western Gotland Sea	Transect 9; ca. 400 L	Pump system	IOW long-term observation
TF0271, 5 m	ca. 400 L	Pump system	IOW long-term observation
TF0271, 225 m	2 samples each ca. 400 L	<i>In-situ</i> pump system	IOW long-term observation
TF0010	Surface sediment	Grab sampler	Contract work for BSH
TF0012	Surface sediment	MUC corer	Contract work for BSH
TF0069	Surface sediment	MUC corer	Contract work for BSH
TF0109	Surface sediment	MUC corer	Contract work for BSH

Table 5.5 Sampling for the analysis contaminants of emerging concern.

Site	Sample type	Volume	Gear
TF0010	surface water	1 L	Carousel sampler
TF0360	surface water	1 L	Carousel sampler
TF0012	surface water	4 x 1 L	Carousel sampler
TF0046	surface water	1 L	Carousel sampler
TF0030	surface water	1 L	Carousel sampler
TF0113	surface water	1 L	Carousel sampler
TF0069	surface water	1 L	Carousel sampler
TF0109	surface water	1 L	Carousel sampler
TF0213	surface water	1 L	Carousel sampler
TF0271	surface water	4 x 1 L	Carousel sampler

(Responsible scientist: Dr. Marion Kanwischer, WG Organic Trace Substances, IOW)

5.5 Deployment of ARGO Floats

As part of the ongoing monitoring activities and contribution to the global Argo Program, two BGC-Argo profiling floats were deployed during the cruise. The first float was equipped with a CTD (for temperature and salinity), oxygen and an experimental pCO₂ sensor. It was released at 55°15.01'N, 15°58.98'E in the Bornholm Basin near the monitoring station TF0213 within the Danish EEZ, outside the 12 nautical mile zone, on the 9th February (Fig. 5.4). Being a free-drifting platform that passively follows the currents, it may drift in- and out- the Swedish EEZ thereafter during the intended 2 years deployment period. The other BGC-Argo float was deployed on the 11th February in the Gotland basin at 57°15.97'N, 19°47.81'E near the monitoring station GB_B13 within the Swedish EEZ, outside territorial waters (Fig. 5.4).

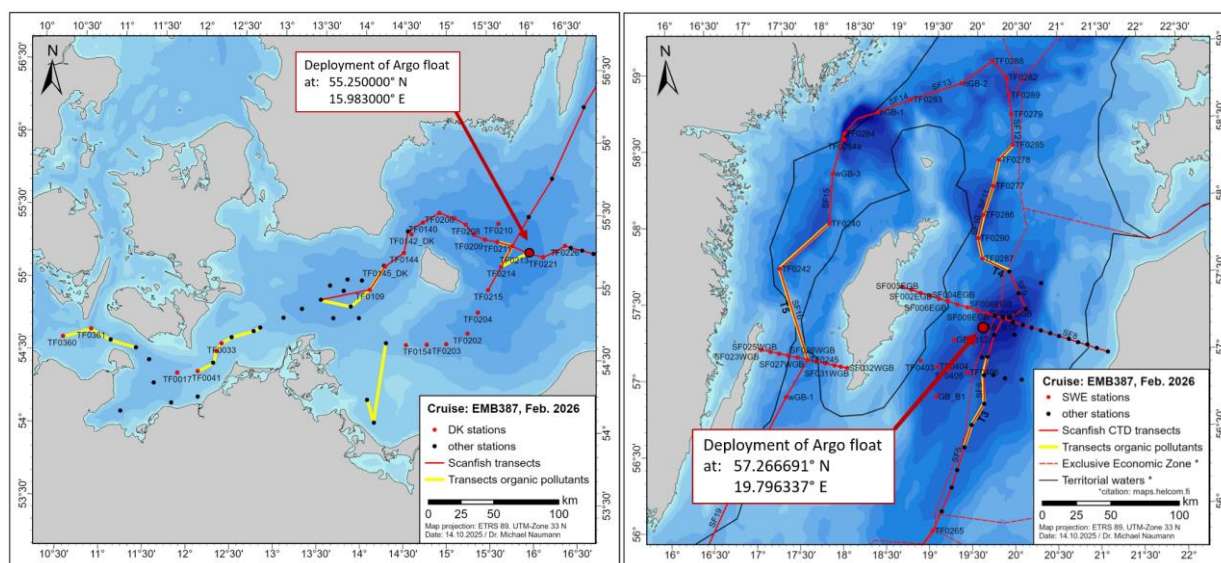


Fig. 5.4 Positions of the deployment of two BGC-Argo floats within the Danish EEZ (left) and Swedish EEZ during the cruise EMB387 from the 05.02. - 19.02.2026.

Both floats contribute to the global Argo network of free-drifting profiling floats and their data are collected and made freely available by the International Argo Program and the national programs that contribute to it (<https://argo.ucsd.edu>, <https://www.ocean-ops.org>). The Argo Program is part of the Global Ocean Observing System.

(Responsible scientist: Henry Bittig, Chemical Oceanography IOW)

5.6 Analysis of PFAS Substances

The project EMPEREST (Eliminating Micro-Pollutants from Effluents for REuse STRategies, <https://interreg-baltic.eu/project/emperest/>) funded by the Interreg Baltic Sea Region program aims at the development of new technologies for the removal of organic micro-pollutants such as pharmaceuticals and in particular perfluorated alkylated substances (PFAS) from wastewater. Moreover, the EMPEREST partner HELCOM aims at the development of methodological recommendations for a harmonized monitoring of PFAS substances in the Baltic Sea region.

In order to increase the number of data for concentrations of PFAS substances in waters of the German EEZ, IOW provided surface water samples from this region to the project partner Prof. Barjenbruch (Technische Universität Berlin, Dpt. Urban Water management).

