



**RAPPORT FRA
HAVFORSKNINGEN
NR. 2023-32**

Depth (m)

- 0-100
- 100-200
- 200-300
- 300-400
- 400-1000
- 1000-2000
- 2000-3000
- > 3000

Legend:

- Oceanographic sections
- Oceanographic sections (that are taken regularly)
- Fixed oceanographic station
- × St. M

**RAPPORT FRA
HAVFORSKNINGEN
NR. 2023-32**

Title (English and Norwegian):

Report on cruises and data stations 2022

Oversikt over tokt og stasjoner tatt i 2022

Report series: Year - No.: Date:

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Fossheim

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Norskehavet

Barentshavet og Polhavet

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Marine prosesser og menneskelig
påvirkning

Trygg og sunn sjømat

Miljøeffekter av akvakultur

Fremtidens havbruk

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klima, Pelagisk fisk, Plankton,
Populasjonsgenetikk, Økosystemakustikk,
Økosystemprosesser

Number of pages:

196

Summary (English):

The report gives an overview of cruises in 2022, by the Institute of Marine Research, University of Bergen and Tromsø and Norwegian Polar Institute, on board our research vessels and many of the hired commercial vessels. Each cruise has a short description and a track chart showing CTD and trawl stations. A table displaying the coverage of the oceanographic sections in addition to a table showing the number of observations per month for the fixed stations are included at the end of the report. Meta data about the cruises are reported to the International Council for the Exploration of the Sea (ICES) using the form "Cruise Summary Report": <https://www.seadatanet.org/Metadata/CSR-Cruises>. Research data are available from the Norwegian Marine Data Centre at Institute of Marine Research (<https://www.nmdc.no>). Charts are generated by Silje Smith-Johnsen using ggOceanMaps by Mikko Vihtakari (IMR).

Summary (Norwegian):

Rapporten gir en oversikt over tokt i 2022 i regi av Havforskningsinstituttet, Universitetet i Bergen og Tromsø, og Norsk Polarinstitutt, med egne og mange av de innleide fartøyer. Den gir en kort beskrivelse av toktet og viser kurs- og stasjonskart – over CTD og trålstasjoner. Tabeller viser når de faste snittene er tatt og antall observasjoner per måned for de faste stasjonene. Toktene er innrapportert ICES (Det internasjonale råd for havforskning) i skjemaet "Cruise Summary Report": <https://www.seadatanet.org/Metadata/CSR-Cruises>. Data (og kart) fra toktene er tilgjengelig fra Norsk marint datasenter, Havforskningsinstituttet (<https://www.nmdc.no>). Kartene er generert av Silje Smith-Johnsen ved hjelp av ggOceanMaps av Mikko Vihtakari (HI).

Content

1	Charts overview 2022 – CTD stations and trawl stations.	5
2	"G. O. Sars" – Cruises 2022	8
3	" G.O. Sars" – Charts for cruises 2022	10
4	"Johan Hjort" - Cruises 2022	34
5	"Johan Hjort" – Charts for cruises 2022	36
6	"Kristine Bonnevie" – Cruises 2022	54
7	"Kristine Bonnevie" – Charts for 2022	58
8	"Kronprins Haakon" – Cruises 2022	94
9	" Kronprins Haakon" – Charts for cruises 2022	97
10	"G. M. Dannevig" – Cruises 2022	115
11	"G. M. Dannevig" – Charts for cruises 2022	117
12	"Statsraad Lehmkuhl" - Cruises 2022	134
13	"Statsraad Lehmkuhl" Charts for 2022	135
14	"Dr. Fridtjof Nansen" – Cruises 2022	137
15	"Dr. Fridtjof Nansen" Charts for 2022	146
16	"Hans Brattstrøm" Cruises 2022	165
17	"Hans Brattstrøm" Charts for 2022	166
18	Hired vessels – Cruises 2022	169
19	Hired vessels – Charts for 2022	174
20	Oceanographic sections and Fixed oceanographic stations map	193
21	Tables – Observations in 2022. Oceanographic sections and fixed oceanographic stations	194

1 - Charts overview 2022 – CTD stations and trawl stations.

CTD stations, 2022

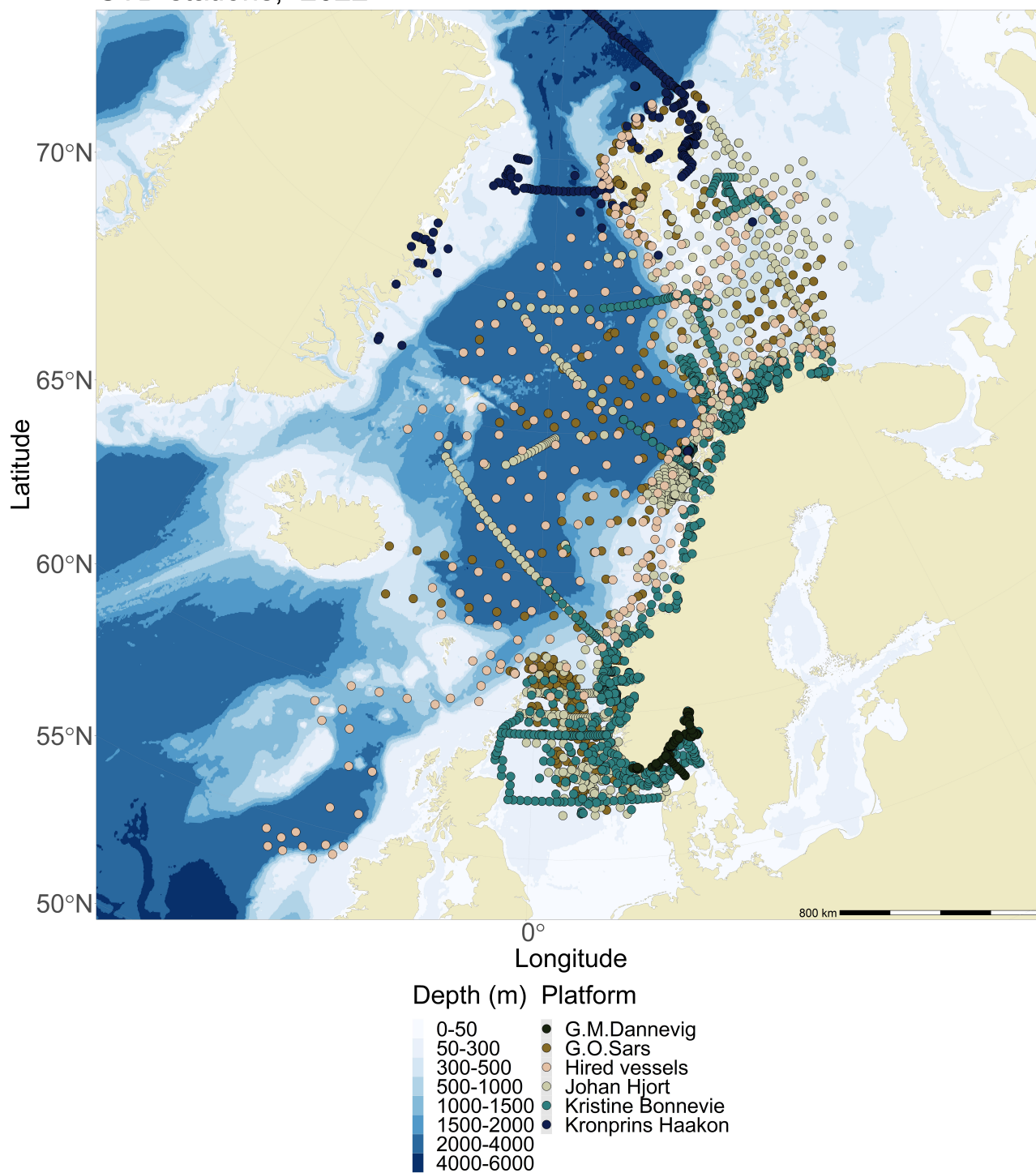


Fig. 1.1 - CTD stations 2022

Trawl stations, 2022

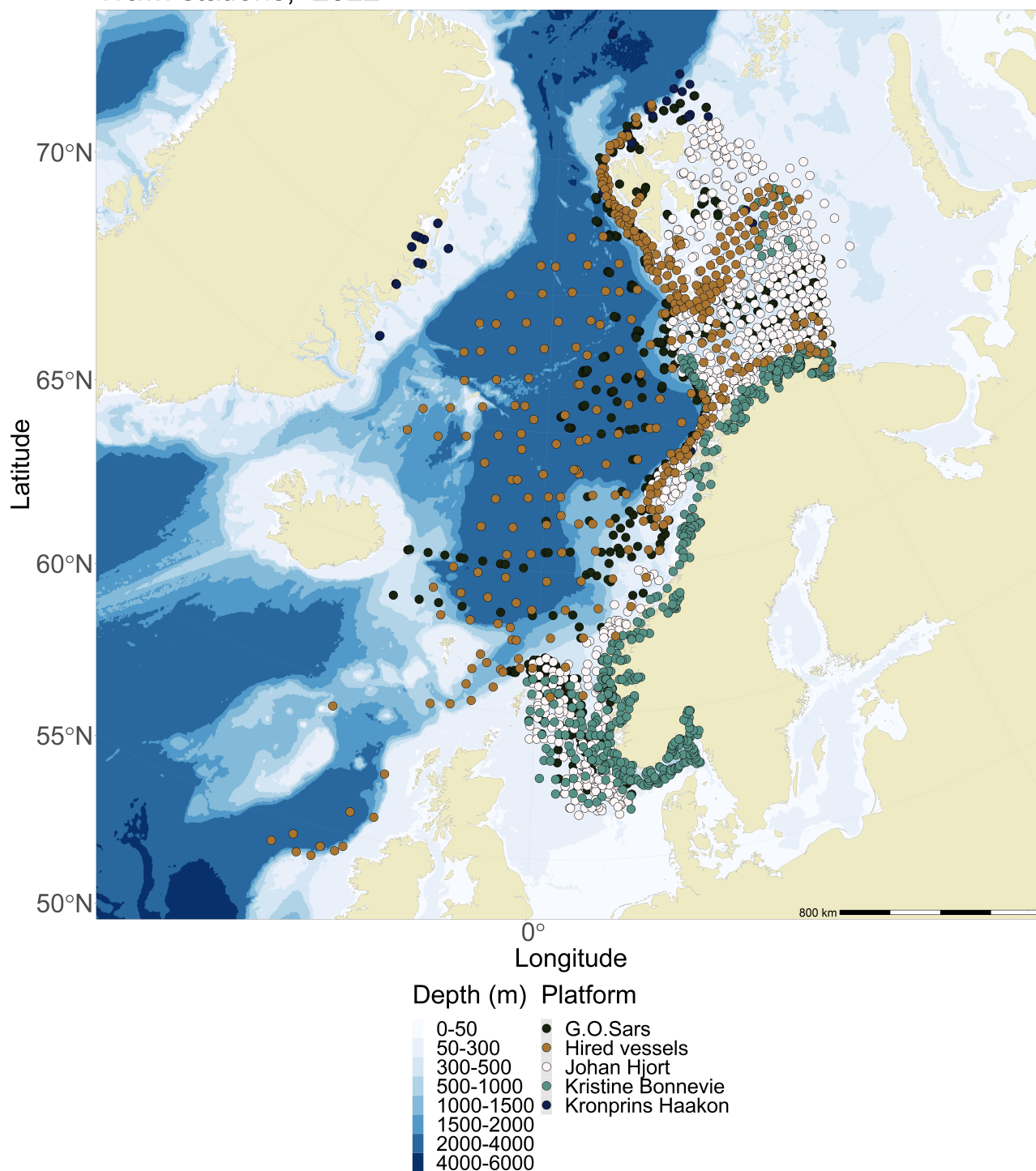


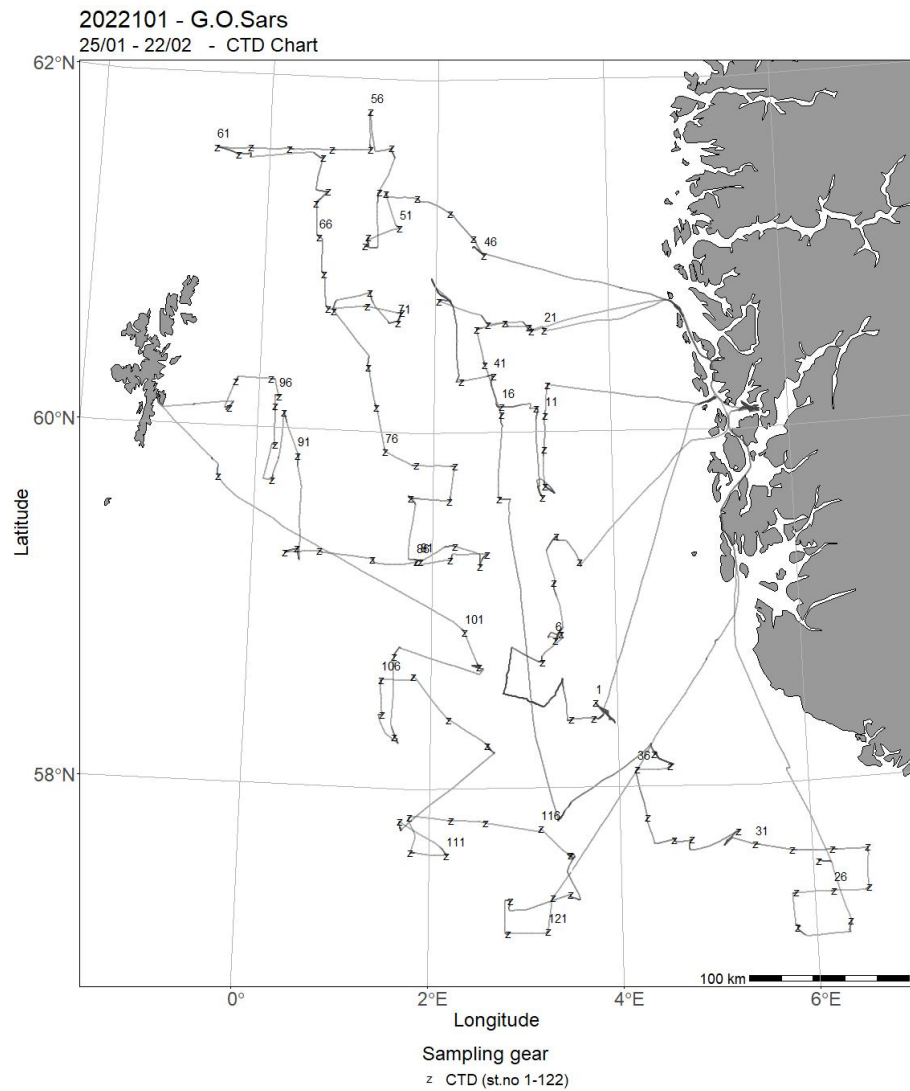
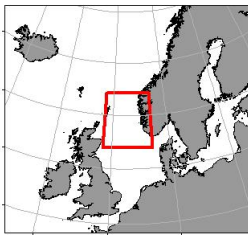
Fig. 1.2 - Trawl stations 2022

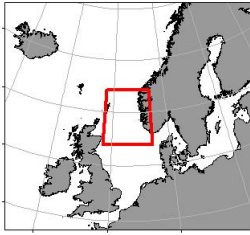
2 - "G. O. Sars" – Cruises 2022

Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022101	25/01 - 22/02	The main objectives of the IBTS Q1 bottom trawl survey coordinated by ICES/IBTSWG are: to determine the distribution and relative abundance of prerecruits of the main commercial species with a view of deriving recruitment indices to monitor changes in the stocks of commercial fish species independently of commercial fisheries data to monitor the distribution and relative abundance of all fish species and selected invertebrates to collect data for the determination of biological parameters for selected species to collect hydrographical and environmental information to determine the abundance and distribution of herring and other fish larvae as well as fish eggs. Project name: Quarter 1 International Bottom Trawl Survey in the North Sea (IBTS-NS) Coordinating body: ICES/IBTSWG	North Sea	1-122	1-52
2022102	24/02 - 26/02	2022-GEO-004: Formålet med kurset er å gi studenter innenfor maringeologiske fagfelt opplæring i data innsamling og analysing av marine data.	North Sea	123-131	-
2022103	27/02 - 23/03	2022-NSJ-006: Acoustic survey of saithe during the spawning period. Joint international survey with Germany on saithe spawning stock (SSB), at time of year when fish are highly aggregated. Survey to be used in assessment after >5 years (ICES regulation).	North Sea	132-192	56-131
2022104	25/03 - 20/04	Combined acoustic and bottom trawl survey along the continental shelf from 62°N to 74°N. Main target fish species are greenland halibut, redfish and greater silver smelt. Map the spatial distribution and acoustic biomass of Silver smelt. Map the spatial distribution and trawl index (biomass) of Greenland halibut. Map the spatial distribution of redfish. Collect biological data (length weight, sex maturation etc) of all fish species. Genetic samples of several species of fish and elasmobranchii.	Northeast Atlantic Ocean (40W)	193-202	132 - 209
2022105	26/04 - 30/05	Part of the International Ecosystem Survey of the Nordic Seas (IESNS) where the objectives are (1) to measure the abundance of Norwegian spring-spawning herring and blue whiting using acoustics, (2) collect data on zoo- and phytoplankton, (3) measure the hydrographical conditions.	Norwegian Sea	204 - 263	210-254
2022106	31/05 - 09/06	A methods testing cruise intended to primarily explore the capabilities and potential standard operating procedures when using a Munin+ AUV for acoustic and photo mapping in deeper water (max 1500m). Additionally, the Kongsberg Simrad EC150-3C ADCP was being tested and compared to the R.D.I. ADCP. Unfortunately a number of technical and weather issues resulted in very little data being collected with the Munin+, allowing more extensive testing of the EC150-3C ADCP and some opportunistic collection of Topas PS18 subbottom profiler data in an area of known pockmarks. A methods testing cruise intended to primarily explore the capabilities and potential standard operating procedures when using a Munin+ AUV for acoustic and photo mapping in deeper water (max 1500m). Additionally, the Kongsberg Simrad EC150-3C ADCP was being tested and compared to the R.D.I. ADCP. Unfortunately a number of technical and weather issues resulted in very little data being collected with the Munin+, allowing more extensive testing of the EC150-3C ADCP and some opportunistic collection of Topas PS18 subbottom profiler data in an area of known pockmarks.	Norwegian Sea	264-272	-
2022107	10/06 - 20/07	2022-JC-Deepsea-000: Dyphavsforskning ved midthavssryggene i Norske-Grønlandshavet: vulkansk aktivitet, hydrotermale systemer og deres påvirkning på vannsøylen, mikrobielt liv i ekstreme miljø, benthiske økosystemer, dypmarine ressurser og miljøspørsmål. 2022-GFI-006: Rigg- og gliderarbeid relatert til NorEMSO-aktivitet på Svinøy-snittet, Stasjon M, Gimsøy-snittet og Mohnryggen.	Norwegian Sea	273 - 282	-
2022109	22/07 - 13/08	2022-NOR-025: To assess the stock of Sebastes mentella in the open Norwegian Sea. To collect data in support to integrated ecosystem in the open Norwegian Sea, as part of the international deep pelagic ecosystem surveys (ICES-WGIDEEPS).	Norwegian Sea	283-284	255-281
2022110	16/08 - 13/09	The cruise forms part of a multi-ship, multi-purpose ecosystem survey of the Barents Sea, carried out jointly by Norway and Russia. The objective of the cruise was to collect data related to stations and along cruise tracks, on water chemistry and physics, phytoplankton, zooplankton, fish (acoustics and trawl), benthic organisms, sea mammals, birds, and pollution. Project name: BESS (Barents Sea Ecosystem Survey) Coordinating body: Institute of Marine Research, Bergen (in cooperation with VNIRO, Moscow/Murmansk)	Barents Sea	285 - 362	282 - 426
2022111	15/09 - 19/09	2022-MP-023: Quantify impact of tidally forced, breaking internal waves on marine productivity, plankton distribution and coral reef distribution. On this cruise rigs with oceanographic instruments will be retrieved.	Norwegian Sea	-	-
2022112	20/09 - 08/10	Training course in Ocean Science (BIO325): The survey collected samples in West Norwegian fjords (Masfjord, Fensfjord, Åfjorden and Førdefjorden), in the Norwegian trench, on the North Sea plateau between Fedje and Shetland, and in the Faroe Trench. The equipment used was : Demersal Campelen 1800 trawl. Harstad Pelagic trawl 320 with MultiSampler (3 cod-ends) Harstad Pelagic trawl with one codend Multinet Acoustics CTD Longlines (other station) Deepwater traps (other station) PI A - Anne Gro Veia Salvanes (Fjord survey: Masfjord and Fensfjord) PI B - Tom Langbehn (North Sea survey: Norwegian trench, North Sea plateau, Faroe trench, Byfjorden, Åfjorden and Førdefjorden) Spectroradiometer (surface unit)	North Sea	363 - 393	427 - 463
2022114	12/11 - 21/11	2022-BAR-017: Undersøke konnektivitet i polartorsk og loddebestandene i Barentshavet. Ønsker å undersøke i hvilken grad gyteprodukter fra disse bestandene når vestkysten av Svalbard. Ønsker å undersøke gyteklare polartorsk i november.	Barents Sea	402 - 430	464 - 488
2022115	22/11 - 03/12	2022-MP-012: Utprøving og opplæring i bruk av breidbandsekkolodd knytt til CRIMAC prosjektet. Testing av nye sensorar (Kongsberg) og testing av Deep Vision (Scantrol Deep vision). Innsamling av breidbandsdata på sild med Sounder USV og Kayakdrone. Gjennomføring av transekt over LoVe etter fast oppsett.	Norwegian Sea	431-443	489-513
2022117	05/12 - 14/12	2022-NOR-010: Dokumentere ssmfunnsstruktur og biologisk/fysiologisk tilstand hos nøkkelarter samt måle miljøvariabler (pH, temperatur, seston og organiske partikler) som er blitt identifisert som særlig sterke drivere for helsestilstanden til korallrev	Norwegian Sea	443-458	-

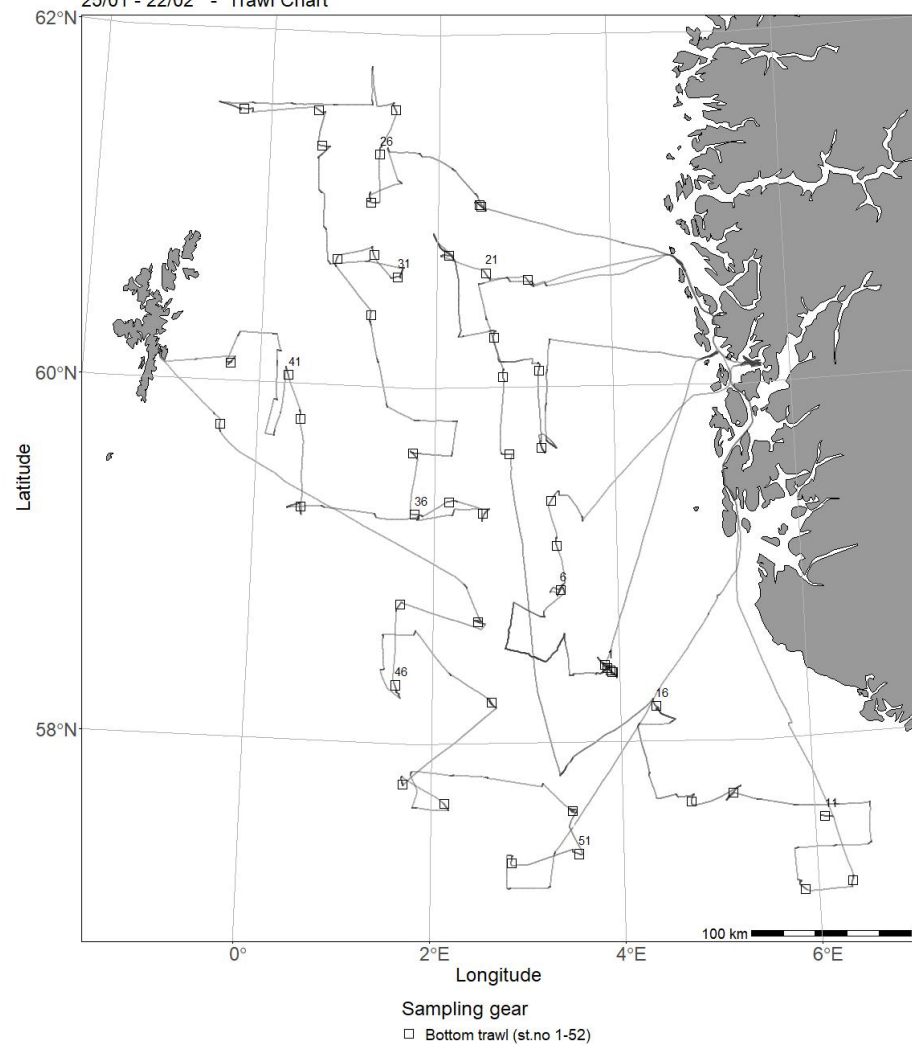
Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022118	14/10 - 30/10	The objectives of this cruise are : (1) to collect baseline data prior to construction of wind turbines outside Utsira Island, including data from the offshore wind area itself and an adjacent control area, (2) to provide evidence for the selection of Particularly Valuable Areas (SVO, in Norwegian), and to (3) document the occurrence of Vulnerable Marine Ecosystems (forvaltningsprioritert natur). These data were collected in four sampling areas : Utsira Nord Control, Utsira Nord, North Skagerrak (NS) 04, and Hvaler National Park. The data types included underwater footage (at all sampling stations), as well as collection of physical samples of both sediment and seabed fauna at six stations. Project name: MAREANO, Frisk OslofjordCoordinating body: Institute of Marine Research	North Sea	395 - 401	11-17

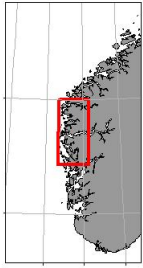
3 - "G.O. Sars" – Charts for cruises 2022



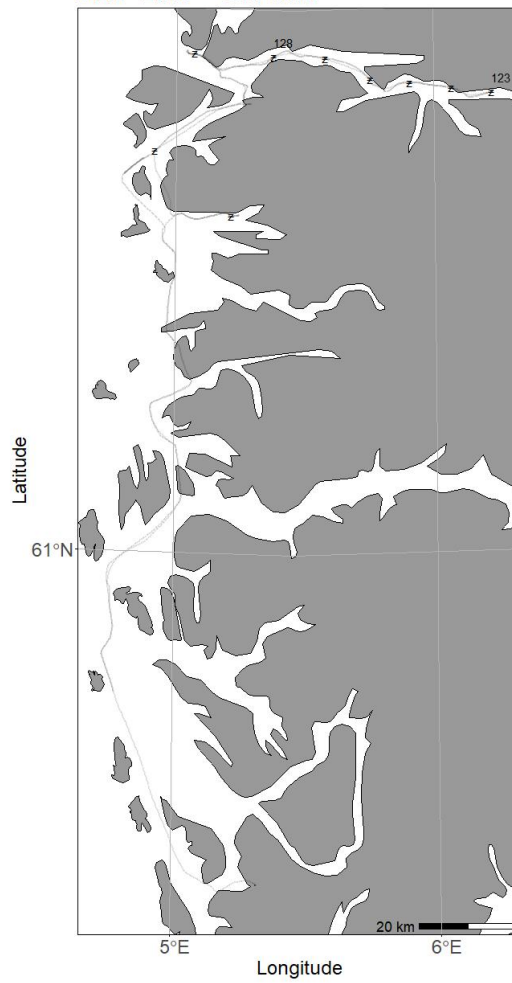


2022101 - G.O.Sars
25/01 - 22/02 - Trawl Chart

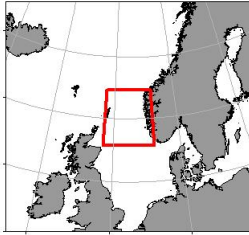




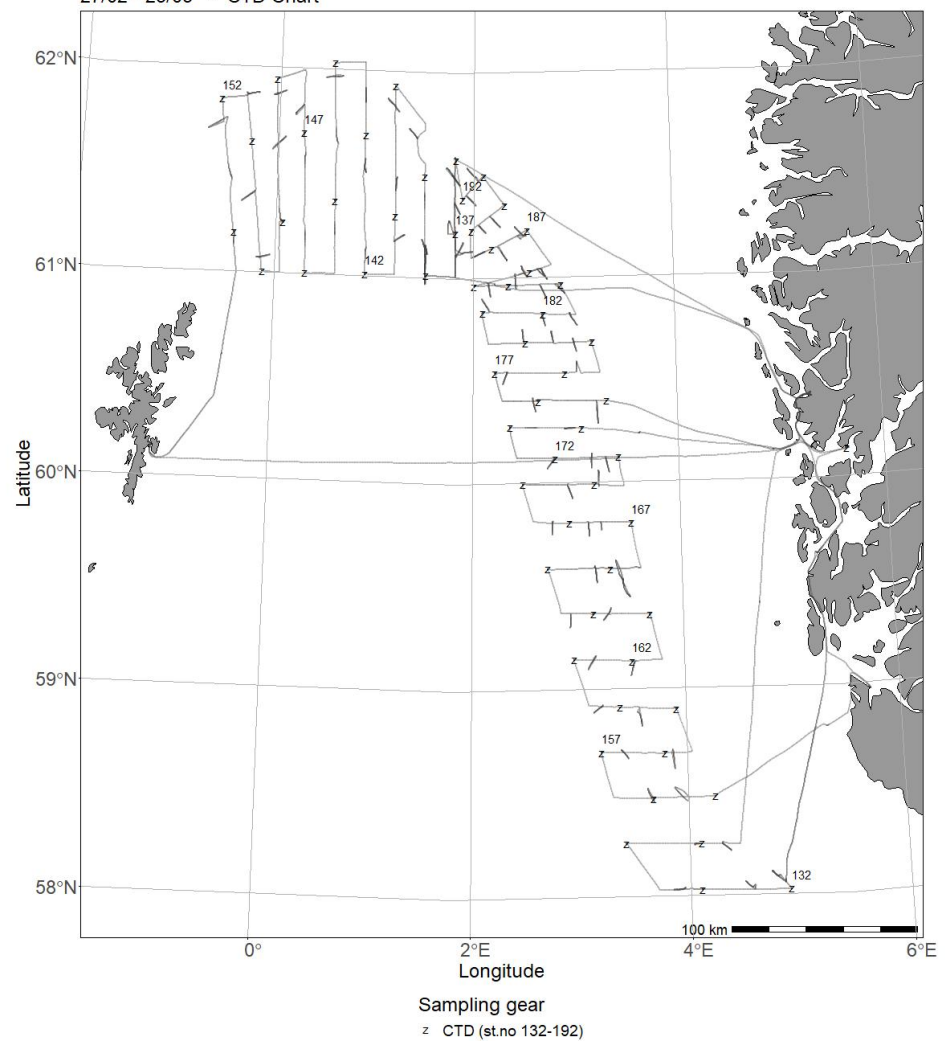
2022102 - G.O.Sars
24/02 - 26/02 - CTD Chart

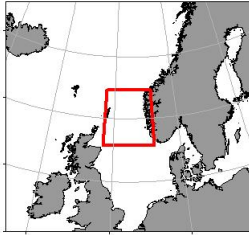


Sampling gear
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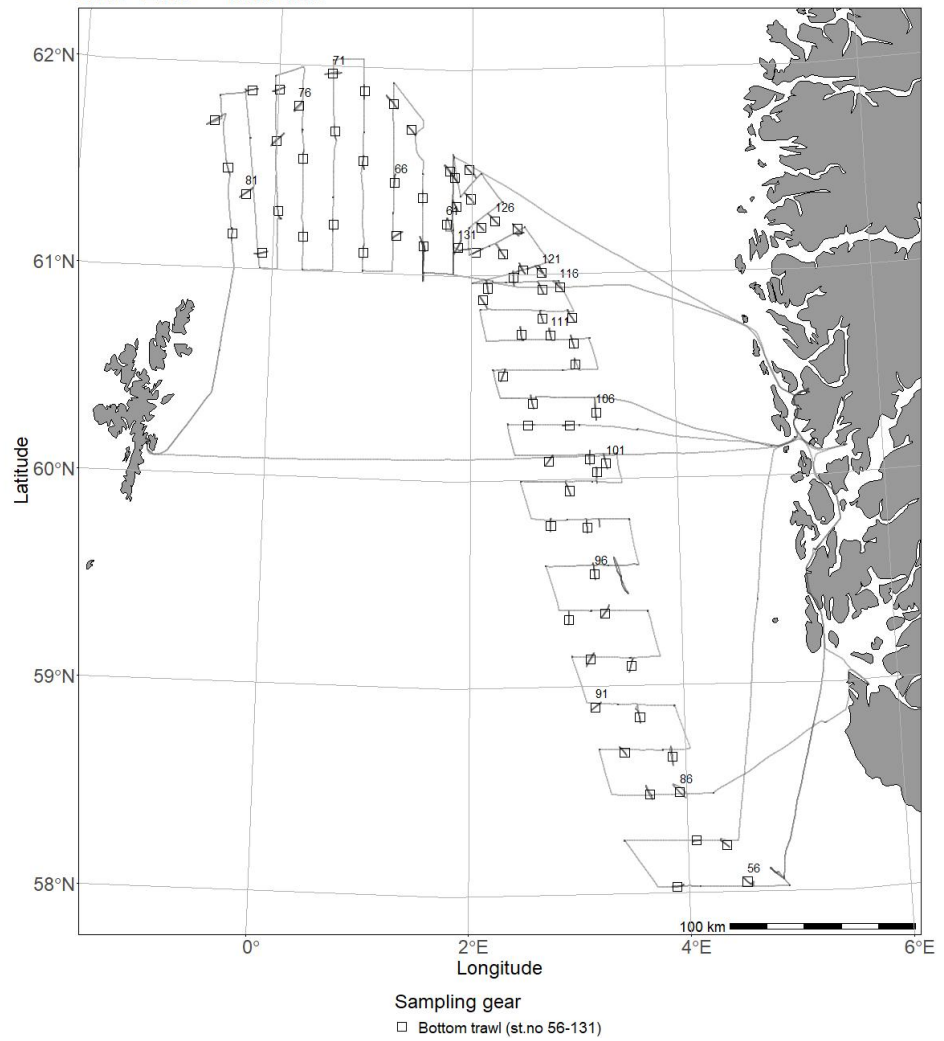


2022103 - G.O.Sars
27/02 - 23/03 - CTD Chart

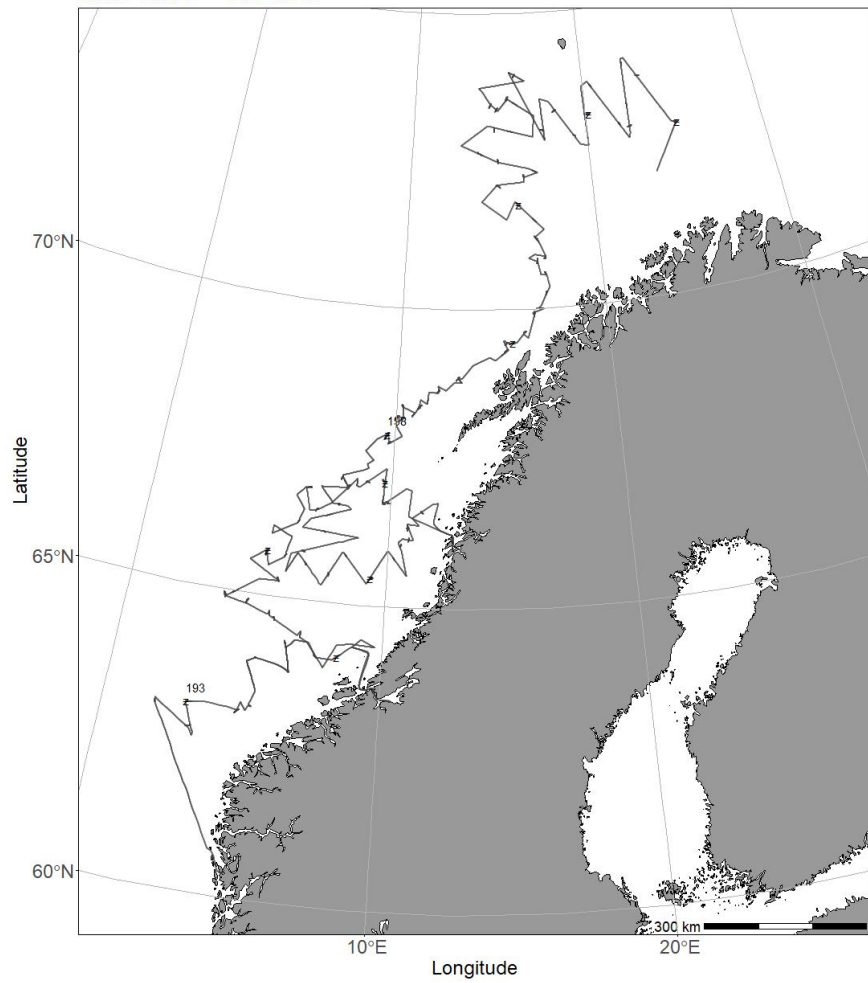
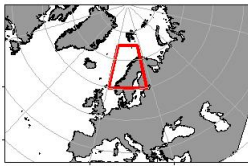




2022103 - G.O.Sars
27/02 - 23/03 - Trawl Chart

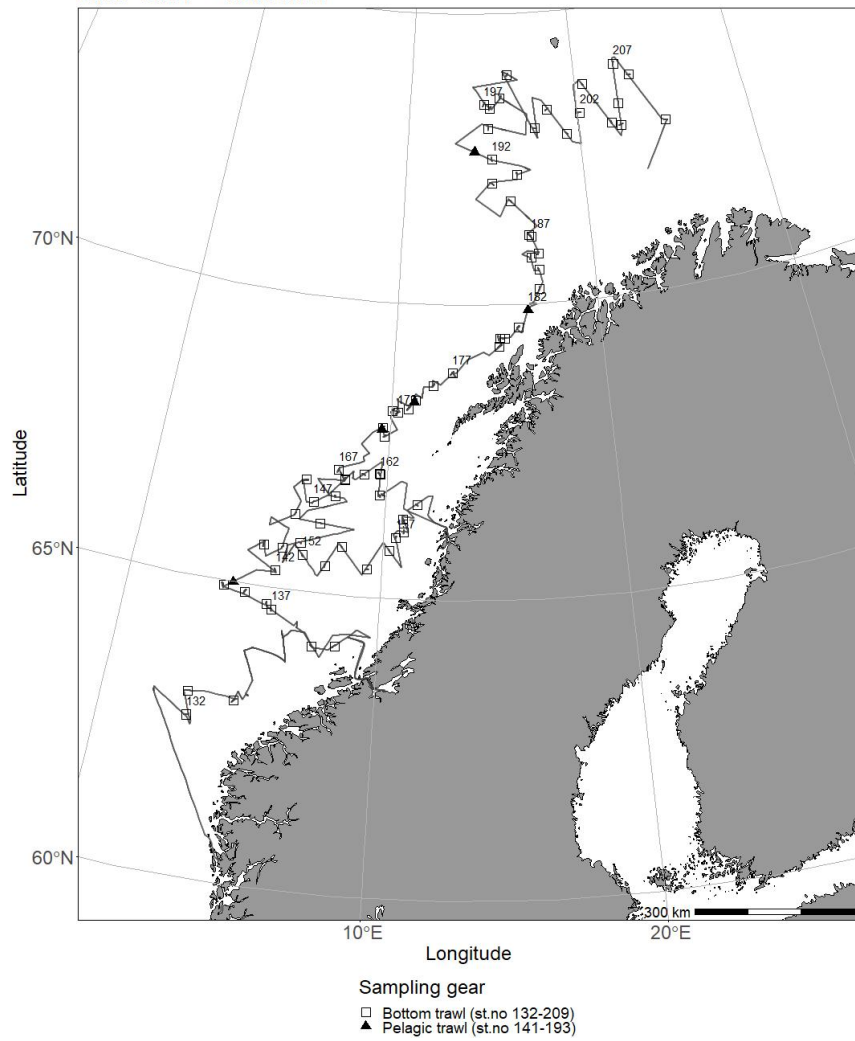
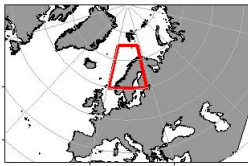


2022104 - G.O.Sars
25/03 - 20/04 - CTD Chart



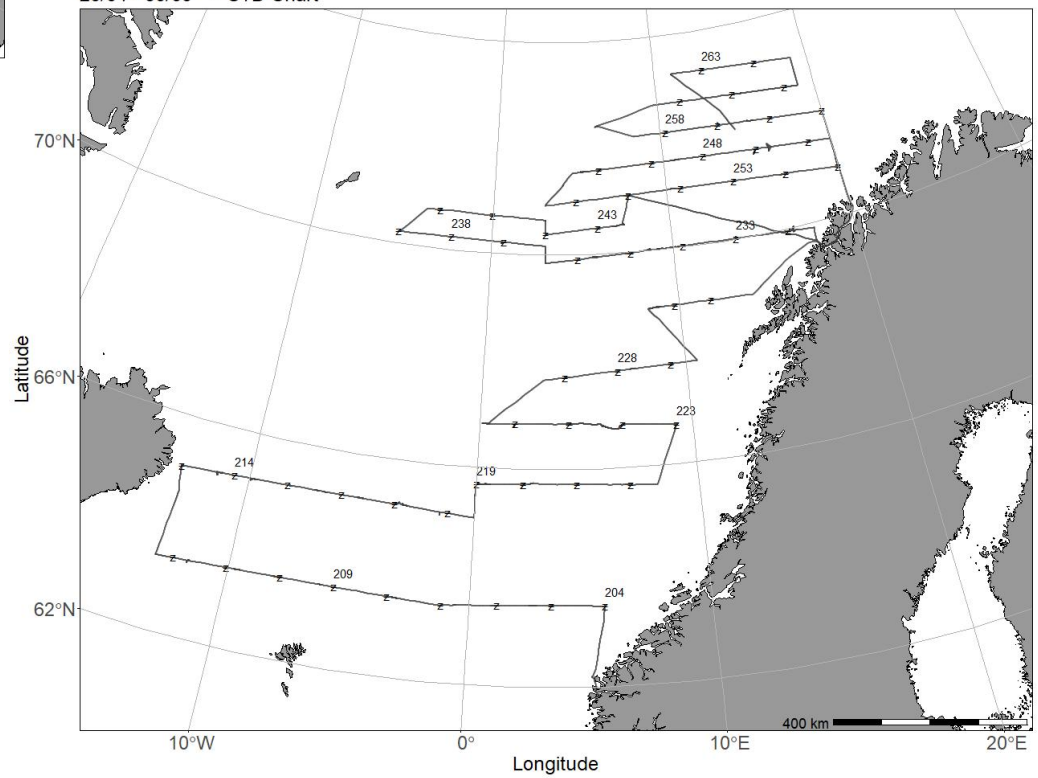
Sampling gear
z CTD with water sampler (st.no 193-202)

2022104 - G.O.Sars
25/03 - 20/04 - Trawl Chart

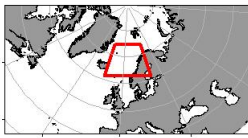




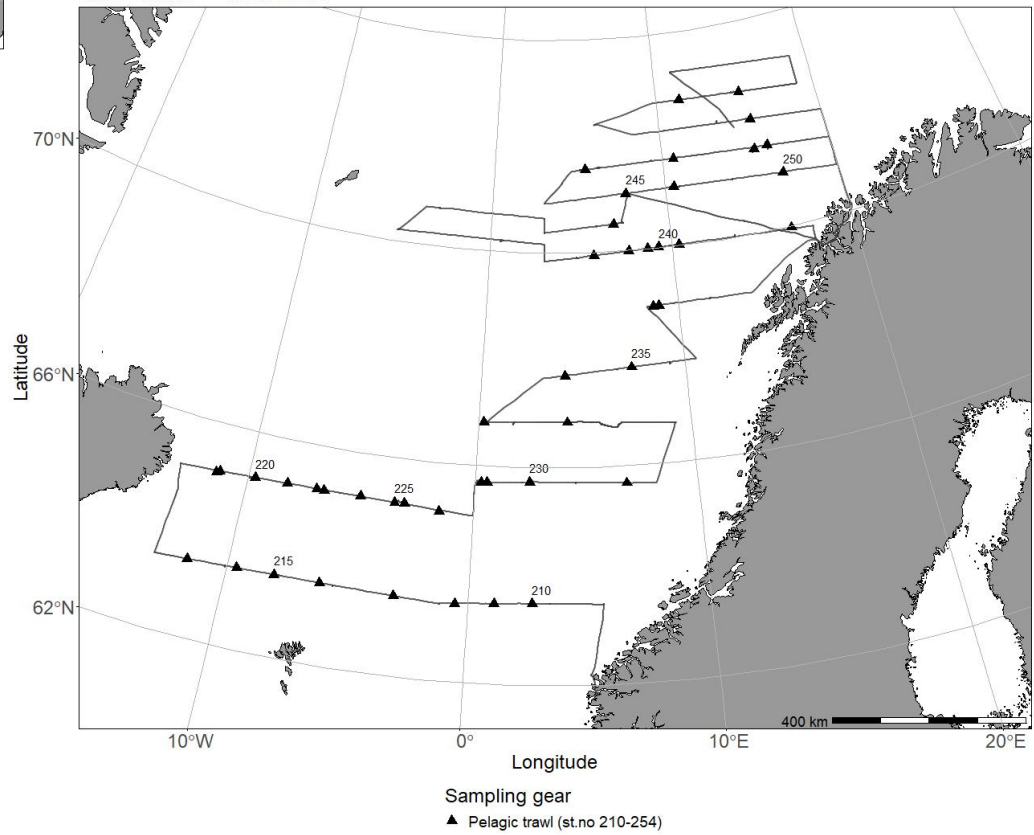
2022105 - G.O.Sars
26/04 - 30/05 - CTD Chart

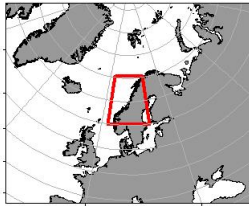


Sampling gear
z CTD with water sampler (st.no 204-263)
z CTD (st.no 215)

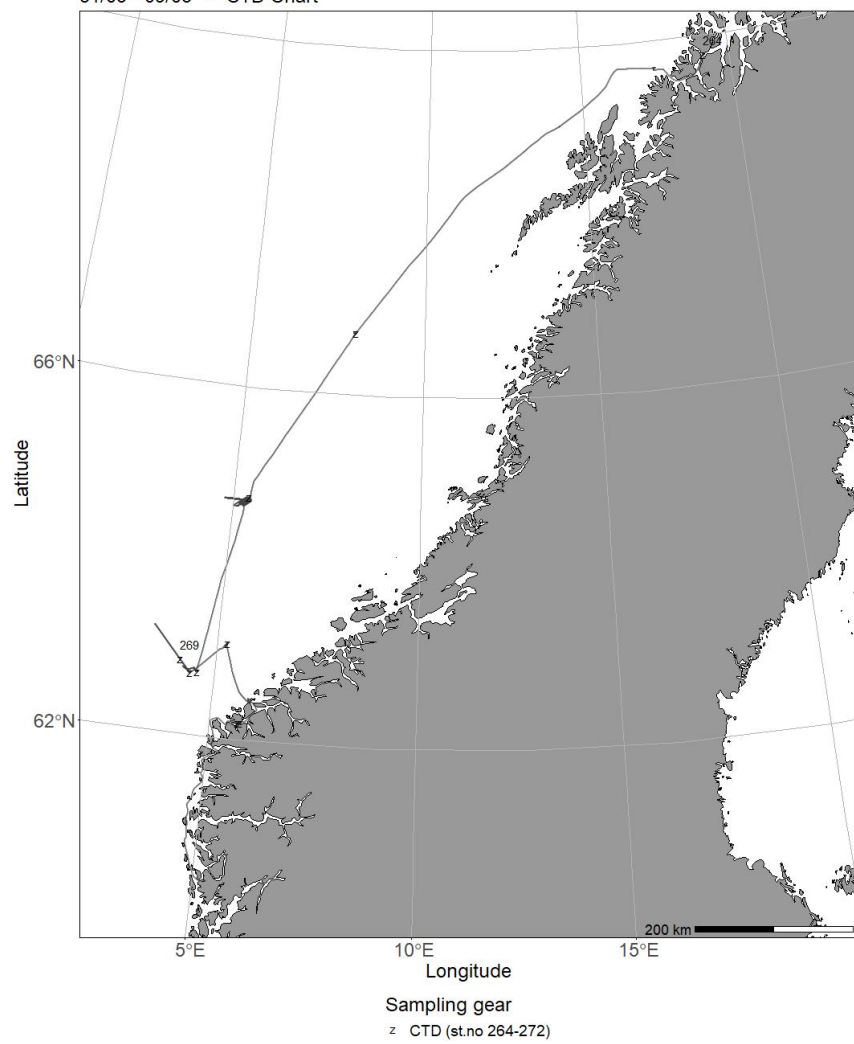


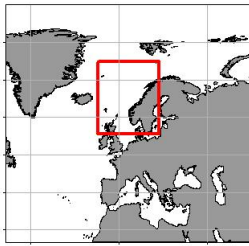
2022105 - G.O.Sars
26/04 - 30/05 - Trawl Chart



