RV Heincke DBCK Cruise HE 645

Preliminary Cruise Report

05.02.2024, 05.08.2024-28.08.2024, Jnr. 24/1505
RiS ID 12413 A1

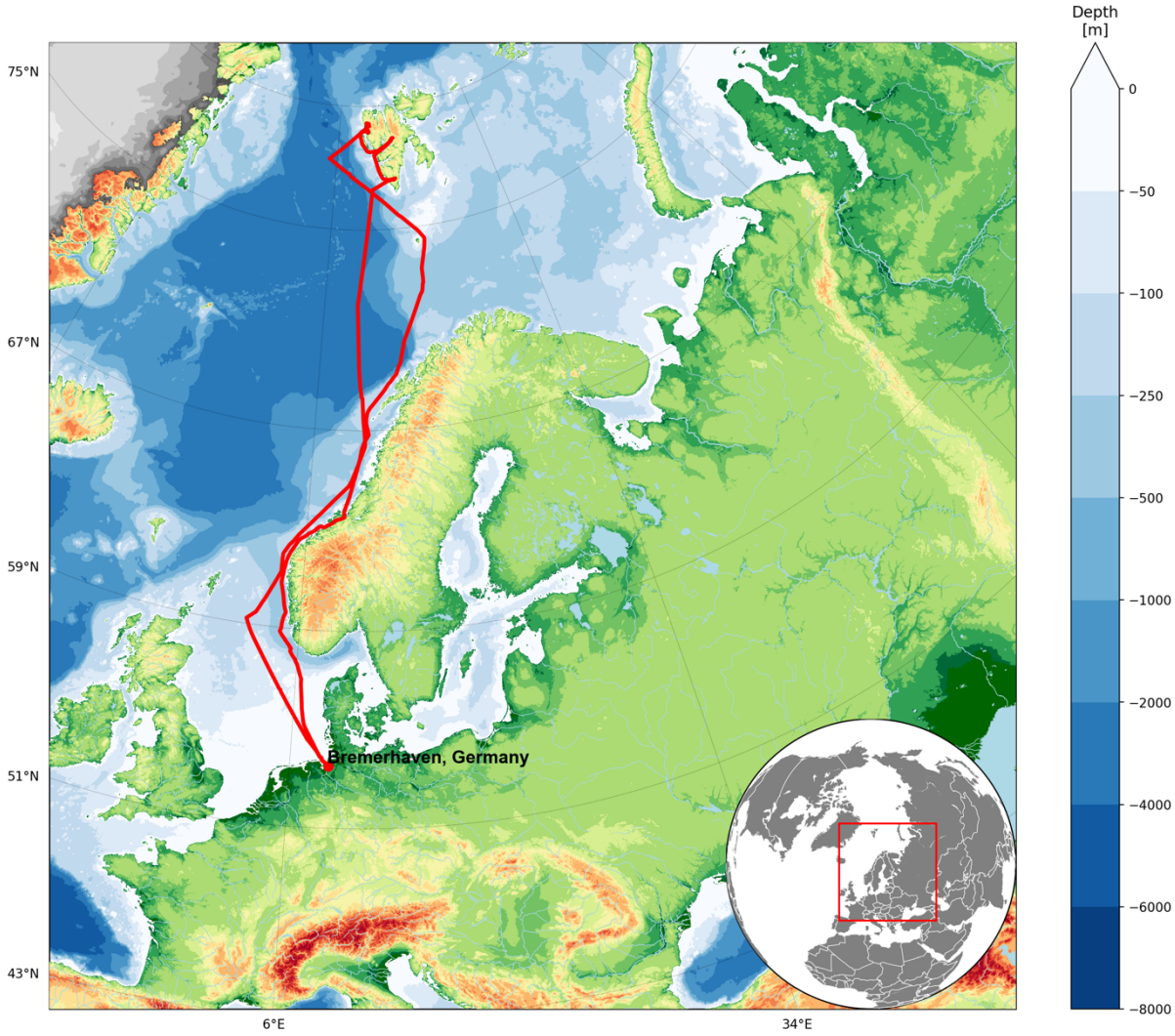
Cruise report **Heincke HE 645**; 5.8.-29.8.2024