During cruise EMB387 surface water samples were obtained at similar sites as for the samples for UV filter analysis (Tab. 5.3) using the carousel water sampler. Harshada Sakpal conducted the sampling onboard. The 1 L samples were stored in PE bottles and handed over to Prof. Barjenbruch and colleagues after the cruise who forwarded them to an external laboratory for PFAS analysis.

(Responsible scientist: Dr. Marion Kanwischer, Chemical Oceanography IOW).

5.7 Biological Sampling

Samples for the investigation of the seasonal and long-term variation of the phytoplankton and zooplankton were collected on selected station for the subsequent analysis in the laboratory. This analysis is time consuming and is initiated once samples were brought to the laboratory. Therefore, preliminary results are not available yet.

6 Ship's Meteorological Station

Not applicable on RV ELISABETH MANN BORGESE. The meteorological conditions during the cruise are described in section 5.1.

7 Station List EMB387/2026

7.1 Overall Station List

Station No.		Date	Gear	Time	Latitude	Longitude	Water Depth	Remarks/Recovery
EMB	IOW	2026		[UTC]			[m]	
EMB387_01-01	TF05	05.02.	ROS/CTD	14:20	54°13.88'N	12°04.44'E	10	
EMB387_01-02	TF05	05.02.	Secchi disk	14:22	54°13.85'N	12°04.45'E	9	
EMB387_02-01	TF0010	05.02.	ROS/CTD	19:01	54°33.13'N	11°19.21'E	26	
EMB387_02-02	TF0010	05.02.	Van Veen	19:01	54°33.11'N	11°19.24'E	26	for contaminants start transect 1 end transect 1
EMB387_02-03	TF0010	05.02.	<i>in-situ</i> pump	19:01	54°33.07'N	11°19.22'E	26	
		06.02.	<i>in-situ</i> pump	0028	54°36.04'N	10°26.92'E	16	
EMB387_03-01	TF0014	05.02.	ROS/CTD	21:07	54°35.67'N	11°00.81'E	25	
EMB387_04-01	TF0361	05.02.	ROS/CTD	22:45	54°39.52'N	10°46.99'E	20	
EMB387_05-01	TF0360	06.02.	ROS/CTD	00:50	54°36.02'N	10°27.01'E	16	3x hand net
EMB387_05-02	TF0360	06.02.	Apstein 20	00:55	54°36.01'N	10°27.19'E	16	
EMB387_05-03	TF0360	06.02.	WP-2 100	01:06	54°36.02'N	10°27.17'E	15	
EMB387_05-04	TF0360	06.02.	ROS/CTD	01:19	54°36.02'N	10°27.06'E	15	
EMB387_06-01	TF0013	06.02.	ROS/CTD	06:19	54°28.41'N	11°29.85'E	24	
EMB387_07-01	TF0022	06.02.	ROS/CTD	09:19	54°06.60'N	11°10.52'E	21	
EMB387_08-01	TF0012	06.02.	ROS/CTD	11:45	54°18.91'N	11°32.93'E	22	3x hand net
EMB387_08-02	TF0012	06.02.	Secchi disc	11:49	54°18.91'N	11°32.92'E	22	
EMB387_08-03	TF0012	06.02.	Apstein 20	11:51	54°18.91'N	11°32.92'E	22	
EMB387_08-04	TF0012	06.02.	ROS/CTD	12:24	54°18.91'N	11°32.97'E	22	
EMB387_08-05	TF0012	06.02.	ROS/CTD	12:40	54°18.91'N	11°32.98'E	22	
EMB387_08-06	TF0012	06.02.	WP-2 100	12:53	54°18.90'N	11°32.97'E	22	
EMB387_08-07	TF0012	06.02.	WP-2 100	12:59	54°18.91'N	11°32.96'E	22	