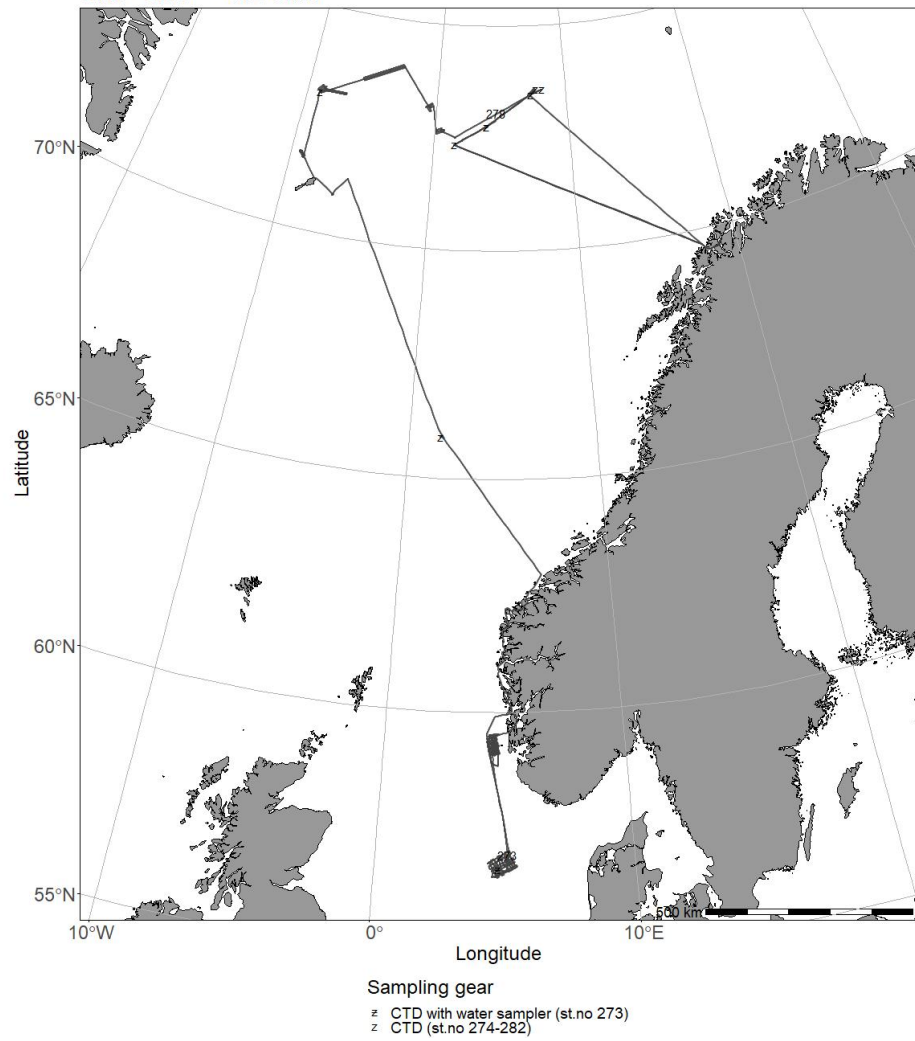


2022106 - G.O.Sars
31/05 - 09/06 - CTD Chart

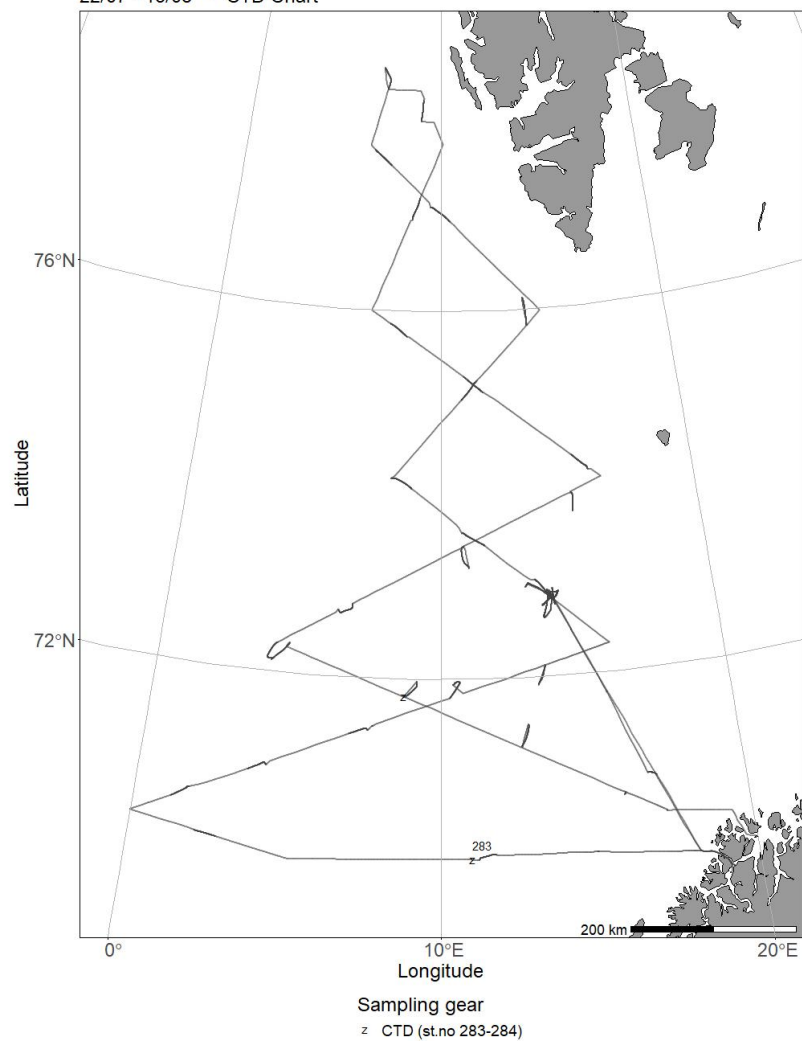
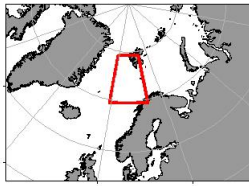




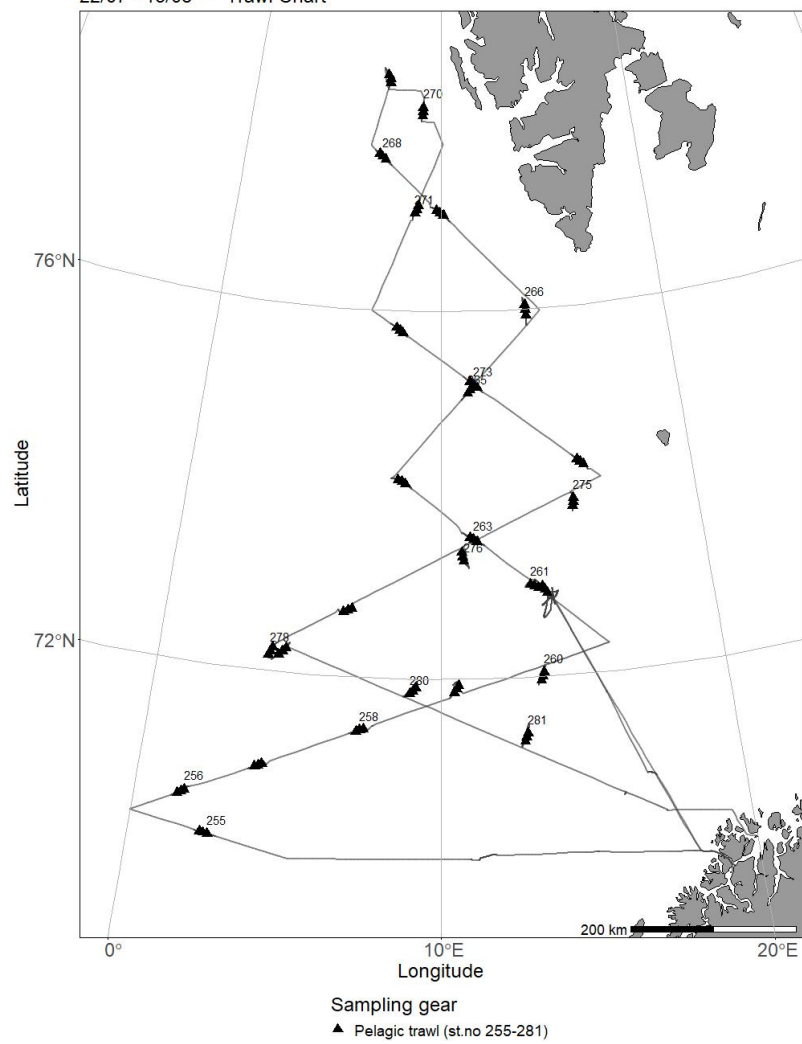
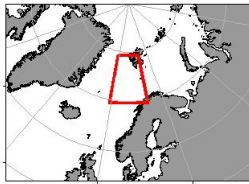
2022107 - G.O.Sars
10/06 - 20/07 - CTD Chart



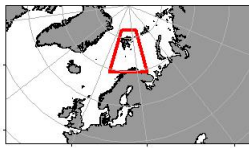
2022109 - G.O.Sars
22/07 - 13/08 - CTD Chart



2022109 - G.O.Sars
22/07 - 13/08 - Trawl Chart

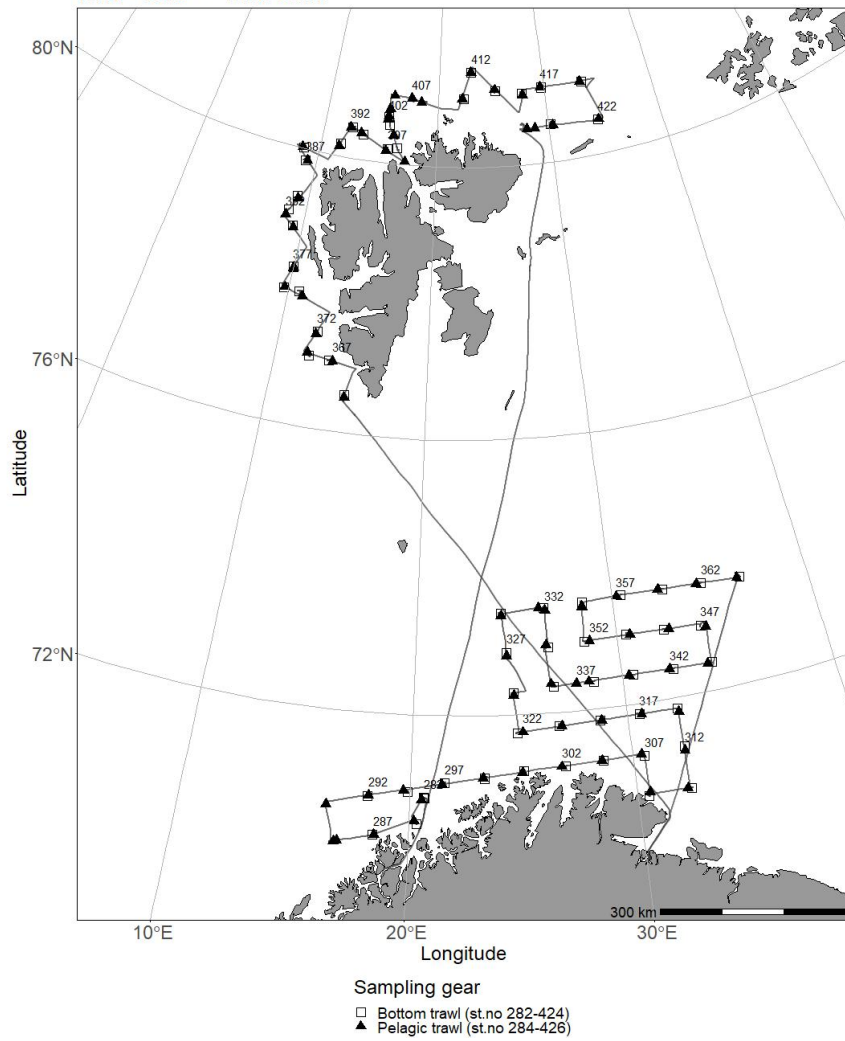
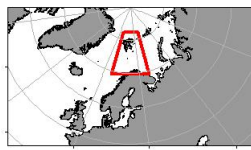


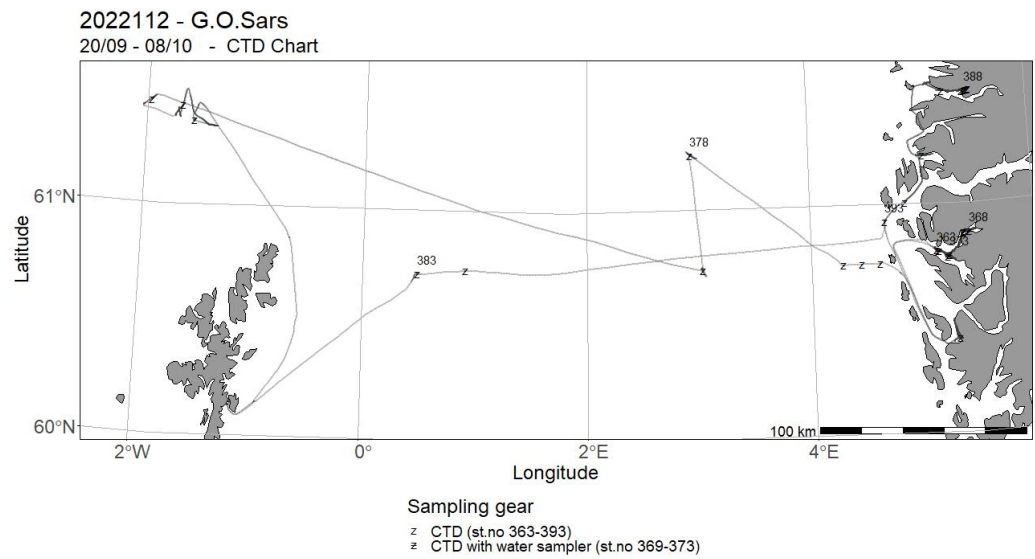
2022110 - G.O.Sars
16/08 - 13/09 - CTD Chart

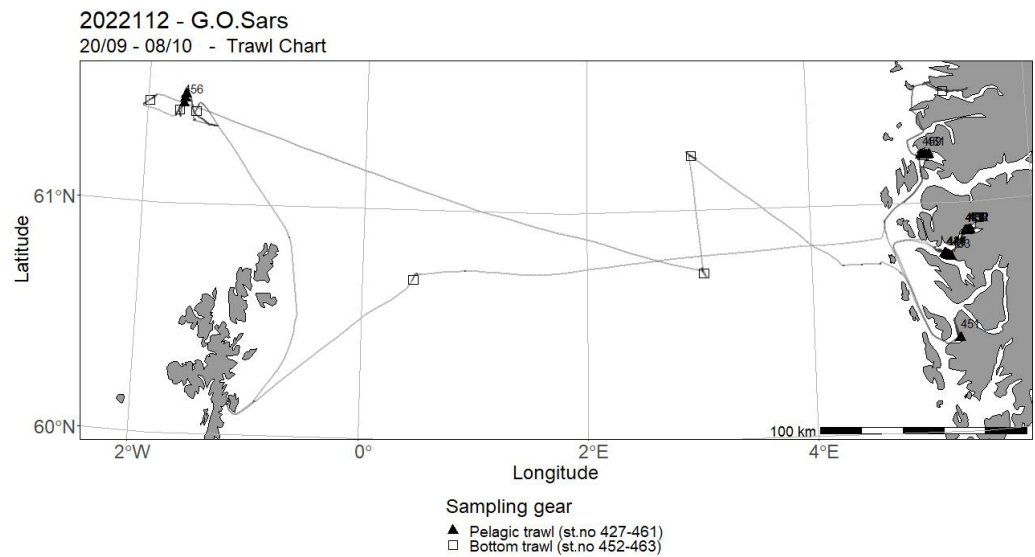
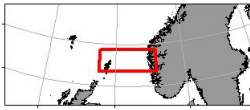


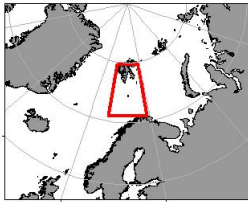
Sampling gear
z CTD with water sampler (st.no 285-362)
Z CTD (st.no 324)

2022110 - G.O.Sars
16/08 - 13/09 - Trawl Chart

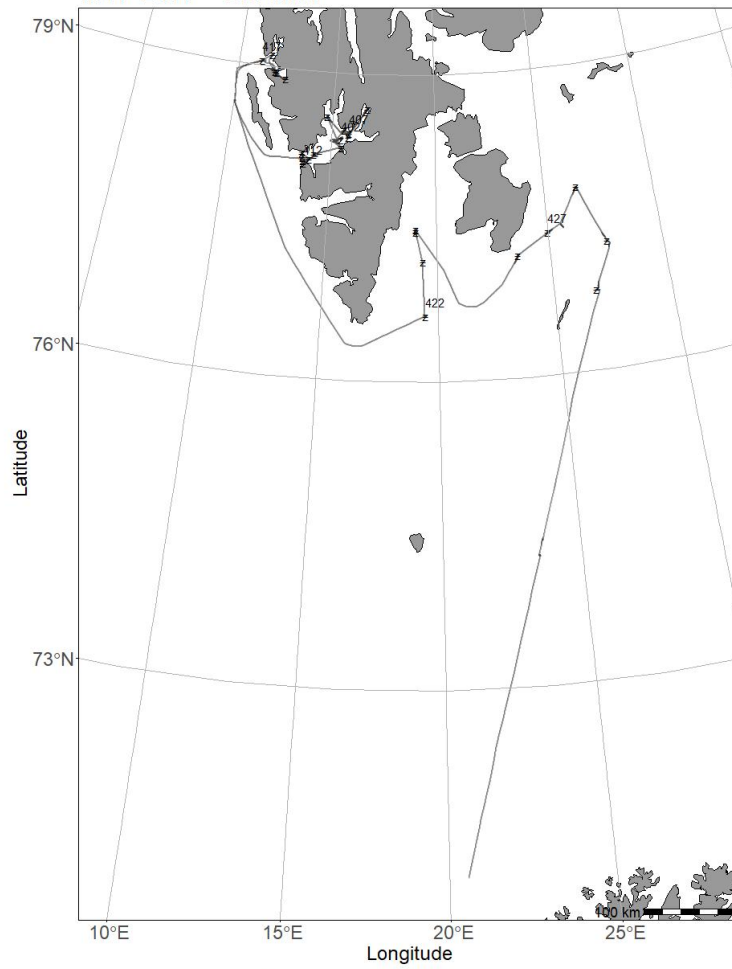




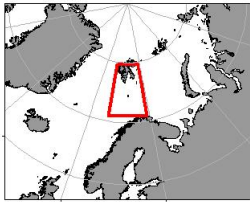




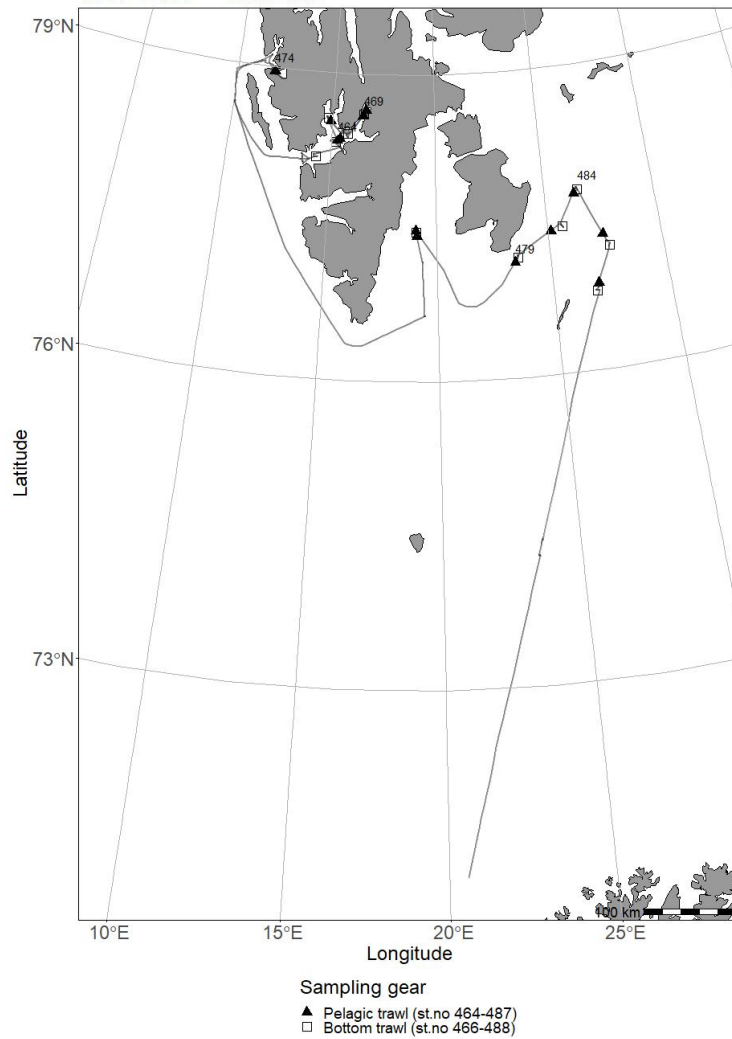
2022114 - G.O.Sars
12/11 - 21/11 - CTD Chart

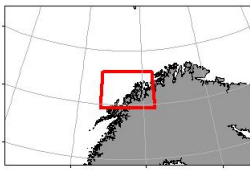


Sampling gear
z CTD (st.no 402)
z CTD with water sampler (st.no 403-430)

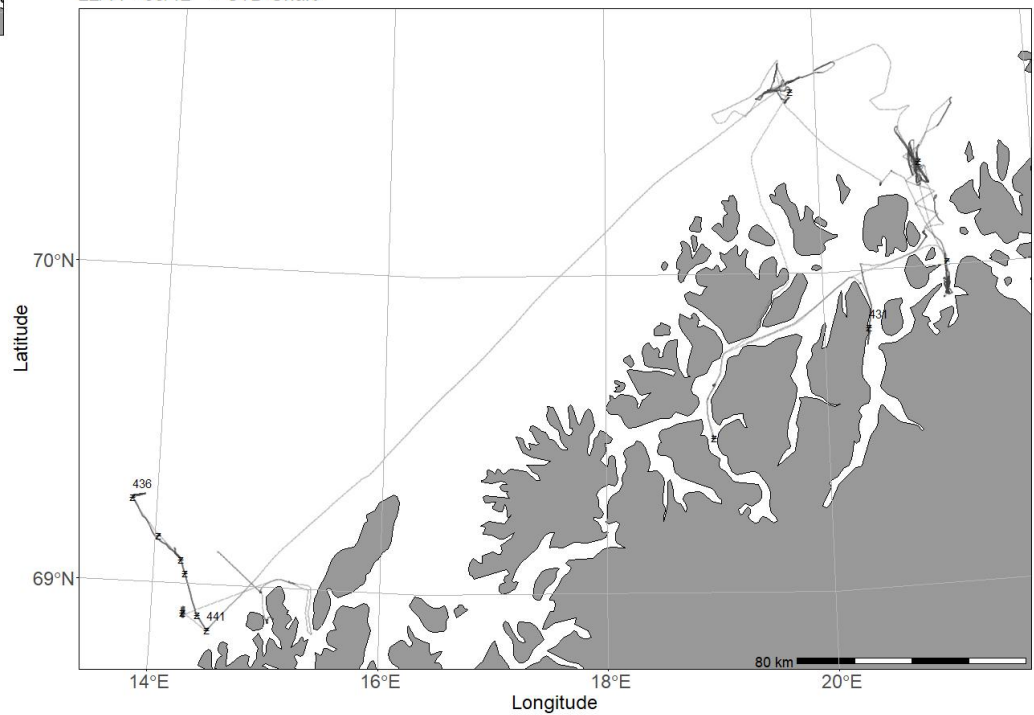


2022114 - G.O.Sars
12/11 - 21/11 - Trawl Chart

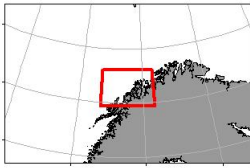




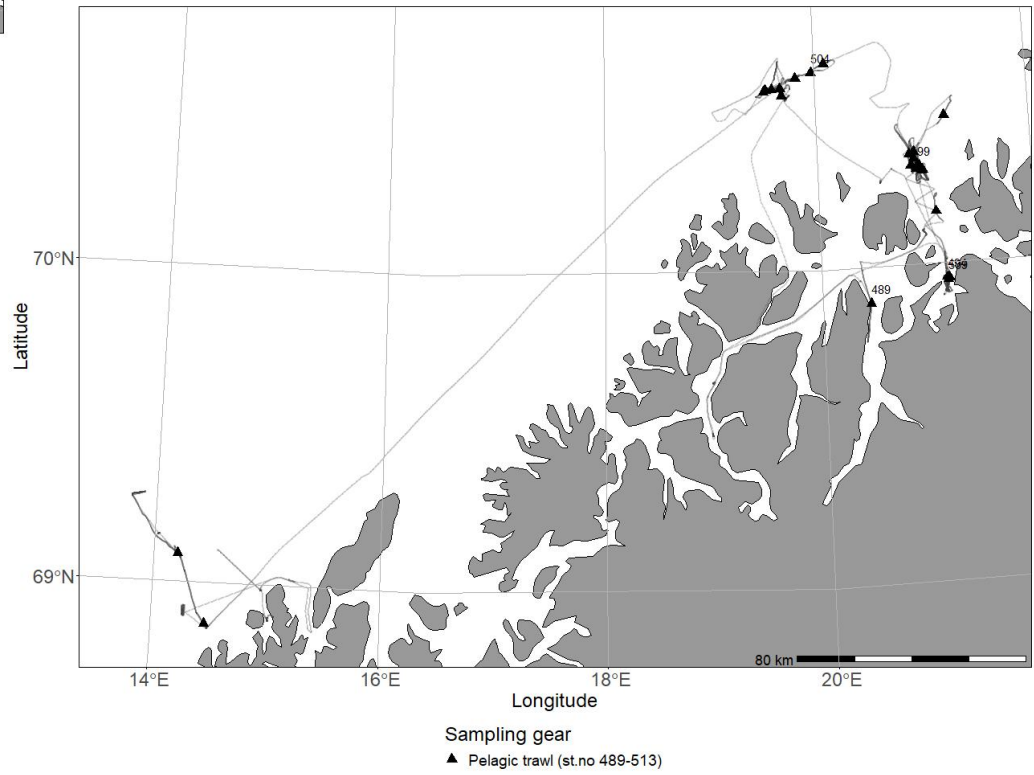
2022115 - G.O.Sars
22/11 - 03/12 - CTD Chart

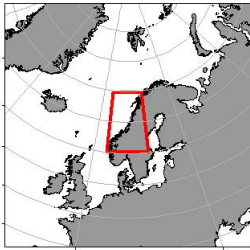


Sampling gear
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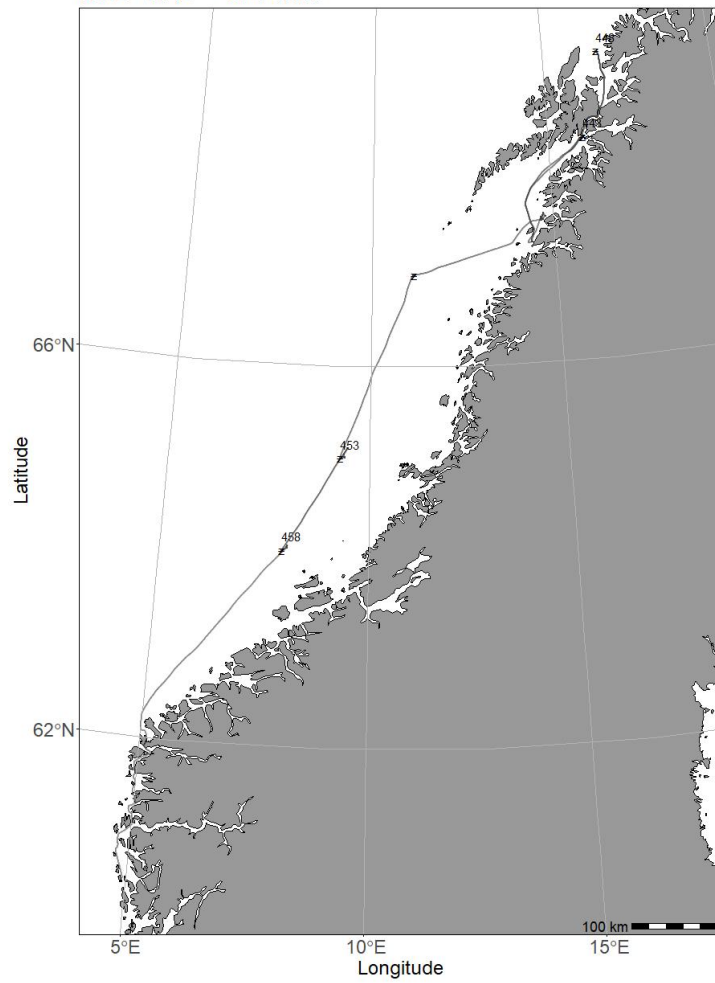


2022115 - G.O.Sars
22/11 - 03/12 - Trawl Chart





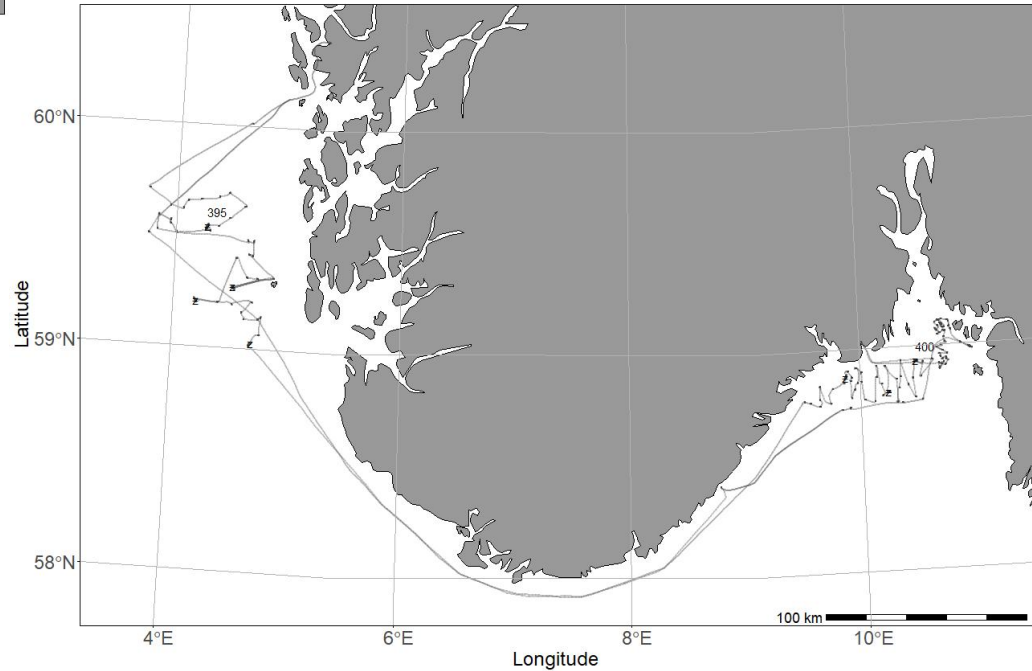
2022117 - G.O.Sars
05/12 - 14/12 - CTD Chart



Sampling gear
z CTD with water sampler (st.no 443-458)



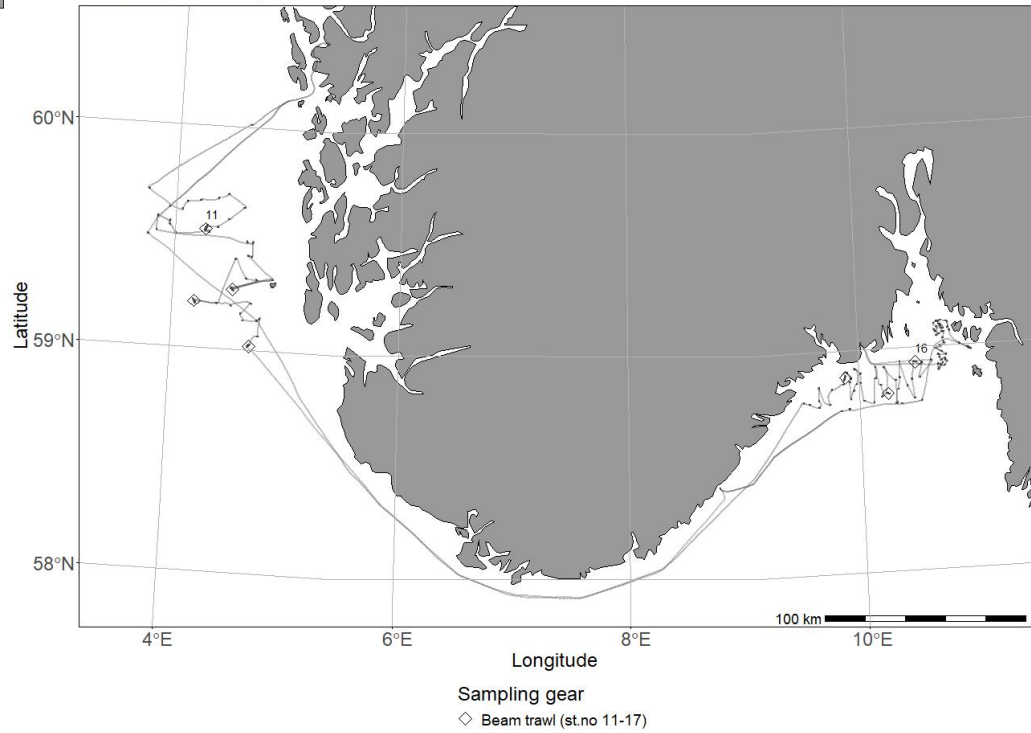
2022118 - G.O.Sars
14/10 - 30/10 - CTD Chart



Sampling gear
z CTD with water sampler (st.no 395-400)
z CTD (st.no 401)



2022118 - G.O.Sars
14/10 - 30/10 - Trawl Chart



4 - "Johan Hjort" - Cruises 2022

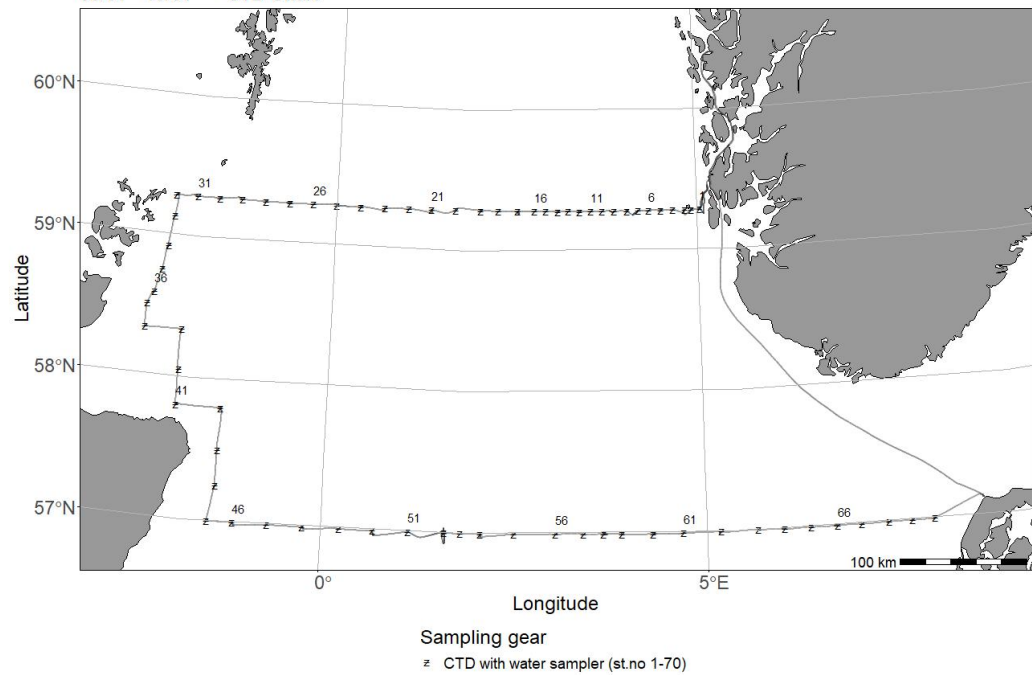
Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022201	01/01 - 02/01	2022-RED-003: Testing av installasjon, håndtering og bruk av AUV Munin+ på Johan Hjort når det er forenlig med andre toktaktiviteter.		-	-
2022202	06/01 - 15/01	Objectives: To collect data and samples on pre-selected stations. To sample standard transects for physical oceanographic parameters (CTD casts, nutrients and chlorophyll) and zooplankton in the North Sea. Cruise programme: 1. Utsira-V transect 2. Scotland East Coast transect 3. Hanstholm-Aberdeen transect 4. Fair Isle-Pentland transect (1/2 of the transect completed)	North Sea	1-70	-
2022203	16/01 - 24/01	The objective of the cruise was to collect data and samples on pre-selected stations as part of the IMR Monitoring of the environment and plankton on the Svinøy and Fugløya-Bjørnøya sections and at station M in January. Implementation of transect over LoVe. This has been done in the last five years as part of other activities in the area for a given period of time and with regular tasks. Sampling was undertaken on the following standard transects: Svinøy and and at station M. The cruise programme included sampling for physical-chemical oceanographic parameters (CTD casts, nutrients and chlorophyll), zooplankton with plankton net and Multinet Mammoth. Water samples of carbon at station M for NORCE. Water samples of carbon on the Svinøy section. 2022-GFI-006: Riggings and gliding work related to NorEMSO activity on the Svinøy sections. Multinet Mammoth was not used due to storm and high waves. Transect over LoVe was not taken due to lack of time and bad weather. Fugløya-Bjørnøya sections was not taken due to storm and 8 meter waves.	Norwegian Sea	71-85	-
2022204	27/01 - 14/03	Annual combined acoustic and bottom trawl survey in the Barents Sea in winter to: map the distribution and estimate acoustic and bottom trawl abundances indices, length, weight and maturity at age of cod and haddock. Map the acoustic distribution and do biological sampling of capelin, herring, polar cod and blue whiting. Map the general hydrographic regime by using a CTD-sonde to monitor the temperature and at about every second-third fixed bottom trawl stations (for about every 40 NM) stomach sampling of cod. Vardø North transect Project name: Barents Sea Winter Groundfish Survey Coordinating body: IMR (Bergen) and PINRO (Murmansk)	Barents Sea	86 - 155	1 - 216
2022205	20/03 - 09/04	Annually recurrent acoustic survey to monitor abundance of spawning North-East Arctic cod in the spawning area around Lofoten by systematic parallell transects and with systematic sampling of fish-egg concentrations by vertical nets in the upper 100 m of the water column. Lofoten is the main spawning location for the stock, and the acoustic survey index indicate spawning biomass and abundance of the mature stock.	Norwegian Sea	156-299	217 - 247
2022206	13/04 - 12/05	Objectives : Part 1 : To collect data and samples on pre-selected stations. To sample standard transects for physical oceanographic parameters (CTD casts, nutrients and chlorophyll), zooplankton and fishlarvae / egg abundance in the North Sea. Cruise programme (following standard transects): Fedje-Shetland Slotterøy Utsira-Start point Fair Isle-Pentland Aberdeen-Hanstholm Oksøy-Hanstholm Lindesnes SW Egerøy SW Jærens rev SW + W . Part 2: Measuring the abundance, distribution and age composition of lesser sandeel Dredge sampling for burrowed sandeels Bottom trawls Pelagic trawls Echo sounder sampling Zooplankton sampling Mapping of hydrographical conditions Project name: 14917 - Early life history dynamics of North Sea fishes 14920 - Monitoring of climate and plankton in the North Sea 14918 - Sandeel monitoring Coordinating body: Institute of Marine Research, Bergen	Norwegian Sea	300 - 487	248-321

Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022207	24/05 - 21/06	The cruise objectives were to occupy the monitoring sections Fugløya-Bjørnøya in the Barents Sea, extended Bjørnøya vest and extended Gimsøy section in the northern Norwegian Sea and the Svinøy section in the southern Norwegian Sea and deploy Argo floats. The earlier weather ship station M was occupied. A synoptic survey was conducted of the Lofoten Basin Eddy (LBE) with a section extending into the Norwegian Basin. On the sections, at station M and in the LBE, CTD observations measurements were made from surface to bottom. Water samples were drawn for nutrients analysis, carbon system analysis and trace gas analysis. Chlorophyll was sampled for the top 100 m. WP2 plankton nets for the top 200 m was conducted along the sections. Qualitative plankton nets were sampled on selected stations. ADCP, Thermosalinograph and echo sounder data were collected underway. 2 Argo floats, one deep and one bio geochemical (BGC) were deployed in the Norwegian Basin. 3 Argo floats, one deep, one BCG and one standard with oxygen, were deployed in the Lofoten Basin. 3 Argo floats, one deep, one BCG and one standard, were deployed in the central Greenland Sea. 2 Argo floats, one BIO and one standard were deployed in the Iceland Sea. One Argo float was deployed close to the continental slope at N 74 30. 1 (BIO) Argo float was deployed in the Barents Sea. To monitor the radioactivity close to the sunken nuclear submarine Komsomolet, water samples and sediments were collected close to the wreck at about 1900 m depth.	Norwegian Sea	488-8999	-
2022208	23/06 - 27/07	Acoustic survey for herring and sprat (HERAS, leg 1) and saithe (NORACU, leg 2) in the North Sea to be used in assessment. Testing of equipment, stationary acoustics and blind zone investigations for improving survey and analyses. Calibration of echosounder and sonar before start of the survey. Take samples of seawater, sediments, fish and other species to analyze levels of toxic components (POPs, PAH, radioactivity) and measurements of biomarkers. Take samples for safe seafood.	North Sea	642 - 700	322 - 457
2022209	28/07 - 12/08	Monitoring of the environment and plankton on the Svinøy, station M, Gimsøy, Sørkapp V, Fugløya-Bjørnøya and Bjørnøya-V sections. Measuring physical, chemical and biological parameters important to follow changes in climate and environment at weather station M in the Norwegian Sea. Gliders and rigs.	Norwegian Sea	701-779	-
2022210	18/08 - 06/10	The cruise forms part of a multi-ship, multi-purpose 'ecosystem survey' of the Barents Sea, carried out jointly by Norway and Russia. The objective of the cruise was to collect data related to stations and along cruise tracks, on water chemistry and physics, phytoplankton, zooplankton, fish (acoustics and trawl), benthic organisms, sea mammals, and birds.	Barents Sea	780-938	458 - 705
2022211	07/10 - 10/11	Annual combined acoustic and bottom trawl survey along the Norwegian coast north of 62N. Map the distribution and calculate acoustic abundances indices, length, weight and maturity at age for coastal cod and saithe. Improve data basis for the assessment of golden redfish, by allocating additional bottom trawls map the general hydrographical regime by using a CTD-sonde to monitor the temperature and salinity at one at bottom trawl stations and/or at fixed intervals (about 30 NM). Collection of frozen samples of selected shark and skate species, and deep sea shrimps	Norwegian Sea	939-992	706 - 830
2022212	13/11 - 21/11	Objectives : To collect data and samples on pre-selected stations. To sample standard transects for physical oceanographic parameters (CTD casts, nutrients and chlorophyll) and zooplankton in the North Sea. Cruise programme: Utsira-V transect	North Sea	993-1024	-
2022213	22/11 - 06/12	The objective of the cruise was to collect data and samples on pre-selected stations as part of the IMR Monitoring of the environment and plankton on the Svinøy, Gimsøy, Bjørnøya-east and Fugløya-Bjørnøya sections and at station M in november/december. Sampling was undertaken on the following standard transects: Svinøy, Gimsøy, Bjørnøya-east and Fugløya-Bjørnøya sections and at station M. The cruise programme included sampling for physical-chemical oceanographic parameters (CTD casts, nutrients and chlorophyll), zooplankton with plankton net (WP2) and Multinet Mammoth. Water samples of carbon at station M for UiB-GFI2022-GFI-006: Rigging and gliding work related to NorEMSO activity on St.M and the Gimsøy section. Multinet Mammoth was used to collect vertically stratified samples of zooplankton on the Svinøy section.			