After loading the aquarium container and other large items in the morning of August 5th, we left port in Bremerhaven around noon in good weather, heading north to the first scientific station some 30nm north of the island of Helgoland. We arrived there in the late evening and processed the first CTD and hand net of this research cruise (HE645_1). The next water sampling station (HE645_2) was reached in the early morning of August 7th, already between the Orkney Islands and Western Norway. The next station in the open Atlantic at 66 °N had to be cancelled due to rough weather and instead, Heincke stayed in the relatively protected waters close to the Norwegian shore until about 66 °N, from where we took straight north for 2 more CTD and zooplankton stations at 72 °N and 76.5 °N on August 10th and 11th, respectively (HE645_3, 4). Station 4 was already positioned on the Western Shelf of Svalbard, and a few more hours of steaming brought us into Hornsund in the morning of August 12th, where we stayed for the next 36 hours. Next to several CTDs and hand nets, we waited for an optimal combination of tides and wind and fished the Western (Hornsund, HE645_5) and Eastern (Brepollen, HE465_6) basins. In the latter, we found abundant Polar cod in the mid and deep water layers.
August 14th saw us in Billefjorden (HE645_7), usually a reliable location for fishing for Polar cod, but this time we only found few fish in the deep and cold water layers directly above ground. Fishing live fish was made impossible by an up to 20m strong warm freshwater layer on top of the Northern part of the fjord, which we had not observed in this intensity before.
On the way to Kongsfjorden, we stopped over at the oceanographic station SV1 (eastern part of the Hausgarten series, HE645_8) for CTD and hand nets on August 15th and then moved towards Ny Ålesund for AWIPEV freight logistics on August 16th. We left the pier again in the afternoon of August 16th for oceanographic sounding of the seafloor at potential sites for cage deployment around Kongsfjordneset and Blomstrand and spent the night in Krossfjorden, assembling and testing a submersible net pen. We returned to Blomstrand the following morning, on August 18th, where we deployed a CTD and a hand net (HE645_9) as well as the submersible net cage. August 19th found us in Krossfjorden again, where we had a standard station with CTD, hand net and pelagic fish trawl (HE645_10), with an unusually high abundance of Polar cod throughout the water column, in shallower and warmer layers together with several large Atlantic cod. We returned to Ny Ålesund on Monday August 19th for some further logistics and assisted MV Teisten (of KingsBay, Ny Ålesund) in an attempt to lift the submersible sea cage with its own crane in the early morning of August 20th (HE645_11). As bad weather was closing in, we started the return leg to Bremerhaven straight after, with a little deviation out into the Atlantic to successfully salvage a lost NATO mooring. On our way south, we stopped over for water sampling, CTD and hand net at Bear Island (HE645_12, August 22nd) before looking for storm shelter close to the Norwegian coast and slowly moving south over the next days, resampling the first station (HE645_1; HE645_13) in the afternoon of Augsut 28th before reaching AWI in the morning of August 29th, where we swiftly unloaded the ship to prepare for a display for the Federal Ministry of Education and

Research in the afternoon. In the morning of August 30th, we unloaded the aquarium container and some further larger items and handed the ship over to the next group of users (HE646). Thus ended a mostly successful research cruise. We were able to carry out most of the planned station work, and took a good amount of biological samples. In 13 days of station work between Bremerhaven and Svalbard, we carried out 12 CTD profiles and hand nets, as well as 11 pelagic fish trawls with fish lift. We caught more than 1200 live Polar cod 400 of which were left at Kings Bay Marine Lab in Ny Ålesund and brought more than 500 juvenile Polar cod back to the home institute in Bremerhaven alive.

Cruise track

R.V. Heincke: HE645
Bremerhaven, Germany (05.08.2024) - Bremerhaven, Germany (29.08.2024)



Station list

Event label	Method/Device	Abbreviation	Date/Time	Latitude	Longitude	Elevation	Date/Time end	Latitude end	Longitude end	Elevation end
HE645-track	Underway cruise track measurements	CT	2024-08-05T05:37:07	53.53326	8.58100		2024-08-29T06:02:59	53.53221	8.57833	
HE645_0_Underway-4	Ship Weather Station	SWEAS	2024-08-05T12:19:03	53.53240	8.57831	-5				
HE645_0_Underway-3	Thermosalinograph	TSG	2024-08-05T15:32:11	53.94969	7.96522	-19	2024-08-29T03:17:18	53.83918	8.11432	-7
HE645_1-1	CTD/Rosette	CTD-RO	2024-08-05T20:30:30	54.60910	7.07305	-35				
HE645_1-2	WP-2 towed closing plankton net	WP2	2024-08-05T20:40:27	54.60862	7.07631	-36	2024-08-05T20:41:18	54.60857	7.07651	-35
HE645_2-1	CTD/Rosette	CTD-RO	2024-08-07T05:59:34	59.52044	2.51992	-126				
HE645_2-2	WP-2 towed closing plankton net	WP2	2024-08-07T06:08:06	59.52185	2.52140	-125	2024-08-07T06:10:28	59.52231	2.52185	-126
HE645_3-1	CTD/Rosette	CTD-RO	2024-08-10T13:40:15	72.00001	10.22514					
HE645_3-2	WP-2 towed closing plankton net	WP2	2024-08-10T14:05:59	72.00183	10.22463	-2423	2024-08-10T14:08:10	72.00184	10.22415	-2424
HE645_3-3	Mooring	MOOR	2024-08-10T14:11:04	72.00180	10.22398		2024-08-10T14:15:25	72.00220	10.22448	-2422
HE645_4-1	CTD/Rosette	CTD-RO	2024-08-11T19:02:36	76.59791	12.53499	-1638				
HE645_4-2	WP-2 towed closing plankton net	WP2	2024-08-11T19:32:59	76.60247	12.53405	4	2024-08-11T19:35:07	76.60302	12.53323	-1738
HE645_5-1	CTD/Rosette	CTD-RO	2024-08-12T06:03:57	76.97442	15.73639	-239				
HE645_5-2	WP-2 towed closing plankton net	WP2	2024-08-12T06:19:44	76.97384	15.73385	-238	2024-08-12T06:21:39	76.97376	15.73359	-238
HE645_5-3	Young fish trawl	YFT	2024-08-12T07:23:16	76.97909	15.73621	-233	2024-08-12T07:49:36	76.97659	15.62589	-132
HE645_5-4	Young fish trawl	YFT	2024-08-12T11:50:03	76.98589	15.83992	-193	2024-08-12T12:26:03	76.97955	15.69197	-143
HE645_6-1	CTD/Rosette	CTD-RO	2024-08-13T06:05:15	76.98814	16.43549	-108				
HE645_6-2	WP-2 towed closing plankton net	WP2	2024-08-13T06:17:21	76.98830	16.43459	-112	2024-08-13T06:20:11	76.98841	16.43407	-114
HE645_6-3	Young fish trawl	YFT	2024-08-13T06:57:19	77.00177	16.45261	-126	2024-08-13T07:26:59	76.98875	16.34897	-118
HE645_6-4	Young fish trawl	YFT	2024-08-13T08:58:06	76.98643	16.30654	-115	2024-08-13T09:36:41	77.00061	16.43829	-128
HE645_6-5	Young fish trawl	YFT	2024-08-13T11:23:35	77.00416	16.46971	-131	2024-08-13T12:15:14	76.98596	16.29526	-114
HE645_6-6	Young fish trawl	YFT	2024-08-13T13:39:21	76.98841	16.35966	-118	2024-08-13T13:53:18	76.99345	16.40906	-125
HE645_7-2	WP-2 towed closing plankton net	WP2	2024-08-14T06:02:31	78.65796	16.68871	-196	2024-08-14T06:03:52	78.65811	16.68807	-196