EMB387_08-08	TF0012	06.02.	MUC	13:11	54°18.91'N	11°32.98'E	22	
EMB387_08-09	TF0012	06.02.	<i>in-situ</i> pump	13:36	54°18.97'N	11°33.15'E	22	for contaminants start transect 2 end transect 2
			<i>in-situ</i> pump	19:15	54°31.10'N	12°15.96'N	27	
EMB387_09-01	TF0017	06.02.	ROS/CTD	15:12	54°23.59'N	11°49.42'E	16	
EMB387_10-01	TF0041	06.02.	ROS/CTD	16:55	54°24.42'N	12°03.74'E	16	
EMB387_11-01	TF0046	06.02.	ROS/CTD	18:12	54°28.21'N	12°14.38'E	26	3x hand net
EMB387_11-02	TF0046	06.02.	Apstein 20	18:14	54°28.20'N	12°14.39'E	26	
EMB387_11-03	TF0046	06.02.	WP-2 100	18:36	54°28.18'N	12°14.55'E	26	
EMB387_12-01	TF0083	06.02.	ROS/CTD	19:35	54°33.01'N	12°16.45'E	23	
EMB387_12-02	TF0083	06.02.	ROS/CTD	19:47	54°33.00'N	12°16.48'E	23	
EMB387_13-01	TF0033	06.02.	ROS/CTD	20:31	54°36.31'N	12°19.90'E	18	
EMB387_14-01	TF0002	06.02.	ROS/CTD	21:30	54°38.98'N	12°26.86'E	15	
EMB387_15-01	TF0001	06.02.	ROS/CTD	23:01	54°71.74'N	12°41.72'E	19	
EMB387_16-01	TF0030	06.02.	ROS/CTD	23:50	54°43.40'N	12°46.93'E	20	
EMB387_16-02	TF0030	07.02.	Apstein 20	00:14	54°43.40'N	12°46.98'E	20	
EMB387_16-03	TF0030	07.02.	ROS/CTD	00:23	54°43.40'N	12°46.99'E	20	
EMB387_17-01	TF0115	07.02.	ROS/CTD	02:08	54°47.70'N	13°03.43'E	27	
EMB387_18-01	TF0114	07.02.	ROS/CTD	03:55	54°51.62'N	13°16.54'E	43	
EMB387_19-01	TF0113	07.02.	ROS/CTD	05:30	54°55.48'N	13°29.77'E	46	3x hand net
EMB387_19-02	TF0113	07.02.	Apstein 20	05:46	54°55.50'N	13°29.80'E	45	
EMB387_19-03	TF0113	07.02.	WP-2 100	05:59	54°55.54'N	13°30.01'E	45	
EMB387_19-04	TF0113	07.02.	WP-2 100	06:06	54°55.55'N	13°30.02'E	45	
EMB387_19-05	TF0113	07.02.	ROS/CTD	06:28	54°55.54'N	13°30.02'E	45	
EMB387_19-06	TF0113	07.02.	<i>in-situ</i> pump	06:49	54°55.54'N	13°30.02'E	35	
		07.02.	<i>in-situ</i> pump	10:53	54°59.99'N	14°04.71'E	47	start transect 3 end transect 3
EMB387_20-01	TF0069	07.02.	ROS/CTD	08:26	54°59.98'N	13°17.97'E	44	
EMB387_21-01	TF0122	07.02.	ROS/CTD	10:53	54°59.40'N	13°46.11'E	45	
EMB387_22-01	TF0109	07.02.	ROS/CTD	12:25	54°59.99'N	14°04.97'E	46	
EMB387_22-02	TF0109	07.02.	Secchi	12:28	55°00.01'N	14°04.82'E	46	
EMB387_22-03	TF0109	07.02.	Apstein 20	12:31	55°00.01'N	14°04.86'E	46	
EMB387_22-04	TF0109	07.02.	WP-2 100	12:57	55°00.01'N	14°04.99'E	46	
EMB387_22-05	TF0109	07.02.	ROS/CTD	13:14	55°00.01'N	14°05.02'E	47	
EMB387_23-01	TF0145Dk	08.02.	ROS/CTD	23:58	55°09.66'N	14°15.78'E	45	
EMB387_24-01	TF0144	09.02.	ROS/CTD	01:35	55°15.43'N	14°29.32'E	42	
EMB387_25-01	TF0142Dk	09.02.	ROS/CTD	02:56	55°22.92'N	14°35.01'E	70	
EMB387_26-01	TF0140	09.02.	ROS/CTD	04:11	55°27.98'N	14°43.01'E	67	
EMB387_27-01	TF0206	09.02.	ROS/CTD	05:32	55°31.98'N	14°54.82'E	75	