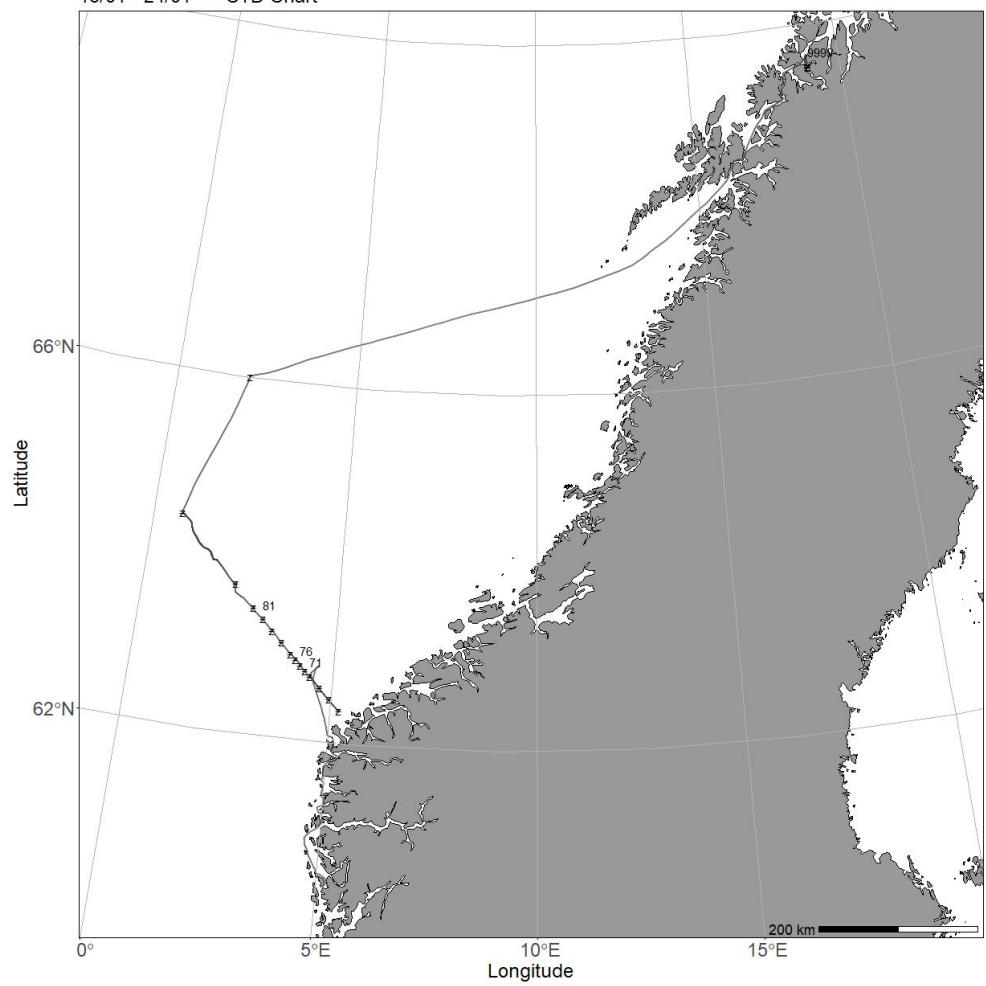
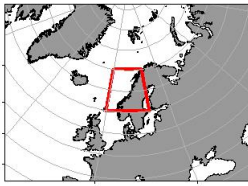
5 - "Johan Hjort" – Charts for cruises 2022



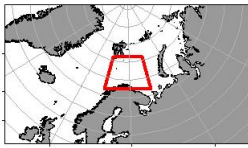
2022202 - Johan Hjort
06/01 - 15/01 - CTD Chart



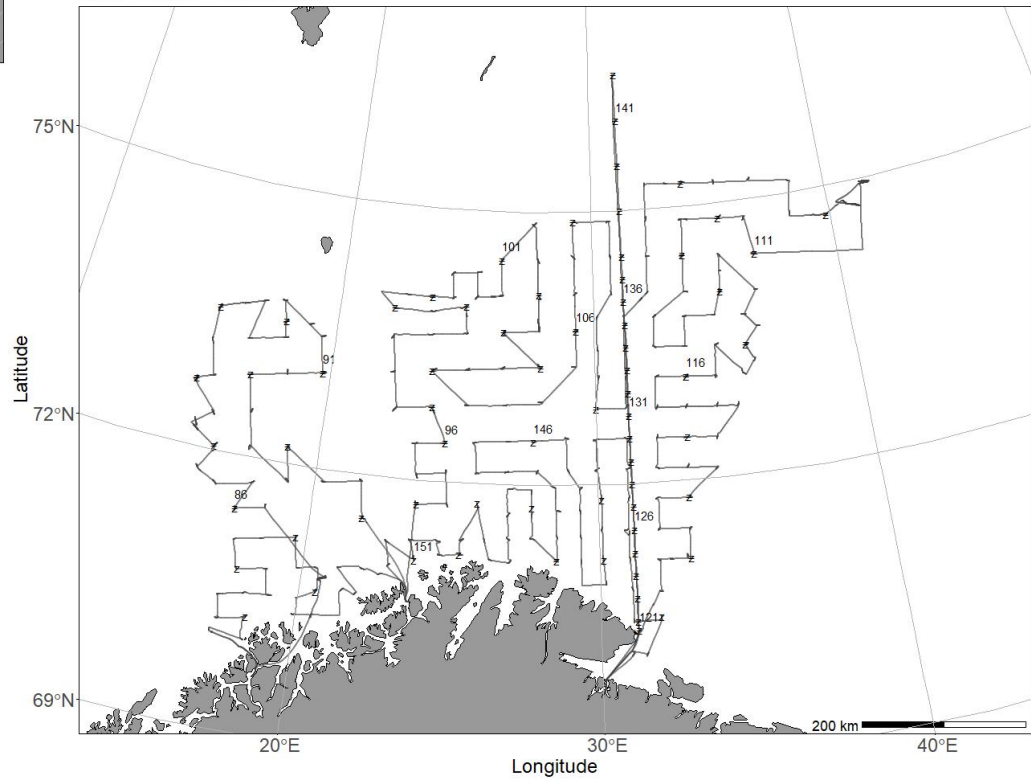
2022203 - Johan Hjort
16/01 - 24/01 - CTD Chart



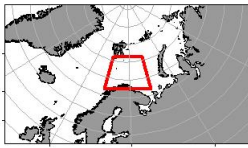
Sampling gear
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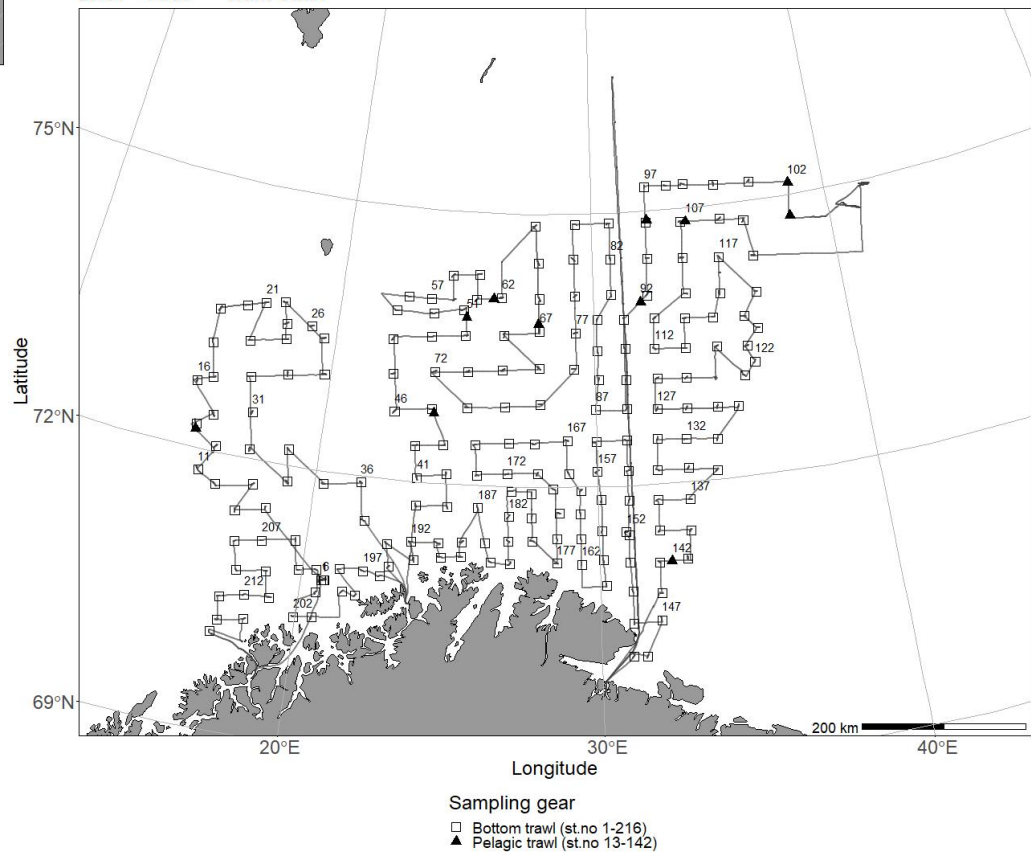
2022204 - Johan Hjort
27/01 - 14/03 - CTD Chart

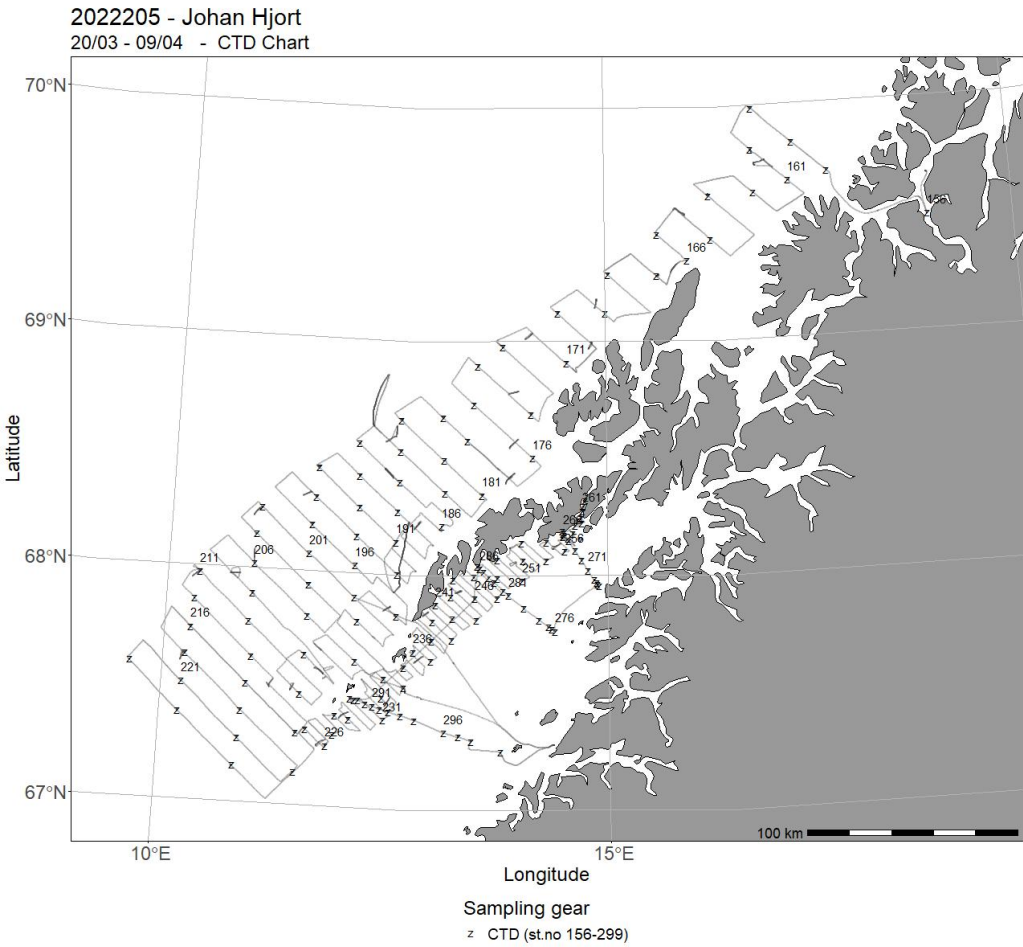
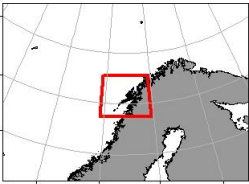


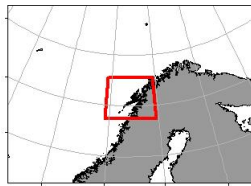
Sampling gear
z CTD with water sampler (st.no 86-142)
z CTD (st.no 143-155)



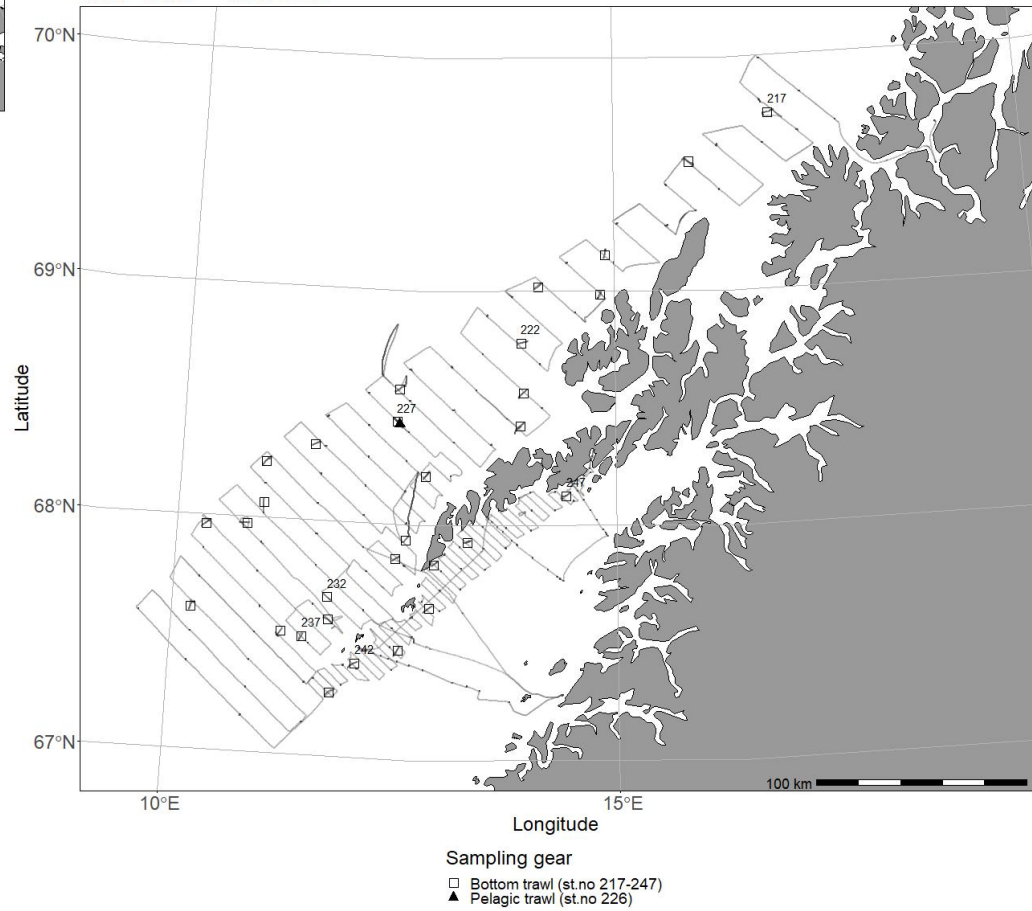
2022204 - Johan Hjort
27/01 - 14/03 - Trawl Chart





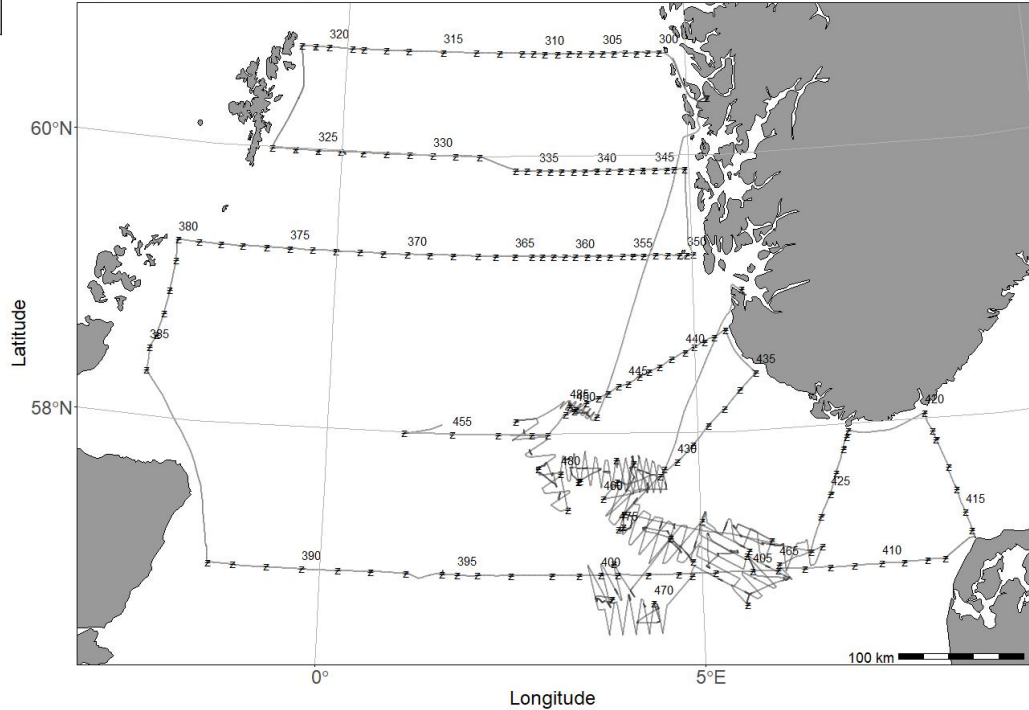


2022205 - Johan Hjort
20/03 - 09/04 - Trawl Chart





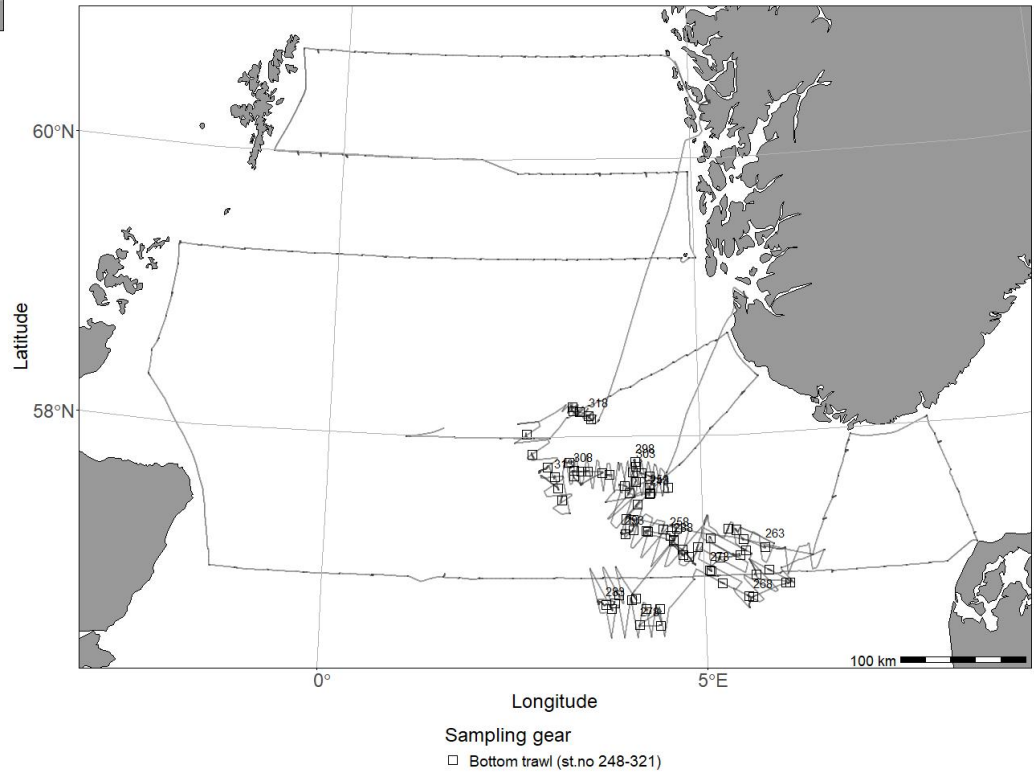
2022206 - Johan Hjort
13/04 - 12/05 - CTD Chart



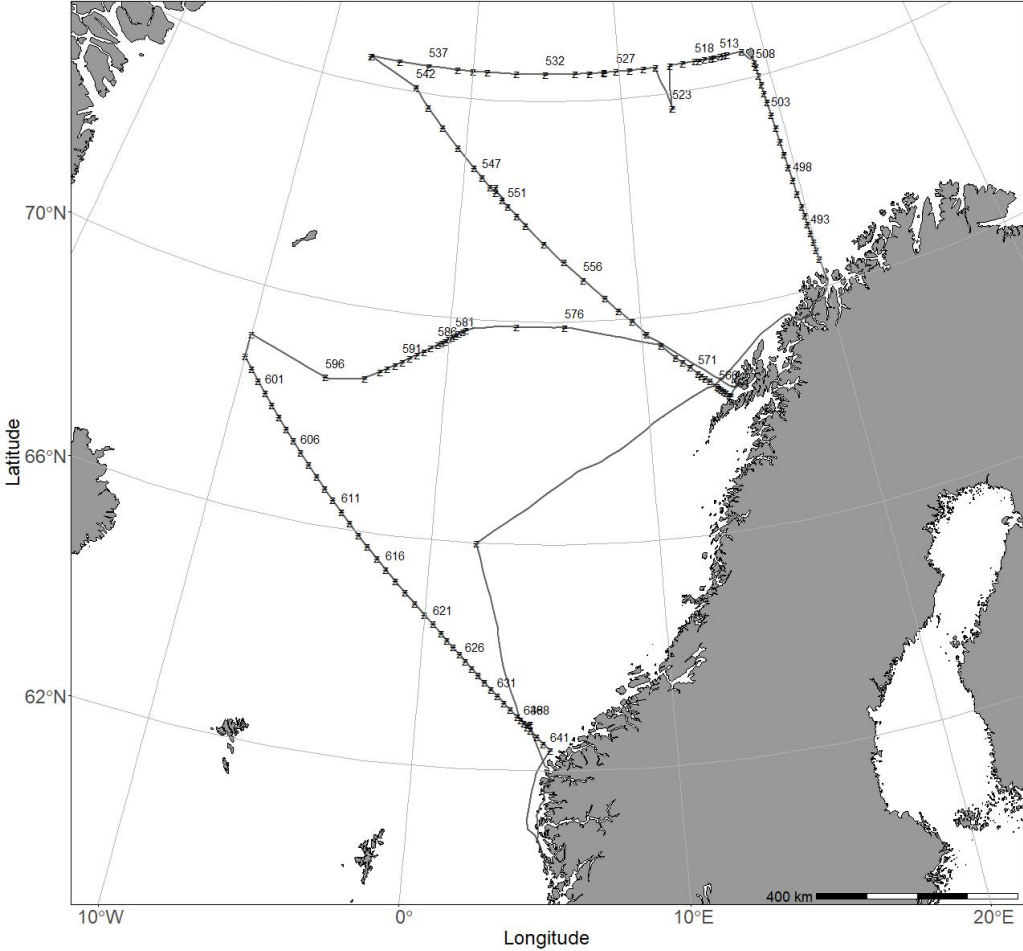
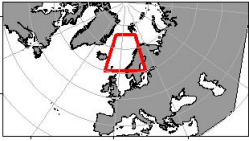
Sampling gear
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z CTD (st.no 487)



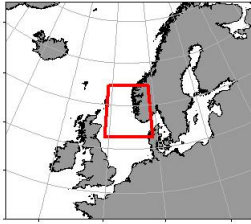
2022206 - Johan Hjort
13/04 - 12/05 - Trawl Chart



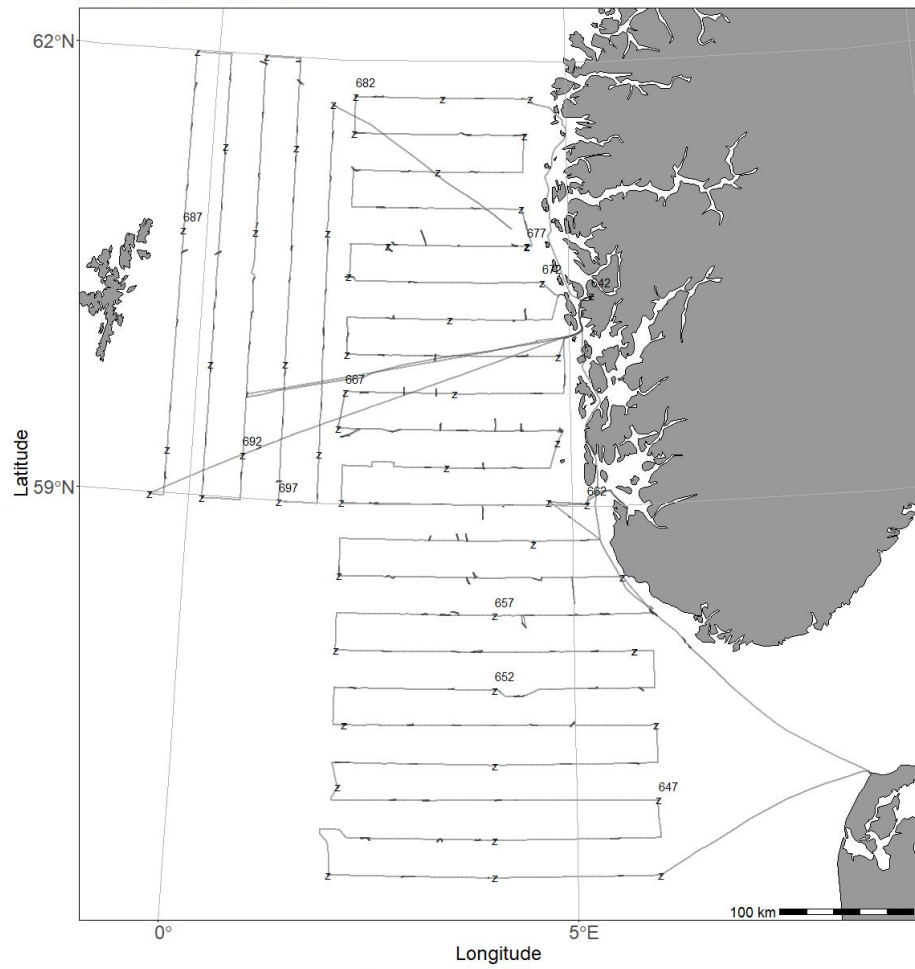
2022207 - Johan Hjort
24/05 - 21/06 - CTD Chart



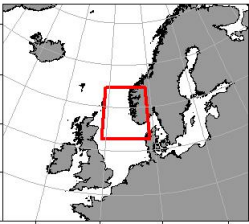
Sampling gear
≠ CTD with water sampler (st.no 488-8999)



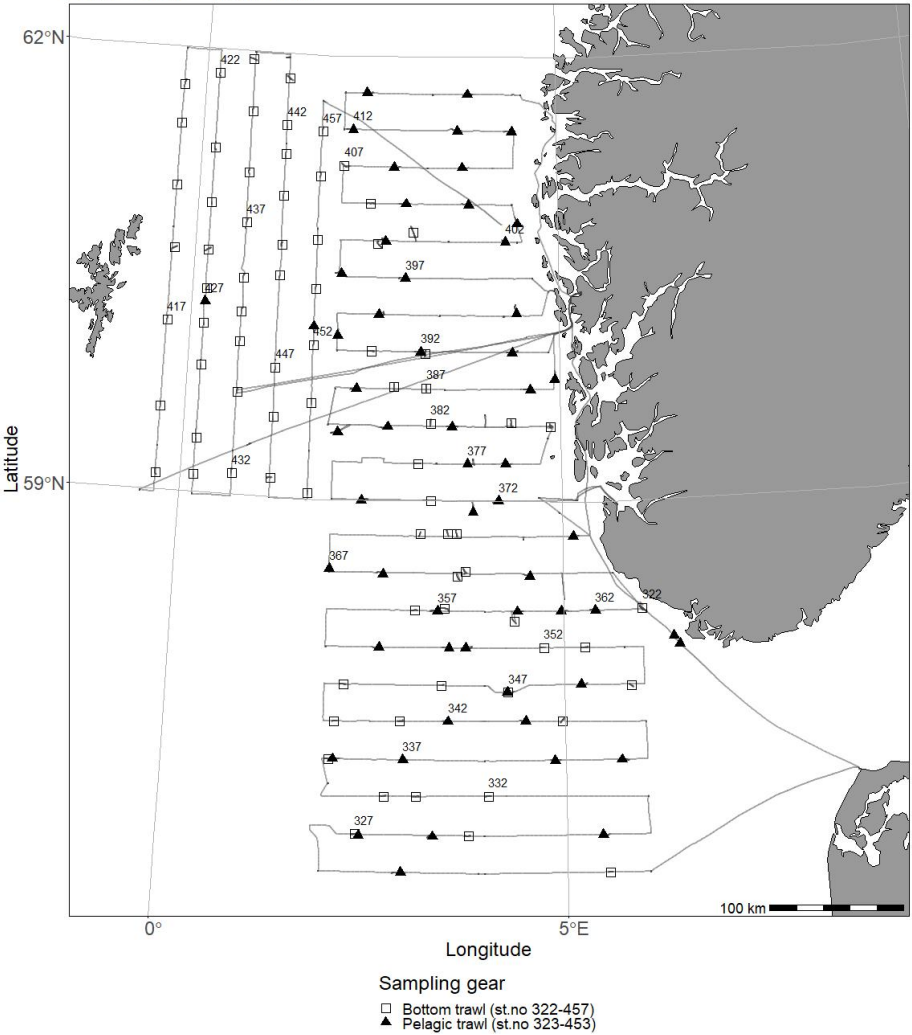
2022208 - Johan Hjort
23/06 - 27/07 - CTD Chart



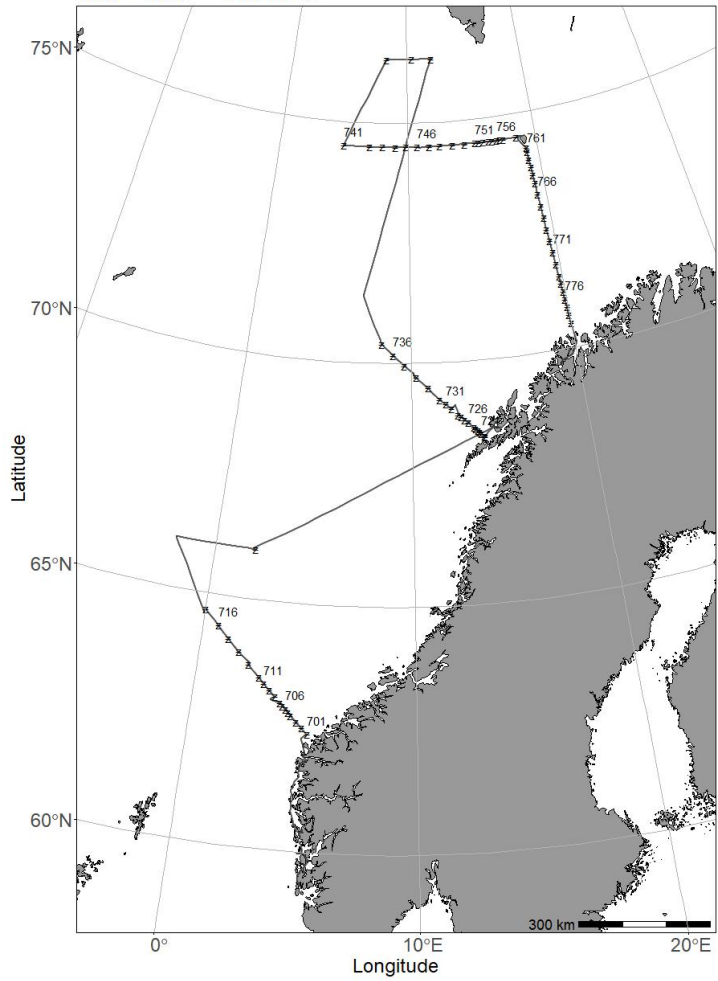
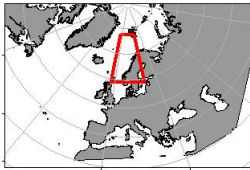
Sampling gear
z CTD with water sampler (st.no 642)
z CTD (st.no 643-700)



2022208 - Johan Hjort
23/06 - 27/07 - Trawl Chart

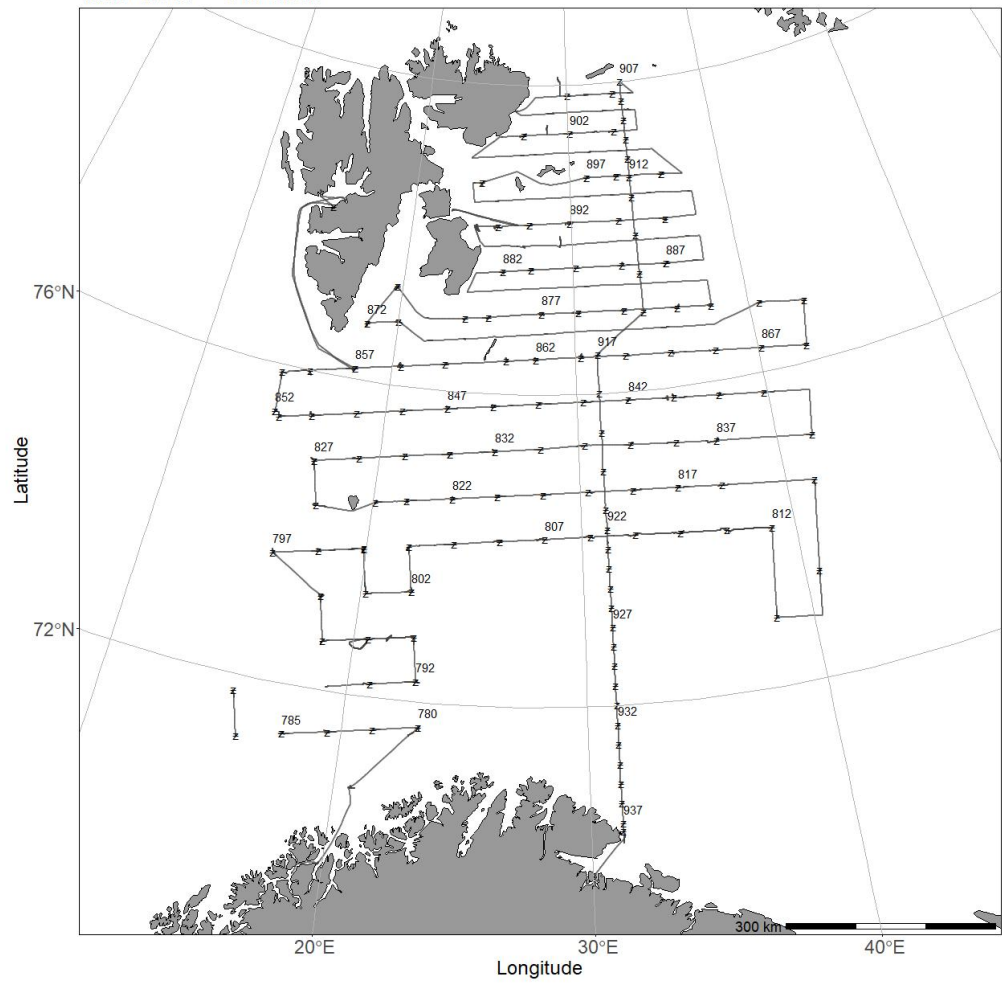
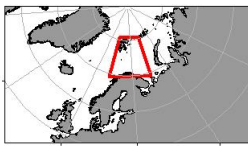


2022209 - Johan Hjort
28/07 - 12/08 - CTD Chart



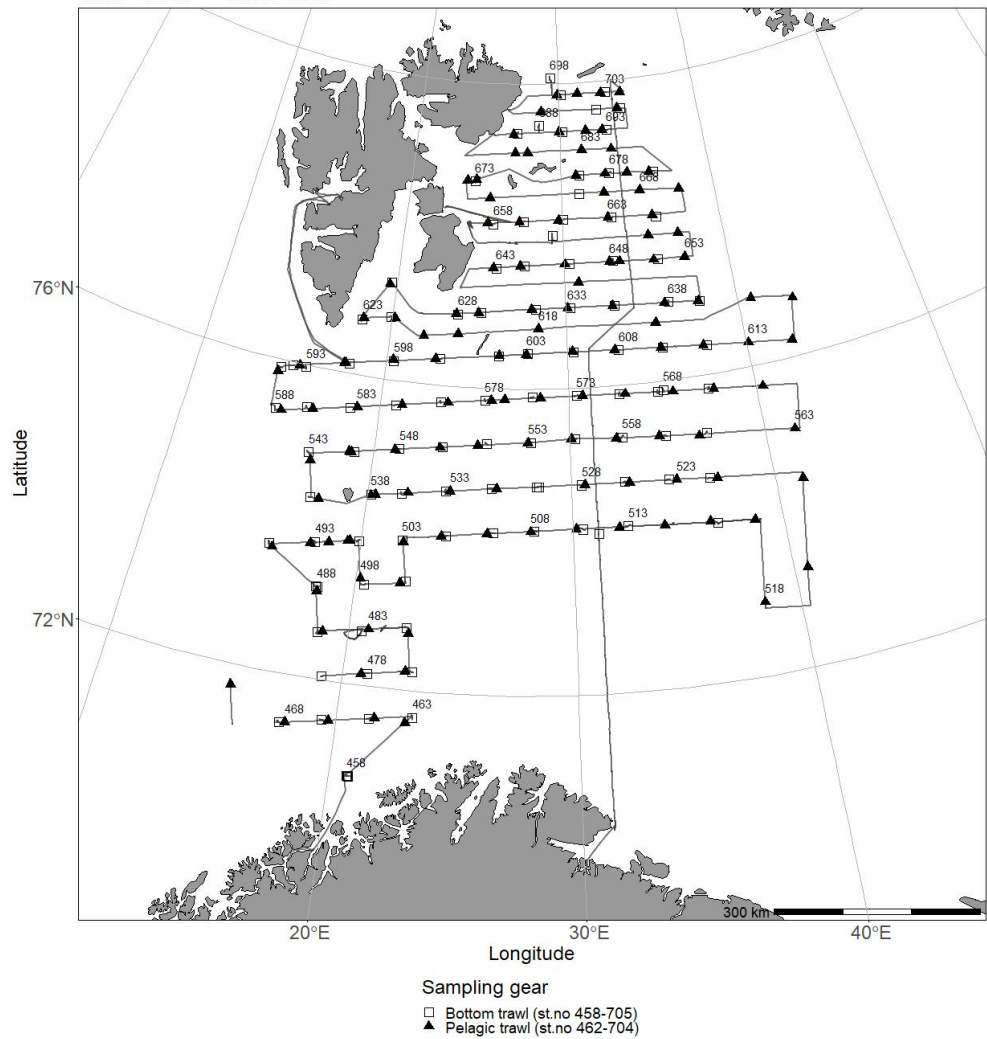
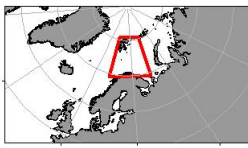
Sampling gear
z CTD with water sampler (st.no 701-779)

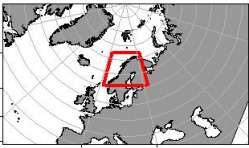
2022210 - Johan Hjort
18/08 - 06/10 - CTD Chart



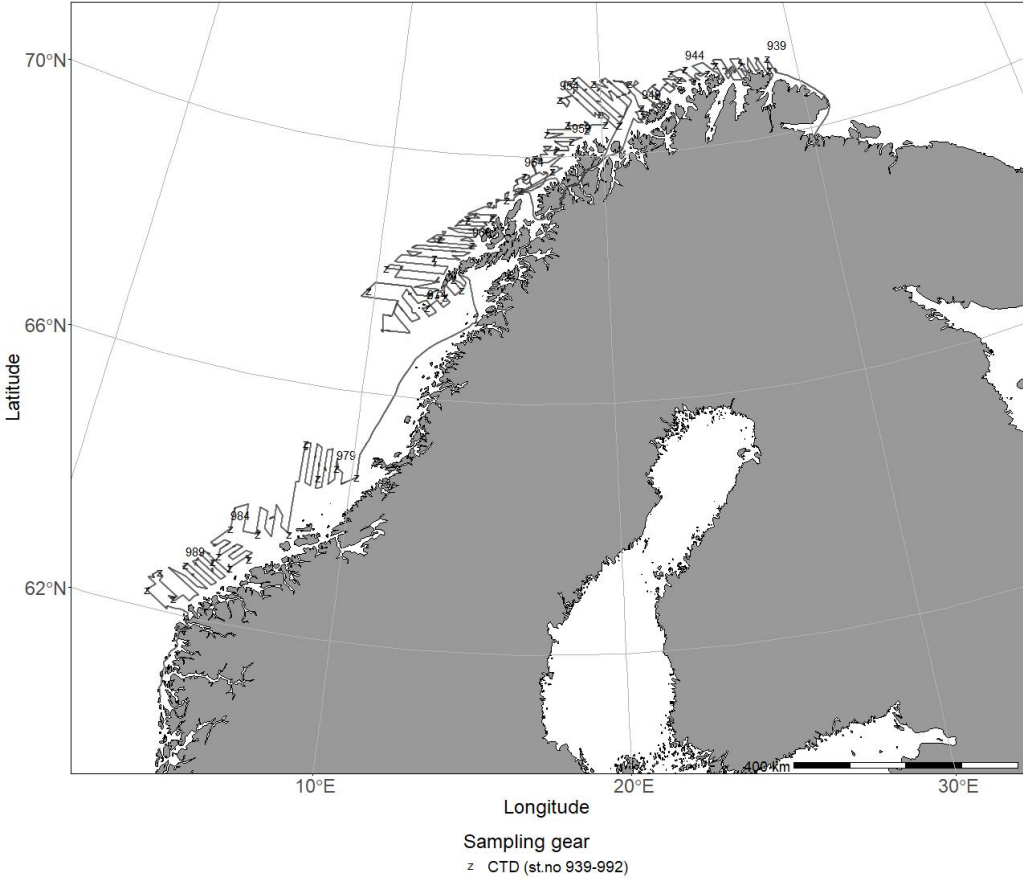
Sampling gear
= CTD with water sampler (st.no 780-938)

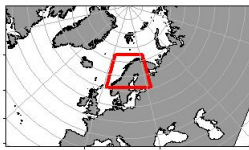
2022210 - Johan Hjort
18/08 - 06/10 - Trawl Chart



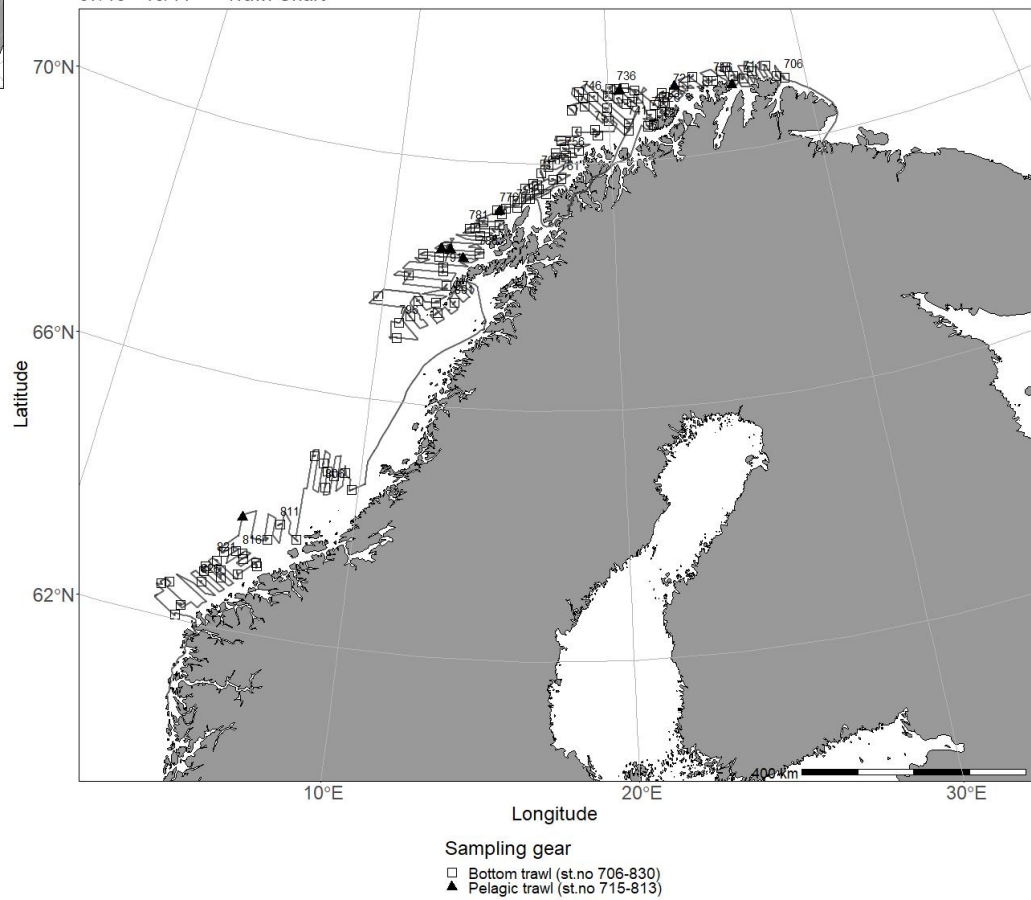


2022211 - Johan Hjort
07/10 - 10/11 - CTD Chart

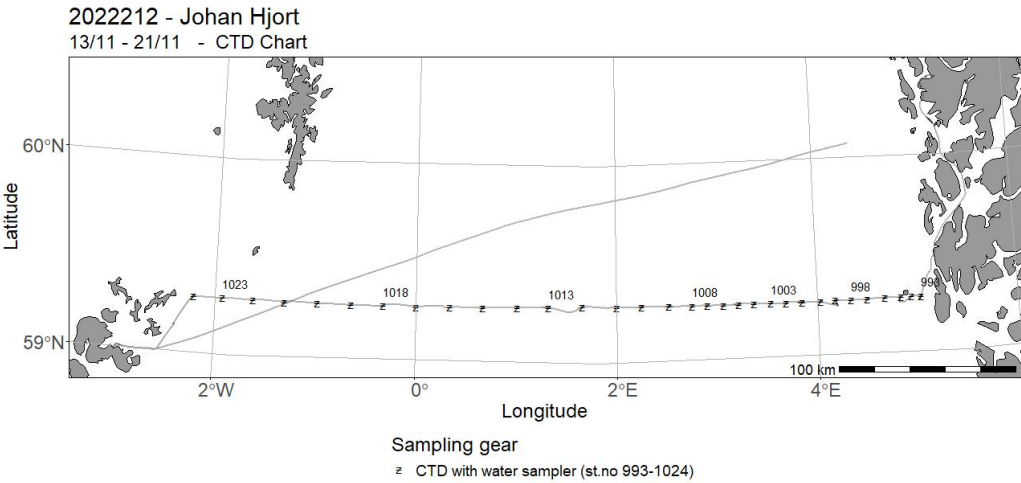




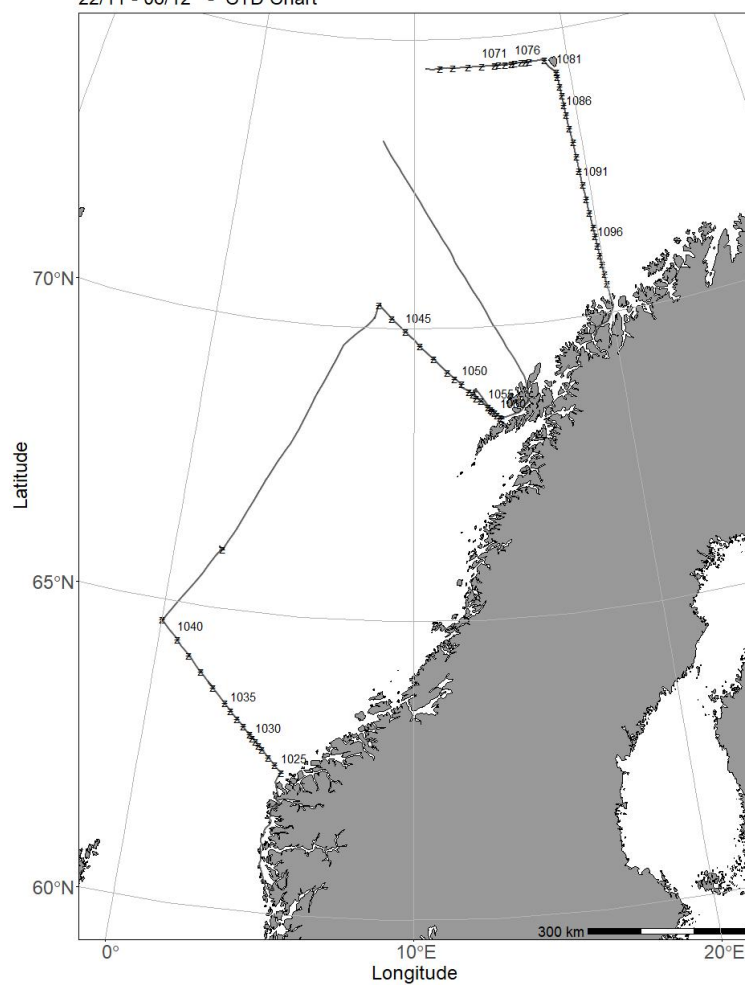
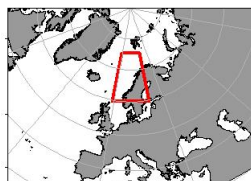
2022211 - Johan Hjort
07/10 - 10/11 - Trawl Chart



Sampling gear
□ Bottom trawl (st.no 706-830)
▲ Pelagic trawl (st.no 715-813)



2022213 - Johan Hjort
22/11 - 06/12 - CTD Chart



6 - "Kristine Bonnevie" – Cruises 2022

Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022601	05/01 - 31/01	Annual shrimp survey conducted by the IMR : 1. Fixed trawl stations (bottom trawl) for northern shrimp (<i>Pandalus borealis</i>) and fish. Data on shrimp biomass, abundance, and recruitment: total weight, length, sex, maturity 2. CTD (temperature, salinity) on all trawl stations 3. Length and total weight of all fish species 4. Roundnose grenadier & greater/lesser argentine: individual weight, length, sex, maturity, age 5. Sharks & rays, except spiny dogfish: individual length, weight, sex 6. Spiny dogfish: individual length, weight, age, maturity, genetic sampling 7. Norway lobster (<i>Nephrops</i>): individual weight, length, sex, maturity 8. Atlantic halibut: individual length, weight, sex, maturity, age 9. Anglerfish: individual length, weight, sex, maturity, age 10. Blue ling: individual length, weight, sex, maturity, age, genetic sampling, gonad samples of females 11. Sea cucumber (<i>Parastichopus</i>): individual length, weight 12. For the Norwegian Defence Research Establishment (FFI): liver and muscle samples of roundnose grenadier, rabbit fish, skates, and flatfish: individual samples of pandalid shrimps and squat lobsters Chief of mission: Dr. Guldberg Søvik, IMR	Skagerrak	1-117	2-125
2022602	02/02 - 05/02	The cruise is part of the activity within the project FJO2Rd, financed by the Norwegian Research project. The primary objective of FJO2RD is to explore if, how, and why the renewal frequency has changed as a result of physical climate change, and to determine its link to the deoxygenation of Norwegian fjords and the potential anthropogenic contribution. During the cruise we 1) Made CTD sections and took water samples (O ₂ , Alkalinity, nutrients, total carbon, isotopes and trace metals) from Lure and Masfjorden 2) Deployed and recovered oceanographic moorings in the fjords 3) Took sediment cores using a) Multi-corer and b) gravity corer.	North Sea	118-147	-
2022603	09/02 - 18/02	Bottom trawling for demersal fish and northern shrimp. Pelagic trawling for krill and other pelagic species. Multinet macro plankton trawling. Sandeel dredging (beam trawl). CTD (temperature, salinity, water sampling). Deployment/retrieval of current profilers Project name: CoastRisk - Assessing cumulative impacts on the Norwegian coastal ecosystem and its services Coordinating body: Institute of Marine Research, Norway	Skagerrak	148 - 227	21 - 161
2022604	19/02 - 22/02	Training of students at University of Bergen, Course BIO356, in fishery acoustic and trawl methods. Echo sounder sampling. Trawling with DeepVision camera system	North Sea	228	162-164
2022605	23/02 - 01/03	This aim of the cruise was to collect data for student projects and to give student practical experience from oceanographic data collection. During the cruise we 1) Made CTD sections and took water samples (O ₂ , Alkalinity, nutrients, total carbon, isotopes, salinity) from Lurefjorden, Masfjorden and the fjords around Osterøy 2) Deployed and recovered oceanographic moorings in the fjords 3) Made time series and sections of turbulence / microstructure profiles 4) Deployed surface drifters Cruise coordinator: Elin Darelus, University of Bergen	North Sea	229-324	-

Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022606	03/03 - 17/03	The objective of the cruise was to collect data and samples on pre-selected stations as part of the IMR Monitoring of the environment and plankton on the Svinøy Gimsøy, Bjørnøya-vest and Fugløya-Bjørnøya sections and at station M in March. Sampling was undertaken on the following standard transects: Svinøy, Gimsøy, Bjørnøya-vest and Fugløya-Bjørnøya sections and at station M. The cruise programme included sampling for physical-chemical oceanographic parameters (CTD casts, nutrients and chlorophyll), zooplankton with plankton net and Multinet Mammoth. Water samples of carbon on the Gimsøy and Fugløy-Bjørnøya section. Rigging and gliding work related to NorEMSO activity on the Svinøy and Gimsøy, sections, UiB.	Norwegian Sea	325-400	-
2022607	18/03 - 24/03	CTD-survey of fjords and coast in Troms and western Finnmark (Malangen-Revsbotn). Water sampling for analysis of eDNA, nutrients and the carbonate system. Deploy current meter moorings in Ullsfjorden. Project name: Fjord oceanography and coastal climate (FOKK), FishDiv & SalCodCoordinating body: Institute of Marine Research	Norwegian Sea	401-508	-
2022608	29/03 - 07/04	The goal of the cruise is to collect fish eggs for mapping spawning areas in the project «National program for mapping of marine nature types». The primary targets for the mapping are local stock of coastal cod. The secondary goal is to visually determine all eggs and preserve these for further genetic studies. All eggs are photographed. Stations are located primarily in the inner fjord areas, with less emphasis on the outer coastal areas. Project name: National program for mappings spawning and nursery areas for commercially important coastal speciesCoordinating body: Institute of Marine Research, Norway	Northeast Atlantic Ocean (40W)	509-514	-
2022609	08/04 - 19/04	Map the main spawning grounds of NEA haddock. Survey report available from: hi.no/hi/nettrapporter/toktrapport-2022-8 .	Barents Sea	515 - 555	165-196
2022610	20/04 - 23/04	Annual combined acoustic and bottom trawl survey in the Barents Sea in winter to: Fugløya-Bjørnøya transect Project name: Monitoring of plankton in Barents Sea Coordinating body: Institute of Marine Research (Bergen)	Barents Sea	556 - 570	-
2022611	29/04 - 09/05	Effects of seismic sound on zooplankton (ZoopSeis) is a project founded by the Norwegian Research Council, aiming at uncovering the effect of seismic on zooplankton. This cruise is part of the ZoopSeis project. The aim of the cruise was to find at what distance seismic airguns impact zooplankton in terms of immediate mortality, delayed mortality and any behaviours effects (i.e. swarming, sinking and so on). In addition to the zooplankton response to seismic we conducted an acoustic transect on Vikingbanken on our way back. The transect lasted 10 hour covering ~93 nm. The methods followed standard acoustic survey coverage. The acoustic data was scrutinised following sandeel protocol.	North Sea	571 - 580	-
2022613	20/05 - 21/05	Testing and training with one Slocum electric ocean glider. Testing of one surface drifter.	Norwegian Sea	-	-
2022614	22/05 - 28/05	The survey collected samples in West Norwegian fjord: (Fensfjord, Masfjord, Haugsværsvfjord, Osterfjord and Sørfjord. The equipment used was : CTD Harstad Pelagic trawl 320 with Multi Sampler (3 cod-ends) Demersal campelen 1800 trawl. MIKWP2 Spectroradiometer Acoustics Picarro CWS stable water isotope analysis Niskin water bottles Project name: HypOnFjordFish/CLIFORD/FJO2RD Coordinating body: Department of Biological Sciences, University of Bergen	North Sea	582 - 613	197 - 219
2022615	01/06 - 12/06	CTD-survey of fjords and coast in Troms and western Finnmark (Malangen-Revsbotn). Water sampling for nutrients and the carbonate system. Monitor the spreading of red king crab in Troms and western Finnmark (Uløya-Revsbotn). Studying the area where the red king crab is freely fished, using traps, to estimate the stock in this area. Project name: Fjord oceanography and coastal climate (FOKK) and Bestandsrådgivning kongekrabbe Coordinating body: Institute of Marine Research	Norwegian Sea	614 - 757	-

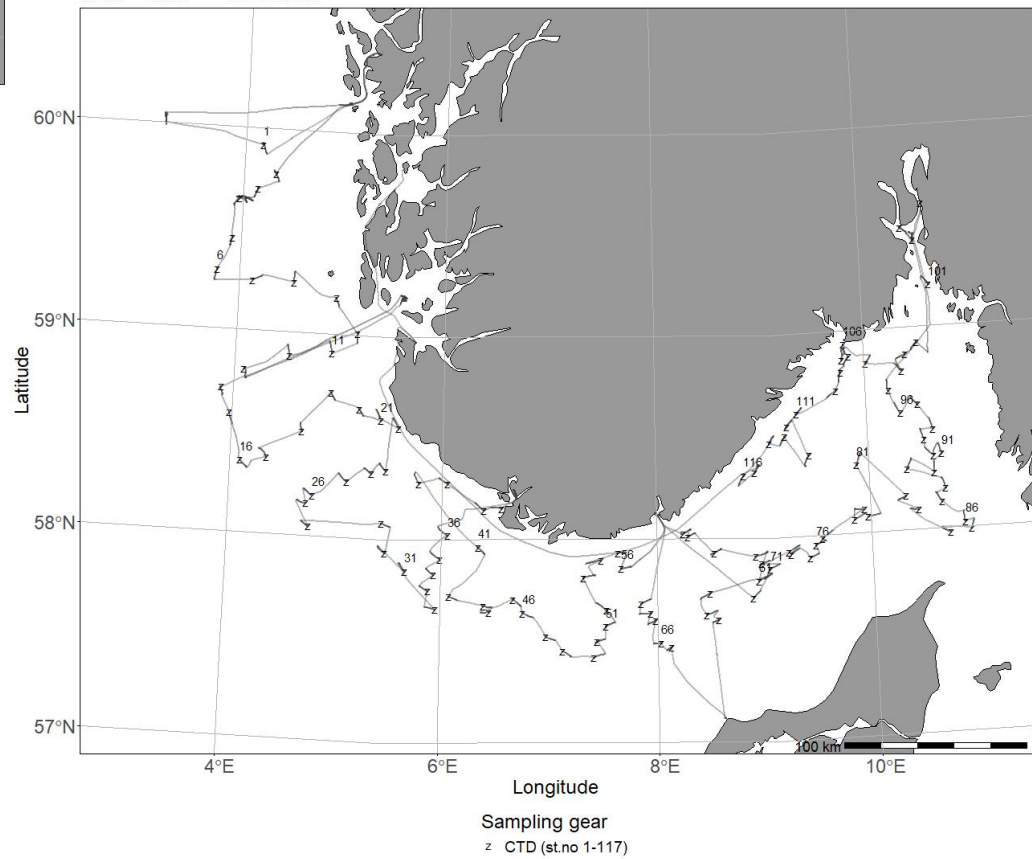
Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022616	15/06 - 30/06	The aim of the cruise was to study the spreading and collect density data on the snow crab in the Svalbard Fishery Protection Zone by using a research vessel. Our main study area was in the present area for commercial fishing. Also testing of different traps were performed during the cruise. Project name: 14422 Snøkrabbe and 15560 Fangstteknologi snøkrabbe	Barents Sea	-	110-701
2022617	01/07 - 05/07	2022-MP-025: Elucidate the influence of CH ₄ seeps (i.e., acidification) on the physiology and functioning of benthic ecosystem engineers (foraminifera, CWC and sponges) at LoVe Node 7 compared to control Node 1. On this cruise we will collect fauna with ROV, prepare fauna for deployment on benthic landers for transplantation. On-board physiological measurements will be carried out. Eco-Pulse: Sette ut rigger for å studere generering av brytende indre bølger på sokkelkanten og dess effekt på transport av materiale innover sokkelen og mattilgang for korallrev.	Norwegian Sea	758-843	-
2022618	05/07 - 09/07	Areas in central Norway were heavily contaminated with fallout from the Chernobyl accident in 1986. Due to rainfall during the first few days after the accident, some areas in Oppland, Hedmark, Trøndelag and Nordland counties, were particularly contaminated. Results from Norway's national monitoring programme Radioactivity in the Marine Environment (RAME: www.dsa.no) show that Vefsnfjord is one of the Norwegian fjords with highest levels of radioactive cesium (137Cs) in surface sediments with activity concentrations up to 348 Bq kg ⁻¹ dry weight (d.w.) in the period 2002-2020. These levels are two orders of magnitude higher than in open Norwegian sea area sediments, and confirm that Vefsnfjord is heavily affected by 137Cs contamination, even more than 30 years after the Chernobyl accident. The aim of this cruise was To investigate in more detail how 137Cs is transported from land via rivers to the Vefsnfjord. To study how 137Cs is distributed in the fjord between seawater, particles in the seawater, sediments and various marine organisms living in the fjord. We collected samples of surface seawater, bottom seawater, seawater from 20 m depth, surface sediments, sediment cores and various marine organisms. The seawater samples were size fractionated.	Norwegian Sea	844 - 885	220
2022619	12/07 - 15/08	First part: sampling standard transects for hydrography (salinity and temperature), nutrients (phosphate, nitrate, nitrite and silicate), chlorophyll, zooplankton, and fish eggs and larvae, in the North Sea during summer. Cruise programme (following standard transects) : 1. Hanstholm - Aberdeen 2. Scotland East Coast 3. Fair Isle - Pentland 4. Utsira mot vest The second part of the cruise (21st of July to 13th August) corresponds to the International Bottom Trawl Survey (IBTS), coordinated by the ICES International Bottom Trawl Survey Working Group (IBTSWG). IBTS targets the following commercial fish species: herring, cod, haddock, whiting, saithe, Norway pout, mackerel, sprat. The main objective of the IBTS quarter 3 survey is to monitor changes in these stocks independently of commercial fisheries data, and to collect data for the determination of biological parameters relevant to stock assessments. Additionally, demersal and benthic community compositions are monitored, including size composition for all fish and commercial invertebrates. Hydrographic data (salinity, temperature) are also collected at each station. Part1:Project name: 14917 - Early life history dynamics of North Sea fishes 14920 - Monitoring of climate and plankton in the North Sea Coordinating body: Institute of Marine Research (IMR) Part 2:Coordinating bodyProject nameICESICES Coordinated 3rd Quarter International Bottom Trawl Survey (IBTS) in the North SeaIMR14915 - North sea herring and sprat14916 - Monitoring of demersal stocks in the North Sea	North Sea	886 - 1017	221-282
2022620	16/08 - 22/08	2022-AKV-019: Overvåkning av koraller ved anlegg i Hardangerfjorden	North Sea	1023-1035	-

Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022622	25/11 - 28/11	2022-RED-004: Testing av installasjon, håndtering og bruk av AUV Munin+ på Kristine Bonnevie når det er forenlig med andre toktaktiviteter.	North Sea	1321	-
2022623	30/08 - 01/09	Collection of marine materials and data for BIO 102 course at University of Bergen.	North Sea	1066 - 1073	313 - 327
2022624	05/09 - 26/09	Stock assessment study for red king crab in quota regulated area in East Finnmark, Norway Collecting CTD-stations Collecting data for e-DNA. Project name: 15594- Kongekrabbe Project name: 15691 Overvåking fjordoseanografi Project name:15602 Fishdiv	Norskekysten: Troms/Finnmark	1074 - 1120	94-547
2022625	28/09 - 13/10	The cruise KB2022625 (28. September 2022, Tromsø to 13. October 2022, Tromsø) aboard the Research Vessel Kristine Bonnevie is a Polar Front process studies cruise of the Nansen LEGACY project. The study region covered the steep topographic slope southeast of Bjørnøya and the Polar Front region between Hopen and Storebanken, all-in-all spreading 73.5° - 78°N and 19.5°-34.5°E. The objectives are to study frontal mixing processes using microstructure profilers, to deploy and recover a short-term mooring at the Polar Front and to deploy (and recover) an underwater glider equipped with turbulence sensors. The overarching goal is to collect data allowing for the analysis of physical processes at the Polar Front on sub-tidal to synoptic timescales. Combined with data from previous cruises, the timescales of investigation may be expanded to seasonal and inter-annual periods. We collected measurements of ocean stratification, currents, and microstructure from the vessel as well as from transects using ocean gliders. From the vessel we obtained 267 microstructure profiles down to 0-20 m above seabed, 64 CTD/LADCP profiles down to 5 m above seabed (all with salinity calibration samples taken at the deepest point), and 14 days of underway current profiles. From the glider we obtained 207 profiles (7 days) including using microstructure sensors in the Polar Front region north of Hopen Trench. Cruise coordinator: Dr. Ilker Fer, Geophysical Institute, University of Bergen, Norway Project name: The Nansen LEGACY Coordinating body: University of Tromsø, Norway	Barents Sea	1121-1182	-
2022626	15/10 - 24/11	Annual combined acoustic and bottom trawl survey along the Norwegian coast north of 62 N map the distribution and estimate acoustic abundances indices, length, weight and maturity at age of cod, saithe and haddockimprove data basis, by allocating additional bottom trawls, for the assessment of golden redfishmap the general hydrographical regime by using a CTD-sonde to monitor the temperature and salinity at bottom trawl stations and/or at fixed intervals (about 30 NM) in selected fjord systems Lyngen, Malangen, Ulsfjord, and Nordland - collect additional biological - and catch data for monitoring purposes and the establishment of a time series of deep water shrimpscollect zooplankton samples in selected fjords, as well as water for chemical analysiscollect sediment samples in Lakse-, Vefsn-, Namsen-, and Trondheimsfjordacoustic coverage of sprat in Trondheimsfjord and Romsdalsfjordsacoustic coverage of 0 and 1-group heering in Finnmark fjordscollect eDNA samples on selected CTD stationscollect frozen fish for analysis of contaminants	Norwegian Sea	1183 - 1320	330 - 495
2022628	06/12 - 11/12	Acoustic trawl survey for surveying sprat and herring, zooplankton and hydrography from Arendal to Oslo. Provide abundance indices for sprat for giving fishery advice. The survey covered the southern Norwegian coast and Oslofjorden.	North Sea	1322-1337	496 - 512
2022629	07/02 - 07/02	-	Norwegian Sea	-	-
2022630	20/08 - 29/08	Acoustic trawl survey for surveying sprat and herring, zooplankton and hydrography in western Norwegian fjords. Provide abundance indices for sprat for giving fishery advice. The survey covered Nordfjord, Sognefjorden and Hardangerfjord.	North Sea	1036 - 1064	286-312

7 - "Kristine Bonnevie" – Charts for 2022

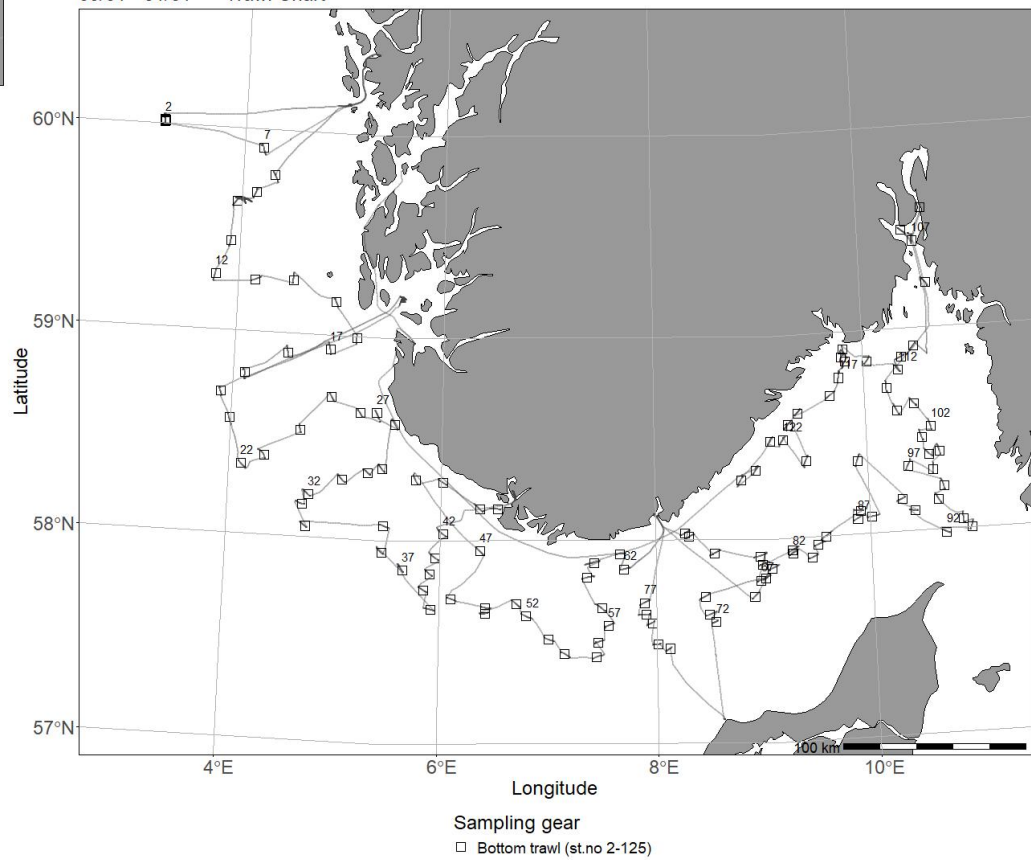


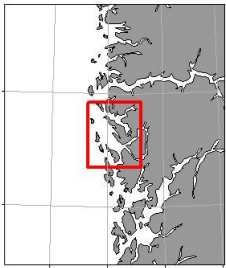
2022601 - Kristine Bonnevie
05/01 - 31/01 - CTD Chart



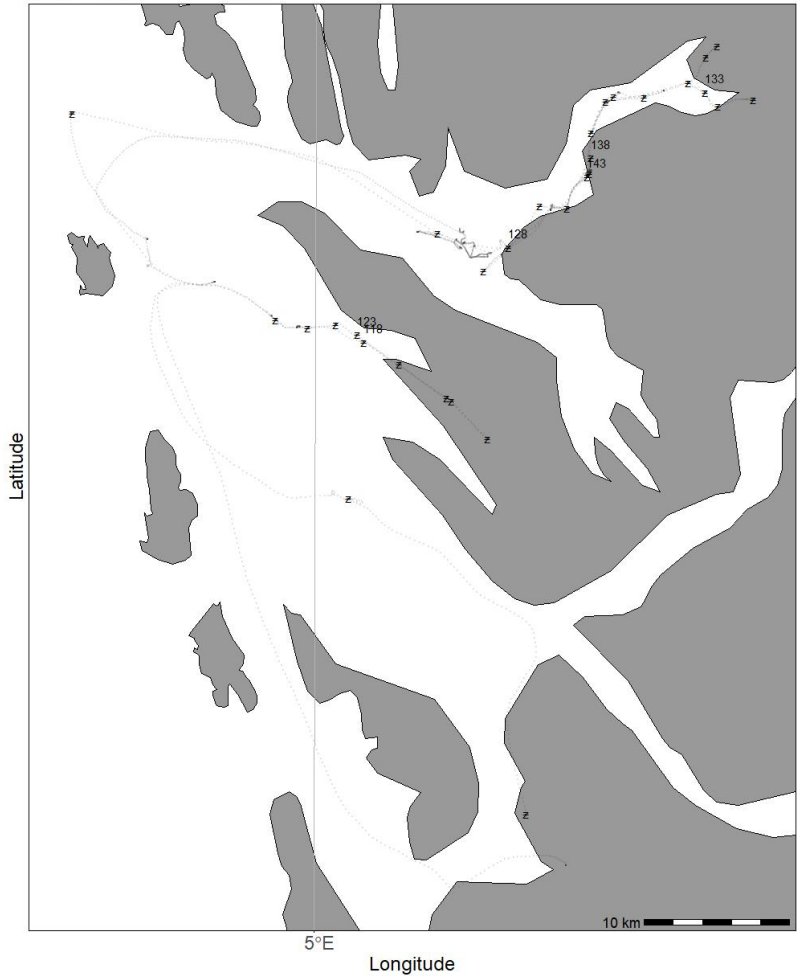


2022601 - Kristine Bonnevie
05/01 - 31/01 - Trawl Chart

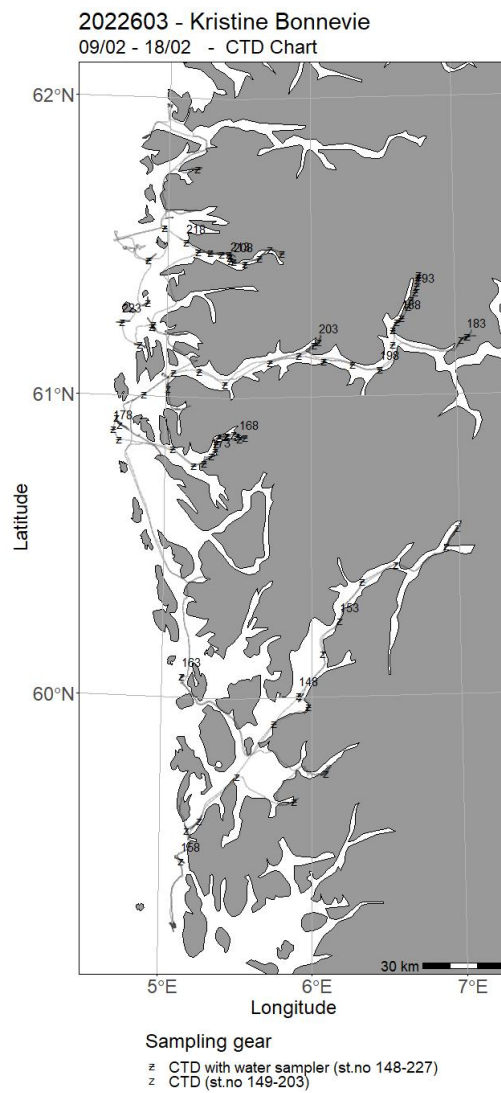


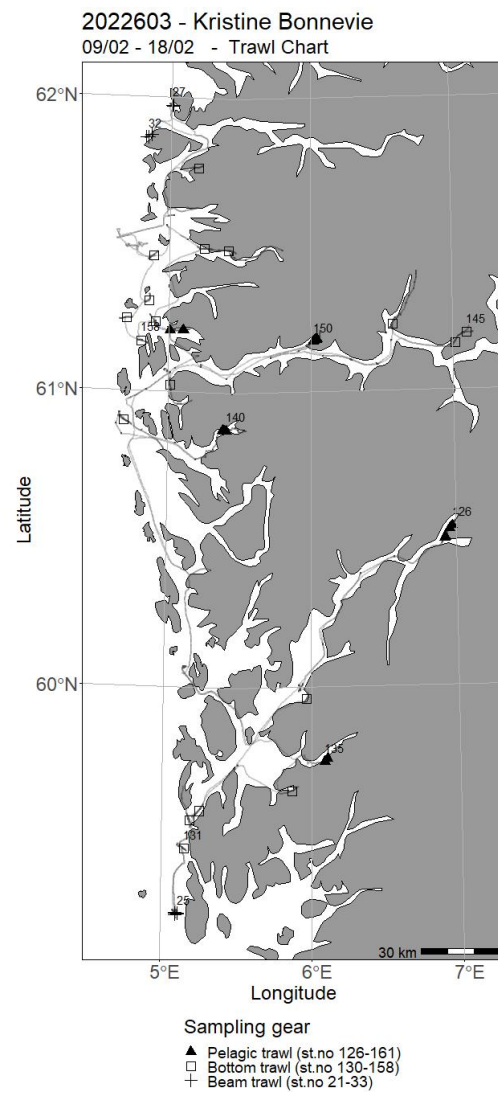


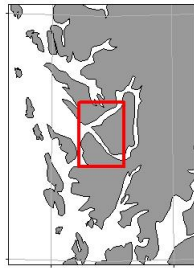
2022602 - Kristine Bonnevie
02/02 - 05/02 - CTD Chart



Sampling gear
z CTD with water sampler (st.no 118-147)



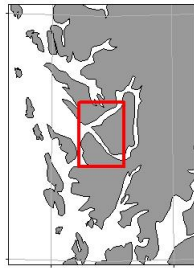




2022604 - Kristine Bonnevie
19/02 - 22/02 - CTD Chart

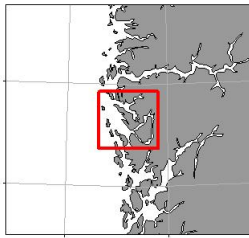


Sampling gear
z CTD with water sampler (st.no 228)

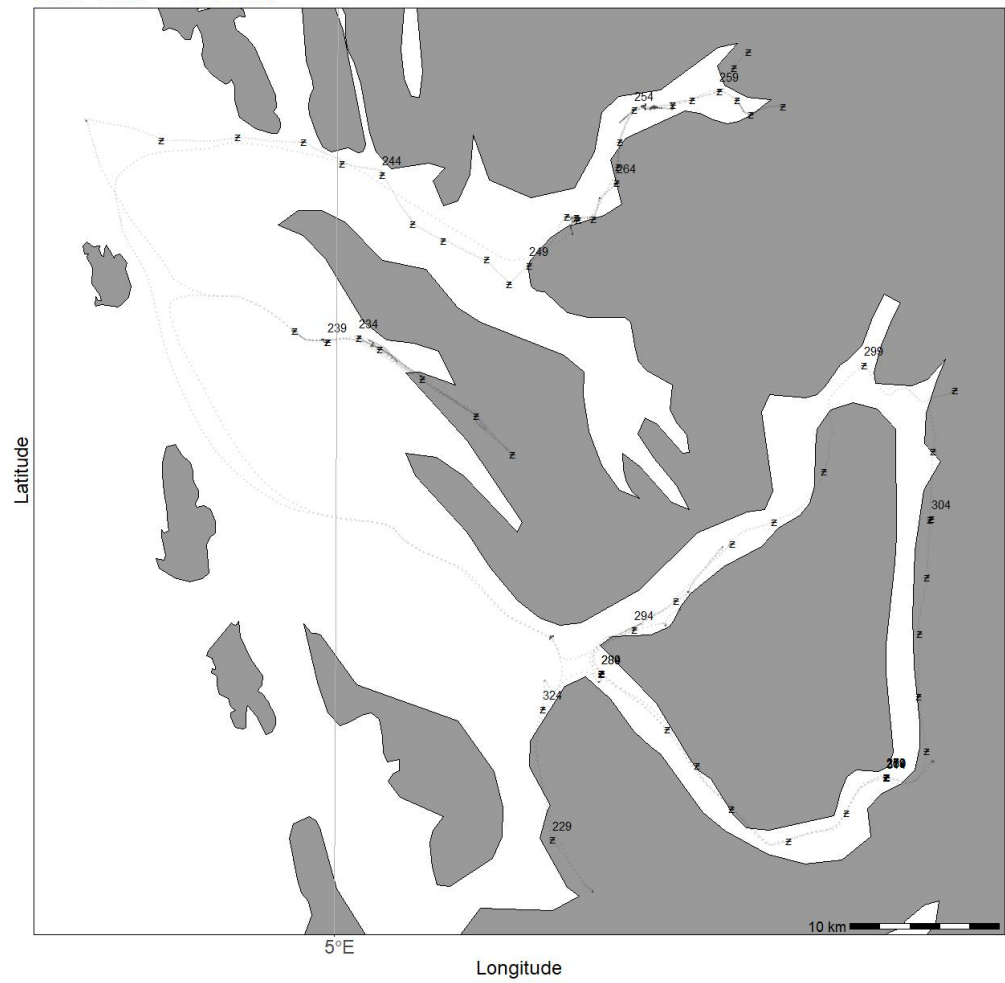


2022604 - Kristine Bonnevie
19/02 - 22/02 - Trawl Chart

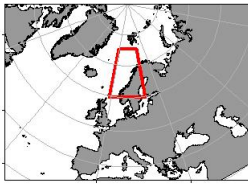




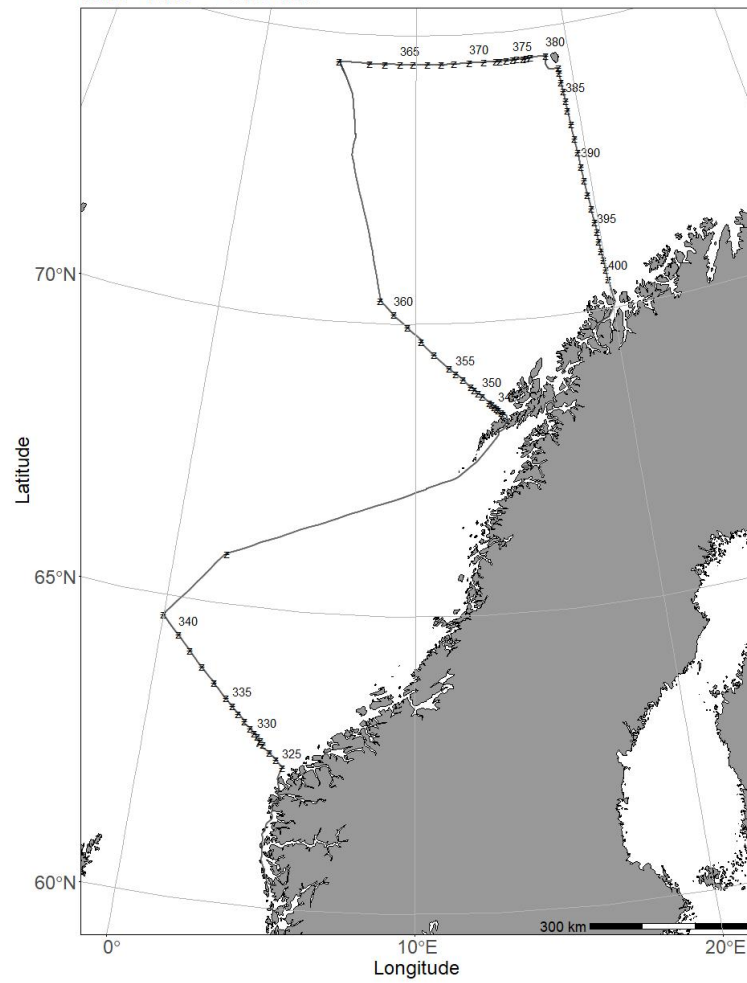
2022605 - Kristine Bonnevie
23/02 - 01/03 - CTD Chart



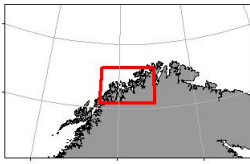
Sampling gear
z CTD with water sampler (st.no 229-324)



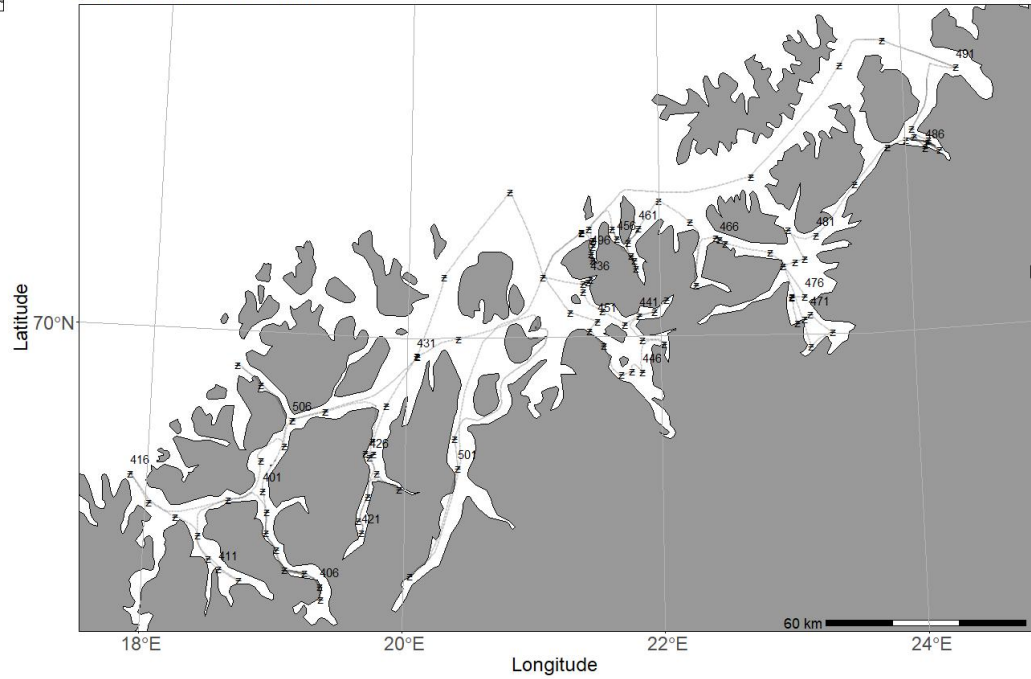
2022606 - Kristine Bonnevie
03/03 - 17/03 - CTD Chart



Sampling gear
z CTD with water sampler (st.no 325-400)



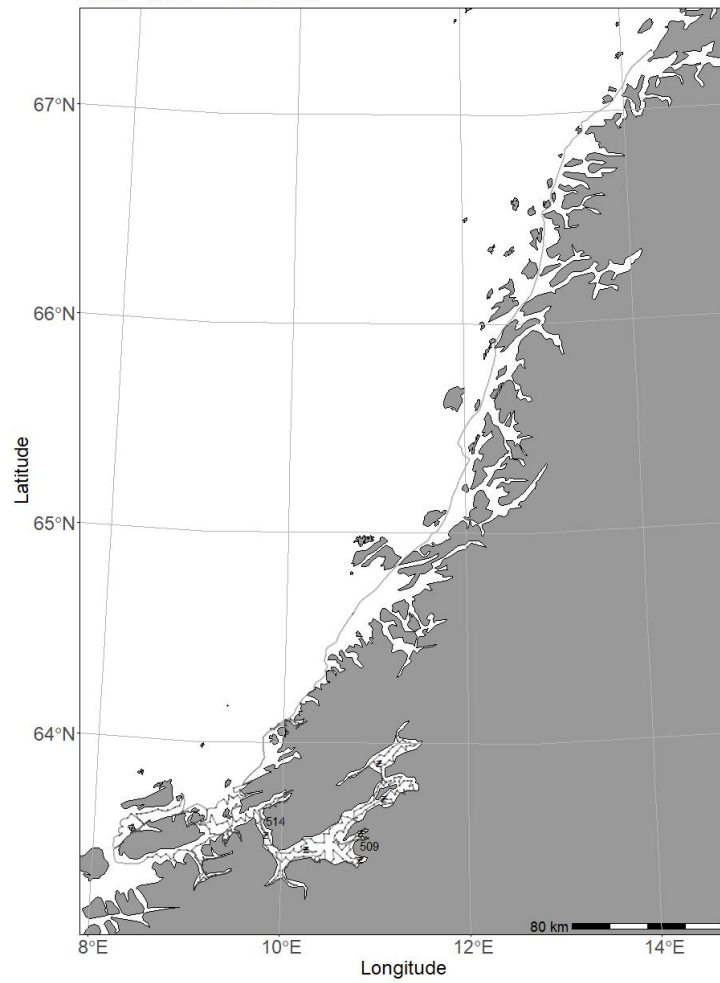
2022607 - Kristine Bonnevie
18/03 - 24/03 - CTD Chart



Sampling gear
z CTD with water sampler (st.no 401-508)



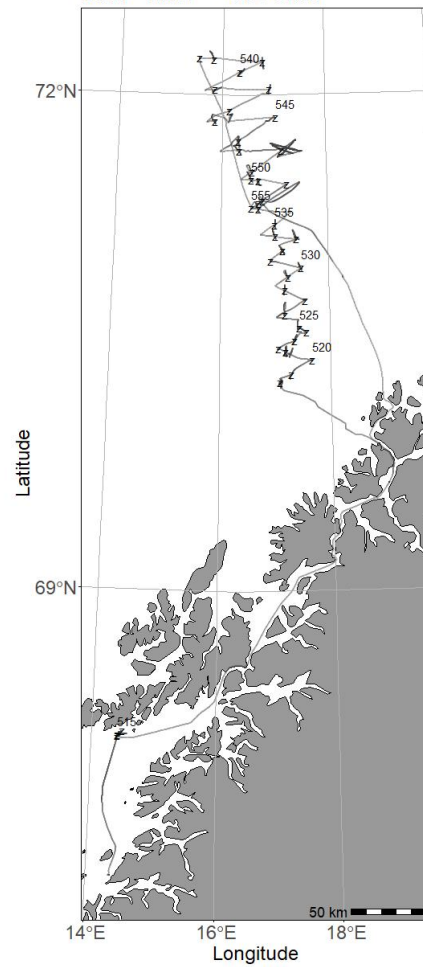
2022608 - Kristine Bonnevie
29/03 - 07/04 - CTD Chart



Sampling gear
z CTD with water sampler (st.no 509-514)



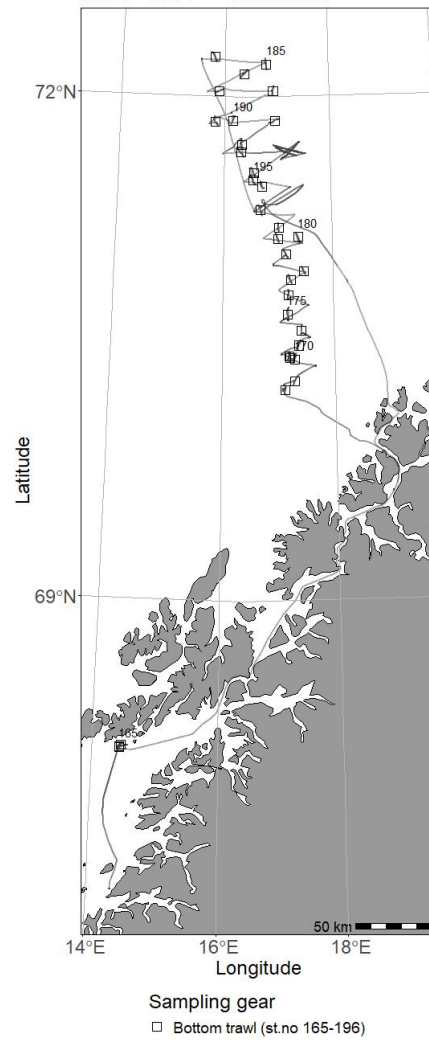
2022609 - Kristine Bonnevie
08/04 - 19/04 - CTD Chart



Sampling gear
z CTD with water sampler (st.no 515)
z CTD (st.no 516-555)

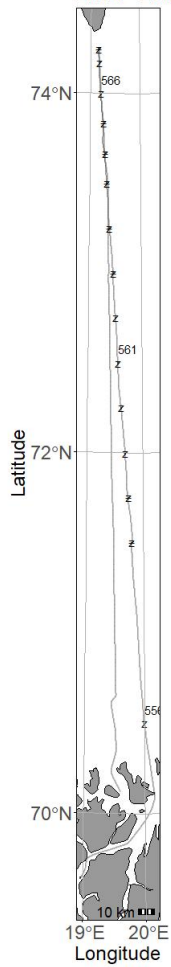


2022609 - Kristine Bonnevie
08/04 - 19/04 - Trawl Chart





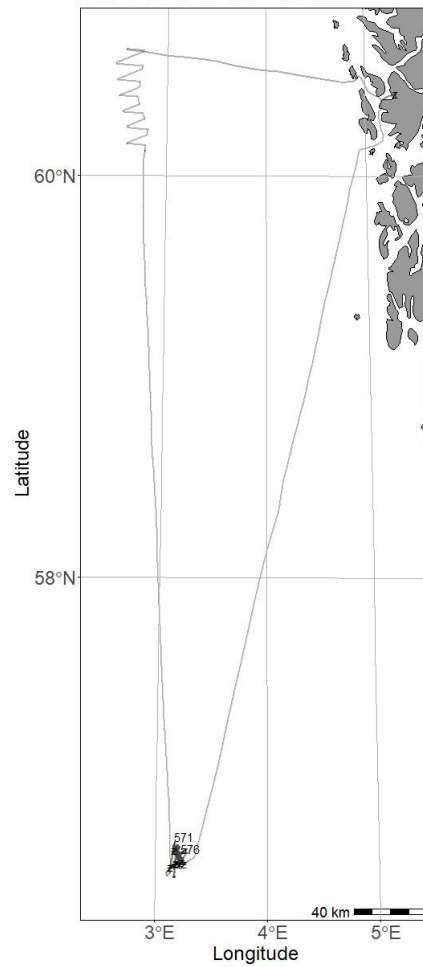
2022610 - Kristine Bonnevie
20/04 - 23/04 - CTD Chart



Sampling gear
z CTD (st.no 556-567)
z CTD with water sampler (st.no 557-570)



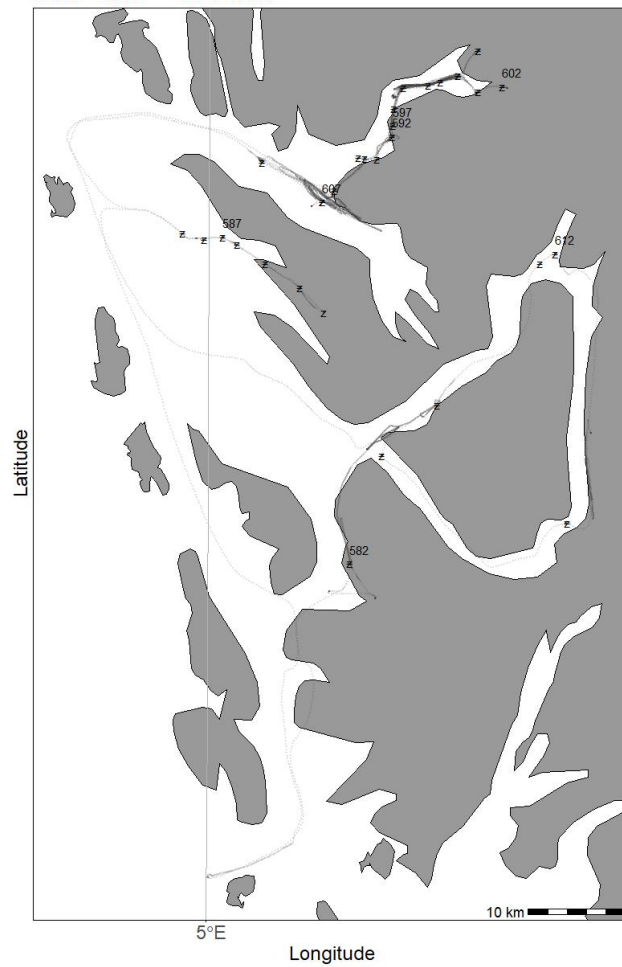
2022611 - Kristine Bonnevie
29/04 - 09/05 - CTD Chart



Sampling gear
≡ CTD with water sampler (st.no 571-579)
z CTD (st.no 574-580)



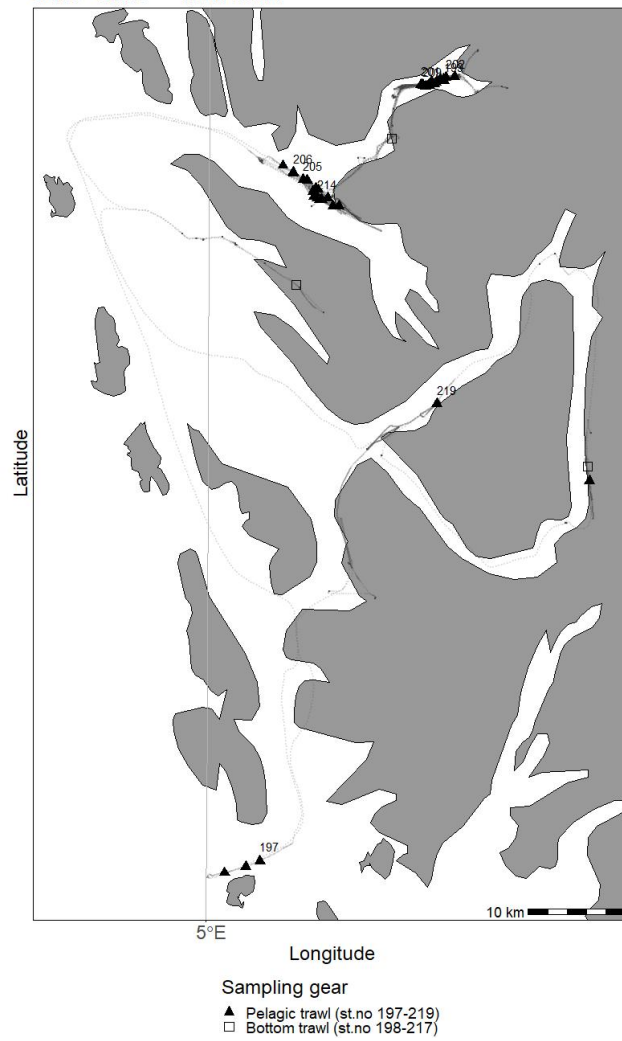
2022614 - Kristine Bonnevie
22/05 - 28/05 - CTD Chart

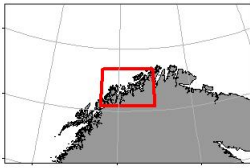


Sampling gear
z CTD with water sampler (st.no 582-613)
z CTD (st.no 583-607)

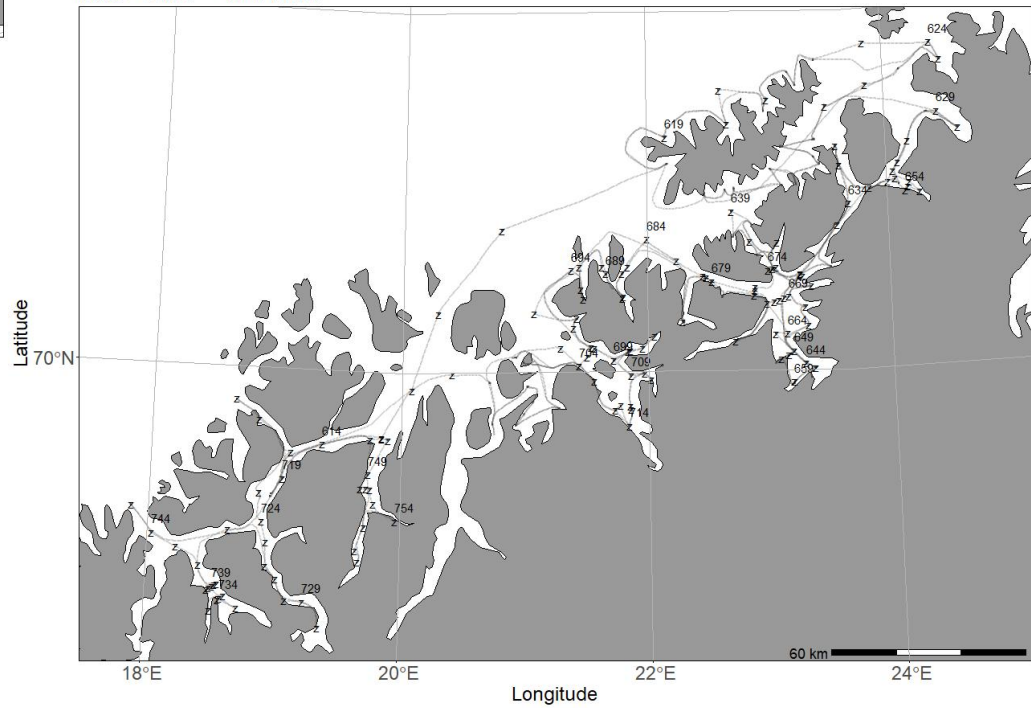


2022614 - Kristine Bonnevie
22/05 - 28/05 - Trawl Chart





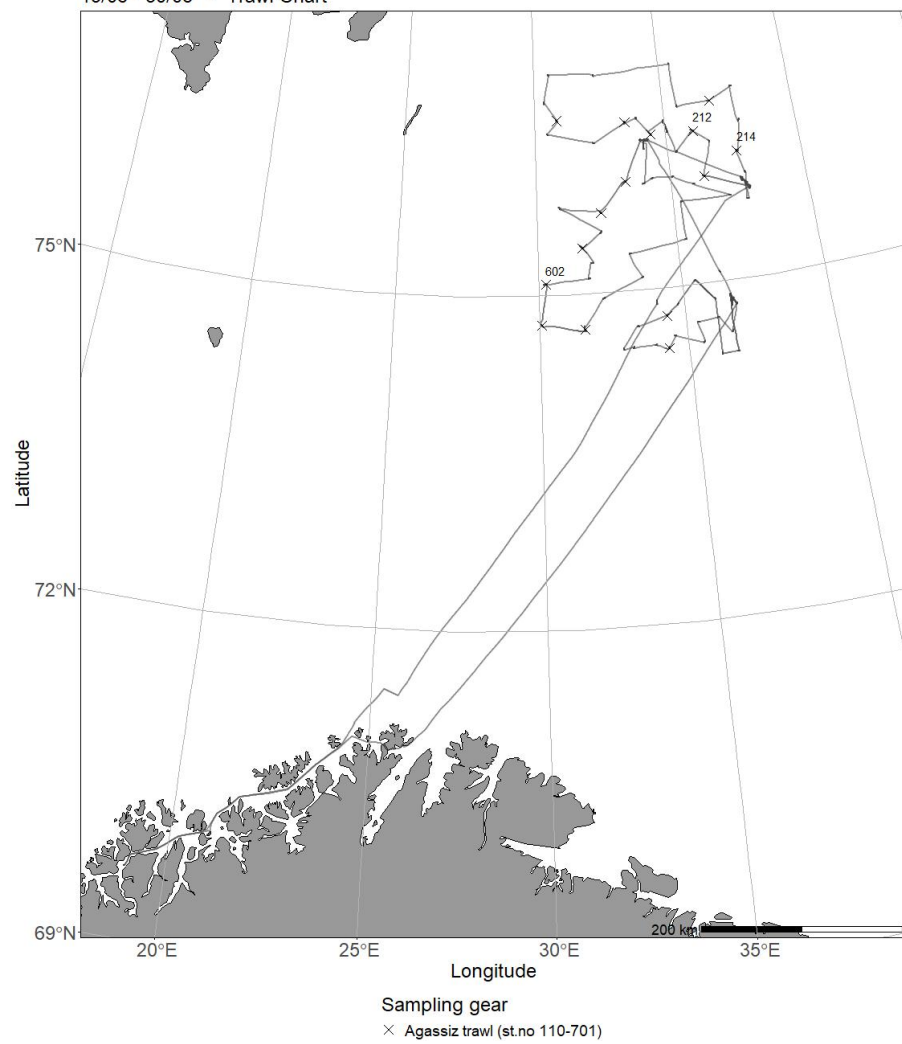
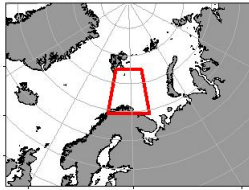
2022615 - Kristine Bonnevie
01/06 - 12/06 - CTD Chart