HE645_7-1	CTD/Rosette	CTD-RO	2024-08-14T06:11:25	78.65866	16.68522	-194				
HE645_7-3	Young fish trawl	YFT	2024-08-14T07:19:03	78.66143	16.70162	-195	2024-08-14T07:55:24	78.63949	16.59546	-161
HE645_7-4	Young fish trawl	YFT	2024-08-14T10:18:48	78.57793	16.46576	-155	2024-08-14T10:50:14	78.60164	16.52210	-156
HE645_7-5	Young fish trawl	YFT	2024-08-14T12:56:17	78.66535	16.75207	-187	2024-08-14T14:16:45	78.61468	16.54052	-150
HE645_8-2	WP-2 towed closing plankton net	WP2	2024-08-15T06:04:05	79.02926	11.08876	-279	2024-08-15T06:08:58	79.02935	11.09352	-280
HE645_8-1	CTD/Rosette	CTD-RO	2024-08-15T06:11:41	79.02951	11.09602	-281				
HE645_9-1	CTD/Rosette	CTD-RO	2024-08-17T14:36:19	78.99843	11.95082	-54				
HE645_9-2	WP-2 towed closing plankton net	WP2	2024-08-17T14:43:43	78.99838	11.95178	-54	2024-08-17T14:45:49	78.99837	11.95186	-54
HE645_9-3	Mooring	MOOR	2024-08-17T16:27:08	78.99780	11.95058	-54	2024-08-17T17:11:30	78.99825	11.95253	-54
HE645_10-2	WP-2 towed closing plankton net	WP2	2024-08-18T06:47:46	79.21402	11.89308	-281	2024-08-18T06:50:06	79.21397	11.89376	-281
HE645_10-1	CTD/Rosette	CTD-RO	2024-08-18T06:57:39	79.21389	11.89569	-281				
HE645_10-3	Young fish trawl	YFT	2024-08-18T08:04:54	79.22570	11.91663	-278	2024-08-18T08:26:29	79.20853	11.89127	-264
HE645_10-4	Young fish trawl	YFT	2024-08-18T11:49:20	79.20768	12.01988	-182	2024-08-18T12:12:14	79.21649	11.93427	-228
HE645_11-1	Mooring	MOOR	2024-08-20T06:39:03	78.99514	11.92227	-189	2024-08-20T06:59:59	78.99630	11.92526	-175
HE645_12-1	CTD/Rosette	CTD-RO	2024-08-22T04:10:55	74.55065	19.97882	-75				
HE645_12-2	WP-2 towed closing plankton net	WP2	2024-08-22T04:21:58	74.54831	19.98578	-75	2024-08-22T04:23:44	74.54790	19.98645	-76
HE645_13-1	CTD/Rosette	CTD-RO	2024-08-28T13:46:09	55.32354	6.73170	-34				
HE645_13-2	WP-2 towed closing plankton net	WP2	2024-08-28T13:52:27	55.32431	6.73218	-34	2024-08-28T13:53:35	55.32434	6.73244	-34

Further information can be found under https://doi.org/10.1594/PANGAEA.972602, the detailed cruise report including results and conclusions will be made available by March 30th, 2026, the latest.