Station No.		Date	Gear	Time	Latitude	Longitude	Water Depth	Remarks/Recovery
EMB	IOW	2026		[UTC]			[m]	
EMB387_28-01	TF0207	09.02.	ROS/CTD	06:43	55°29.72'N	15°05.56'E	84	
EMB387_29-01	TF0200	09.02.	ROS/CTD	08:09	55°22.99'N	15°20.05'E	91	
EMB387_29-02	TF0200	09.02.	<i>in-situ</i> pump	08:10	55°23.01'N	15°20.01'E	91	start transect 5 end transect 5
		09.02.	<i>in-situ</i> pump	13:39	55°14.99'N	15°59.02'E	89	
EMB387_30-01	TF0213	09.02.	ROS/CTD	11:00	55°15.04'N	15°58.90'E	89	3x hand net
EMB387_30-02	TF0213	09.02.	Secchi	11:02	55°15.04'N	15°58.94'E	89	
EMB387_30-03	TF0213	09.02.	Apstein 20	11:19	55°15.03'N	15°58.95'E	89	
EMB387_30-04	TF0213	09.02.	ROS/CTD	11:46	55°15.03'N	15°58.96'E	89	
EMB387_30-05	TF0213	09.02.	WP-2 100	12:13	55°15.02'N	15°58.99'E	89	
EMB387_30-06	TF0213	09.02.	WP-2 100	12:24	55°15.00'N	15°58.99'E	89	
EMB387_30-07	TF0213	09.02.	WP-2 100	12:36	55°14.99'N	15°59.01'E	89	
EMB387_30-08	TF0213	09.02.	WP-2 100	12:44	55°15.00'N	15°59.00'E	89	
EMB387_30-09	TF0213	09.02.	Apstein 55	13:00	55°14.99'N	15°59.01'E	89	
EMB387_30-10	TF0213	09.02.	Apstein 55	13:13	55°15.00'N	15°59.01'E	89	
EMB387_30-11	TF0213	09.02.	Apstein 55	13:26	55°15.00'N	15°59.02'E	89	Deployed
EMB387_30-12	TF0213	09.02.	Argo-Float	13:40	55°15.01'N	15°58.98'E	89	
EMB387_31-01	TF0226	09.02.	ROS/CTD	15:35	55°17.87'N	16°25.86'E	57	
EMB387_32-01	TF0224	09.02.	ROS/CTD	16:15	55°17.03'N	16°29.29'E	61	
EMB387_33-01	SC1_W	09.02.	ROS/CTD	17:03	55°15.02'N	16°34.83'E	62	Deployed
EMB387_33-02	SC1_W	09.02.	Mooring	17:03	55°14.99'N	16°34.82'E	62	
EMB387_34-01	TF0227	09.02.	ROS/CTD	18:09	55°15.69'N	16°38.30'E	68	
EMB387_35-01	TF0228	09.02.	ROS/CTD	19:02	55°14.30'N	16°46.38'E	76	
EMB387_36-01	TF0229	09.02.	ROS/CTD	19:55	55°13.77'N	16°54.81'E	85	
EMB387_37-01	TF0222	09.02.	ROS/CTD	20:49	55°13.03'N	17°03.99'E	91	start transect 6 end transect 6
EMB387_37-02	TF0222	09.02.	<i>in-situ</i> pump	21:05	55°12.99'N	17°03.99'E	91	
		10.02.	<i>in-situ</i> pump	02:46	55°19.67'N	18°13.06'E	77	
EMB387_38-01	TF0266	09.02.	ROS/CTD	22:15	55°15.17'N	17°21.61'E	88	
EMB387_39-01	TF0267	09.02.	ROS/CTD	23:30	55°17.18'N	17°35.59'E	83	
EMB387_40-01	TF0268	10.02.	ROS/CTD	01:05	55°18.45'N	17°55.83'E	74	
EMB387_41-01	TF0256	10.02.	ROS/CTD	02:35	55°19.66'N	18°14.00'E	76	
EMB387_42-01	TF0257	10.02.	ROS/CTD	03:50	55°26.51'N	18°19.21'E	87	
EMB387_43-01	TF0259	10.02.	ROS/CTD	05:21	55°33.03'N	18°23.93'E	89	3x hand net
EMB387_43-02	TF0259	10.02.	Apstein 20	05:37	55°33.04'N	18°23.93'E	90	
EMB387_44-01	TF0255	10.02.	ROS/CTD	06:44	55°37.97'N	18°35.91'E	95	
EMB387_45-01	TF0258	10.02.	ROS/CTD	08:03	55°43.67'N	18°45.96'E	91	
EMB387_46-01	TF0253	10.02.	ROS/CTD	09:13	55°50.46'N	18°51.97'E	101	
EMB387_47-01	TF0265	10.02.	ROS/CTD	10:34	55°57.60'N	19°02.87'E	111	
EMB387_48-01	TF0250	10.02.	ROS/CTD	11:55	56°05.03'N	19°10.03'E	125	
EMB387_49-01	TF0262	10.02.	ROS/CTD	13:25	56°14.07'N	19°18.05'E	132	
EMB387_50-01	TF0263	10.02.	ROS/CTD	14:37	56°20.81'N	19°22.66'E	134	start transect 7 end transect 7
EMB387_50-02	TF0263	10.02.	<i>in-situ</i> pump	15:01	56°20.81'N	19°22.66'E	134	
	TF0273	10.02.	<i>in-situ</i> pump	20:35	56°49.11'N	19°45.44'E	167	
EMB387_51-01	TF0261	10.02.	ROS/CTD	16:20	56°29.54'N	19°28.88'E	143	
EMB387_52-01	TF0260	10.02.	ROS/CTD	18:05	56°38.04'N	19°35.04'E	145	
EMB387_53-01	TF0274	10.02.	ROS/CTD	19:50	56°46.13'N	19°45.06'E	155	
EMB387_54-01	TF0273	10.02.	ROS/CTD	21:34	56°57.12'N	19°46.19'E	184	
EMB387_55-01	TF0272	10.02.	ROS/CTD	22:35	57°04.31'N	19°49.79'E	210	
EMB387_56-01	Gotland_SW	11.02.	ROS/CTD	00:10	57°04.54'N	19°45.21'E	217	
EMB387_57-01	TF0275	11.02.	ROS/CTD	01:50	57°12.62'N	19°55.81'E	231	
EMB387_58-01	Argo_ZGB	11.02.	ROS/CTD	03:07	57°16.07'N	19°47.84'E	210	deployed
EMB387_58-02	Argo_ZGB	11.02.	Argo-Float	03:47	57°15.97'N	19°47.81'E	210	
EMB387_59-01	TF0271	11.02.	ROS/CTD	04:47	57°19.29'N	20°02.88'E	241	surface start surface end
EMB387_59-02	TF0271	11.02.	<i>in-situ</i> pump	05:05	57°19.28'N	20°02.90'E	241	
	TF0271	11.02.	<i>in-situ</i> pump	10:43	57°19.22'N	20°03.02'E	241	
EMB387_59-03	TF0271	11.02.	Apstein 20	05:08	57°19.28'N	20°02.90'E	241	
EMB387_59-04	TF0271	11.02.	ROS/CTD	05:57	57°19.23'N	20°02.97'E	241	
EMB387_59-05	TF0271	11.02.	Secchi	06:43	57°19.22'N	20°02.97'E	241	
EMB387_59-06	TF0271	11.02.	ROS/CTD	06:44	57°19.22'N	20°02.98'E	241	
EMB387_59-07	TF0271	11.02.	ROS/CTD	07:23	57°19.21'N	20°03.02'E	241	
EMB387_59-08	TF0271	11.02.	ROS/CTD	07:58	57°19.21'N	20°03.03'E	241	
EMB387_59-09	TF0271	11.02.	<i>in-situ</i> pump	08:38	57°19.20'N	20°03.04'E	241	
	TF0271	11.02.	<i>in-situ</i> pump	15:07	57°19.20'N	20°02.89'E	241	225 m start
EMB387_59-10	TF0271	11.02.	ROS/CTD	15:15	57°19.19'N	20°02.99'E	241	225 m end