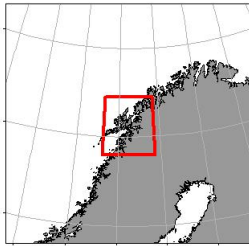


Sampling gear

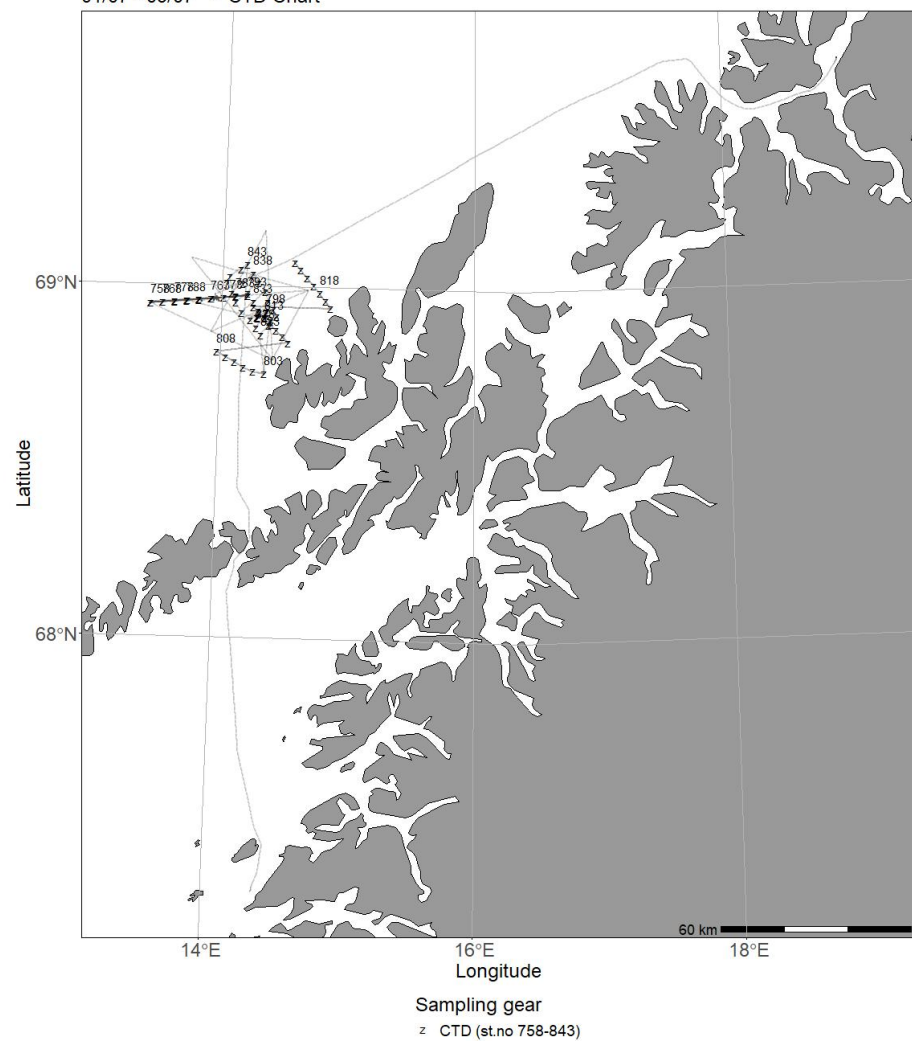
- z CTD (st.no 614-757)
- z CTD with water sampler (st.no 679-681)

2022616 - Kristine Bonnevie
15/06 - 30/06 - Trawl Chart



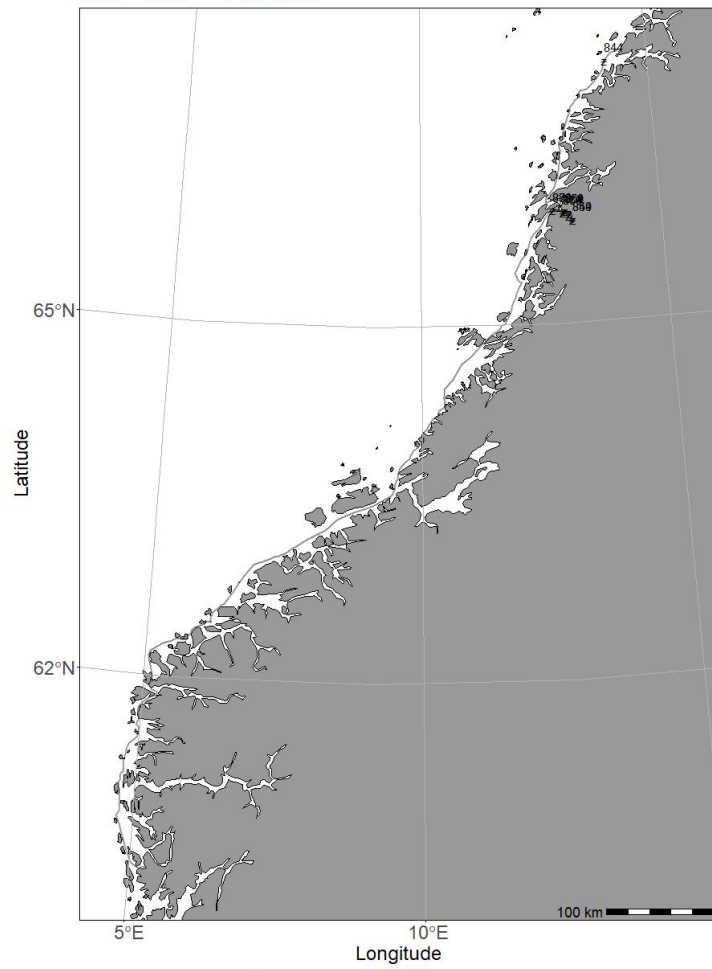


2022617 - Kristine Bonnevie
01/07 - 05/07 - CTD Chart





2022618 - Kristine Bonnevie
05/07 - 09/07 - CTD Chart

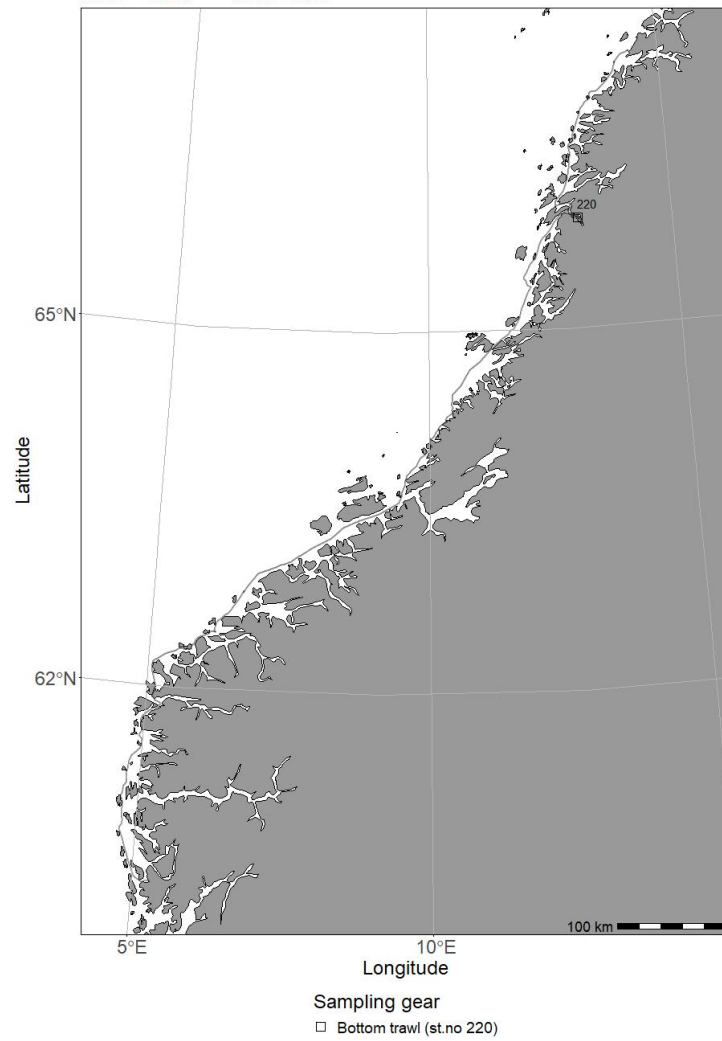


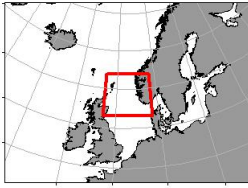
Sampling gear

- z CTD with water sampler (st.no 844-885)
- z CTD (st.no 845-876)

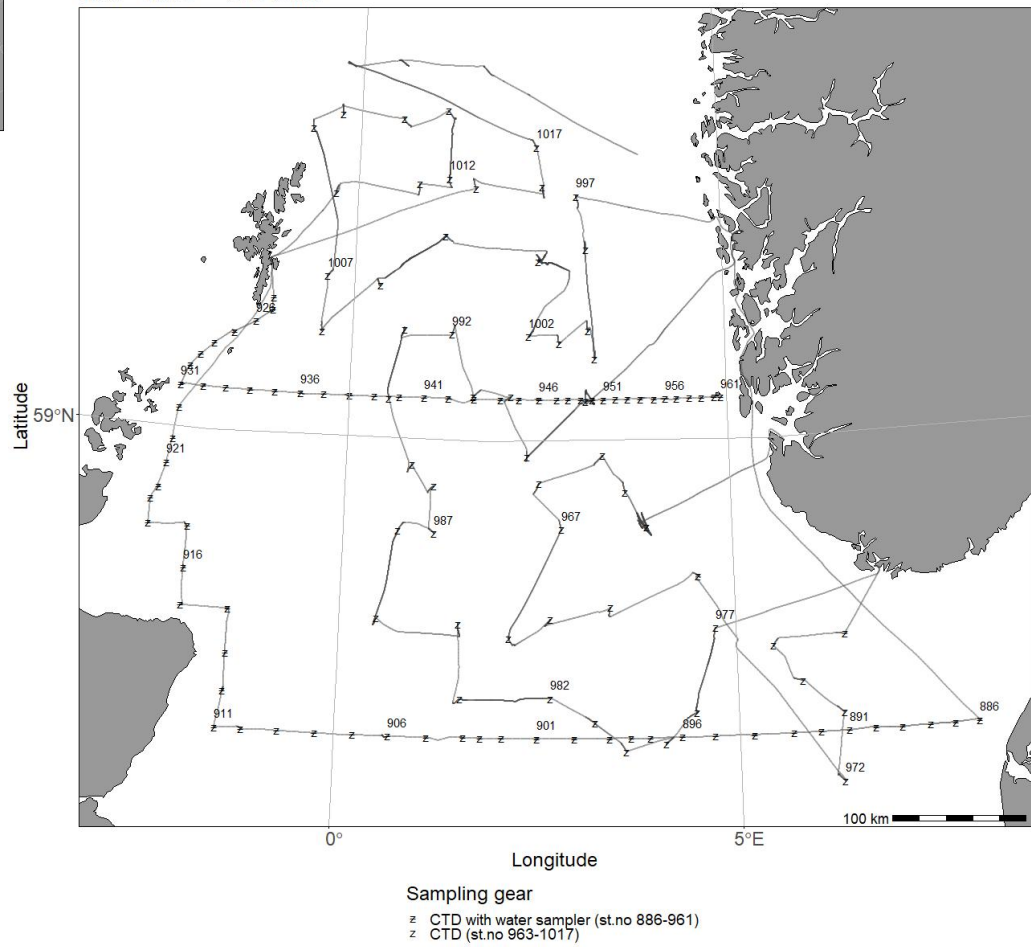


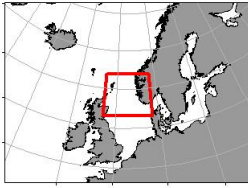
2022618 - Kristine Bonnevie
05/07 - 09/07 - Trawl Chart



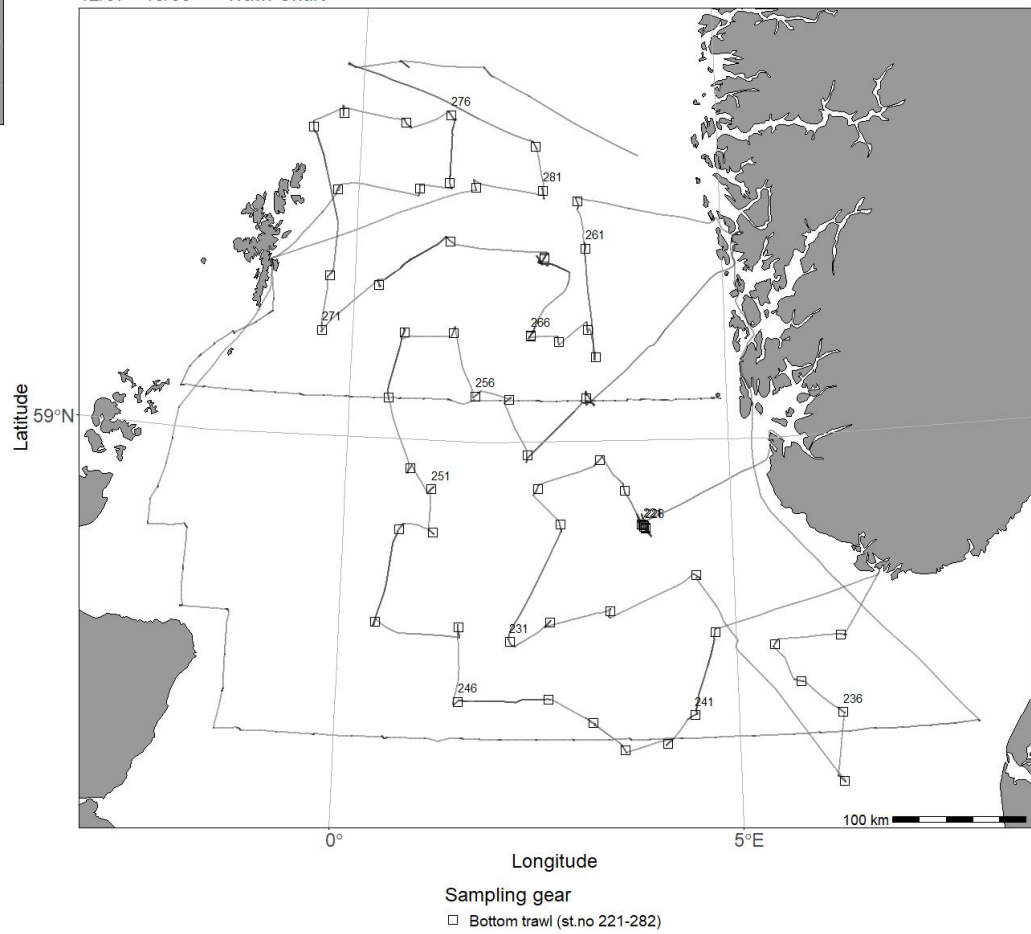


2022619 - Kristine Bonnevie
12/07 - 15/08 - CTD Chart



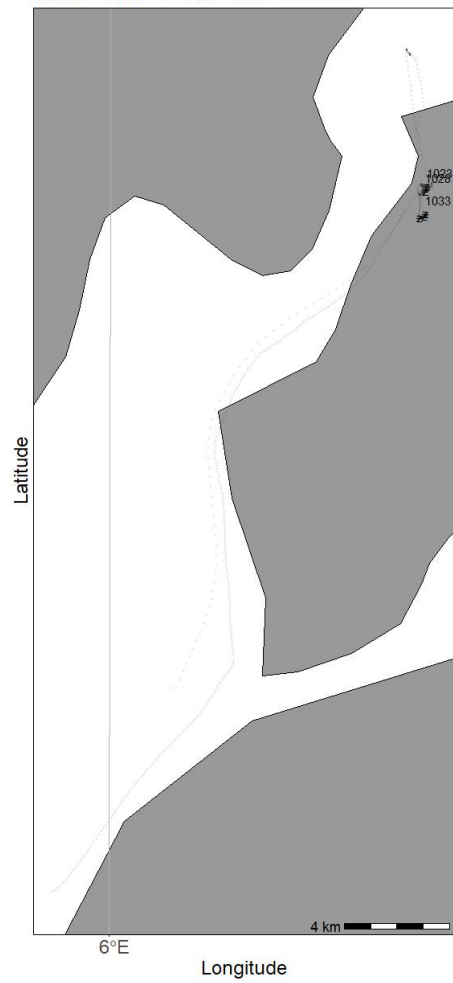


2022619 - Kristine Bonnevie
12/07 - 15/08 - Trawl Chart



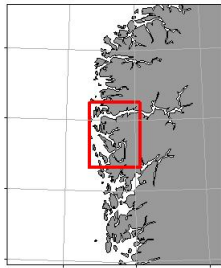


2022620 - Kristine Bonnevie
16/08 - 22/08 - CTD Chart

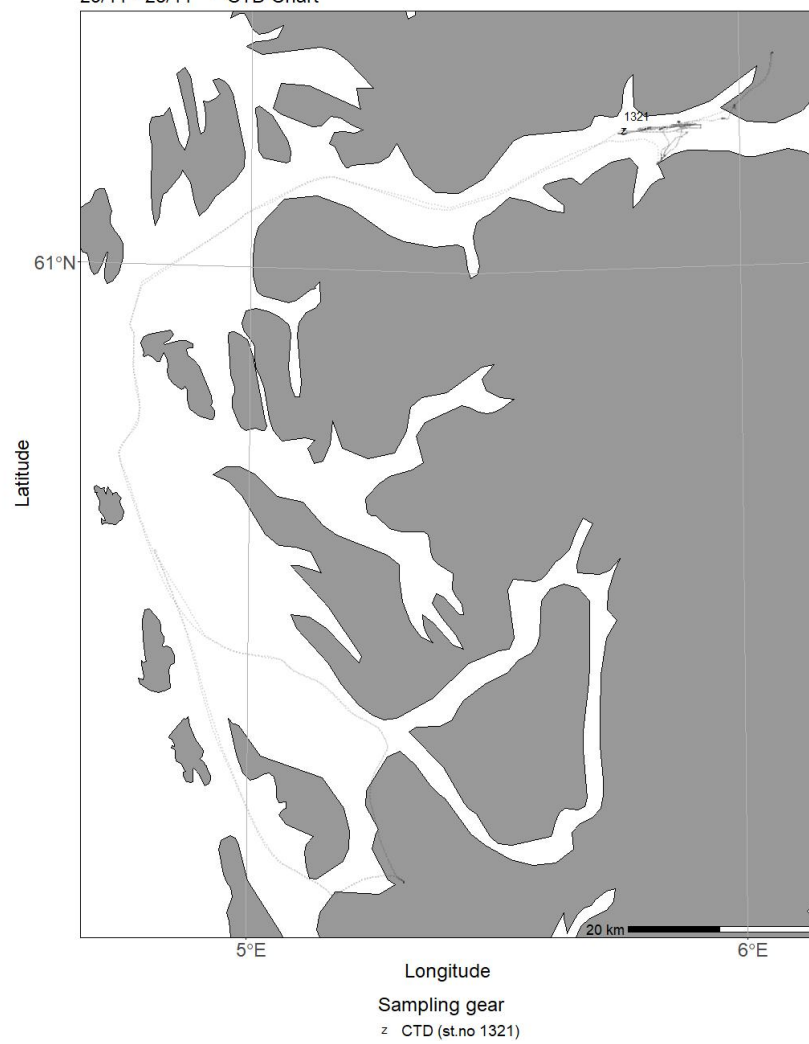


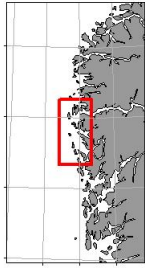
Sampling gear

z CTD with water sampler (st.no 1023-1035)

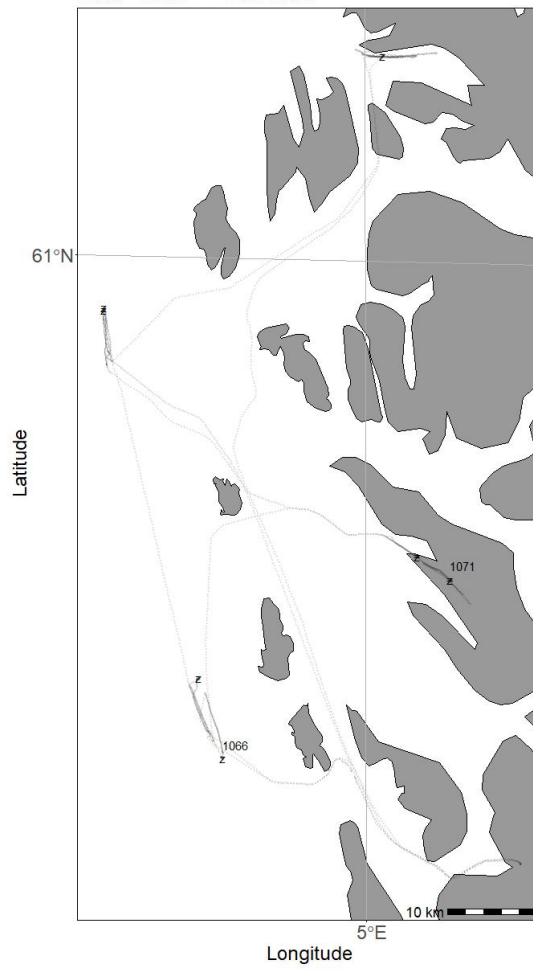


2022622 - Kristine Bonnevie
25/11 - 28/11 - CTD Chart



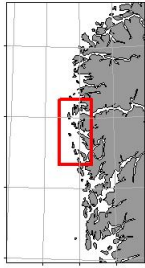


2022623 - Kristine Bonnevie
30/08 - 01/09 - CTD Chart

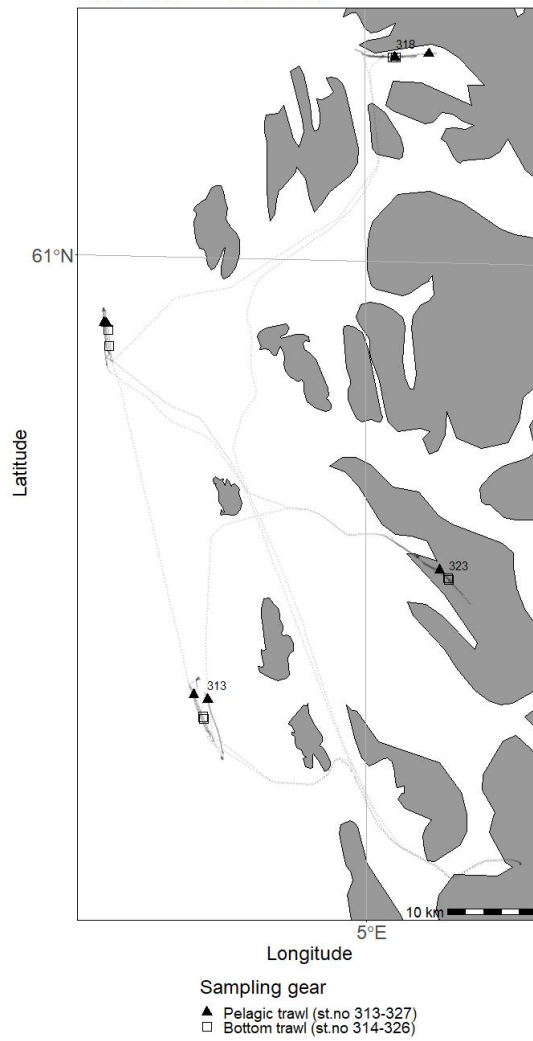


Sampling gear

- z CTD (st.no 1066-1073)
- z CTD with water sampler (st.no 1070-1072)

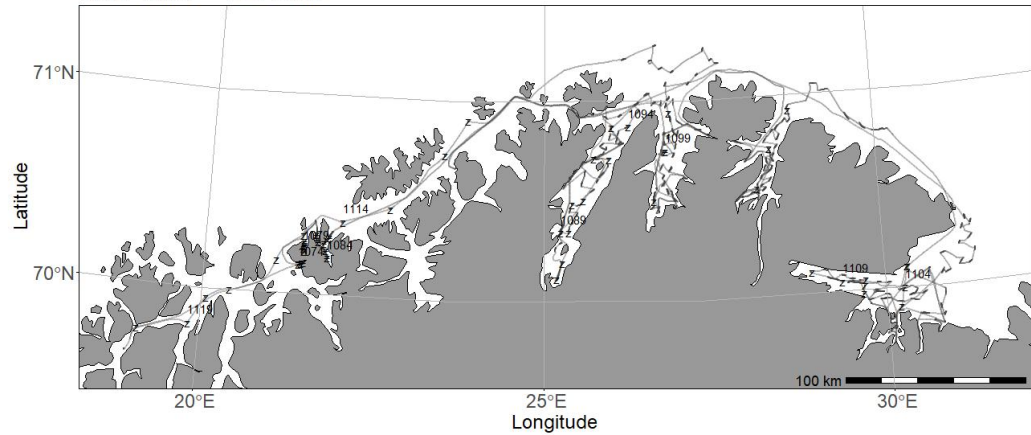


2022623 - Kristine Bonnevie
30/08 - 01/09 - Trawl Chart



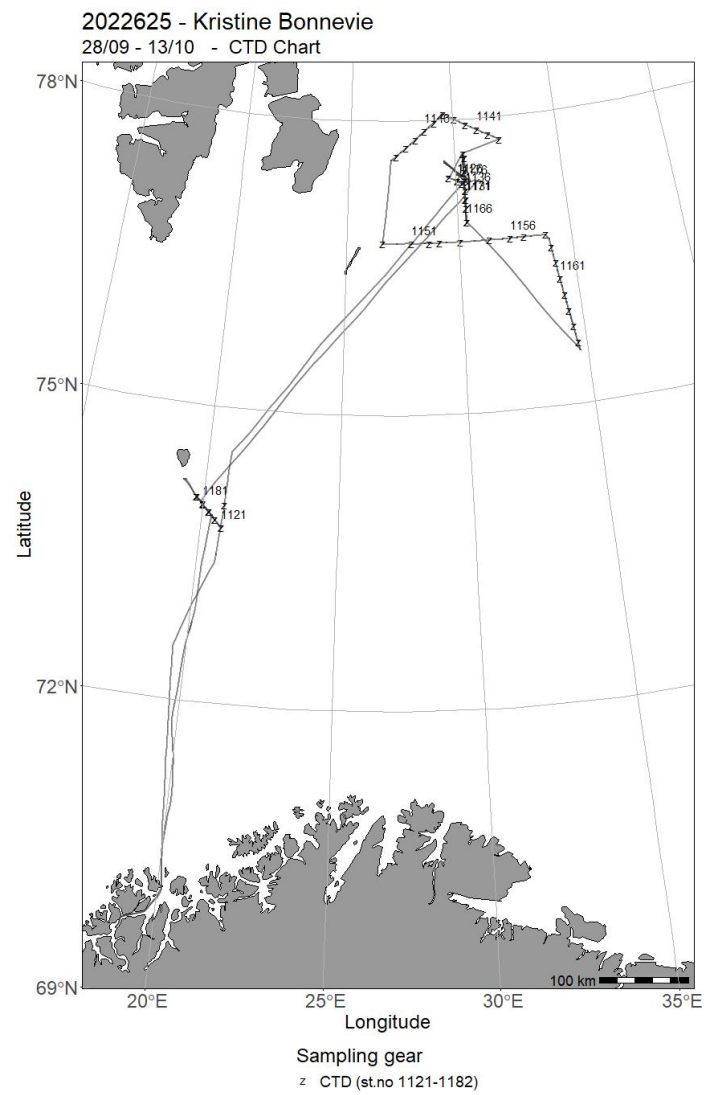


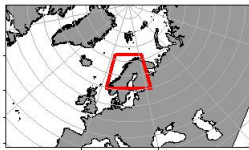
2022624 - Kristine Bonnevie
05/09 - 26/09 - CTD Chart



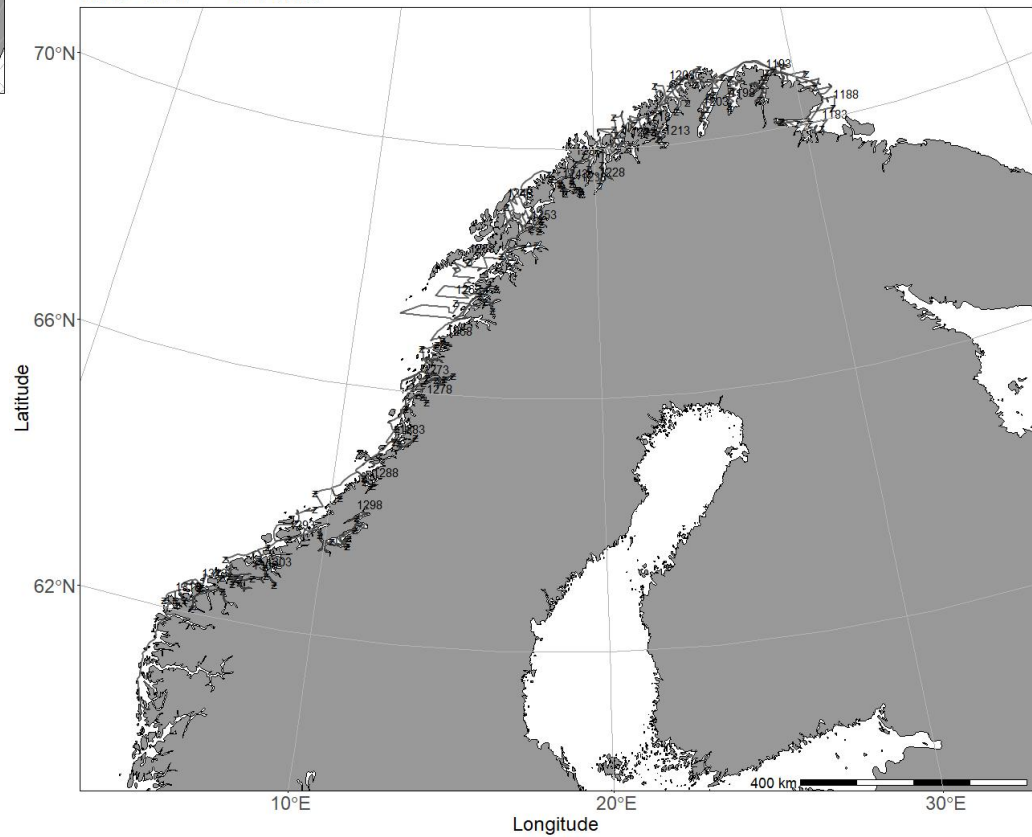
Sampling gear

- z CTD with water sampler (st.no 1074-1099)
- z CTD (st.no 1087-1120)



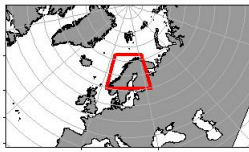


2022626 - Kristine Bonnevie
15/10 - 24/11 - CTD Chart

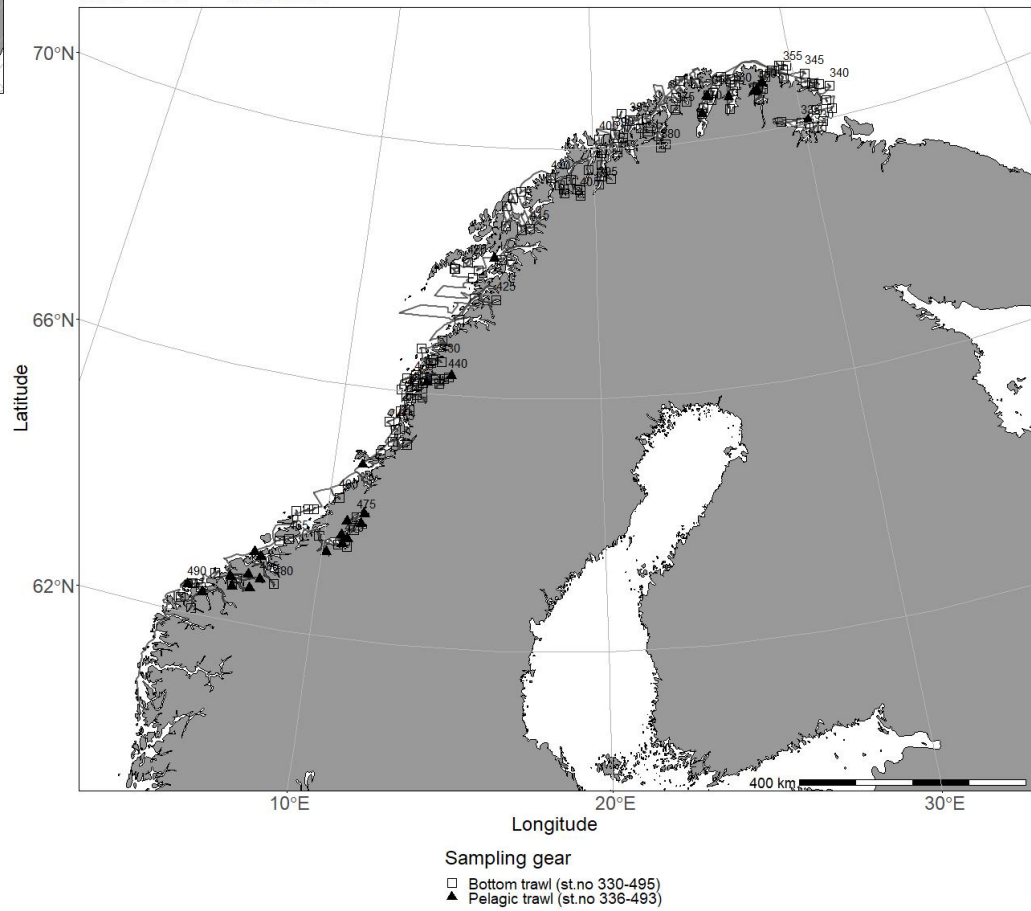


Sampling gear

- z CTD (st.no 1183-1312)
- z CTD with water sampler (st.no 1235-1320)

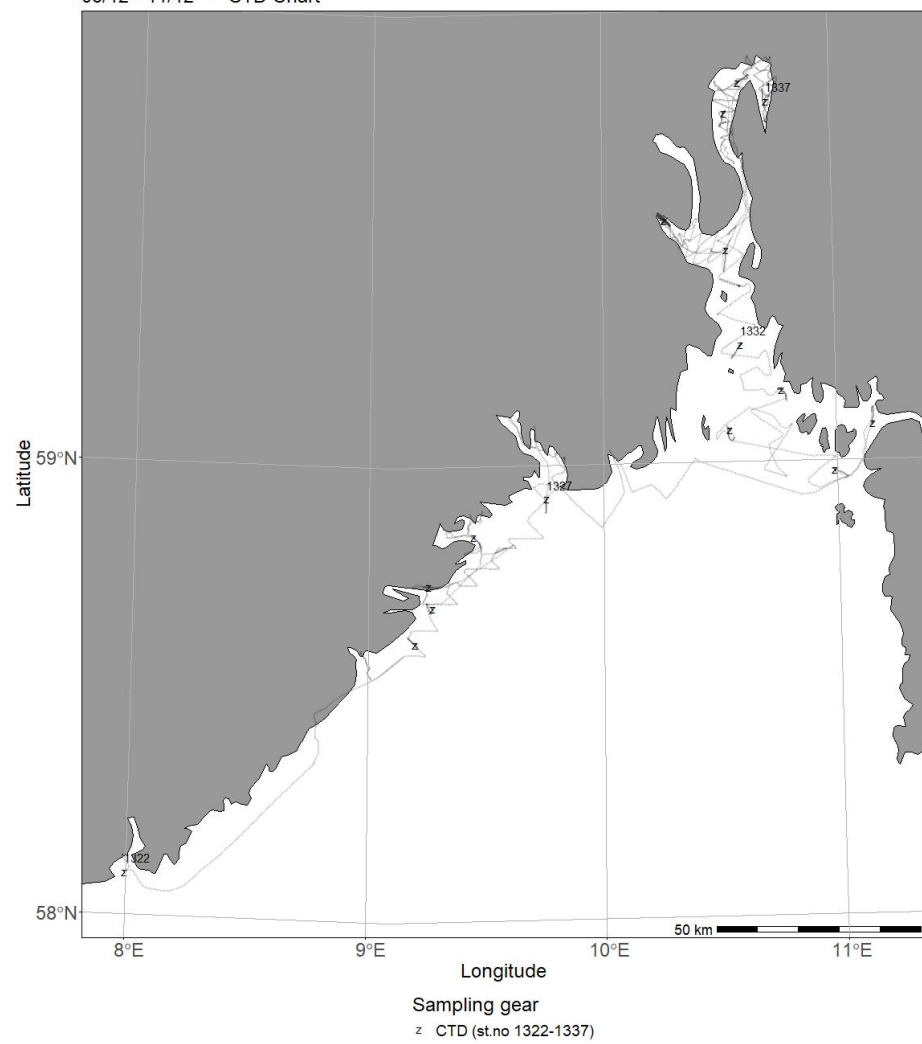


2022626 - Kristine Bonnevie
15/10 - 24/11 - Trawl Chart



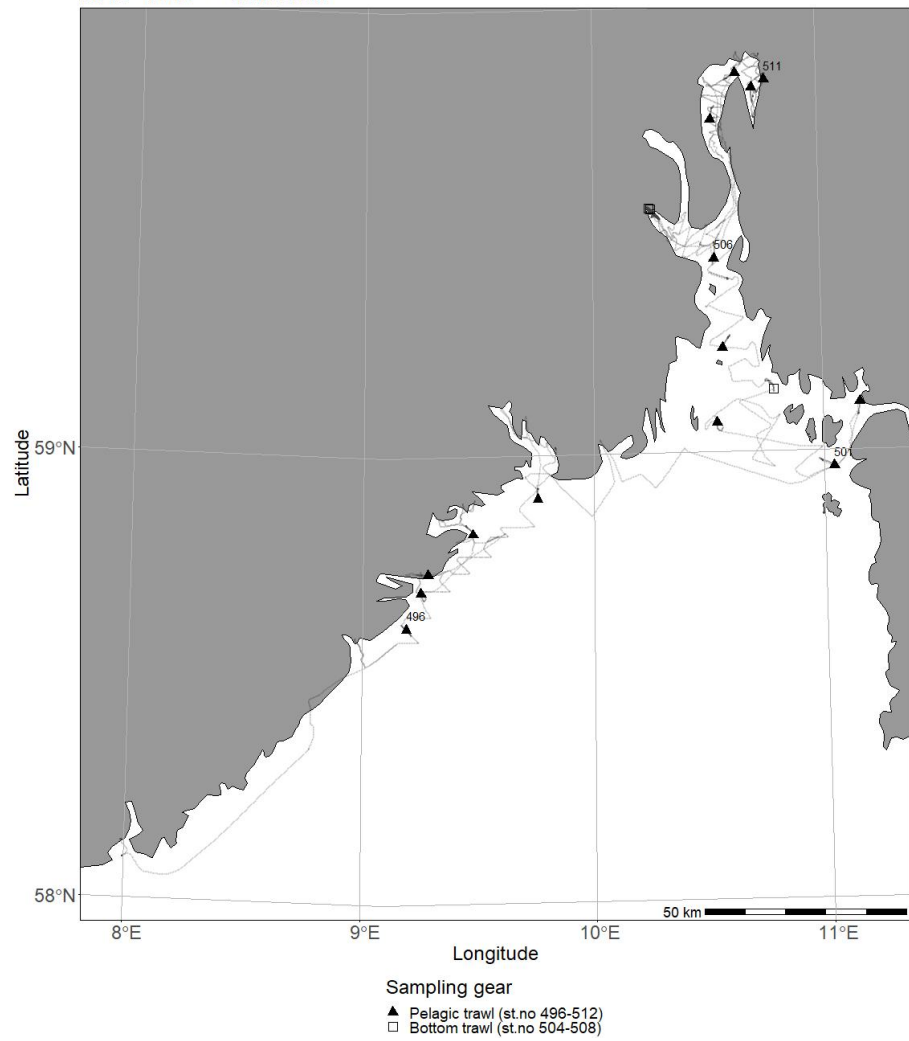


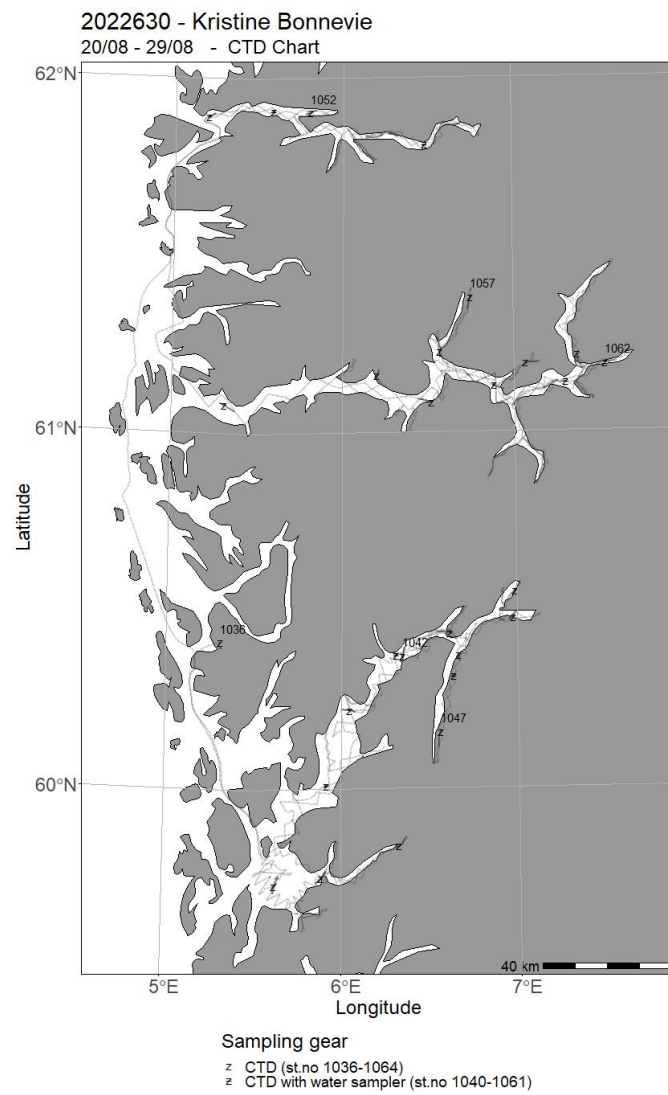
2022628 - Kristine Bonnevie
06/12 - 11/12 - CTD Chart

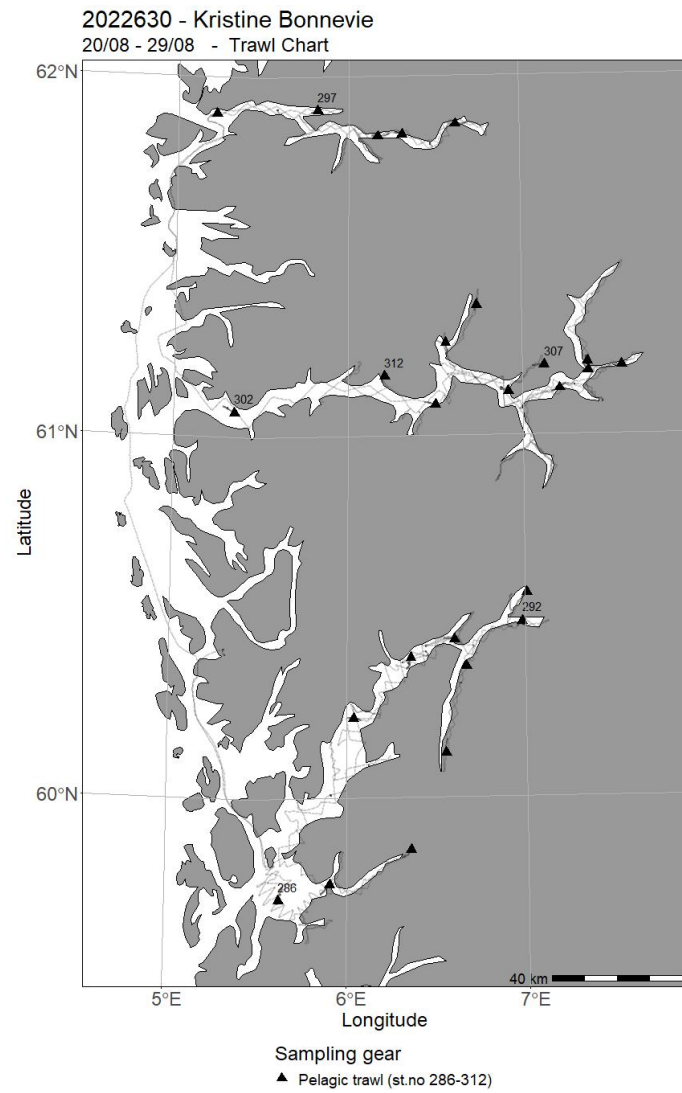




2022628 - Kristine Bonnevie
06/12 - 11/12 - Trawl Chart







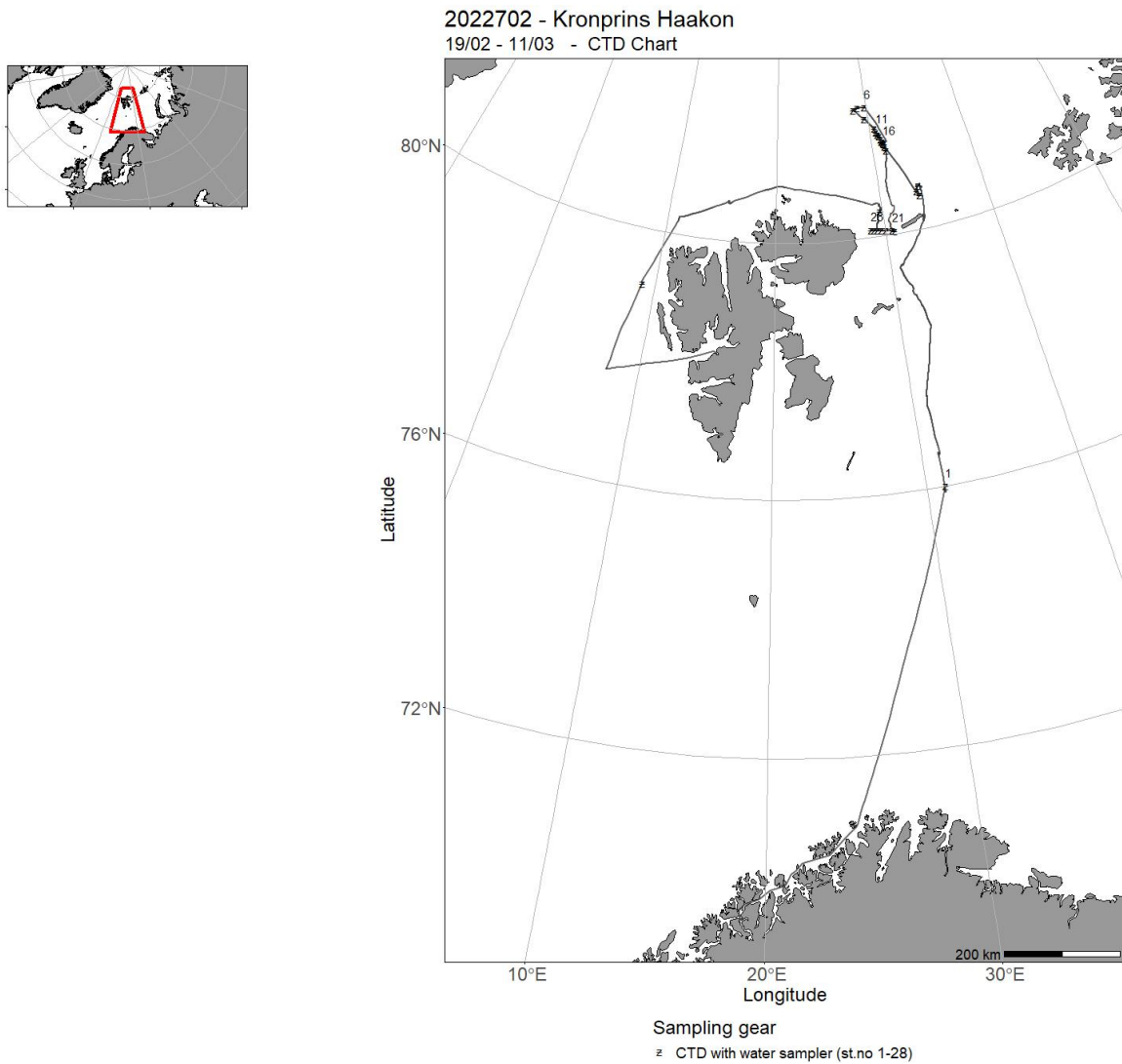
8 - "Kronprins Haakon" – Cruises 2022

Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022702	19/02 - 11/03	The NL JC3 cruise was a joint cruise of RFs 1, 2, 3 and RA-C in the Nansen Legacy project. Chief scientists were Angelika Renner (IMR) and Rolf Gradinger (UiT). Main objective of the cruise was an interdisciplinary survey including physical, biological and chemical sampling as well as technological experiments to further our understanding of the connection between the northern Barents Sea and the continental shelf, slope and deep basin north of Svalbard during the transition time from winter to spring. To achieve this, sampling was conducted on five process stations, three of them in sea ice, and along two CTD transects. Ship-based sampling included CTD profiles including dual rosette-mounted LADCPs and water samples for biology and biogeochemistry, pelagic sampling for phyto-, zooplankton and fish, and benthic sampling. Sea ice work included sea ice physics, biology and biogeochemistry as well as ROV work for technology development. Underway sampling included surface T, S and pCO ₂ measurements, shipboard ADCP (38 and 150 kHz) and EK80, weather station data, and wind observations with new instrumentation. Additionally, three gliders were recovered in the central Barents Sea and west of Svalbard. Project name: The Nansen Legacy Coordinating body: UiT The Arctic University of Norway	Barents Sea	1-28	1 - 5
2022703	16/03 - 11/04	The 2022 survey of harp and hooded seal pup production in the Greenland Sea was carried out to obtain updated estimates to be used to assess current status of these two seal stocks. Since a similar survey in 2018 indicated a 40% reduction in harp seal pup production since the 2012 survey, and the continued lack of increase in pup production of the severely depleted hooded seal stock despite its protection from hunting since 2007, a new survey after a period of only 4 years was urgent. The survey was carried out using well established methodologies for these species, including 1) reconnaissance of the drift ice breeding habitat from a helicopter based on the research icebreaker R/V Kronprins Haakon and a fixed-wing aircraft stationed at Constable Pynt in East Greenland, 2) deploying GPS beacons around the identified breeding areas to monitor its displacement in the East Greenland Current, 3) carrying out staging surveys to monitor the pup age structure and estimate the optimal day of pup counting as well as correction factors accounting for pups not present on the ice at the time of counting, and 4) conducting aerial photographic surveys using the fixed-wing aircraft. Project name: Ishavsselens bestandsstruktur (project no: 14391) Coordinating body: Institute of Marine research	Greenland Sea	-	-
2022704	22/04 - 10/05	2022-UiT-004: The research cruise will go to The Fram Strait (Belgica Bank), and perform in-situ measurements and remote sensing observations for validation of remote sensing algorithms, forecast models and information products resulting from the CIRFA work.	Framstredet	31-75	-
2022705	11/05 - 23/05	AKMA-OceanSenses Research Expedition to the Arctic Ocean is focused on both science and education. Our science focuses on extreme environments such as cold seeps, places on the seafloor where methane and oil are emitted at the seafloor naturally and areas characterized by gas hydrate. In seep sites environmental stressors, such as chemistry of the emitting fluids and anoxic conditions at the seafloor, affect biological communities and produce peculiar seafloor features. Combining newly acquired data with the data already available to us we will increase our ability to understand the present and predict the future of these delicate and remote areas in the deep sea. Project name: AKMA, Advancing Knowledge of Methane in the Arctic, funded by NFR Coordinating body: UiT (Giuliana Panieri, PI)	Barents Sea	76-78	-
2022706	25/05 - 31/05	The main aim of the cruise was to test the ROV Ægir6000 at depth greater than 4500m. The selection of dive stations allowed to look at the evolution of the Molloy deep. In parallel, sediment cores were taken for microbial ecology studies.	Barents Sea	79	-