Station No.		Date	Gear	Time	Latitude	Longitude	Water Depth	Remarks/Recovery
EMB	IOW	2026		[UTC]			[m]	
EMB387_60-01	GotlandNE	11.02.	ROS/CTD	17:02	57°22.01'N	20°19.70'E	223	
EMB387_61-01	TF0276	11.02.	ROS/CTD	18:24	57°28.21'N	20°15.42'E	207	
EMB387_62-01	TF0270	11.02.	ROS/CTD	20:18	57°36.99'N	20°09.85'E	144	start transect 8 end transect 8
EMB387_62-02	TF0270	11.02.	<i>in-situ</i> pump	20:20	57°36.99'N	20°09.87'E	144	
	TF0286	12.02.	<i>in-situ</i> pump	01:16	58°00.00'N	19°53.99'E	196	
EMB387_63-01	TF0287	11.02.	ROS/CTD	22:07	57°42.90'N	19°51.10'E	129	
EMB387_64-01	TF0290	11.02.	ROS/CTD	23:49	57°50.99'N	19°48.92'E	173	
EMB387_65-01	TF0286	12.02.	ROS/CTD	01:04	57°59.99'N	19°53.95'E	196	
EMB387_65-02	TF0286	12.02.	ROS/CTD	01:56	57°53.99'N	19°53.97'E	196	
EMB387_66-01	TF0277	12.02.	ROS/CTD	03:35	58°11.02'N	20°02.97'E	163	
EMB387_67-01	TF0278	12.02.	ROS/CTD	05:21	58°20.98'N	20°08.80'E	121	
EMB387_68-01	TF0285	12.02.	ROS/CTD	06:45	58°26.48'N	20°20.00'E	123	
EMB387_69-01	TF0240	14.02.	ROS/CTD	09:32	57°59.99'N	17°59.96'E	169	start transect 9 end transect 9
EMB387_69-02	TF0240	14.02.	<i>in-situ</i> pump	09:33	57°59.99'N	17°59.95'E	170	
	TF0242	14.02.	<i>in-situ</i> pump	15:05	57°43.01'N	17°21.95'E	100	
EMB387_70-01	TF0242	14.02.	ROS/CTD	12:59	57°43.01'N	17°21.95'E	141	
EMB387_71-01	TF0245	14.02.	ROS/CTD	18:03	57°06.94'N	17°39.83'E	110	
EMB387_72-01	wGB-1	14.02.	ROS/CTD	20:25	56°52.61'N	17°39.99'E	97	
EMB387_73-01	wGB-SW	14.02.	ROS/CTD	22:36	56°37.50'N	17°07.78'E	78	
EMB387_74-01	TF0213	15.02.	ROS/CTD	08:23	55°14.99'N	15°58.93'E	89	3x hand net
EMB387_74-02	TF0213	15.02.	Apstein 20	08:25	55°15.04'N	15°59.01'E	89	
EMB387_74-03	TF0213	15.02.	WP-2 100	08:46	55°14.99'N	15°59.02'E	90	
EMB387_74-04	TF0213	15.02.	WP-2 100	08:58	55°15.02'N	15°59.05'E	89	
EMB387_74-05	TF0213	15.02.	WP-2 100	09:08	55°15.02'N	15°59.04'E	89	
EMB387_74-06	TF0213	15.02.	WP-2 100	09:17	55°15.02'N	15°59.01'E	89	
EMB387_74-07	TF0213	15.02.	Apstein 20	09:33	55°15.04'N	15°58.96'E	89	
EMB387_74-08	TF0213	15.02.	Apstein 20	09:45	55°15.05'N	15°58.96'E	89	
EMB387_74-09	TF0213	15.02.	Apstein 20	09:58	55°15.06'N	15°58.98'E	89	
EMB387_75-01	TF0109	15.02.	ROS/CTD	16:13	55°00.04'N	14°04.86'E	47	3x hand net
EMB387_75-02	TF0109	15.02.	Secchi	16:15	55°00.04'N	14°04.87'E	47	
EMB387_75-03	TF0109	15.02.	Apstein 20	16:29	55°00.03'N	14°04.92'E	46	
EMB387_75-04	TF0109	15.02.	MUC	16:33	55°00.01'N	14°04.96'E	46	
EMB387_75-05	TF0109	15.02.	ROS/CTD	16:59	55°00.01'N	14°05.05'E	46	
EMB387_76-01	AB-Boje	15.02.	ROS/CTD	18:25	54°52.83'N	13°51.76'E	44	
EMB387_77-01	TF0112	15.02.	ROS/CTD	19:20	54°48.21'N	13°57.46'E	38	
EMB387_77-02	TF0112	15.02.	ROS/CTD	19:45	54°48.17'N	13°57.47'E	38	
EMB387_78-01	TF0122	17.02.	ROS/CTD	09:13	54°59.38'N	13°46.05'E	46	
EMB387_79-01	TF0103	17.02.	ROS/CTD	10:36	55°03.79'N	13°59.18'E	44	
EMB387_80-01	TF0104	17.02.	ROS/CTD	11:30	55°04.11'N	13°48.77'E	45	
EMB387_81-01	TF0105	17.02.	ROS/CTD	12:49	55°01.51'N	13°36.37'E	45	
EMB387_82-01	TF0069	17.02.	ROS/CTD	14:20	55°00.00'N	13°17.90'E	44	
EMB387_82-02	TF0069	17.02.	ROS/CTD	14:55	55°01.51'N	13°17.99'E	44	
EMB387_83-01	TF0113	17.02.	ROS/CTD	16:16	54°55.52'N	13°29.86'E	45	3x hand net
EMB387_83-02	TF0113	17.02.	Secchi	16:19	54°55.52'N	13°29.89'E	45	
EMB387_83-03	TF0113	17.02.	Apstein 20	16:21	54°55.52'N	13°29.90'E	45	
EMB387_83-04	TF0113	17.02.	WP-2 100	16:43	54°55.53'N	13°29.96'E	45	
EMB387_83-05	TF0113	17.02.	WP-2 100	16:54	54°55.52'N	13°17.93'E	45	
EMB387_84-01	TF0114	17.02.	ROS/CTD	18:27	54°51.56'N	13°16.48'E	43	
EMB387_85-01	TF0115	17.02.	ROS/CTD	19:45	54°47.73'N	13°13.49'E	27	
EMB387_86-01	TF0030	17.02.	ROS/CTD	21:10	54°43.38'N	12°47.06'E	20	3x hand net
EMB387_86-01	TF0030	17.02.	Apstein 20	21:13	54°43.39'N	12°47.09'E	20	
EMB387_87-01	TF0001	17.02.	ROS/CTD	21:51	54°41.78'N	12°42.43'E	18	
EMB387_88-01	TF0002	17.02.	ROS/CTD	23:12	54°39.05'N	12°27.01'E	15	
EMB387_89-01	TF0033	18.02.	ROS/CTD	00:07	54°36.31'N	12°19.95'E	17	
EMB387_90-01	TF0046	18.02.	ROS/CTD	01:38	54°28.19'N	12°14.62'E	26	3x hand net
EMB387_90-02	TF0046	18.02.	Apstein 20	01:43	54°28.19'N	12°14.60'E	26	
EMB387_90-03	TF0046	18.02.	WP-2 100	01:47	54°28.18'N	12°14.52'E	26	
EMB387_91-01	TF0041	18.02.	ROS/CTD	03:22	54°24.34'N	12°03.72'E	19	
EMB387_92-01	TF0017	18.02.	ROS/CTD	04:41	54°23.48'N	11°49.47'E	19	
EMB387_93-01	TF0012	18.02.	ROS/CTD	06:04	54°18.87'N	11°32.97'E	22	3x hand net
EMB387_93-02	TF0012	18.02.	Apstein 20	06:19	54°18.88'N	11°32.97'E	22	
EMB387_93-03	TF0012	18.02.	WP-2 100	06:24	54°18.91'N	11°32.95'E	22	
EMB387_95-01	TF0011	18.02.	ROS/CTD	07:21	54°24.79'N	11°37.04'E	22	

Station No.		Date	Gear	Time	Latitude	Longitude	Water Depth	Remarks/Recovery
EMB	IOW	2026		[UTC]			[m]	
EMB387_96-01	Extra	18.02.	ROS/CTD	07:58	54°26.58'N	11°32.09'E	23	
EMB387_97-01	TF0013	18.02.	ROS/CTD	08:31	54°28.39'N	11°28.91'E	24	
EMB387_98-01	TF0010	18.02.	ROS/CTD	09:35	54°33.09'N	11°19.28'E	26	
EMB387_99-01	TF0014	18.02.	ROS/CTD	11:06	54°33.13'N	11°00.65'E	25	
EMB387_100-01	NH-Boje	18.02.	ROS/CTD	16:00	54°10.69'N	11°57.59'E	8	

7.2 Profile Station List

Station No.	Profile Station No.	Date	Time	Latitude	Longitude	Bottom	Profile numbers
EMB		2024	[UTC]			[m]	
EMB387_01-01	01	05.02.	14:20	54°13.88'N	12°04.44'E	10	CTD_0001_1
EMB387_02-01	02	05.02.	19:01	54°33.13'N	11°19.21'E	25	CTD_0002_1
EMB387_03-01	03	05.02.	21:07	54°39.54'N	10°46.88'E	20	CTD_0003_1
EMB387_04-01	04	05.02.	22:45	54°36.03'N	10°26.92'E	15	CTD_0004_1
EMB387_05-01	05	06.02.	00:50	54°36.02'N	10°27.01'E	16	CTD_0005_1
EMB387_05-04		06.02.	01:19	54°36.02'N	10°27.06'E	15	CTD_0006_1
EMB387_06-01	06	06.02.	06:19	54°28.41'N	11°29.85'E	24	CTD_0007_1
EMB387_07-01	07	06.02.	09:19	54°06.60'N	11°10.52'E	21	CTD_0008_1
EMB387_08-01	08	06.02.	11:45	54°18.91'N	11°32.93'E	22	CTD_0009_1
EMB387_08-04		06.02.	12:24	54°18.91'N	11°32.97'E	22	CTD_0010_1
EMB387_08-05							CTD_0011_1
EMB387_09-01	09	06.02.	15:12	54°23.59'N	11°49.42'E	16	CTD_0012_1
EMB387_10-01	10	06.02.	16:55	54°24.42'N	12°03.74'E	16	CTD_0013_1
EMB387_11-01	11	06.02.	18:12	54°28.21'N	12°14.38'E	26	CTD_0014_1
EMB387_12-01	12	06.02.	19:35	54°33.01'N	12°16.45'E	23	CTD_0015_1
EMB387_12-02							CTD_0016_1
EMB387_13-01	13	06.02.	20:31	54°36.31'N	12°19.90'E	18	CTD_0017_1
EMB387_14-01	14	06.02.	21:30	54°38.98'N	12°26.86'E	15	CTD_0018_1
EMB387_15-01	15	06.02.	23:01	54°71.74'N	12°41.72'E	19	CTD_0019_1
EMB387_16-01	16	07.02.	23:50	54°43.40'N	12°46.93'E	20	CTD_0020_1
EMB387_16-03							CTD_0021_1
EMB387_17-01	17	07.02.	02:08	54°47.70'N	13°03.43'E	27	CTD_0022_1
EMB387_18-01	18	07.02.	03:55	54°51.62'N	13°16.54'E	43	CTD_0023_1
EMB387_19-01	19	07.02.	05:30	54°55.48'N	13°29.77'E	46	CTD_0024_1
EMB387_19-05	19	07.02.	06:28	54°55.54'N	13°30.02'E	45	CTD_0025_1
EMB387_20-01	20	07.02.	08:26	54°59.98'N	13°17.97'E	44	CTD_0026_1
EMB387_21-01	21	07.02.	10:53	54°59.40'N	13°46.11'E	45	CTD_0027_1
EMB387_22-01	22	07.02.	12:25	54°59.99'N	14°04.97'E	46	CTD_0028_1
EMB387_22-05		07.02.	13:14	55°00.01'N	14°05.02'E	47	CTD_0029_1
EMB387_23-01	23	08.02.	23:58	55°09.66'N	14°15.78'E	45	CTD_0033_1
EMB387_24-01	24	09.02.	01:35	55°15.43'N	14°29.32'E	42	CTD_0034_1
EMB387_25-01	25	09.02.	02:56	55°22.92'N	14°35.01'E	70	CTD_0035_1
EMB387_26-01	26	09.02.	04:11	55°27.98'N	14°43.01'E	67	CTD_0036_1
EMB387_27-01	27	09.02.	05:32	55°31.98'N	14°54.82'E	75	CTD_0037_1
EMB387_28_01	28	09.02.	06:43	55°29.72'N	15°05.56'E	84	CTD_0038_1
EMB387_29_01	29	09.02.	08:09	55°22.99'N	15°20.05'E	91	CTD_0039_1
EMB387_30-01	30	09.02.	11:00	55°15.04'N	15°58.90'E	89	CTD_0040_1
EMB387_30-04		09.02.	11:46	55°18.45'N	15°58.96'E	89	CTD_0041_2
EMB387_31-01	31	09.02.	15:35	55°17.87'N	16°25.86'E	57	CTD_0042_1
EMB387_32-01	32	09.02.	16:15	55°17.03'N	16°29.29'E	61	CTD_0043_1
EMB387_33-01	33	09.02.	17:03	55°15.02'N	16°34.83'E	62	CTD_0044_1
EMB387_34-01	34	09.02.	18:09	55°15.69'N	16°38.30'E	68	CTD_0045_1
EMB387_35-01	35	09.02.	19:02	55°14.30'N	16°46.38'E	76	CTD_0046_1
EMB387_36-01	36	09.02.	19:55	55°13.77'N	16°54.81'E	85	CTD_0047_1
EMB387_37-01	37	09.02.	20:49	55°13.03'N	17°03.99'E	91	CTD_0048_1
EMB387_38-01	38	09.02.	22:15	55°15.17'N	17°21.61'E	88	CTD_0049_1
EMB387_39-01	39	09.02.	23:30	55°17.18'N	17°35.59'E	83	CTD_0050_1
EMB387_40-01	40	10.02.	01:05	55°18.45'N	17°55.83'E	74	CTD_0051_1
EMB387_41-01	41	10.02.	02:35	55°19.66'N	18°14.00'E	76	CTD_0052_1
EMB387_42-01	42	10.02.	03:50	55°26.51'N	18°19.21'E	87	CTD_0053_1