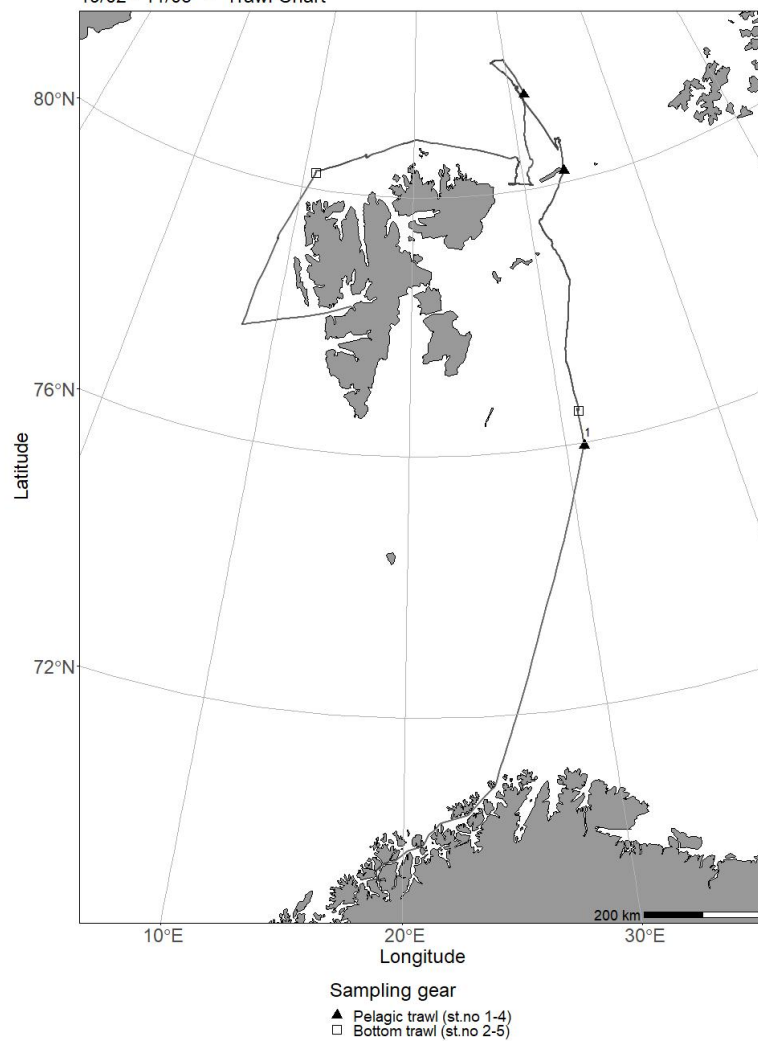
Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022707	01/06 - 16/06	The cruise took place in the frame of the EMAN7 project (Environmental impact of Methane seepage and sub-seabed characterization at LoVe Node 7), aiming at shedding light on how oceanic parameters and climate change influence methane seepage from the seafloor, and the subsequent impacts on ecosystem health. We performed sediment coring, water sampling, coral collection and ROV operations. Main tasks: 1) Photomosaic (with ROV) 2) Microbathymetry (with ROV) 3) Installation of Piezometers and temperature probes (with and without ROV) 4) Coral collection 5) Water and sediment sampling 6) Hydroacoustic survey Project name: EMAN7 (Environmental impact of Methane seepage and sub-seabed characterization at LoVe Node 7) Coordinating body: Institute of Geosciences	Norwegian Sea	80-101	6
2022708	18/06 - 15/07	Sea bottom mapping with video-filming and sampling of benthic fauna and sediments at selected stations in the Barents Sea (north off Svalbard). With the main aim off mapping benthic fauna, bio-diversity, habitat types, geological terrain-parameters and chemical pollution. The mapping was performed using visual seabed observation and sampling of sediments and organisms using a variety of sampling tools (video-rig, grab, box corer, multicorer, beam trawl and hyperbenthic sledge). Project name: MAREANO Coordinating body: Institute of Marine Research	Barents Sea	102-117	37-45
2022710	20/07 - 23/08	To survey the Atlantic sector of the Polar Ocean from Longyearbyen to the North Pole, south along W41° to N87° 05, then south east along a hydrographic transect with CTD stations every 10 nm- Deployment of a mooring in the Amundsen basin and one in the Nansen basin- To conduct ice stations for monitoring of ice and hydrographic parameters, and sampling of primary production- To deploy drifting buoys- To conduct a hydroacoustic survey of the upper 500 m water column of the Atlantic sector of the Polar Ocean- To sample the zooplankton and pelagic species in the water column by plankton nets and pelagic trawls- To record marine mammals and polar bears along the survey track Ole Arve Misund, The Norwegian Polar InstitutePaul Dodd, The Norwegian Polar InstituteAnna Nikolopoulus, The Norwegian Polar InstituteHaakon Hop, The Norwegian Polar Institute	Arctic Ocean	120-203	7 - 16
2022712	02/10 - 12/10	The main objective of the cruise was to retrieve and deploy ocean moorings in the north-western Barents Sea and on the continental slope north of Kvitøya for the Nansen Legacy and A-TWAIN projects. An important secondary objective was to perform hydrographic surveys (CTD transects) in regions of Atlantic Water inflow and other regions of interest. Water mass sampling for nutrients were done on four locations. In addition, the cruise aided other research groups by deployment and recovery of minor equipment at sites along the cruise trajectory. Project name: NANSEN LEGACY RF-1 / A-TWAIN Coordinating body: NORWEGIAN POLAR INSTITUTE	Barents Sea	222-297	33
2022713	14/10 - 26/10	The aim of Leg 1 of this first and multidisciplinary GoNorth cruise was to collect new geophysical, geological, biological, oceanographic, sea ice data on the continental margin north of Svalbard for the participating institutions UiT, UiO, UiB, NORCE, SINTEF, NTNU, Akvaplan-niva.	Arctic Ocean	298-315	-
2022714	27/10 - 19/11	The aim of Leg 2 of this first and multidisciplinary GoNorth cruise was to study deep sea deposits along selected parts of the midt-oceanic spreading ridge west of Svalbard by the Norwegian Petroleum Directorate and UiB. Project name: GoNorth (https://www.sintef.no/projectweb/gonorth/) Coordinating body: SINTEF, Contact person: Gunnar Sand (e-mail: Gunnar.Sand@sintef.no)	Arctic Ocean	316-330	-

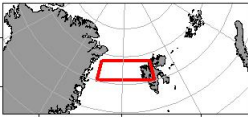
Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022715	24/08 - 07/09	The TUNU programme was established in 2002, aiming to describe marine fish diversity and function in the Atlantic Arctic. The core area has been NE Greenland, where a total of 9 expeditions has been carried out the past 20 years. All expeditions have been carried out with RV Helmer Hanssen, the present cruise is our first with RV Kronprins Haakon. In addition to marine fish diversity and function, benthic invertebrate diversity has been included since 2013. Besides collecting CTD data routinely, geologists has also been part of the TUNU programme since 2013, sampling the sea bottom to reconstruct the glacial history. The TUNU-VIII cruise continued the sampling in 2022, by mostly visiting previously sampled localities as well as some new stations. Results are communicated by peer reviewed papers and reports, and data (CTD, multibeam etc.) are shared with the Government of Greenland, Geodatatyrelsen in Denmark and ICES. Project name: TUNU ProgrammeCoordinating body: UiT The Arctic University of Norway	Norwegian Sea	204-221	5 - 32
2022716	13/04 - 20/04	-	Barents Sea	29	-

9 - “ Kronprins Haakon” – Charts for cruises 2022

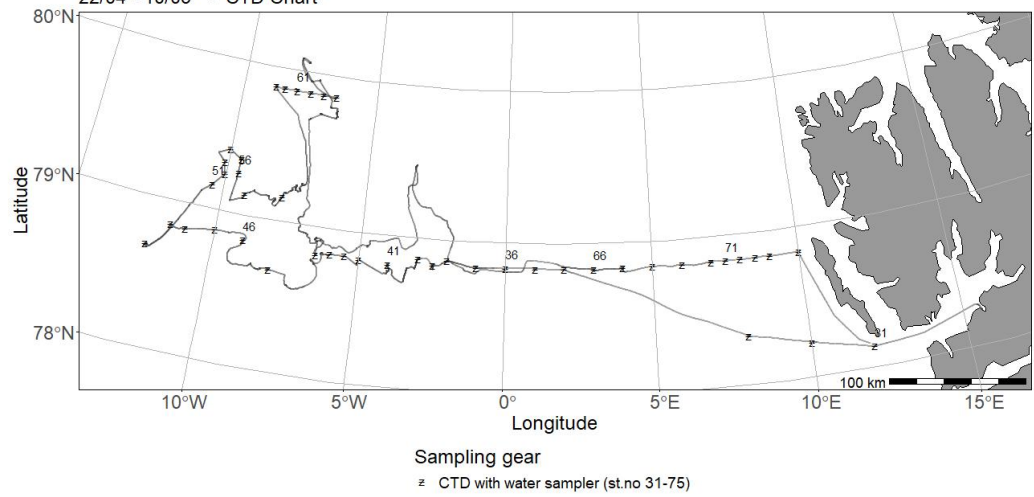


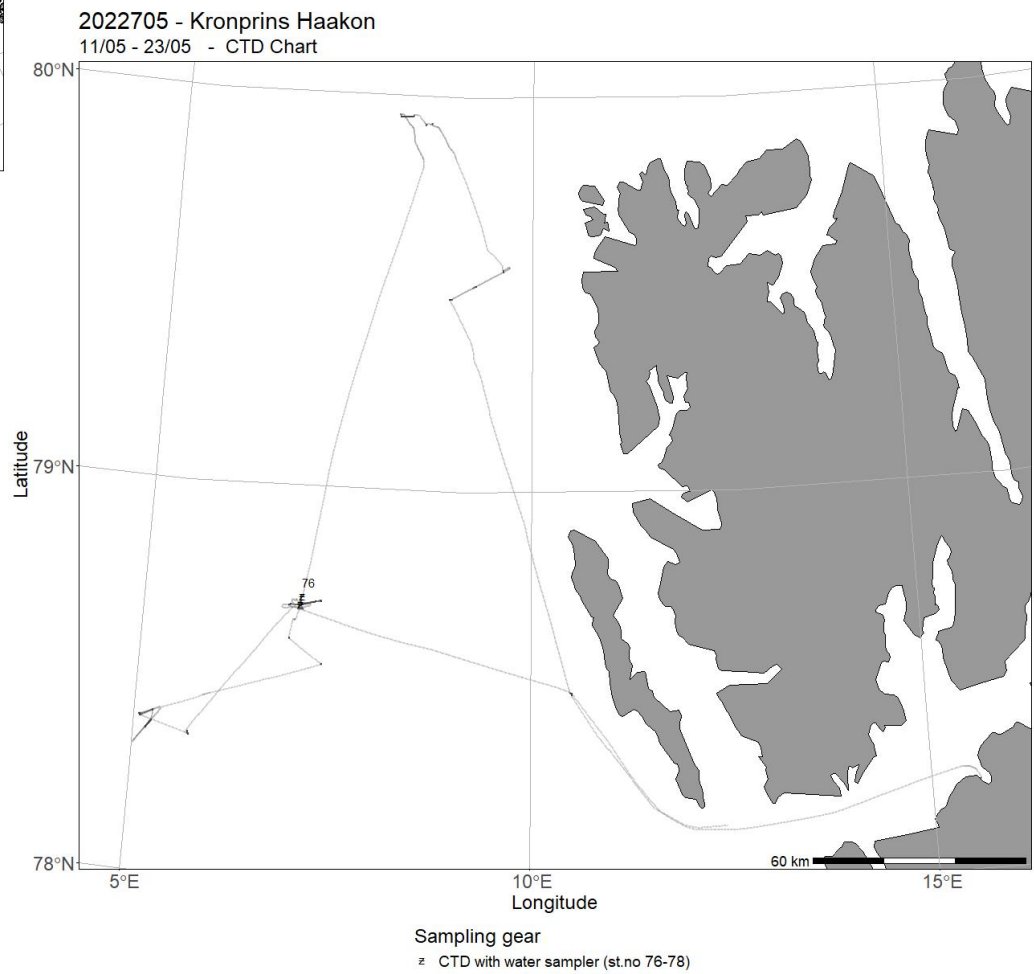
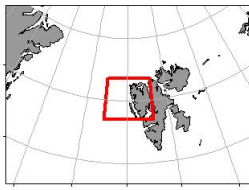
2022702 - Kronprins Haakon
19/02 - 11/03 - Trawl Chart

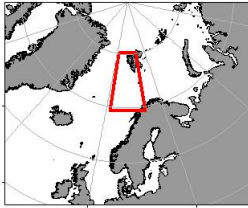




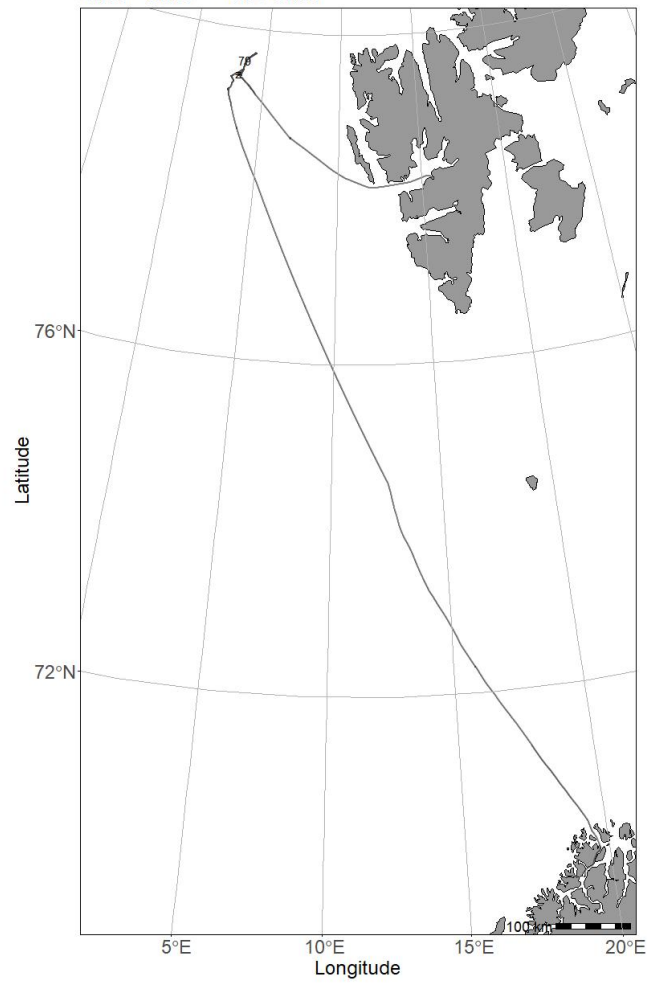
2022704 - Kronprins Haakon
22/04 - 10/05 - CTD Chart



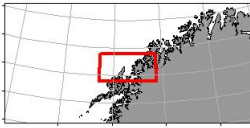




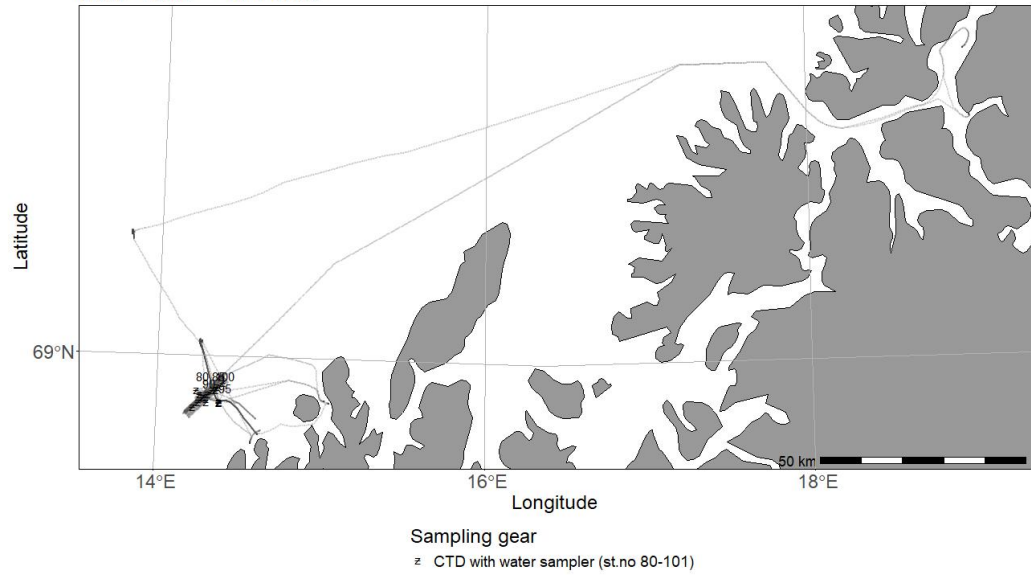
2022706 - Kronprins Haakon
25/05 - 31/05 - CTD Chart

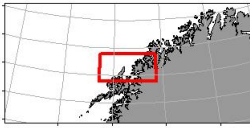


Sampling gear
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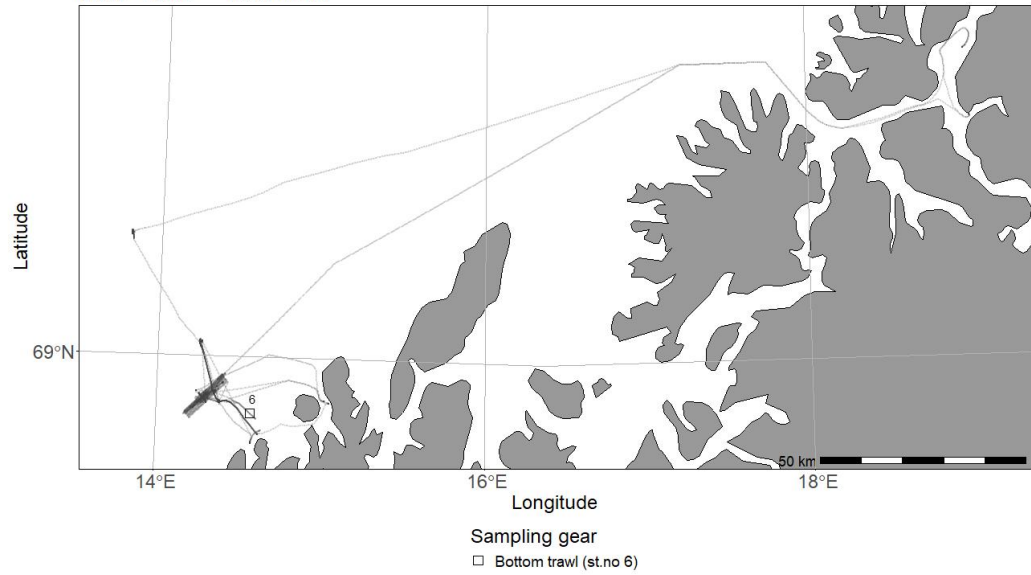


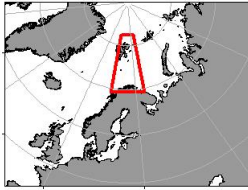
2022707 - Kronprins Haakon
01/06 - 16/06 - CTD Chart



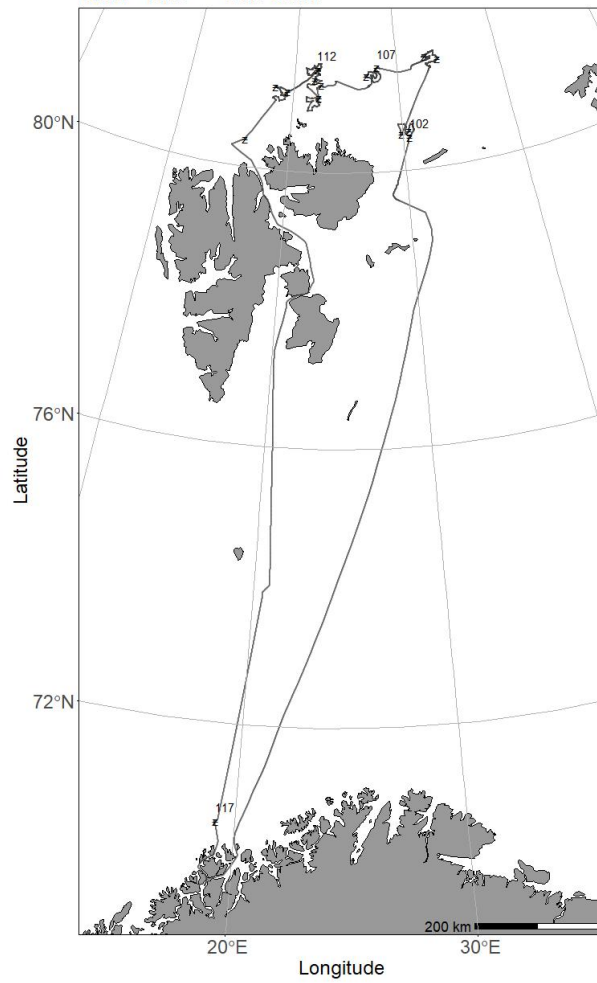


2022707 - Kronprins Haakon
01/06 - 16/06 - Trawl Chart

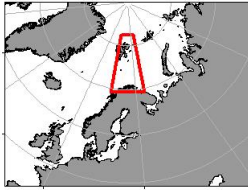




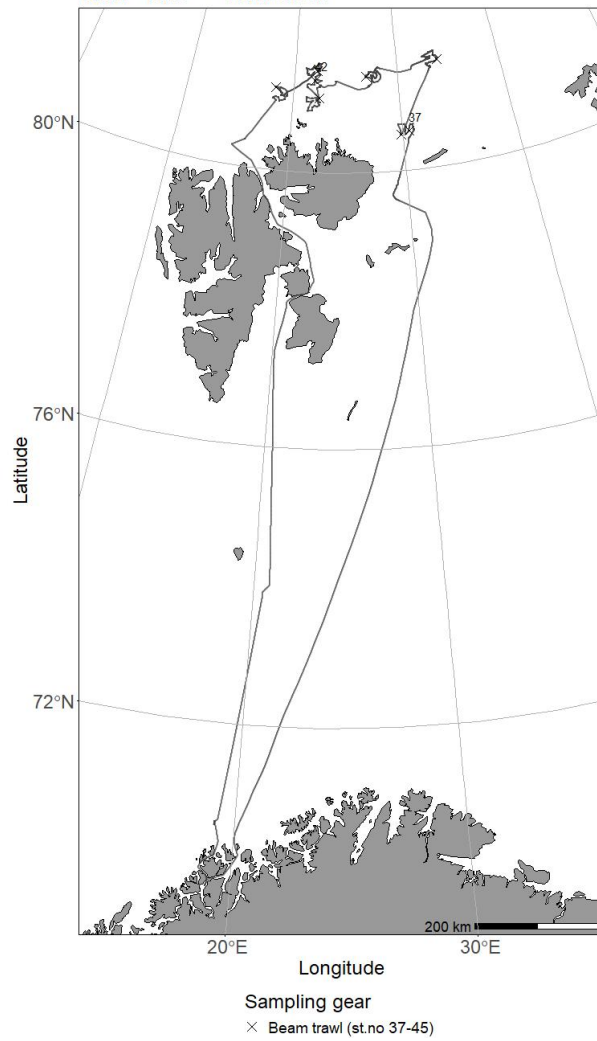
2022708 - Kronprins Haakon
18/06 - 15/07 - CTD Chart

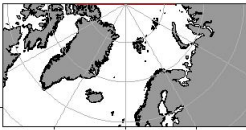


Sampling gear
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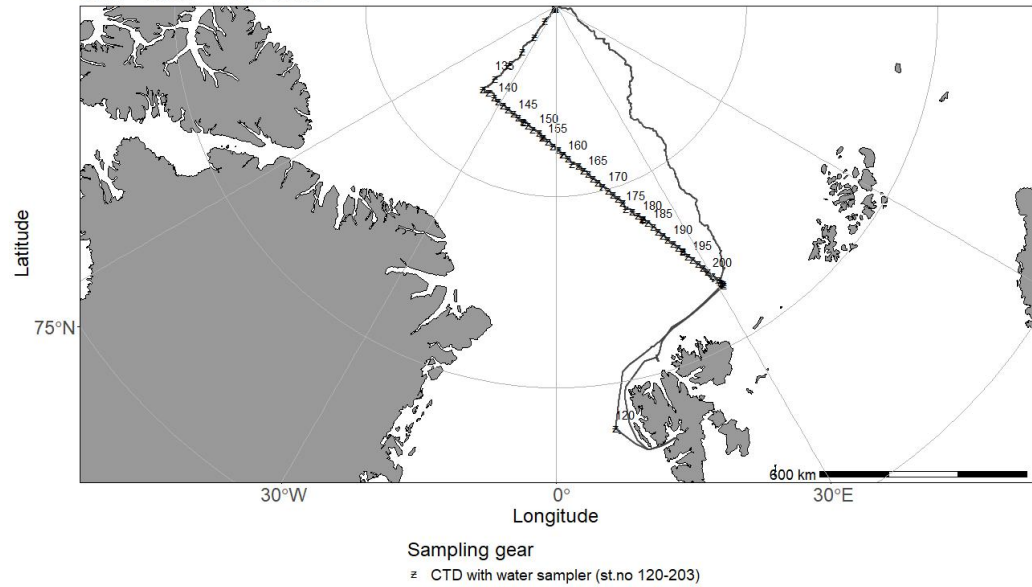


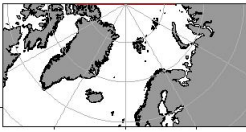
2022708 - Kronprins Haakon
18/06 - 15/07 - Trawl Chart



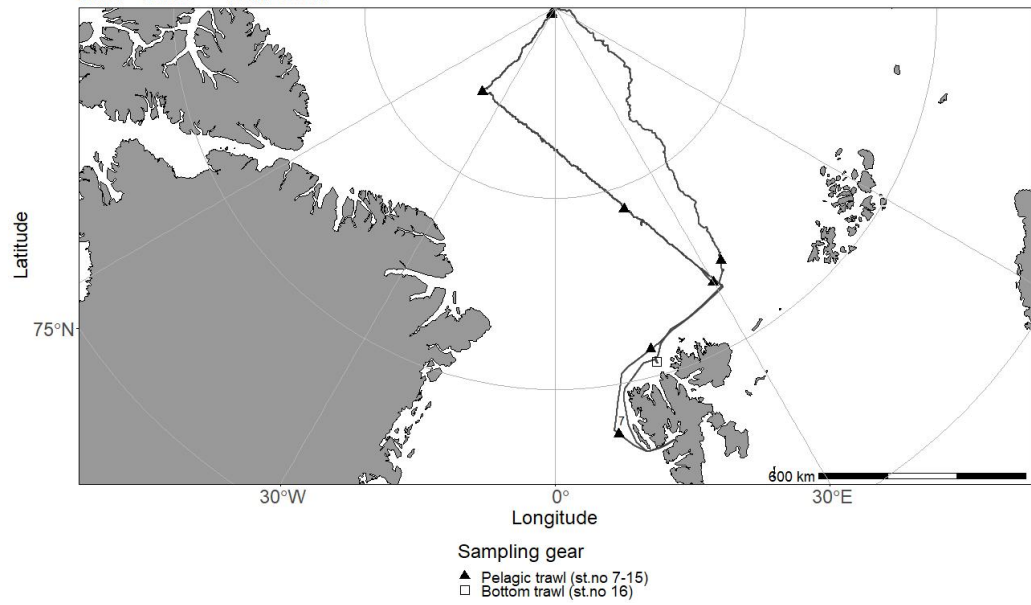


2022710 - Kronprins Haakon
20/07 - 23/08 - CTD Chart

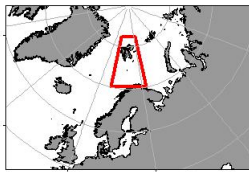




2022710 - Kronprins Haakon
20/07 - 23/08 - Trawl Chart

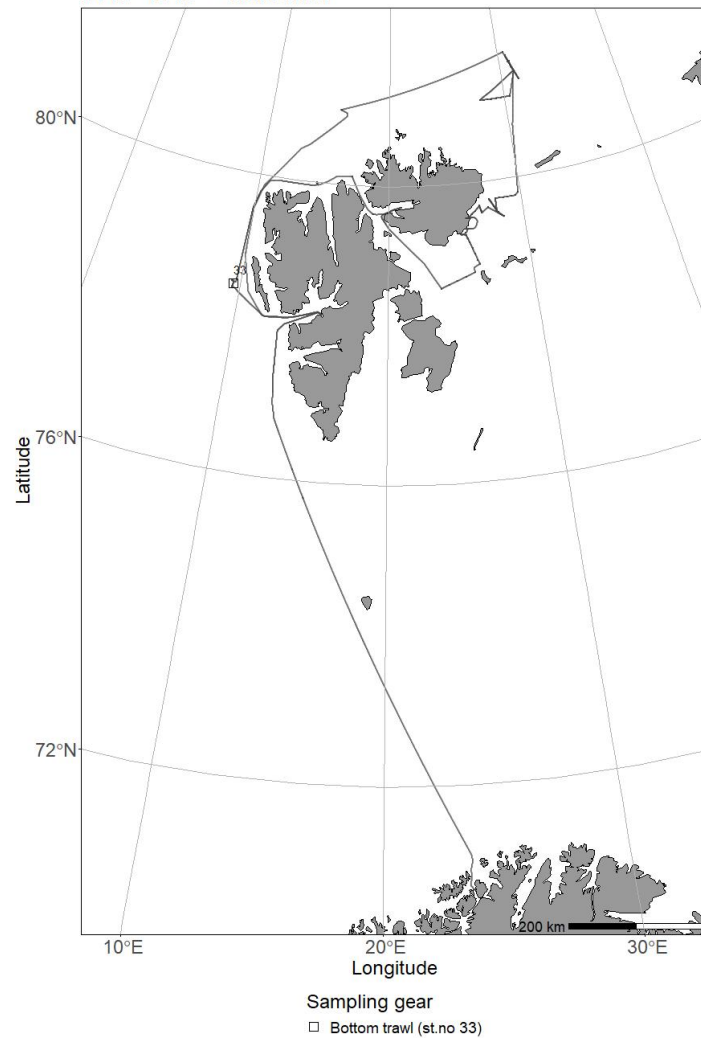


2022712 - Kronprins Haakon
02/10 - 12/10 - CTD Chart

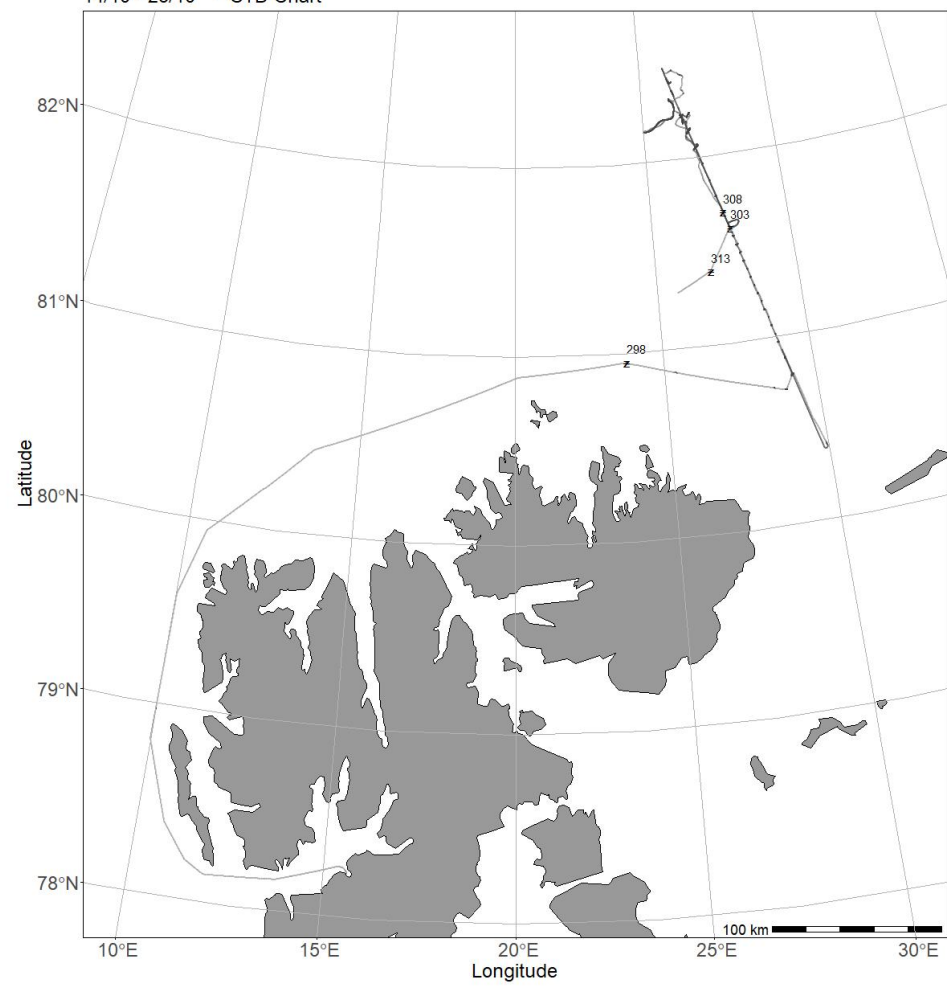
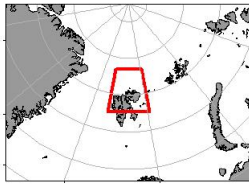


Sampling gear
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2022712 - Kronprins Haakon
02/10 - 12/10 - Trawl Chart

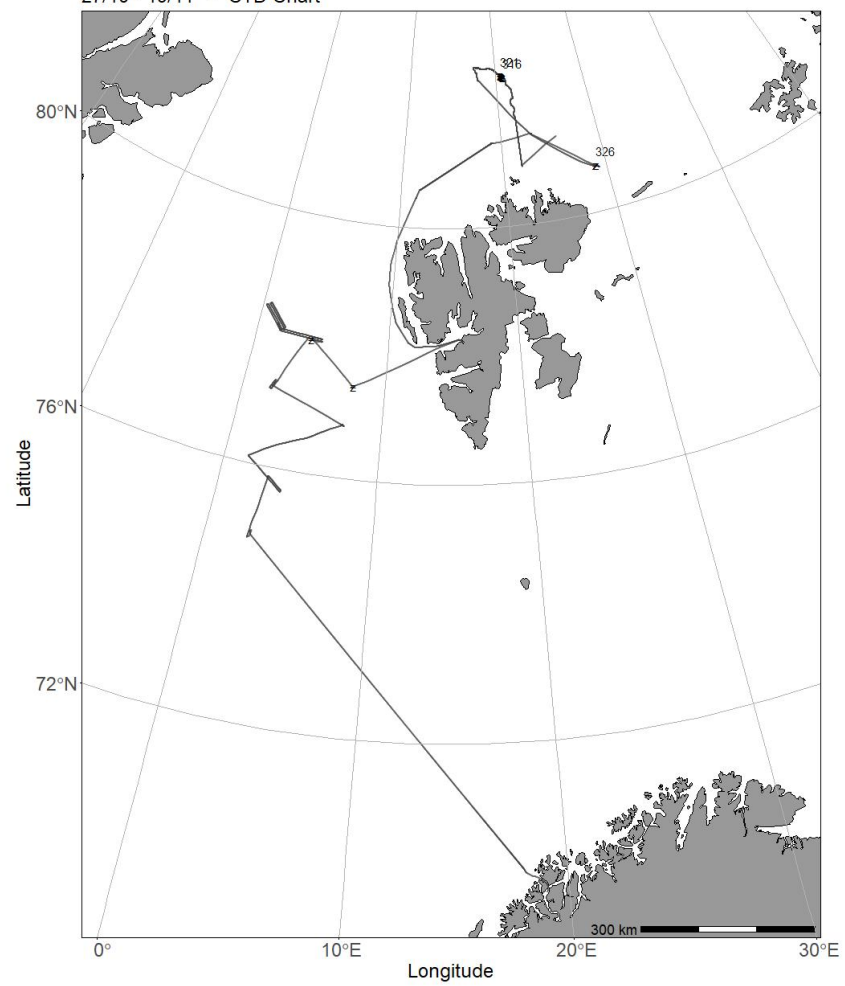
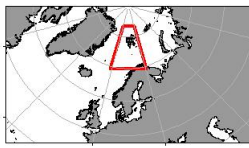


2022713 - Kronprins Haakon
14/10 - 26/10 - CTD Chart

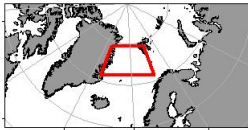


Sampling gear
z CTD with water sampler (st.no 298-315)

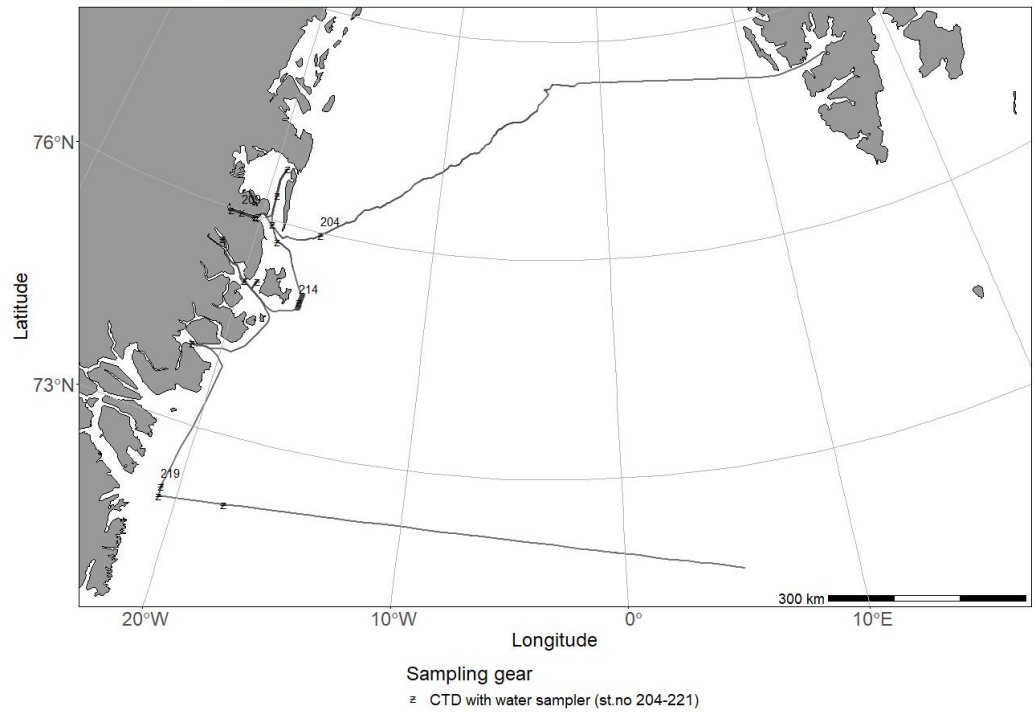
2022714 - Kronprins Haakon
27/10 - 19/11 - CTD Chart

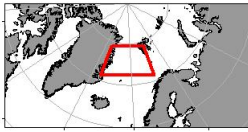


Sampling gear
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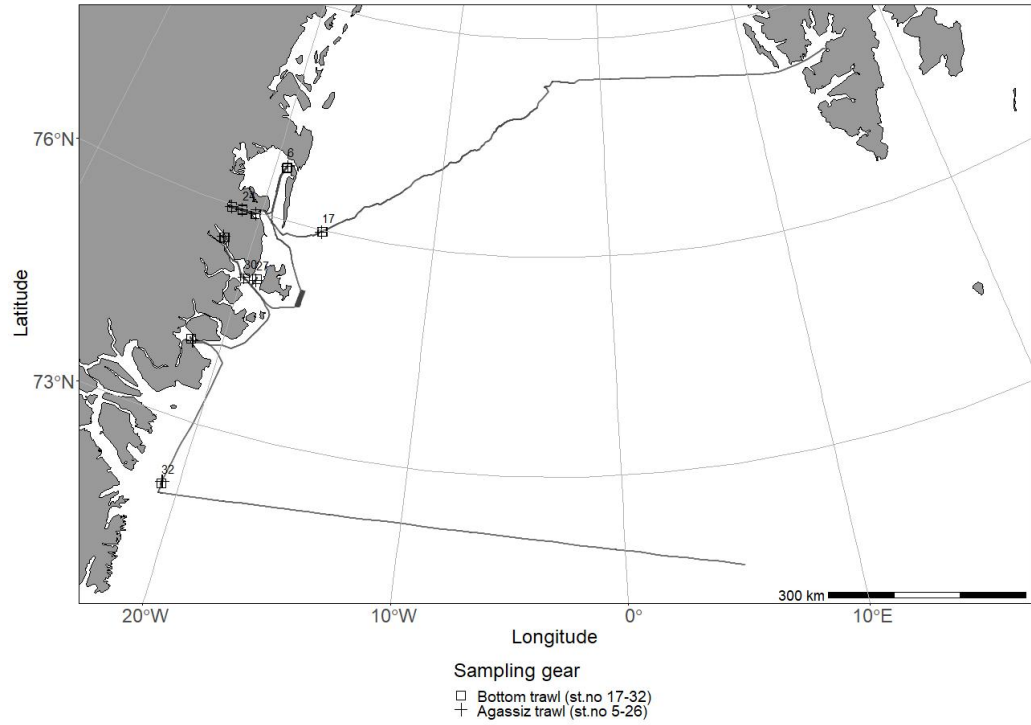


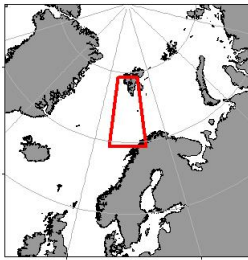
2022715 - Kronprins Haakon
24/08 - 07/09 - CTD Chart



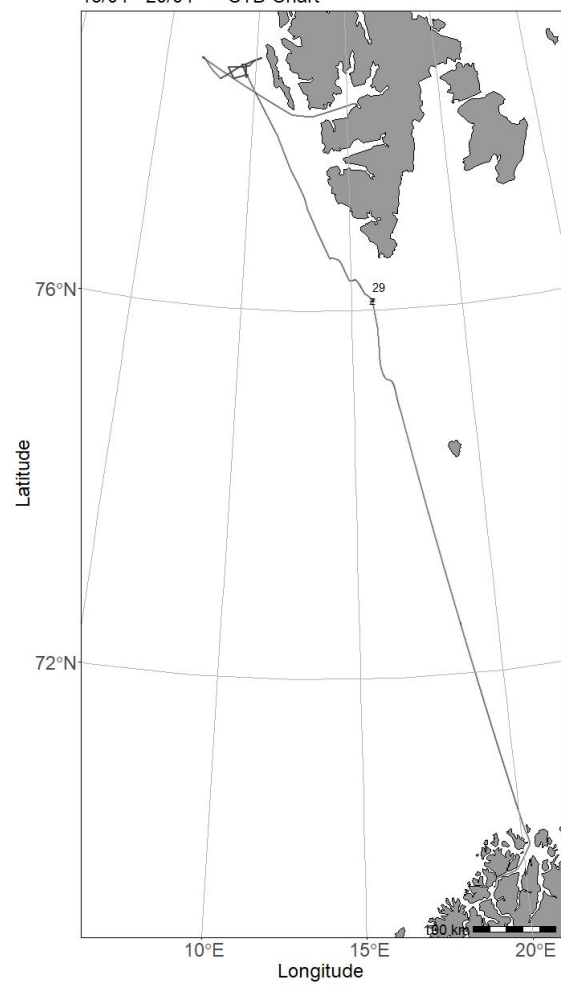


2022715 - Kronprins Haakon
24/08 - 07/09 - Trawl Chart





2022716 - Kronprins Haakon
13/04 - 20/04 - CTD Chart



Sampling gear
z CTD with water sampler (st.no 29)