Station No.	Profile Station No.	Date	Time	Latitude	Longitude	Bottom	Profile numbers
EMB		2024	[UTC]			[m]	
EMB387_43-01	43	10.02.	05:21	55°33.03'N	18°23.93'E	89	CTD_0056_1
EMB387_44-01	44	10.02.	06:44	55°37.97'N	18°35.91'E	95	CTD_0057_1
EMB387_45-01	45	10.02.	08:03	55°43.67'N	18°45.96'E	91	CTD_0058_1
EMB387_46-01	46	10.02.	09:13	55°50.46'N	18°51.97'E	101	CTD_0059_1
EMB387_47-01	47	10.02.	10:34	55°57.60'N	19°02.87'E	111	CTD_0060_1
EMB387_48-01	48	10.02.	11:55	56°05.03'N	19°10.03'E	125	CTD_0061_1
EMB387_49-01	49	10.02.	13:25	56°14.07'N	19°18.05'E	132	CTD_0062_1
EMB387_50-01	50	10.02.	14:37	56°20.81'N	19°22.66'E	134	CTD_0063_1
EMB387_51-01	51	10.02.	16:20	56°29.54'N	19°28.88'E	143	CTD_0064_1
EMB387_52-01	52	10.02.	18:05	56°38.04'N	19°35.04'E	145	CTD_0065_1
EMB387_53-01	53	10.02.	19:50	56°46.13'N	19°45.06'E	155	CTD_0066_1
EMB387_54-01	54	10.02.	21:34	56°57.12'N	19°46.19'E	184	CTD_0067_1
EMB387_55-01	55	10.02.	22:35	57°04.31'N	19°49.79'E	210	CTD_0068_1
EMB387_56-01	56	11.02.	00:10	57°04.54'N	19°45.21'E	217	CTD_0069_1
EMB387_57-01	57	11.02.	01:50	57°12.62'N	19°55.81'E	231	CTD_0070_1
EMB387_58-01	58	11.02.	03:07	57°16.07'N	19°47.84'E	210	CTD_0071_1
EMB387_59-01	59	11.02.	04:47	57°19.29'N	20°02.88'E	241	CTD_0072_1
EMB387_59-04		11.02.	05:57	57°19.23'N	20°02.97'E	241	CTD_0073_1
EMB387_59-06		11.02.	06:44	57°19.22'N	20°02.98'E	241	CTD_0074_1
EMB387_59-07		11.02.	07:23	57°19.21'N	20°03.02'E	241	CTD_0075_1
EMB387_59-08		11.02.	07:58	57°19.21'N	20°03.03'E	241	CTD_0076_1
EMB387_59-10		11.02.	15:15	57°19.19'N	20°02.99'E	241	CTD_0077_1
		11.02.	15:15	57°19.19'N	20°02.99'E	241	CTD_0078_1
EMB387_60-01	60	11.02.	17:02	57°22.01'N	20°19.70'E	223	CTD_0079_1
EMB387_61-01	61	11.02.	18:24	57°28.21'N	20°15.42'E	207	CTD_0080_1
EMB387_62-01	62	11.02.	20:18	57°36.99'N	20°09.85'E	144	CTD_0083_1
EMB387_63-01	63	11.02.	22:07	57°42.90'N	19°51.10'E	129	CTD_0084_1
EMB387_64-01	64	11.02.	23:49	57°50.99'N	19°48.92'E	173	CTD_0085_1
EMB387_65-01	65	12.02.	01:04	57°59.99'N	19°53.95'E	196	CTD_0086_1
EMB387_65-02		12.02.	01:56	57°53.99'N	19°53.97'E	196	CTD_0087_1
EMB387_66-01	66	12.02.	03:35	58°11.02'N	20°02.97'E	163	CTD_0088_1
EMB387_67-01	67	12.02.	05:21	58°20.98'N	20°08.80'E	121	CTD_0089_1
EMB387_68-01	68	12.02.	06:45	58°26.48'N	20°20.00'E	123	CTD_0090_1
EMB387_69-01	69	14.02.	09:32	57°59.99'N	17°59.96'E	169	CTD_0091_1
EMB387_70-01	70	14.02.	12:59	57°43.01'N	17°21.95'E	141	CTD_0092_1
EMB387_71-01	71	14.02.	18:03	57°06.94'N	17°39.83'E	110	CTD_0095_1
EMB387_72-01	72	14.02.	20:25	56°52.61'N	17°39.99'E	97	CTD_0096_1
EMB387_73-01	73	14.02.	22:36	56°37.50'N	17°07.78'E	78	CTD_0097_1
EMB387_74-01	74	15.02.	08:23	55°14.99'N	15°58.93'E	89	CTD_0098_1
EMB387_75-05	75	15.02.	16:59	55°00.01'N	14°05.05'E	47	CTD_0099_1
EMB387_76-01	76	15.02.	18:25	54°52.83'N	13°51.76'E	44	CTD_0100_1
EMB387_77-01	77	15.02.	19:20	54°48.21'N	13°57.46'E	38	CTD_0101_1
EMB387_77-02		15.02.	19:45	54°48.17'N	13°57.47'E	38	CTD_0102_1
EMB387_78-01	78	17.02.	09:13	54°59.38'N	13°46.05'E	46	CTD_0111_1
EMB387_79-01	79	17.02.	10:36	55°03.79'N	13°59.18'E	44	CTD_0112_1
EMB387_80-01	80	17.02.	11:30	55°04.11'N	13°48.77'E	45	CTD_0113_1
EMB387_81-01	81	17.02.	12:49	55°01.51'N	13°36.37'E	45	CTD_0114_1
EMB387_82-01	82	17.02.	14:20	55°00.00'N	13°17.90'E	44	CTD_0115_1
EMB387_83-01	83	17.02.	16:16	54°55.52'N	13°29.86'E	45	CTD_0118_1
EMB387_84-01	84	17.02.	18:27	54°51.56'N	13°16.48'E	43	CTD_0119_1
EMB387_85-01	85	17.02.	19:45	54°47.73'N	13°13.49'E	27	CTD_0120_1
EMB387_86-01	86	17.02.	21:10	54°43.38'N	12°47.06'E	20	CTD_0121_1
EMB387_87-01	87	17.02.	21:51	54°41.78'N	12°42.43'E	18	CTD_0122_1
EMB387_88-01	88	17.02.	23:12	54°39.05'N	12°27.01'E	15	CTD_0123_1
EMB387_89-01	89	18.02.	00:07	54°36.31'N	12°19.95'E	17	CTD_0124_1
EMB387_90-01	90	18.02.	01:38	54°28.19'N	12°14.62'E	26	CTD_0125_1
EMB387_91-01	91	18.02.	03:22	54°24.34'N	12°03.72'E	19	CTD_0126_1
EMB387_92-01	92	18.02.	04:41	54°23.48'N	11°49.47'E	19	CTD_0127_1
EMB387_93-01	93	18.02.	06:04	54°18.87'N	11°32.97'E	22	CTD_0128_1
EMB387_95-01	95	18.02.	07:21	54°24.79'N	11°37.04'E	22	CTD_0129_1
EMB387_96-01	96	18.02.	07:58	54°26.58'N	11°32.09'E	23	CTD_0130_1

Station No.	Profile Station No.	Date	Time	Latitude	Longitude	Bottom	Profile numbers
EMB		2024	[UTC]			[m]	
EMB387_97-01	97	18.02.	08:31	54°28.39'N	11°28.91'E	24	CTD_0131_1
EMB387_98-01	98	18.02.	09:35	54°33.09'N	11°19.28'E	26	CTD_0132_1
EMB387_99-01	99	18.02.	11:05	54°35.96'N	11°00.86'E	29	CTD_0133_1
EMB387_100-01	100	18.02.	16:00	54°10.69'N	11°57.65'E	8	CTD_0134_1

8 Data and Sample Storage and Availability

All data will be stored on a data repository in the IOW immediately after the cruise. The processed and validated data will be stored in the ODIN database (<https://odin2.iowarnemuende.de>). According to the IOW data policy and to facilitate the international exchange of data, all metadata will be made available under the international ISO 19115 standards for georeferenced metadata. Afterwards the data will be delivered to national and international databases (MUDAB, HELCOM, ICES).

The access to the data itself will be restricted for three years after data acquisition to protect the research process, including scientific analysis and publication. After that period, the data becomes openly available to any person or any organization who requests them, under the international Creative Commons (CC, <https://creativecommons.org/licenses/by/4.0/>) data license of type CC BY 4.0. For further details refer to the IOW data policy document.

Table 8.1 Overview of data availability

Type	Database	Available	Access	Contact
Hydrographic data	ODIN	01.05.2026	01.05.2026	volker.mohrholz@iow.de
Nutrient data	ODIN	01.05.2026	01.05.2026	joachim.kuss@iow.de
Contaminants	MUDAB	01.07.2027	01.07.2027	marion.kanwischer@iow.de
Biological data	MUDAB	01.07.2027	01.07.2027	joerg.dutz@iow.de
Genomic data	IOW	End 2026	End 2026	matthias.labrenz@iow.de

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