10 - "G. M. Dannevig" – Cruises 2022

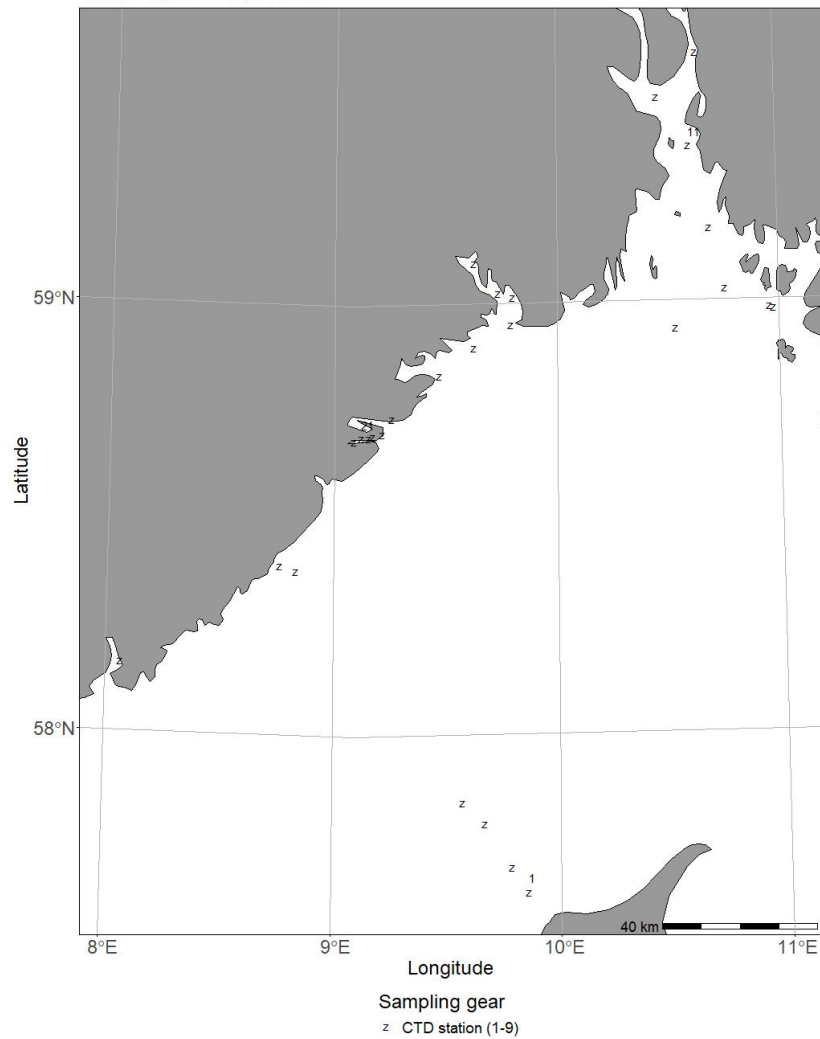
Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022301	11/01 - 17/01	2022-KST-006: Miljøtilstandvurdering/rådgivning for Skagerrak: Havforsurning, oseanografi, HAB, mikroplast, miljø, klima lavere trofiske nivå langs Skagerrakkysten og fast snitt Torungen-Hirtshals. Videreføring av 4 tidsserier (Torungen, Oslofjord, Grenland, Arendal)	Skagerrak	1 - 27	-
2022302	11/02 - 17/02	2022-KST-007: Miljøtilstandvurdering/rådgivning for Skagerrak: Havforsurning, oseanografi, HAB, mikroplast, miljø, klima lavere trofiske nivå langs Skagerrakkysten og fast snitt Torungen-Hirtshals. Videreføring av 4 tidsserier (Torungen, Oslofjord, Grenland, Arendal)	Skagerrak	28 - 48	-
2022303	02/03 - 18/03	2022-KST-022: Tøktet vil kartlegge og overvåke gytefelt for kystnære bestander gjennom innsamling av egg. Tøktet betjener prosjektet: "Program for kartlegging av gyte- og oppvekstområder for kystnære kommersielle bestander".	Skagerrak	49 - 84	-
2022305	20/04 - 27/04	2022-KST-009: Miljøtilstandvurdering/rådgivning for Skagerrak: Havforsurning, oseanografi, HAB, mikroplast, miljø, klima lavere trofiske nivå langs Skagerrakkysten og fast snitt Torungen-Hirtshals. Videreføring av 4 tidsserier (Torungen, Oslofjord, Grenland, Arendal)	Skagerrak	85 - 113	-
2022306	28/04 - 30/04	2022-UiA-003: Sesongundersøkelse av plankton og mikrober langs transekt i Lister området. Dette tøktet er en del av et prosjekt som undersøker planktondynamikk i transektet fra Havika i Lyngdalsfjorden til ytre del av Skjærgården utenfor Farsund.	Skagerrak	113 - 123	-
2022307	01/05 - 06/05	2022-KST-010: Miljøtilstandvurdering/rådgivning for Skagerrak: Havforsurning, oseanografi, HAB, mikroplast, miljø, klima lavere trofiske nivå langs Skagerrakkysten og fast snitt Torungen-Hirtshals. Videreføring av 4 tidsserier (Torungen, Oslofjord, Grenland, Arendal)	Skagerrak	127 - 155	-
2022308	10/05 - 05/06	2022-AKV-021: Tøktet har som hensikt å fange utvandrende vill laksesmolt som en del av den nasjonale overvåkingen på vill laksefisk. Laksesmolt fanges i ytre deler av utvalgte fjordsystem med en spesialbygget pelagisk trål	North Sea	-	-
2022309	08/06 - 17/06	2022-KST-011: Miljøtilstandvurdering/rådgivning for Skagerrak: Havforsurning, oseanografi, HAB, mikroplast, miljø, klima lavere trofiske nivå langs Skagerrakkysten og fast snitt Torungen-Hirtshals. Videreføring av 4 tidsserier (Torungen, Oslofjord, Grenland, Arendal)	Skagerrak	156 - 193	-
2022310	02/07 - 07/07	2022-KST-012: Miljøtilstandvurdering/rådgivning for Skagerrak: Havforsurning, oseanografi, HAB, mikroplast, miljø, klima lavere trofiske nivå langs Skagerrakkysten og fast snitt Torungen-Hirtshals. Videreføring av 4 tidsserier (Torungen, Oslofjord, Grenland, Arendal)	Skagerrak	194 - 220	-
2022311	05/08 - 09/08	Miljøtilstandvurdering/rådgivning for Skagerrak: Havforsurning, oseanografi, HAB, mikroplast, miljø, klima lavere trofiske nivå langs Skagerrakkysten og fast snitt Torungen-Hirtshals. Videreføring av 4 tidsserier (Torungen, Oslofjord, Grenland, Arendal)	Skagerrak	221 - 247	-
2022312	22/08 - 24/08	2022-KST-025: Havforskningsinstituttet og UiA samarbeider om et undervisningstøkt. Formålet med tøktet er å gi studenter (mastergrad) gjenskap med ulike innsamlingsmetoder for bentske undersøkelser og planktoniske organismer (zoo-plant-plankton, maneter)	Skagerrak	248 - 248	-
2022313	27/08 - 09/09	To document nursery areas for commercially important species in inner and outer area of Stavanger municipality (Rogaland), using remote underwater video rigs, fish traps, and a small danish seine. This is part of a bigger, long-term programme on the mapping of spawning and nursery areas for commercially important fish species in Norway. Incorporating NiN-data into the sampling and selection of sampling-sites. Project name: Program for kartlegging av gytefelt og oppvekstområder for kommersielt viktige arter i kystsonenCoordinating body: Fiskeridynamikk, Institute of Marine Research, Norway	North Sea	-	-
2022314	13/09 - 14/09	2022-KST-014: Miljøtilstandvurdering/rådgivning for Skagerrak: Havforsurning, oseanografi, HAB, mikroplast, miljø, klima lavere trofiske nivå langs Skagerrakkysten og fast snitt Torungen-Hirtshals. Videreføring av 4 tidsserier (Torungen, Oslofjord, Grenland, Arendal)	Skagerrak	249 - 255	-

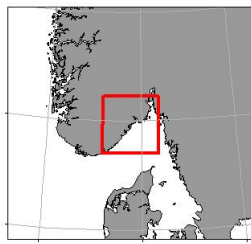
Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022315	15/09 - 07/10	2022-KST-036: Strandnotundersøkelser for å måle rekrutteringen av torskefisk og annen fisk i strand/kystsonen. Videre formål er å kartlegge utbredelsen av fisk i strand/kystsonen. Data/arbeid fra toktet benyttes i flere eksterntfinansierte prosjekt.	-	256 - 318	-
2022316	08/10 - 09/10	2022-KST-015: Miljøtilstandsvurdering/rådgivning for Skagerrak: Havforsurning, oseanografi, HAB, mikroplast, miljø, klima lavere trofiske nivå langs Skagerrakkysten og fast snitt Torungen-Hirtshals. Videreføring av 4 tidsserier (Torungen, Oslofjord, Grenland, Arendal)	Skagerrak	319 - 324	-
2022317	08/11 - 13/11	2022-KST-016: Miljøtilstandsvurdering/rådgivning for Skagerrak: Havforsurning, oseanografi, HAB, mikroplast, miljø, klima lavere trofiske nivå langs Skagerrakkysten og fast snitt Torungen-Hirtshals. Videreføring av 4 tidsserier (Torungen, Oslofjord, Grenland, Arendal)	Skagerrak	325 - 352	-
2022318	14/11 - 01/12	2022-KST-038: Overvåker bestander av kysttorsk og andre kystarter. Driver og forskning på data, da tokt inngår i eksterne prosjekt	Skagerrak	353 - 353	-
2022319	02/12 - 08/12	2022-KST-017: Miljøtilstandsvurdering/rådgivning for Skagerrak: Havforsurning, oseanografi, HAB, mikroplast, miljø, klima lavere trofiske nivå langs Skagerrakkysten og fast snitt Torungen-Hirtshals. Videreføring av 4 tidsserier (Torungen, Oslofjord, Grenland, Arendal)	Skagerrak	354 - 380	-
2022320	10/08 - 19/08	2022-KST-024: Overvåkingsfiske hummerreservater Bolærne og Kvernshjørn, Ytre Oslofjord. Stereovideorigger på stasjonsnett Ytre Oslofjord.	Skagerrak	-	-

11 - "G. M. Dannevig" – Charts for cruises 2022

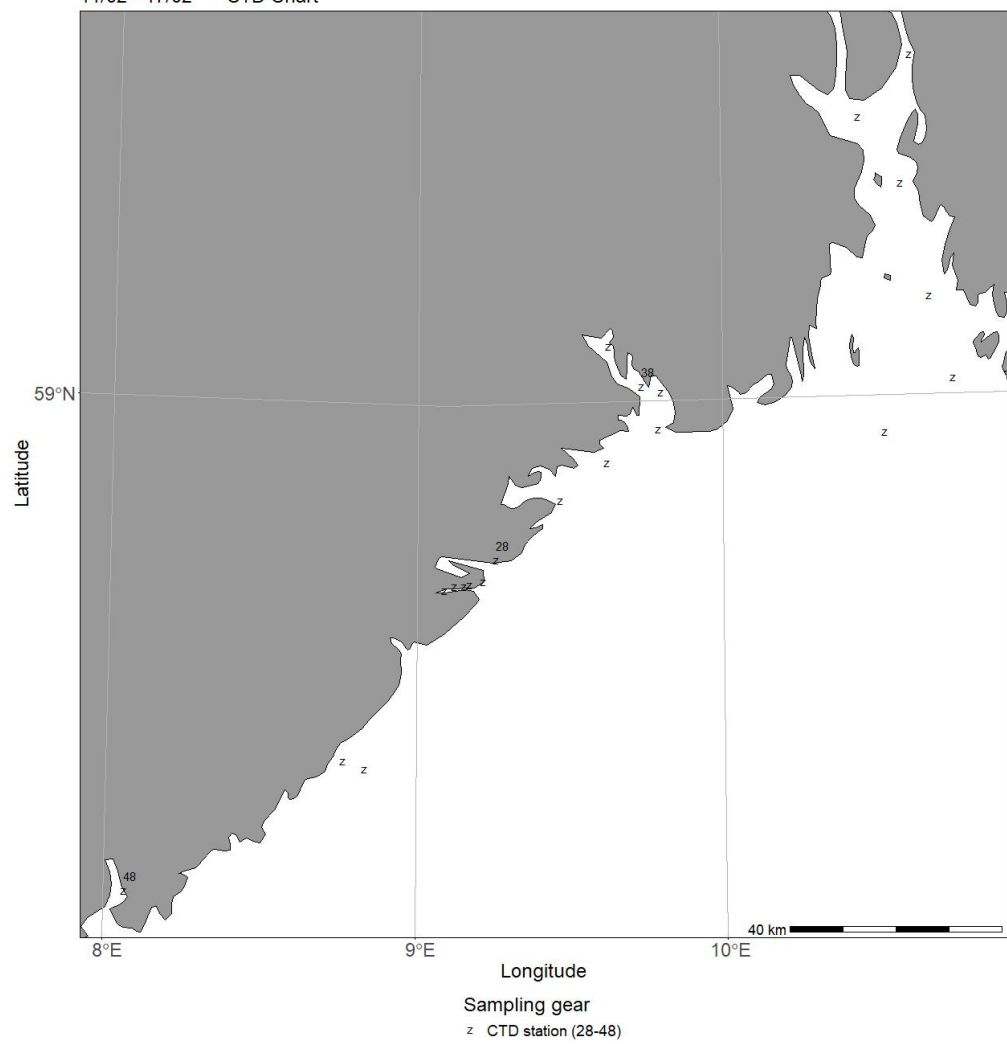


2022301 - G.M.Dannevig
11/01 - 17/01 - CTD Chart



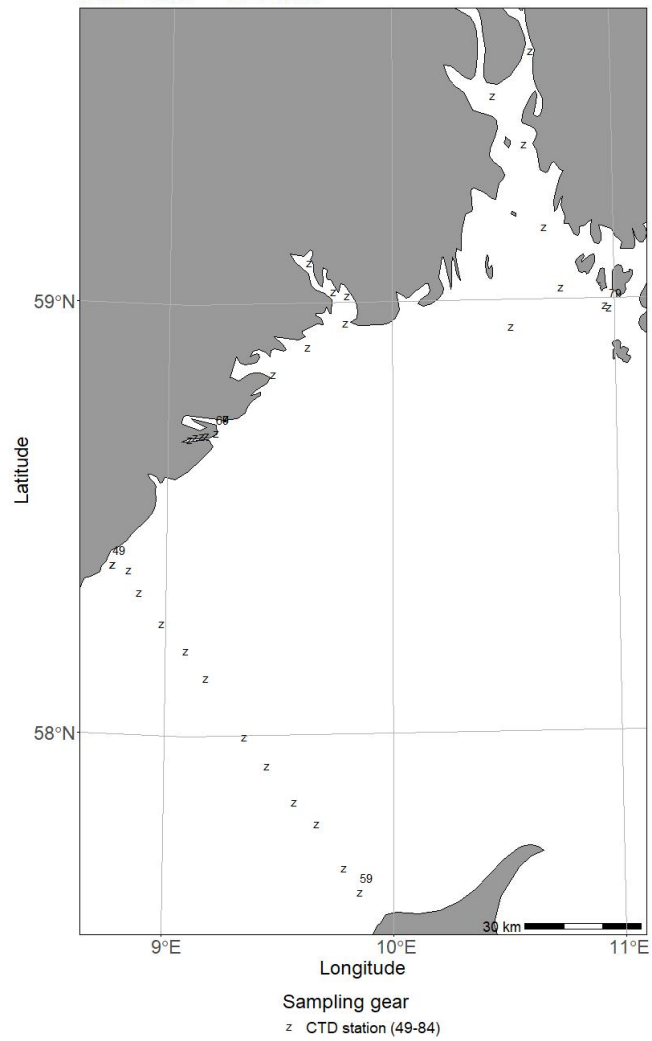


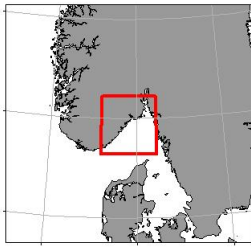
2022302 - G.M.Dannevig
11/02 - 17/02 - CTD Chart



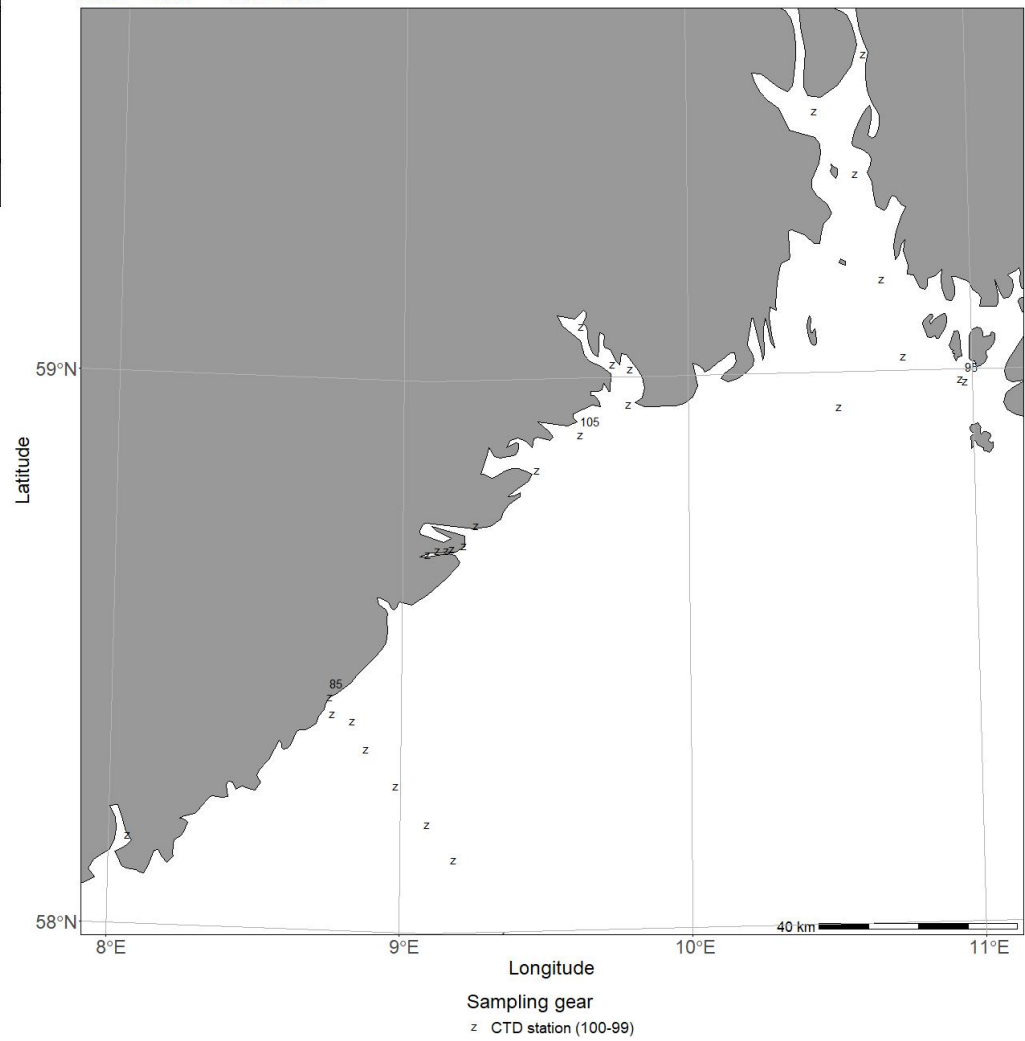


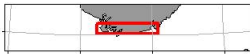
2022303 - G.M.Dannevig
02/03 - 18/03 - CTD Chart



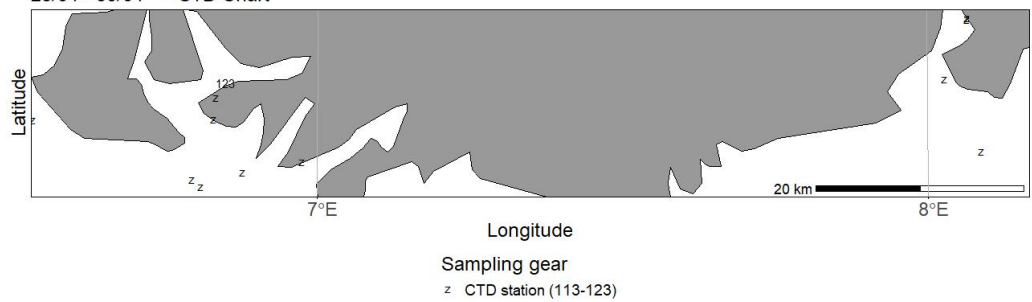


2022305 - G.M.Dannevig
20/04 - 27/04 - CTD Chart



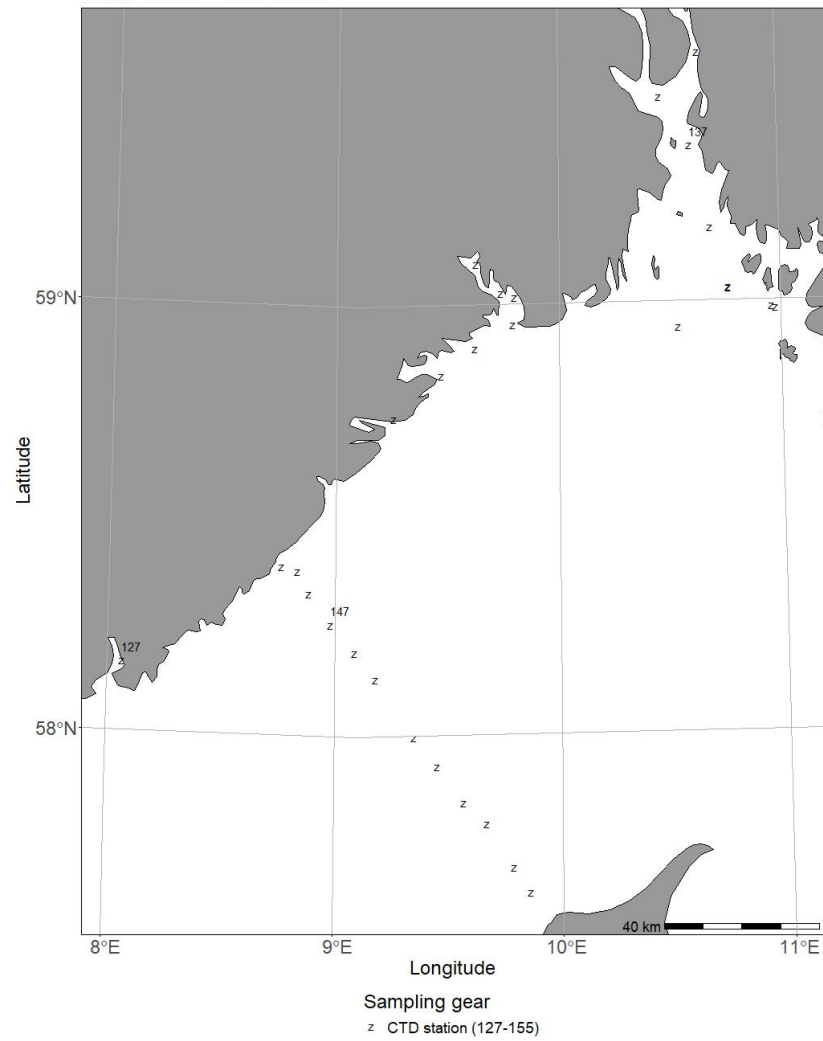


2022306 - G.M.Dannevig
28/04 - 30/04 - CTD Chart



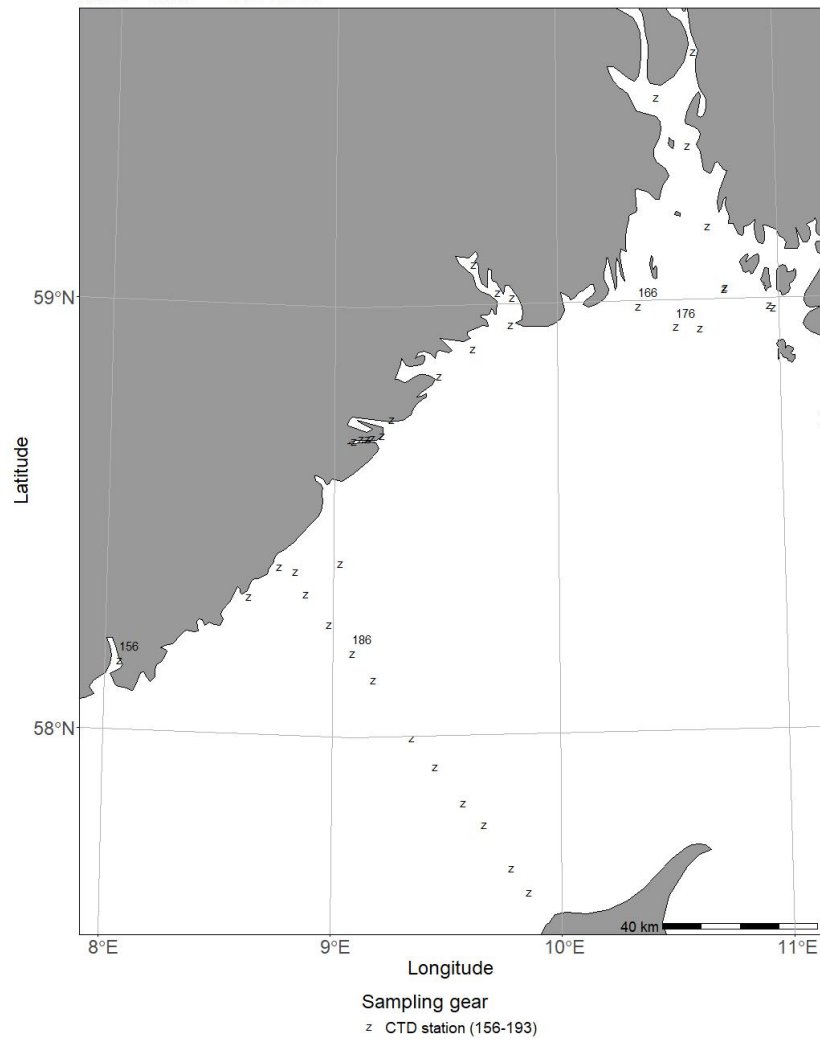


2022307 - G.M.Dannevig
01/05 - 06/05 - CTD Chart



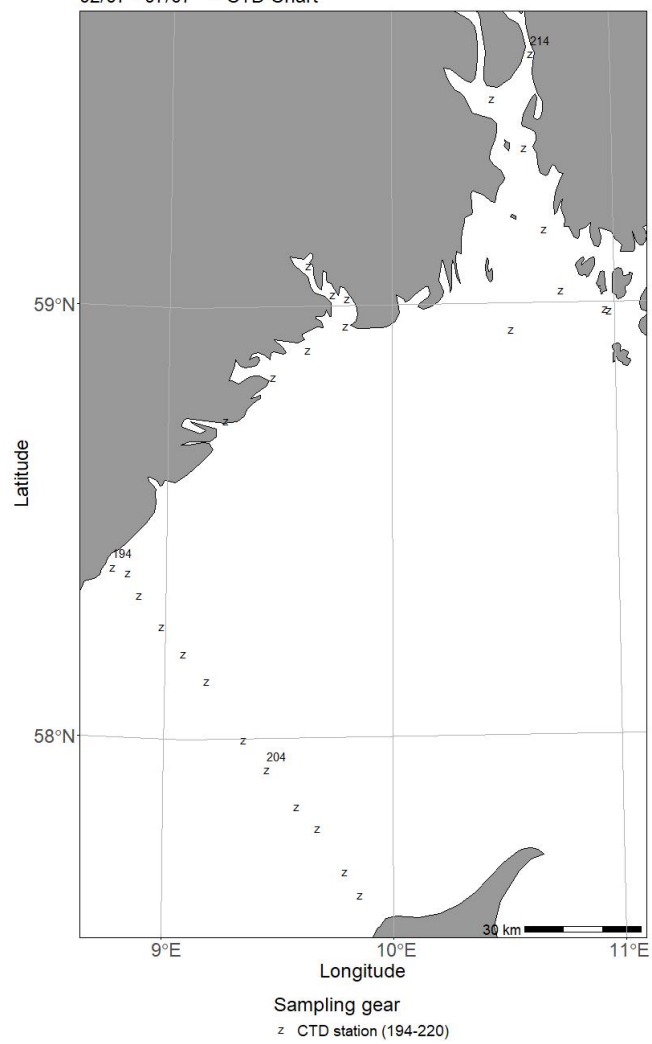


2022309 - G.M.Dannevig
08/06 - 17/06 - CTD Chart



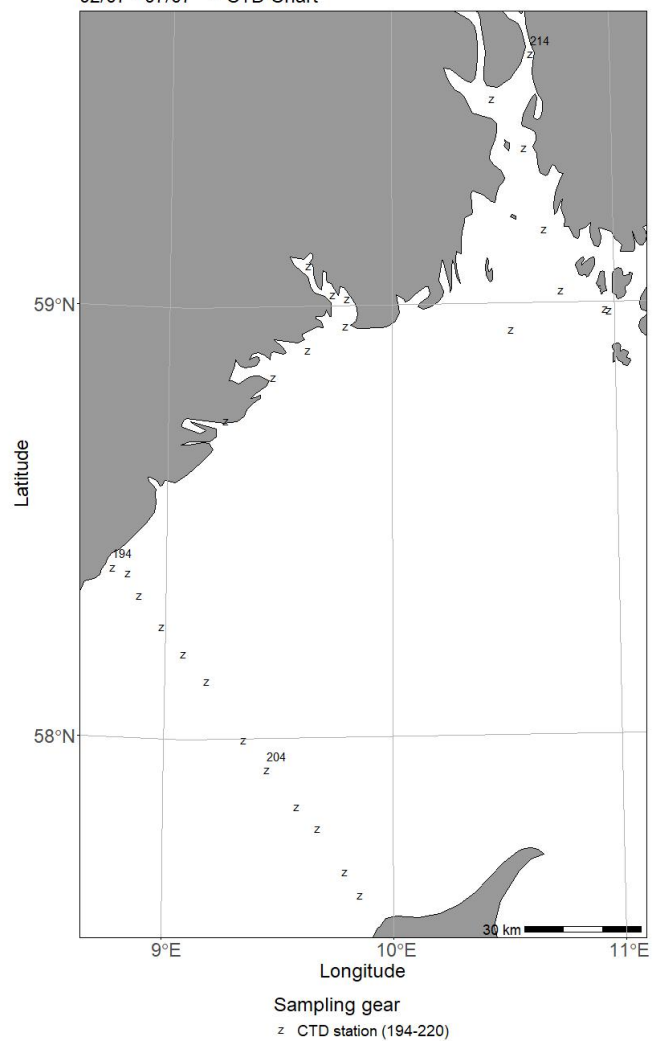


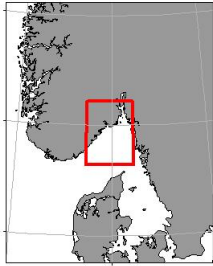
2022310 - G.M.Dannevig
02/07 - 07/07 - CTD Chart



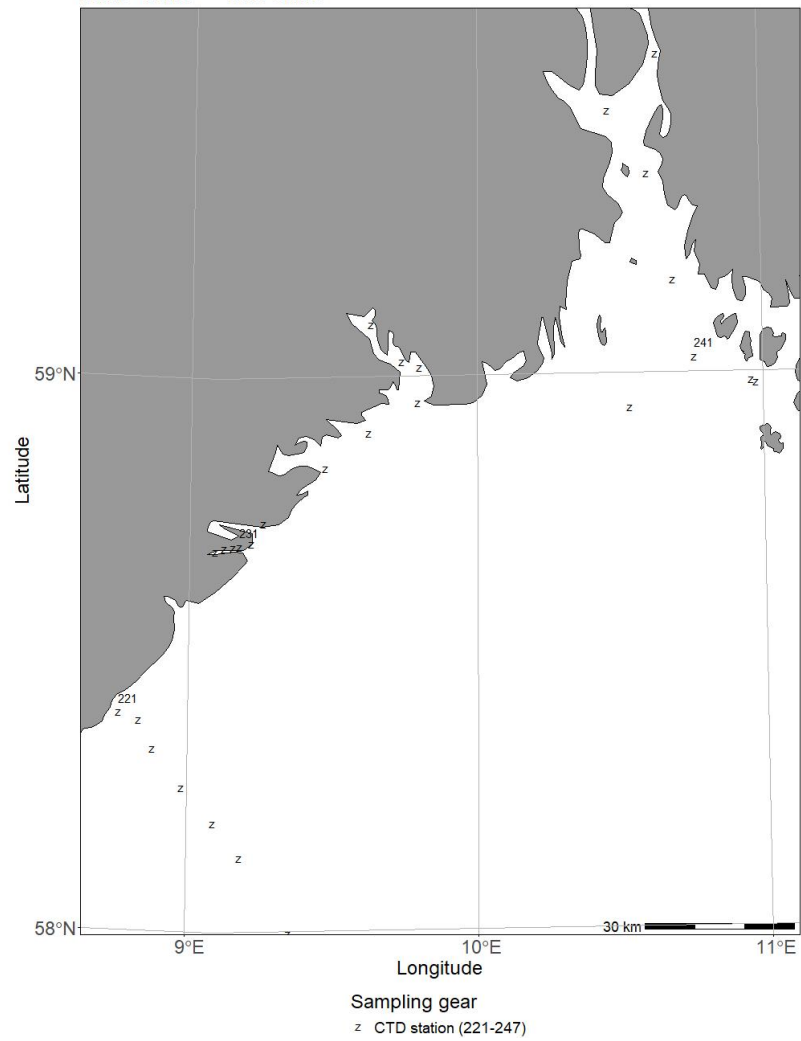


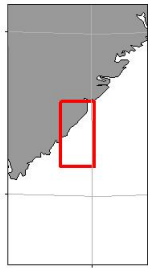
2022310 - G.M.Dannevig
02/07 - 07/07 - CTD Chart



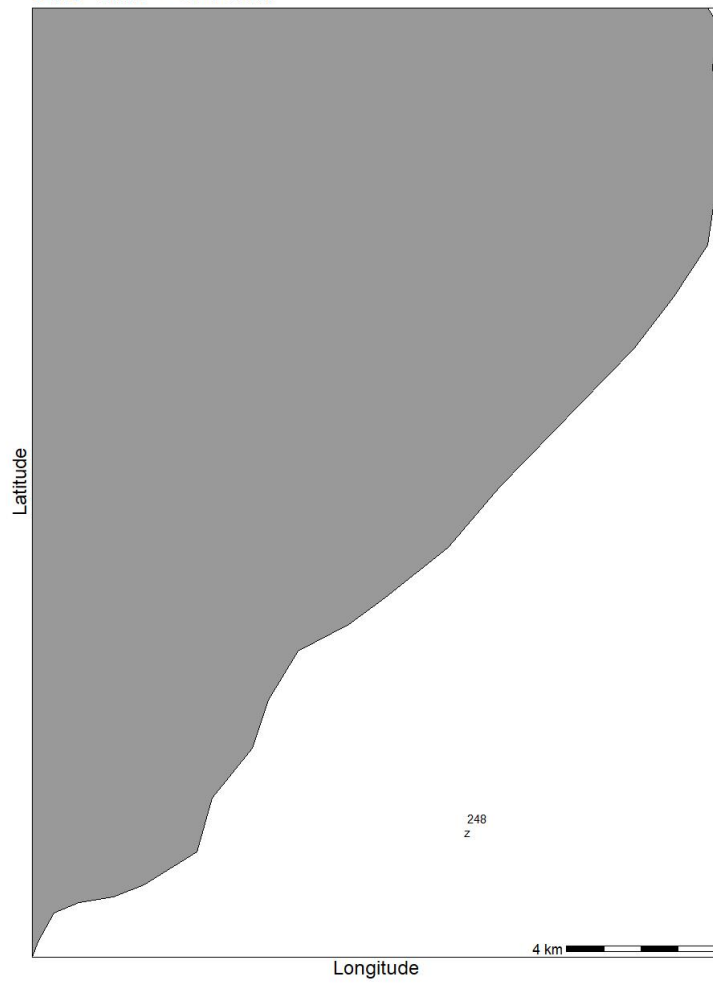


2022311 - G.M.Dannevig
05/08 - 09/08 - CTD Chart

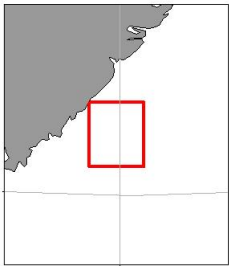




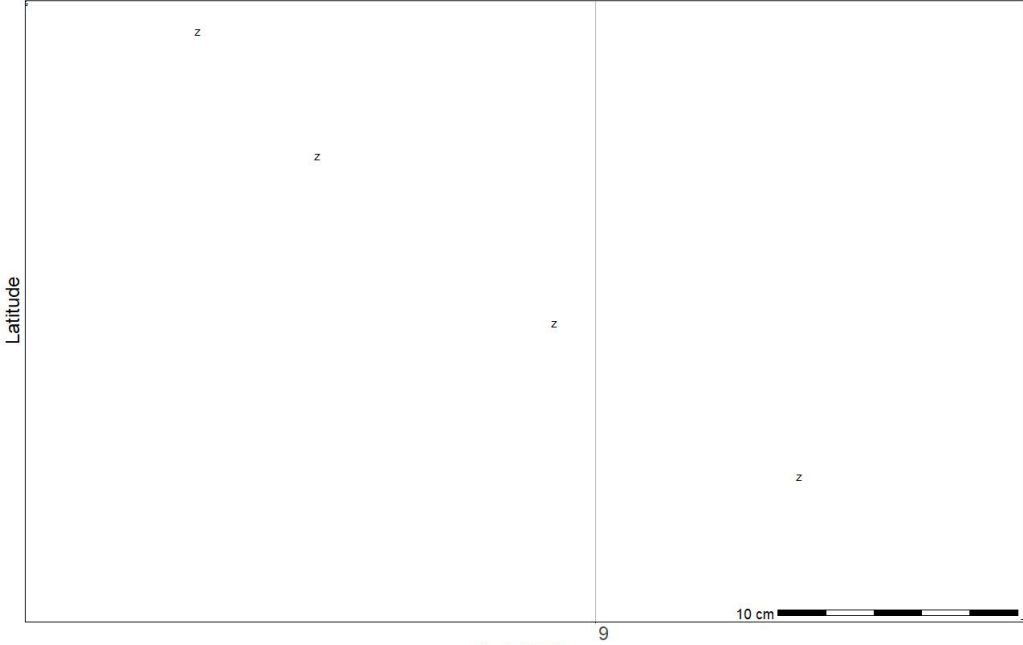
2022312 - G.M.Dannevig
22/08 - 24/08 - CTD Chart



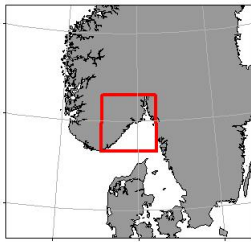
Sampling gear
z CTD station (248-248)



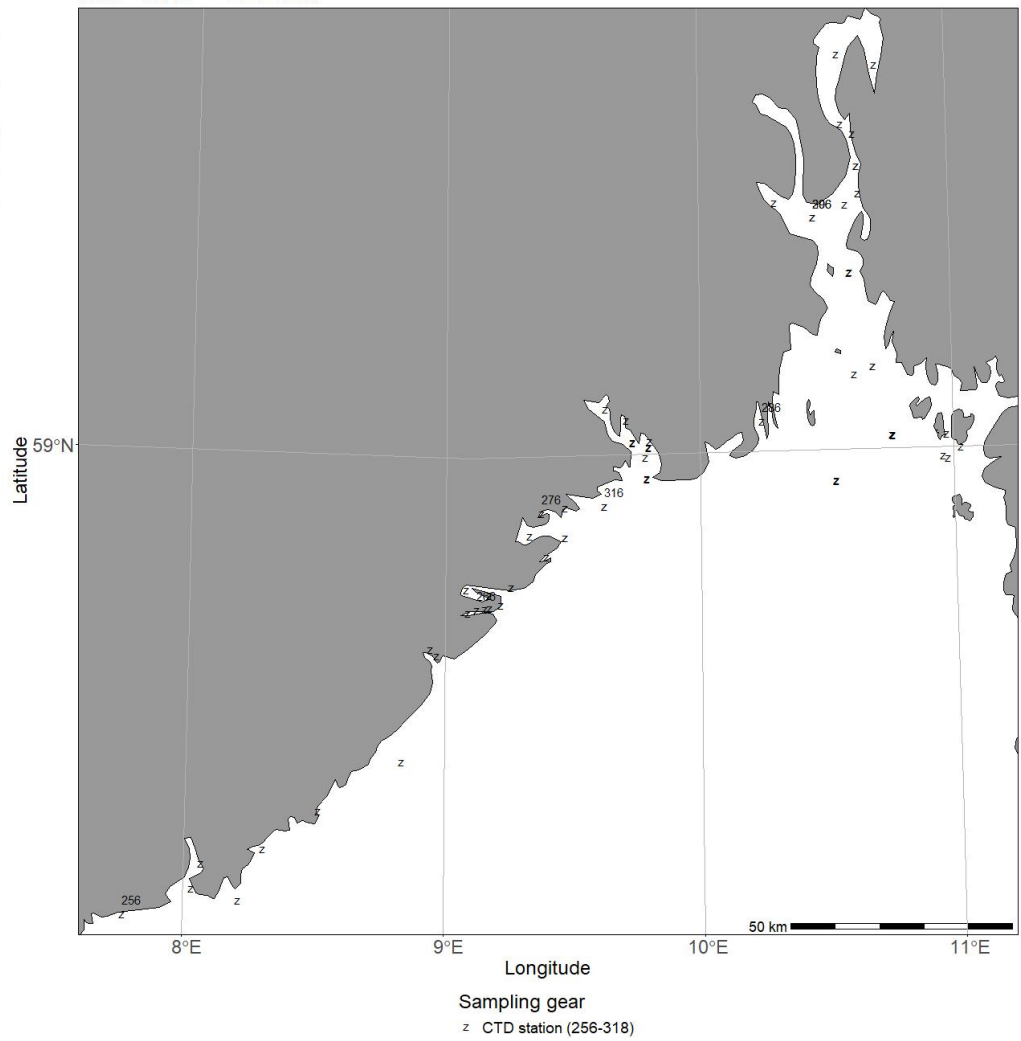
2022314 - G.M.Dannevig
13/09 - 14/09 - CTD Chart

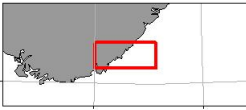


Sampling gear
z CTD station (249-255)

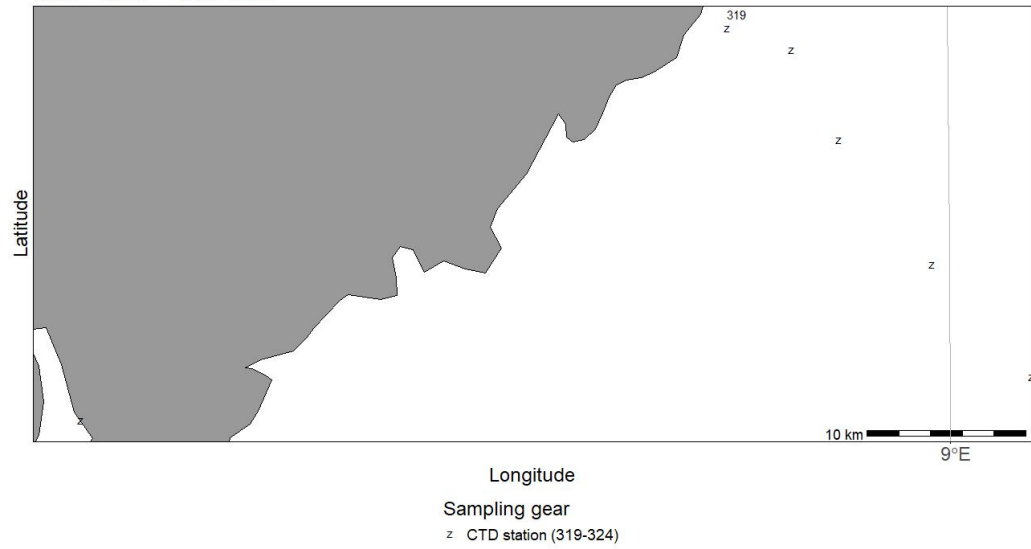


2022315 - G.M.Dannevig
15/09 - 07/10 - CTD Chart



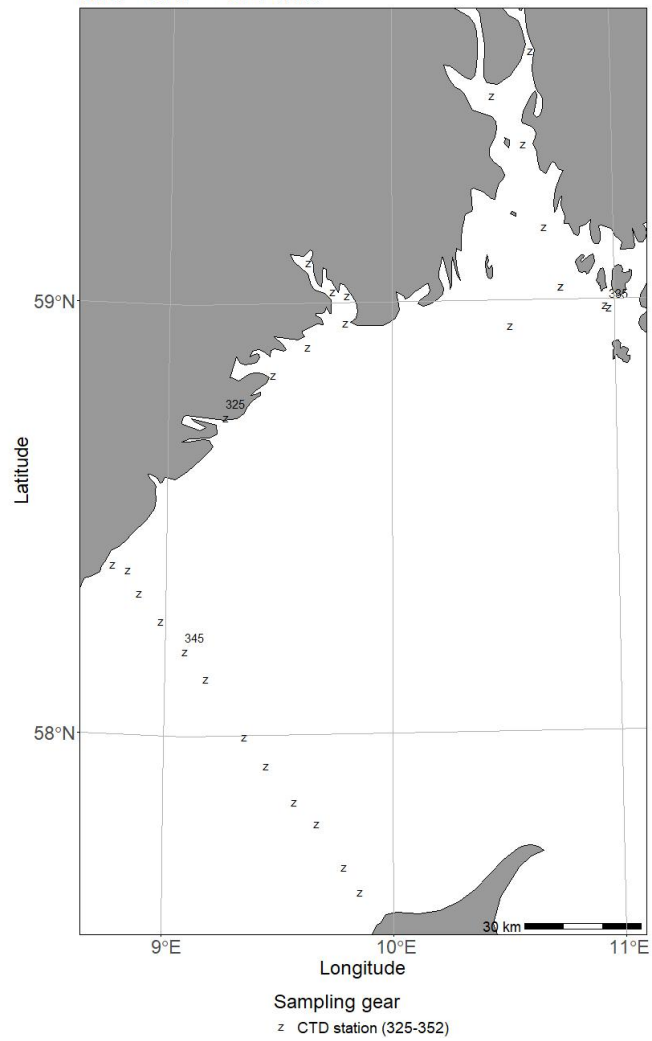


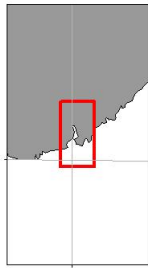
2022316 - G.M.Dannevig
08/10 - 09/10 - CTD Chart





2022317 - G.M.Dannevig
08/11 - 13/11 - CTD Chart



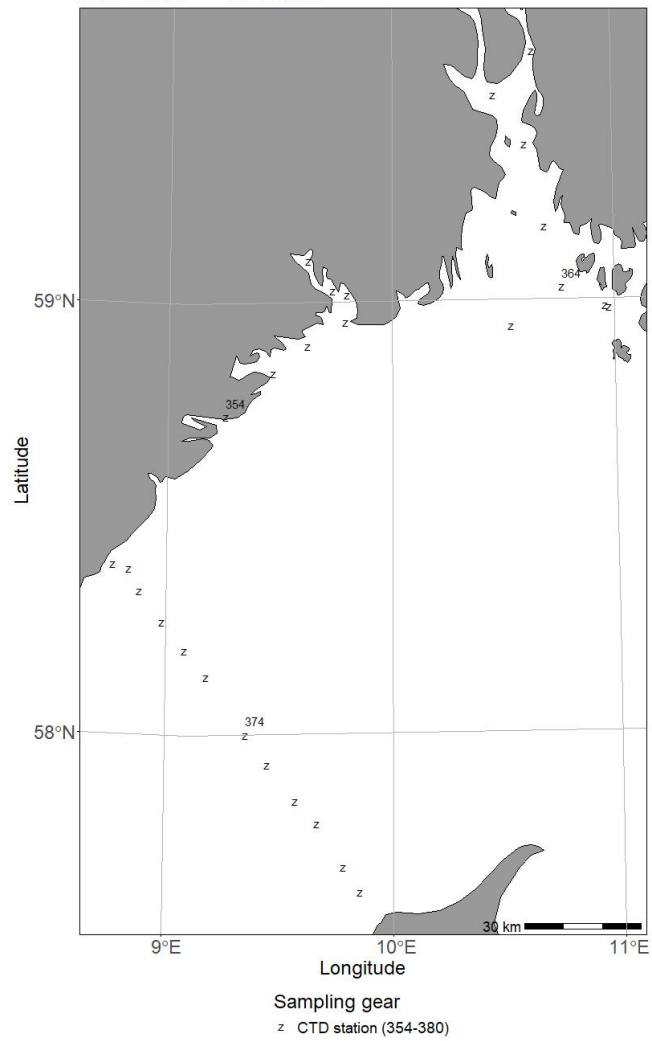


2022318 - G.M.Dannevig
14/11 - 01/12 - CTD Chart





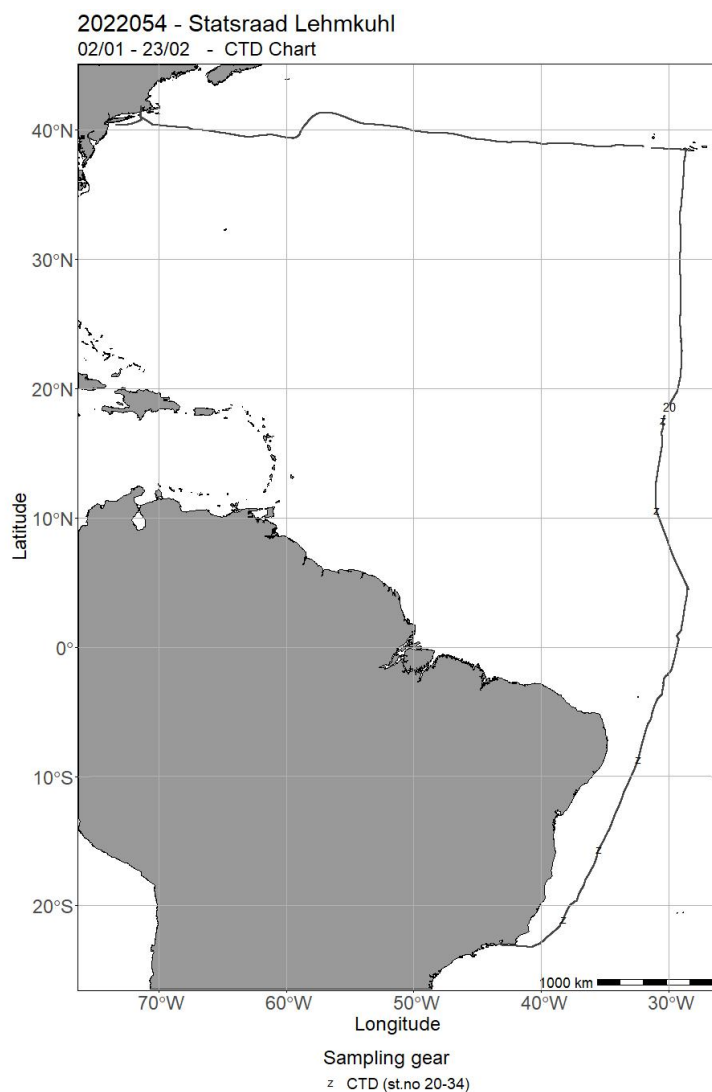
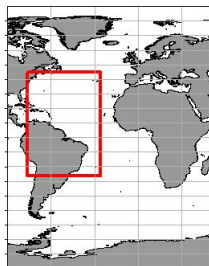
2022319 - G.M.Dannevig
02/12 - 09/11 - CTD Chart



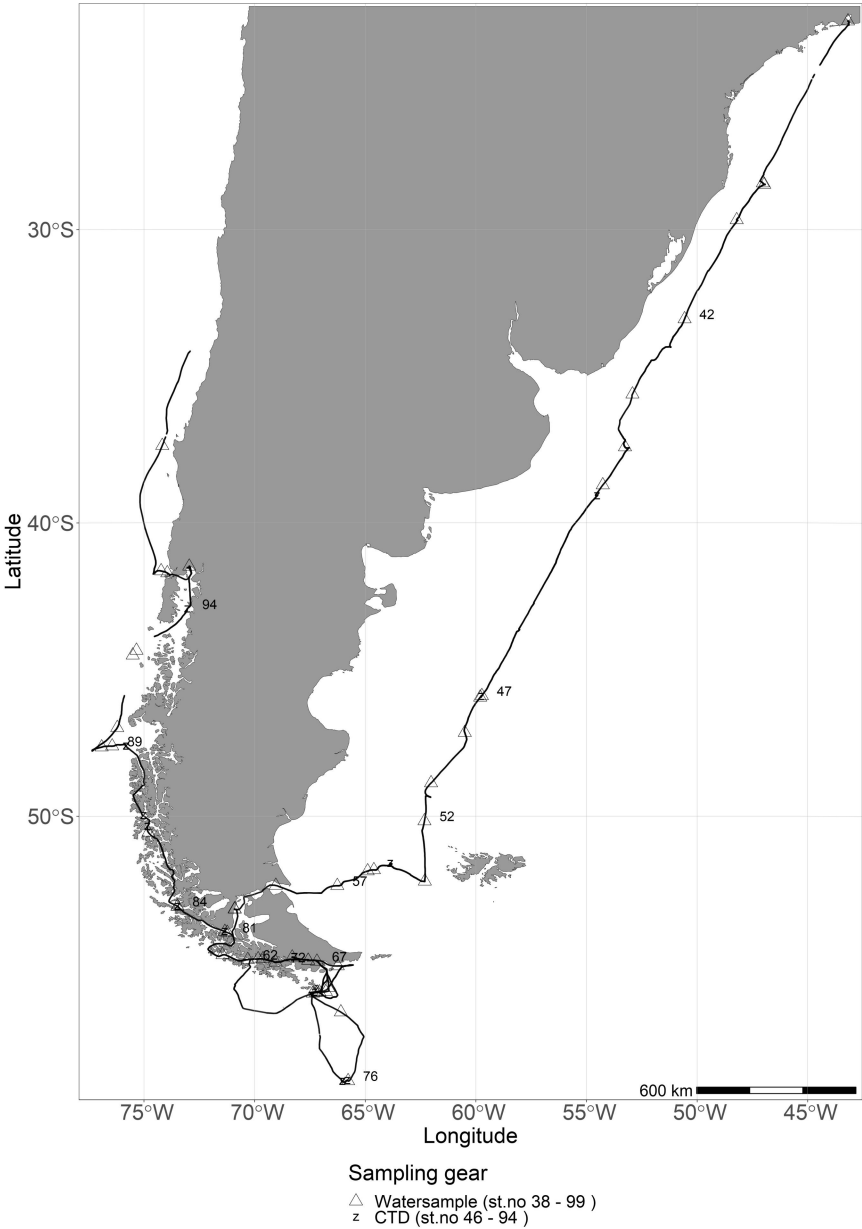
12 - "Statsraad Lehmkuhl" - Cruises 2022

Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022054	02/01 - 23/02	One Ocean Expedition Leg 4	Atlantic Ocean	1-5	-
2022055	26/02 - 29/04	One Ocean Expedition Leg 5	Atlantic Ocean	6-17	-
2022056	01/05 - 25/08	One Ocean Expedition Leg 6	Pacific Ocean	18-28	-
2022057	27/08 - 29/10	One Ocean Expedition Leg 7	Pacific Ocean	29-36	-
2022058	01/11 - 17/12	One Ocean Expedition Leg 8	Pacific Ocean	37-43	-

13 - "Statsraad Lehmkuhl" Charts for 2022



2022055 - Statsraad Lehmkuhl
23/02 - 29/04, 2022 - CTD Chart



14 - "Dr. Fridtjof Nansen" – Cruises 2022

Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022401	20/01 - 20/02	This survey aimed to provide information of bottom habitats and in particular the distribution of vulnerable marine ecosystems (VMEs) such as sponge aggregations, cold-water coral reefs and coral gardens, at 5 seamounts (Annan, Falsos, Perdido 1, Rompetodo and La Meseta) of the Sierra Leone Rise, with reference to survey objectives specified by the CECAF Working Group for the Assessment of Demersal Resources. The survey characterized bottom habitats on the seamounts using: 1) multibeam mapping, 2) VAMS underwater video observations and 3) physical sampling of epibenthos and small demersal fish in selected areas using a beam trawl and/or a rock dredge. The water column characterization encompassed: 1) hydrographic sampling with CTDs (Nutrients, Chlorophyll a, POC, pH and alkalinity) and measurements of currents using a vessel mounted ADCP. Water was filtered eDNA samples were collected to assess if eDNA analysis could be used as a rapid tool for quick screening an area for presence of VME indicator species. Project name: EAF-Nansen Programme Theme 7 Bottom Habitat Mapping Coordinating body: EAF-Nansen Programme, FAO, Institute of Marine Research	Atlantic Ocean	1-56	0-16

Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022402	26/02 - 29/03	Collect data on the status of demersal fish stocks, plankton ecology, benthos, ichthyoplankton, oceanographic conditions along and on the continental shelf from Guinea in the south to Mauritania in the north, specifically : * Obtain information on demersal fish abundance, species and size composition, and distribution. * Standard biological sampling of priority species (including length, weight, sex and maturity). * Standard sampling of environmental variables with CTD and water sampling (salinity, temperature, dissolved oxygen, fluorescence, dissolved nutrients, pH, total alkalinity, chlorophyll a). * Measuring currents with an ADCP. * Sampling of zooplankton and ichthyoplankton. * Sampling with manta trawl for the presence of microplastics in surface waters. * Sample epibenthic organisms occurring in the trawl. * Collect sediment cores in selected sites to reconstruct development in OMZ. Project name: Strengthening the Knowledge Base for and Implementing an Ecosystem Approach to Marine Fisheries in Developing Countries (EAF-Nansen GCP/INT/003/NOR) Coordinating body: Institute of Marine Research, Bergen, Norway	Atlantic Ocean	57 - 242	1-125

Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022403	02/04 - 03/05	Survey of the demersal resources on the outer shelf and slope of North West Africa, Part two. Cape Blanc - Casablanca. For this cruise: Some data collected (until 07.04) was formally part of 2022402 Survey 402 and 403 are part of one coverage of the demersal resources in North West Africa Project name: EAF-Nansen projectCoordinating body: FAO, Rome / IMR, Norway	Atlantic Ocean	265 - 456	146-308

Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022404	07/05 - 07/06	The overall objective of the cruise was to conduct bathymetric mapping with multibeam echosounder, and basic mapping and identification of vulnerable marine ecosystems (VMEs) and fisheries resources on selected seamounts and seamount complexes in the SEAFO Convention Area. Oceanographic sampling was performed at selected stations en route tot he survey area part oft he Guinea Seamount chain. Project name: SEAFO-Nansen survey 2022 Coordinating body: EAF Nansen Programme, Institute of Marine Research, Norway	South Atlantic Ocean	457 - 480	-

Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022405	17/06 - 08/07	Leg 4.1 Fisheries resources in the SEAFO Convention area The objective of SEAFOs Convention (The Convention on the Conservation and Management of Fisheries Resources in the South East Atlantic Ocean) is to ensure the long term conservation and sustainable use of the fishery resources in the Convention Area through the effective implementation of the Convention. The Convention Area excludes exclusive economic zones of the coastal states in the region. The study area were the seamounts along the Atlantic ridge from the Maldivia bank in the south through the central Ewing and the Dubow mounts in the north in international waters west of Namibia. The primary objective of the survey was to determine the distribution, density and abundance of aggregations of orange roughy and alfonso in the survey area and, if possible, to obtain an index of their abundance. Secondary objectives included methodological studies such as acoustic dead zone correction and target strength (TS) measurements, biological description of key species, characterize the mesopelagic community, collect otoliths and tissue samples for stock identification purposes, map the oceanographic conditions at the survey area, and to provide hands-on-training of regional cruise participants. Project name: EAF-Nansen projectCoordinating body: FAO, Rome / IMR, Norway	South Atlantic Ocean	481-533	314 - 360
2022406	19/07 - 14/08	The overall objectives of this regional survey effort in Namibia and Angola were discussed in connection with the EAF-Nansen Programme Annual Forum in Benin in 2019 for surveys to take place in 2020.	South Atlantic Ocean	534 - 607	361 - 394

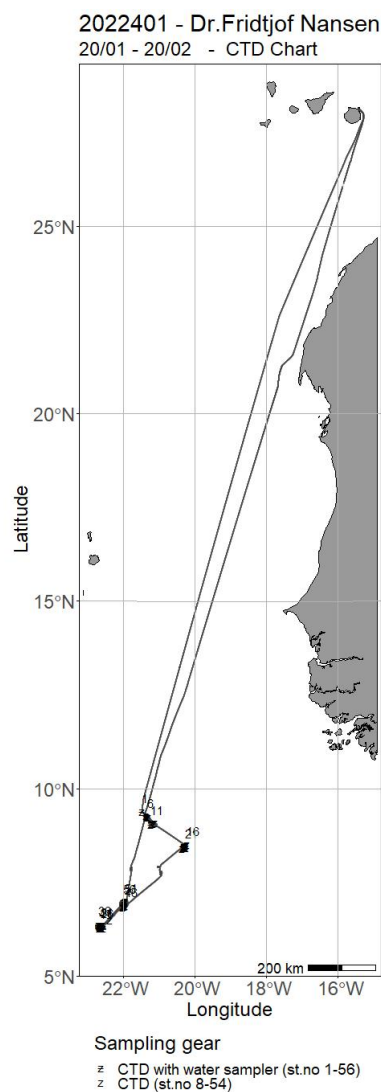
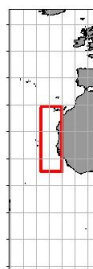
Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022407	20/08 - 19/09	The general objectives of Leg 4.2 and 4.3 surveys are:Obtaining information on pelagic fish species abundance, their distribution and size structure, as well as the species composition of the pelagic fish assemblage.Standard biological sampling of prioritized pelagic species (length, weight, sex and maturity).Map the physical and chemical properties of the water column and the subsurface layer at the study area (temperature, salinity, dissolved O2, chlorophyll, nutrients, pH and total alkalinity), as well as the underwater currents and light penetration.Sampling of zooplankton and ichthyoplankton. Sampling for the presence of microplastic particles in surface waters. Sampling fish for microplastics, food safety and nutrition studies. Project name: Strengthening the Knowledge Base for and Implementing an Ecosystem Approach to Marine Fisheries in Developing Countries (EAF-Nansen GCP/INT/003/NOR) Coordinating body: Institute of Marine Research, Bergen, Norway	Atlantic Ocean	608 - 734	395 - 453

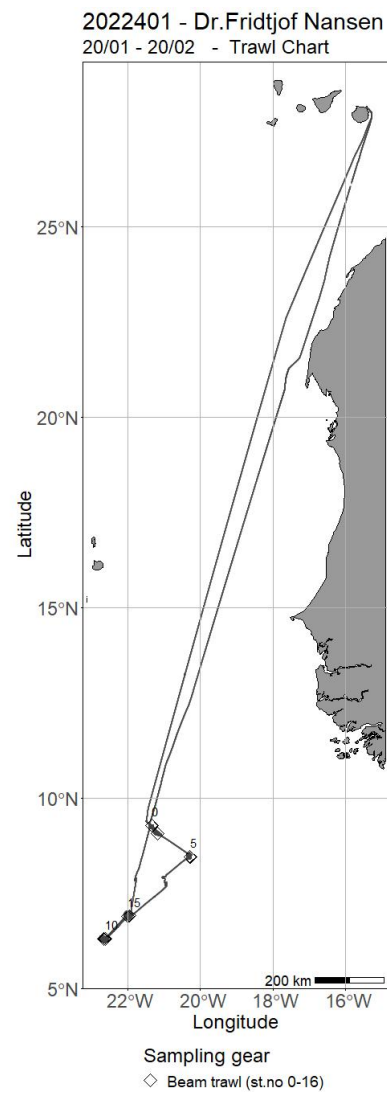
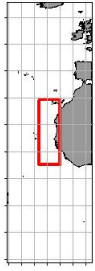
Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022409	06/10 - 18/10	The general objectives of Leg 4.2 and 4.3 surveys are: Obtaining information on pelagic fish species abundance, their distribution and size structure, as well as the species composition of the pelagic fish assemblage. Standard biological sampling of prioritized pelagic species (length, weight, sex and maturity). Specific biologic sampling (otolith extraction for microchemistry) of Atlantic chub mackerel (<i>Scomber colias</i>). Map the physical and chemical properties of the water column and the subsurface layer at the study area (temperature, salinity, dissolved O₂, chlorophyll, nutrients, pH and total alkalinity), as well as the underwater currents and light penetration. Sampling of zooplankton and ichthyoplankton. Sampling for the presence of microplastic particles in surface waters. Project name: Strengthening the Knowledge Base for and Implementing an Ecosystem Approach to Marine Fisheries in Developing Countries (EAF-Nansen GCP/INT/003/NOR) Coordinating body: Institute of Marine Research, Bergen, Norway	Atlantic Ocean	736 - 808	455 - 492

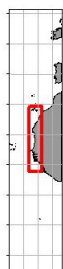
Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022410	22/10 - 15/11	The general objectives of Leg 4.2 and 4.3 surveys are: Obtaining information on pelagic fish species abundance, their distribution and size structure, as well as the species composition of the pelagic fish assemblage. Standard biological sampling of prioritized pelagic species (length, weight, sex and maturity). Specific biologic sampling (otolith extraction for microchemistry) of Atlantic chub mackerel (<i>Scomber colias</i>). Map the physical and chemical properties of the water column and the subsurface layer at the study area (temperature, salinity, dissolved O₂, chlorophyll, nutrients, pH and total alkalinity), as well as the underwater currents and light penetration. Sampling of zooplankton and ichthyoplankton. Sampling for the presence of microplastic particles in surface waters. Project name: Strengthening the Knowledge Base for and Implementing an Ecosystem Approach to Marine Fisheries in Developing Countries (EAF-Nansen GCP/INT/003/NOR) Coordinating body: Institute of Marine Research, Bergen, Norway	Atlantic Ocean	809 - 874	493 - 533

Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022411	17/11 - 15/12	The general objectives of Leg 4.2 and 4.3 surveys are: Obtaining information on pelagic fish species abundance, their distribution and size structure, as well as the species composition of the pelagic fish assemblage. Standard biological sampling of prioritized pelagic species (length, weight, sex and maturity). Specific biologic sampling (otolith extraction for microchemistry) of Atlantic chub mackerel (<i>Scomber colias</i>). Map the physical and chemical properties of the water column and the subsurface layer at the study area (temperature, salinity, dissolved O₂, chlorophyll, nutrients, pH and total alkalinity), as well as the underwater currents and light penetration. Sampling of zooplankton and ichthyoplankton. Sampling for the presence of microplastic particles in surface waters. Project name: Strengthening the Knowledge Base for and Implementing an Ecosystem Approach to Marine Fisheries in Developing Countries (EAF-Nansen GCP/INT/003/NOR) Coordinating body: Institute of Marine Research, Bergen, Norway	North Atlantic Ocean	863 - 1134	527 - 691

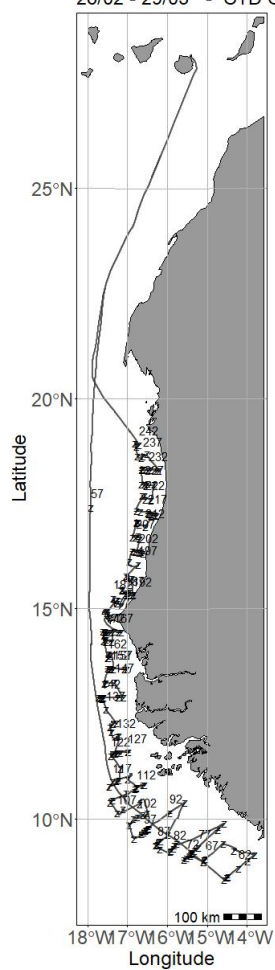
15 - "Dr. Fridtjof Nansen" Charts for 2022





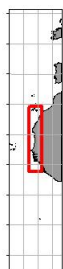


2022402 - Dr.Fridtjof Nansen
26/02 - 29/03 - CTD Chart

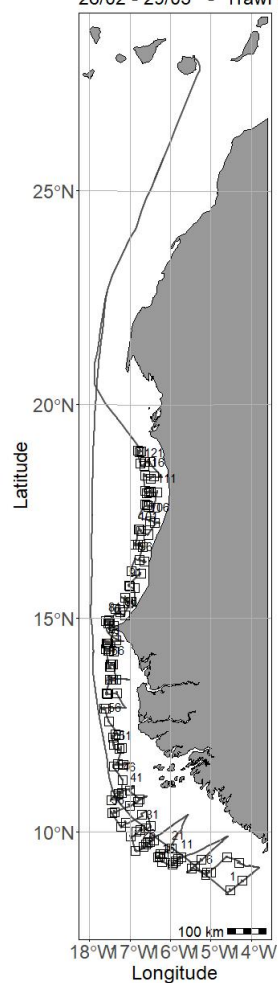


Sampling gear

- z CTD (st.no 57-242)
- z CTD with water sampler (st.no 60-234)



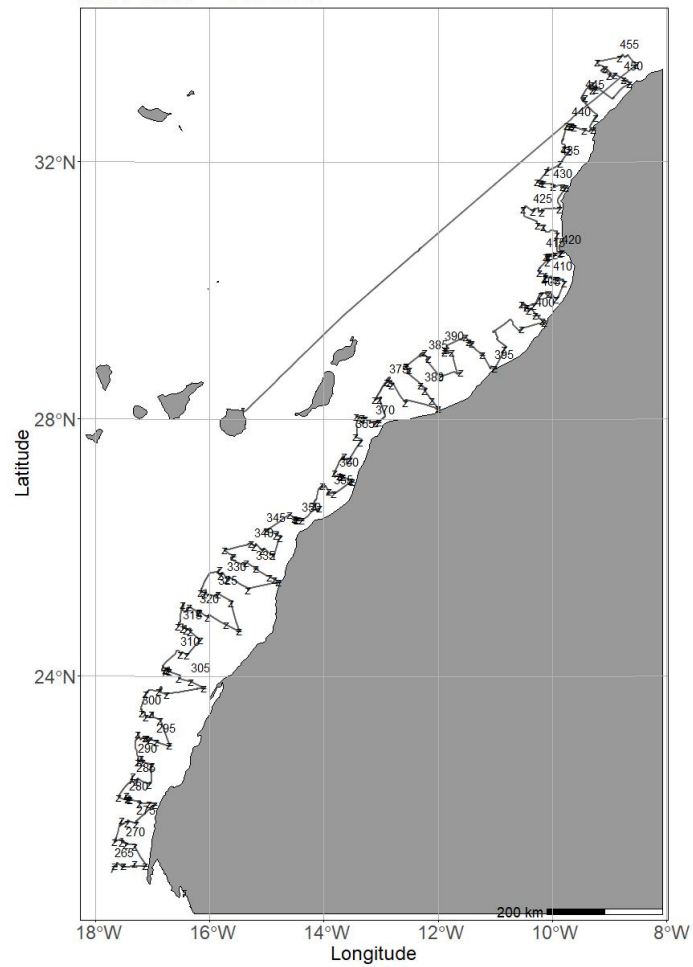
2022402 - Dr.Fridtjof Nansen
26/02 - 29/03 - Trawl Chart



Sampling gear
□ Bottom trawl (st.no 1-125)



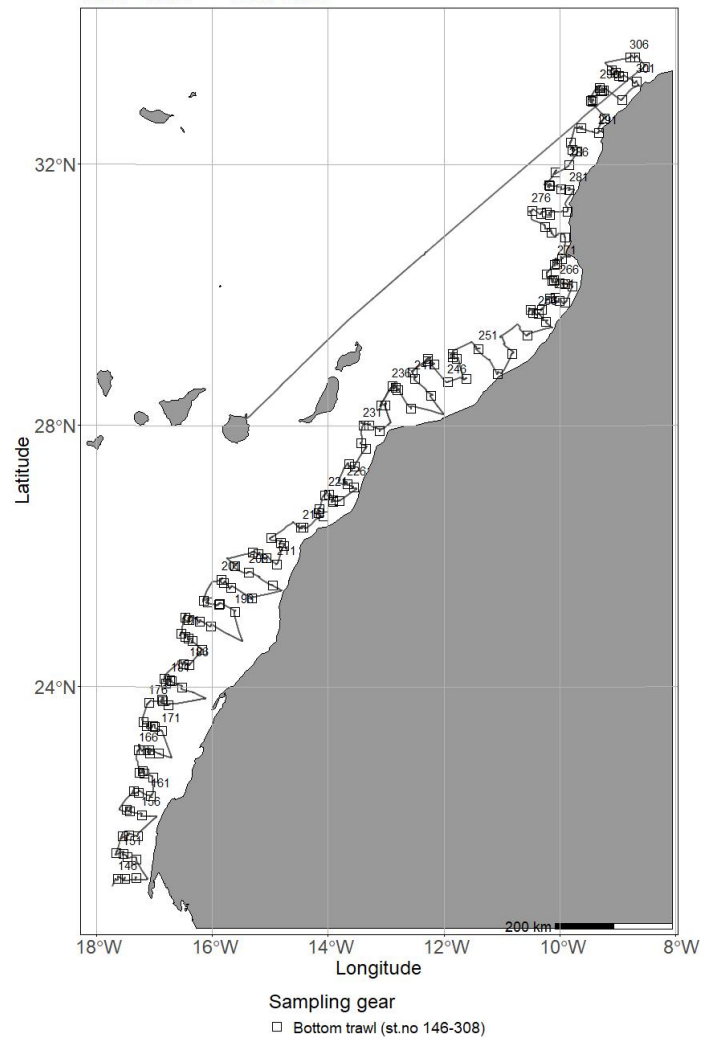
2022403 - Dr.Fridtjof Nansen
02/04 - 03/05 - CTD Chart

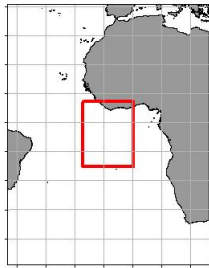


Sampling gear
z CTD with water sampler (st.no 265-453)
z CTD (st.no 267-456)

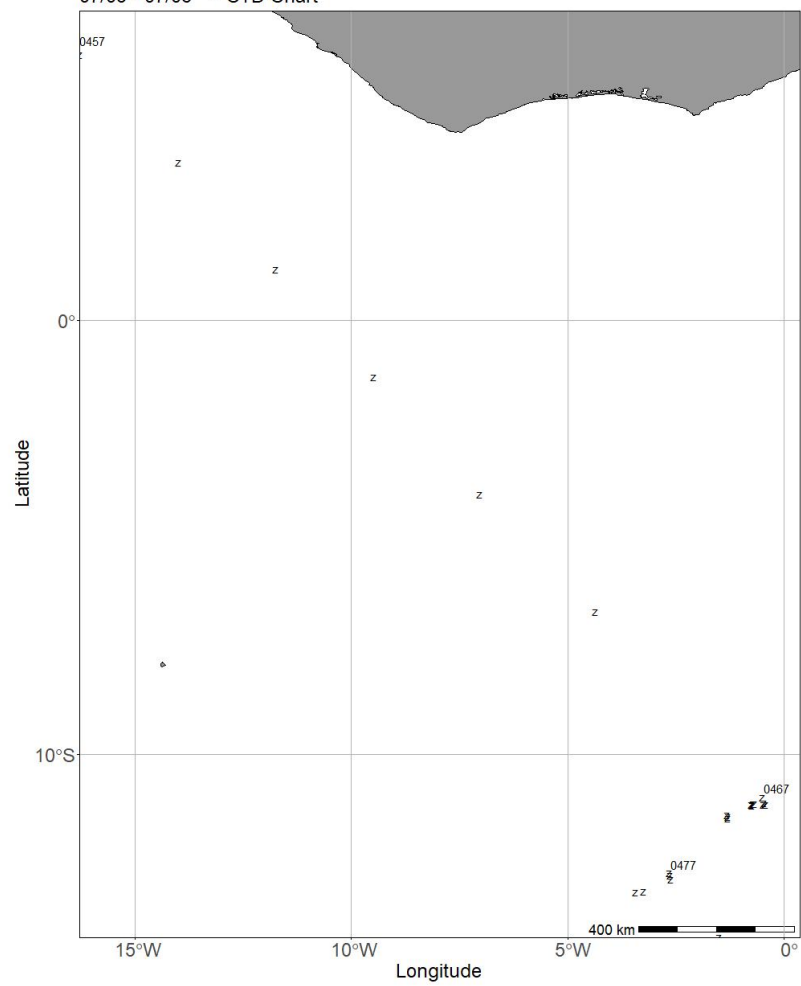


2022403 - Dr.Fridtjof Nansen
02/04 - 03/05 - Trawl Chart

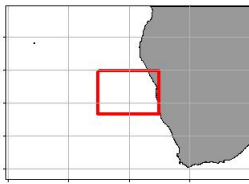




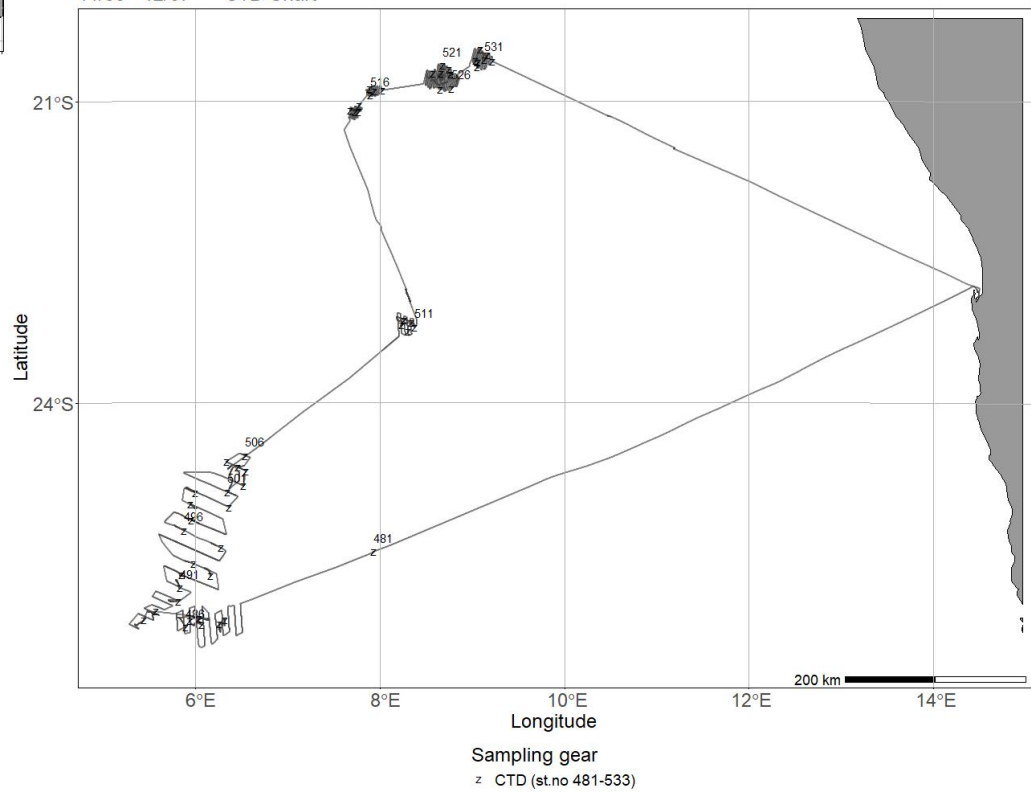
2022404 - Dr.Fridtjof Nansen
07/05 - 07/06 - CTD Chart

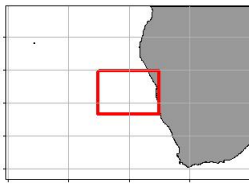


Sampling gear
z CTD station (0457-0480)

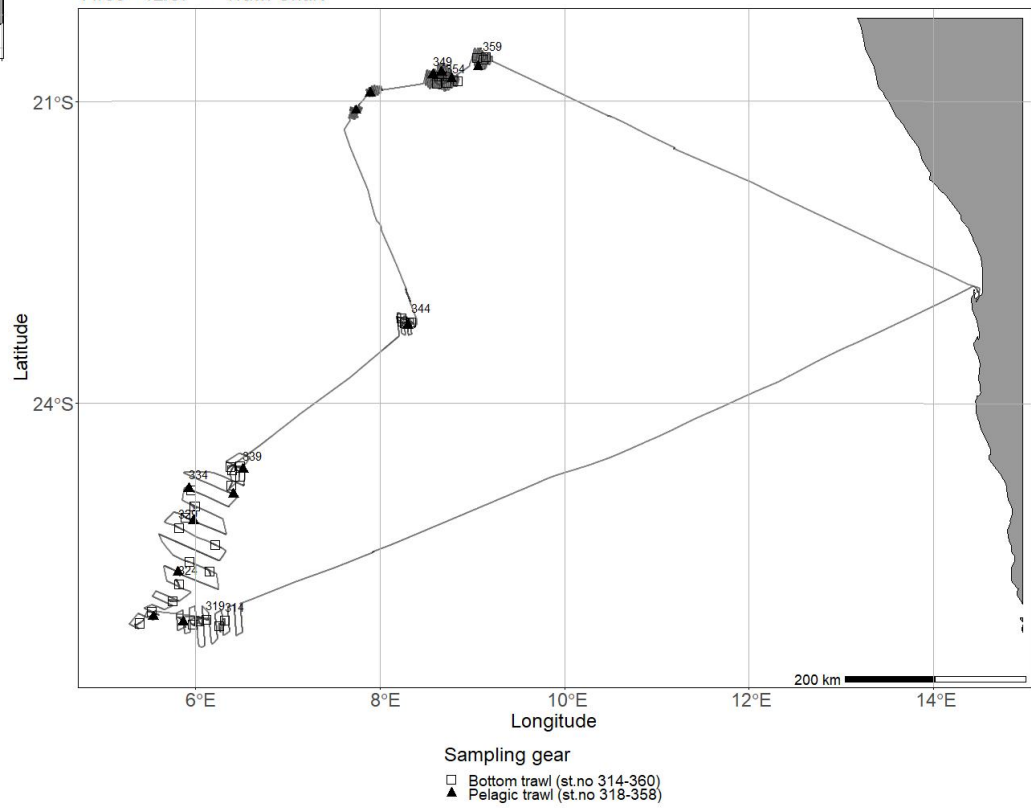


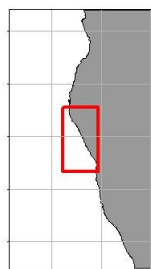
2022405 - Dr.Fridtjof Nansen
11/06 - 12/07 - CTD Chart



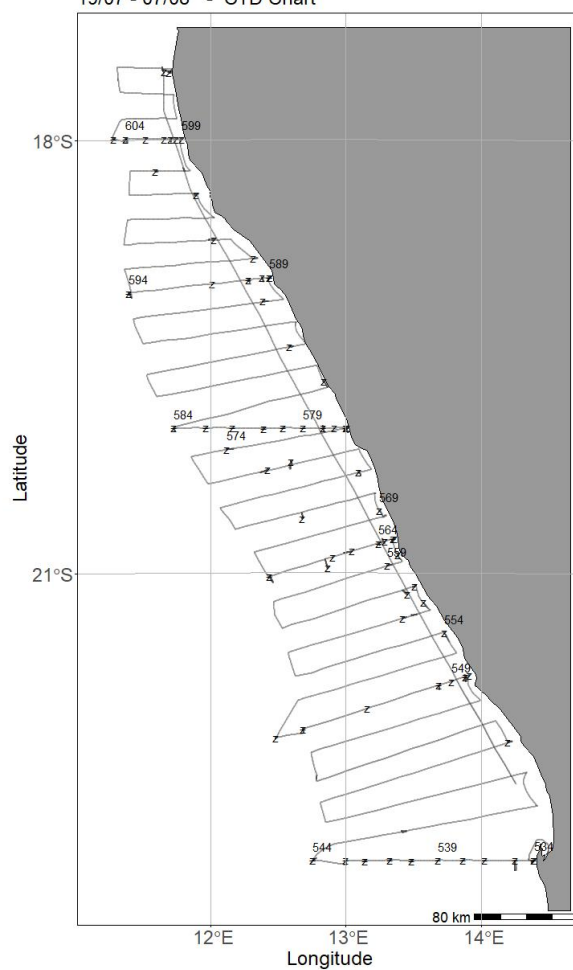


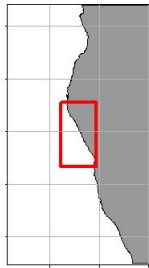
2022405 - Dr.Fridtjof Nansen
11/06 - 12/07 - Trawl Chart



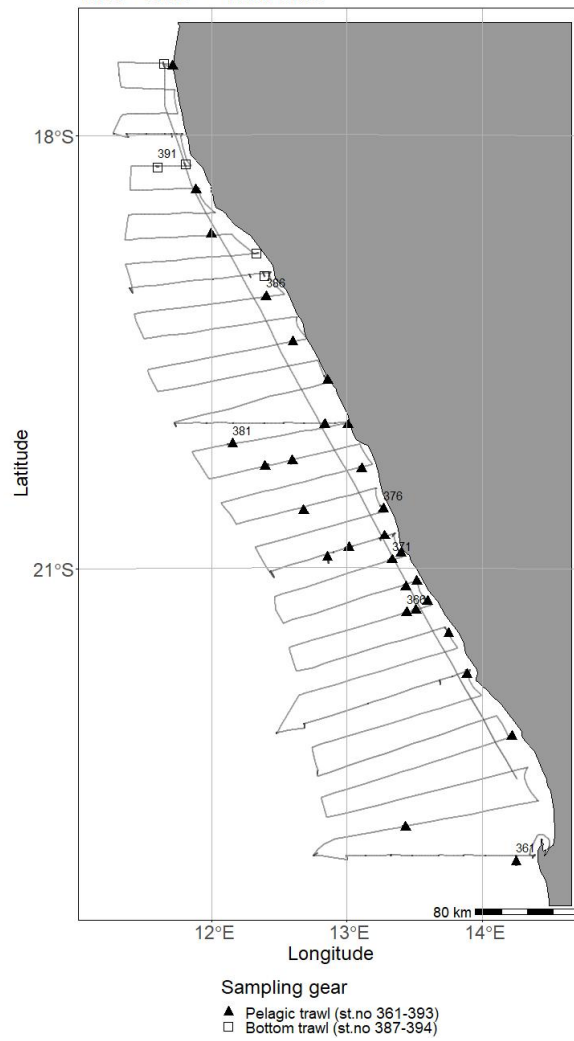


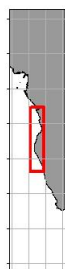
2022406 - Dr.Fridtjof Nansen
19/07 - 07/08 - CTD Chart



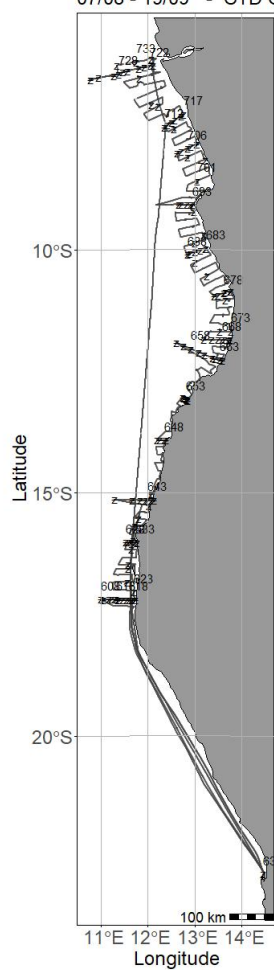


2022406 - Dr.Fridtjof Nansen
19/07 - 07/08 - Trawl Chart



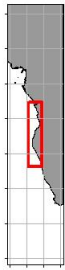


2022407 - Dr.Fridtjof Nansen
07/08 - 19/09 - CTD Chart

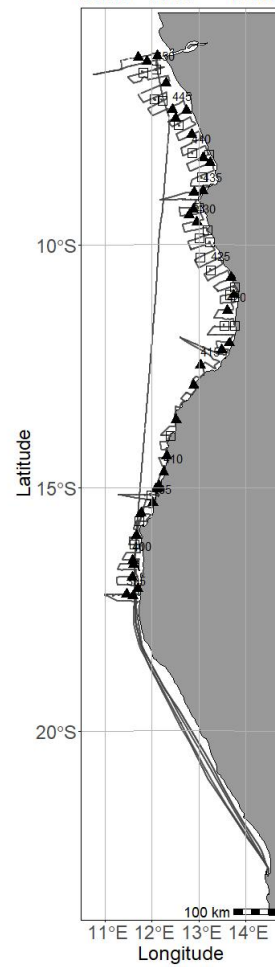


Sampling gear

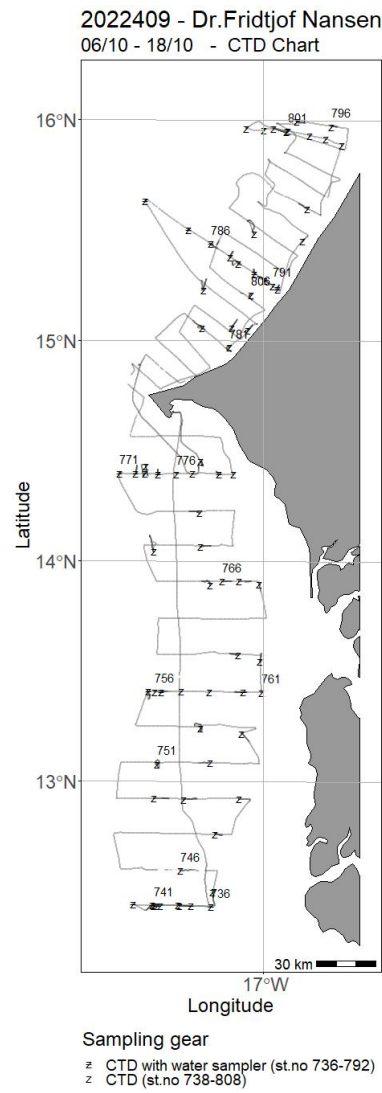
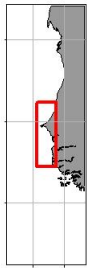
- z CTD with water sampler (st.no 608-731)
- z CTD (st.no 623-734)

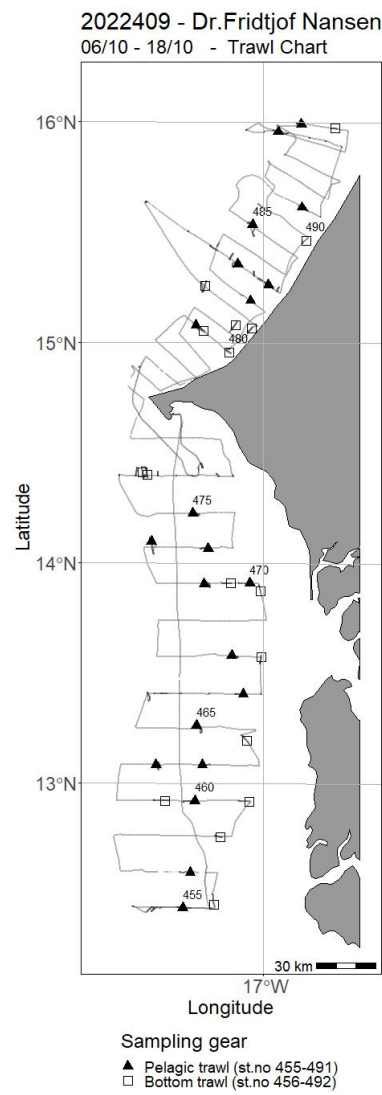
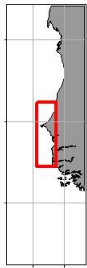


2022407 - Dr.Fridtjof Nansen
07/08 - 19/09 - Trawl Chart



Sampling gear
▲ Pelagic trawl (st.no 395-453)
□ Bottom trawl (st.no 401-450)

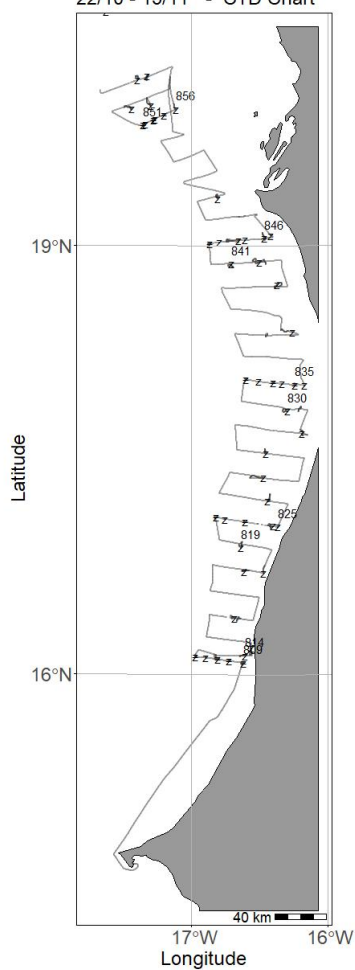






2022410 - Dr.Fridtjof Nansen

22/10 - 15/11 - CTD Chart

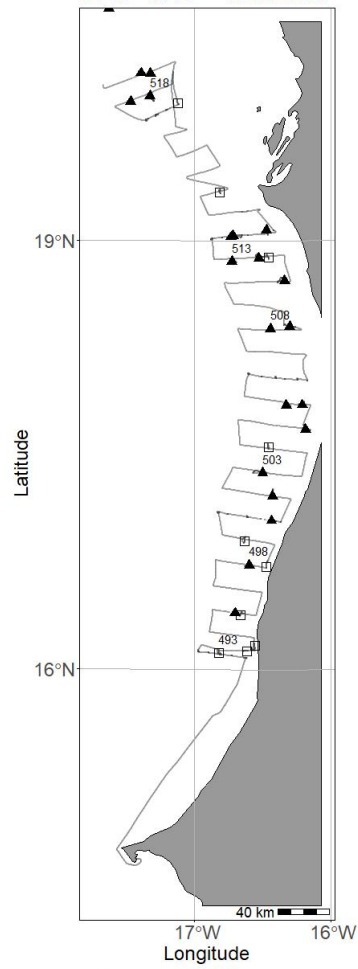


Sampling gear

- ≡ CTD with water sampler (st.no 809-871)
- z CTD (st.no 812-874)



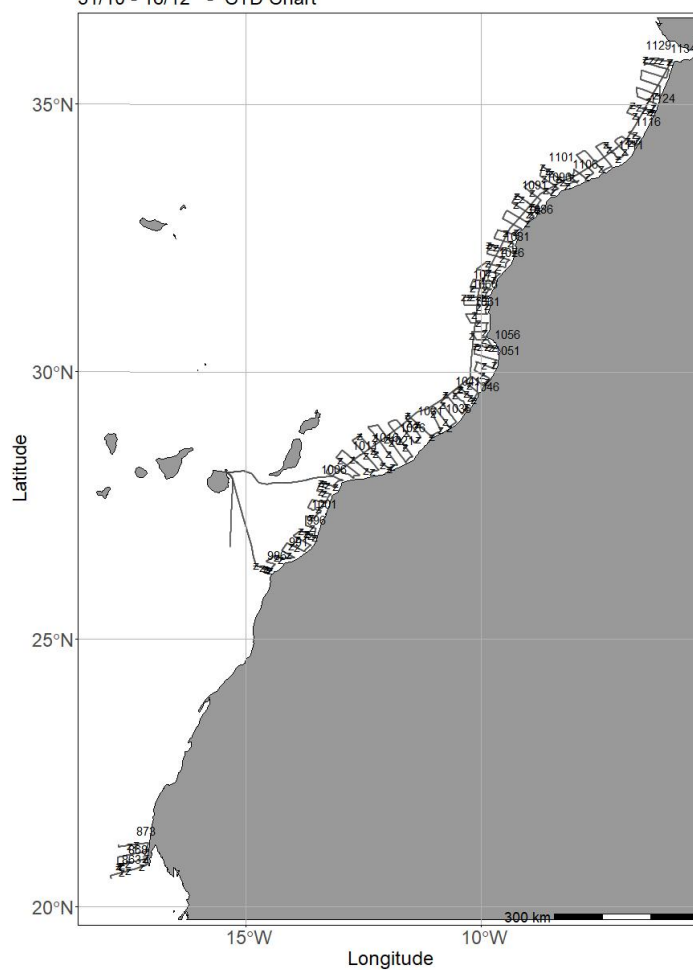
2022410 - Dr.Fridtjof Nansen
22/10 - 15/11 - Trawl Chart



Sampling gear
□ Bottom trawl (st.no 493-531)
▲ Pelagic trawl (st.no 496-533)

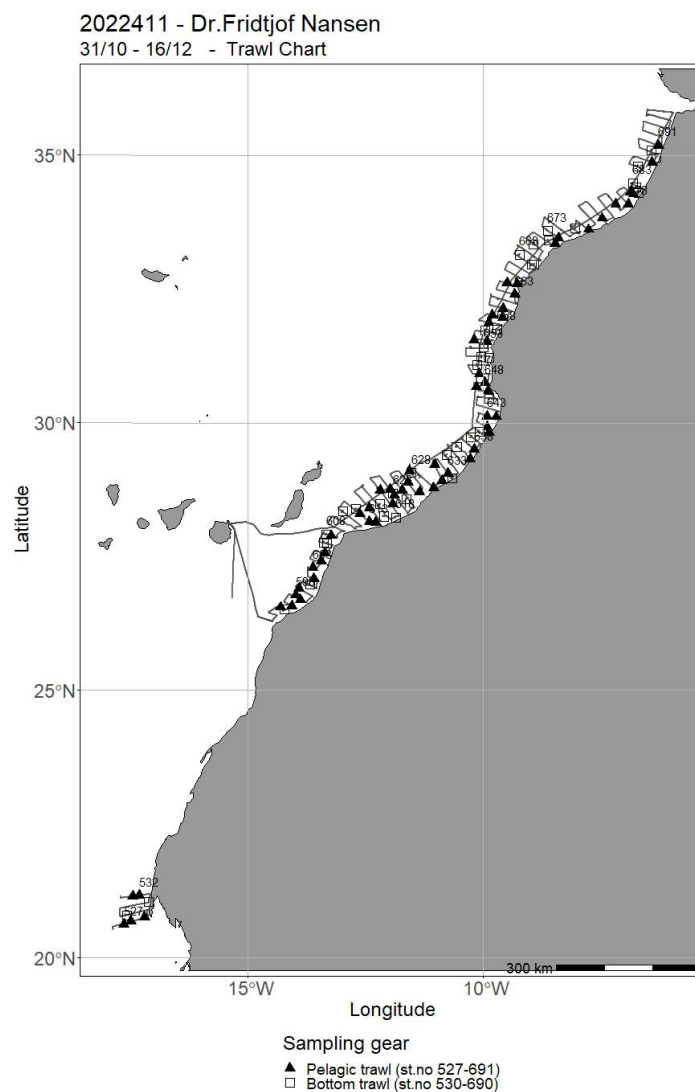


2022411 - Dr.Fridtjof Nansen
31/10 - 16/12 - CTD Chart



Sampling gear

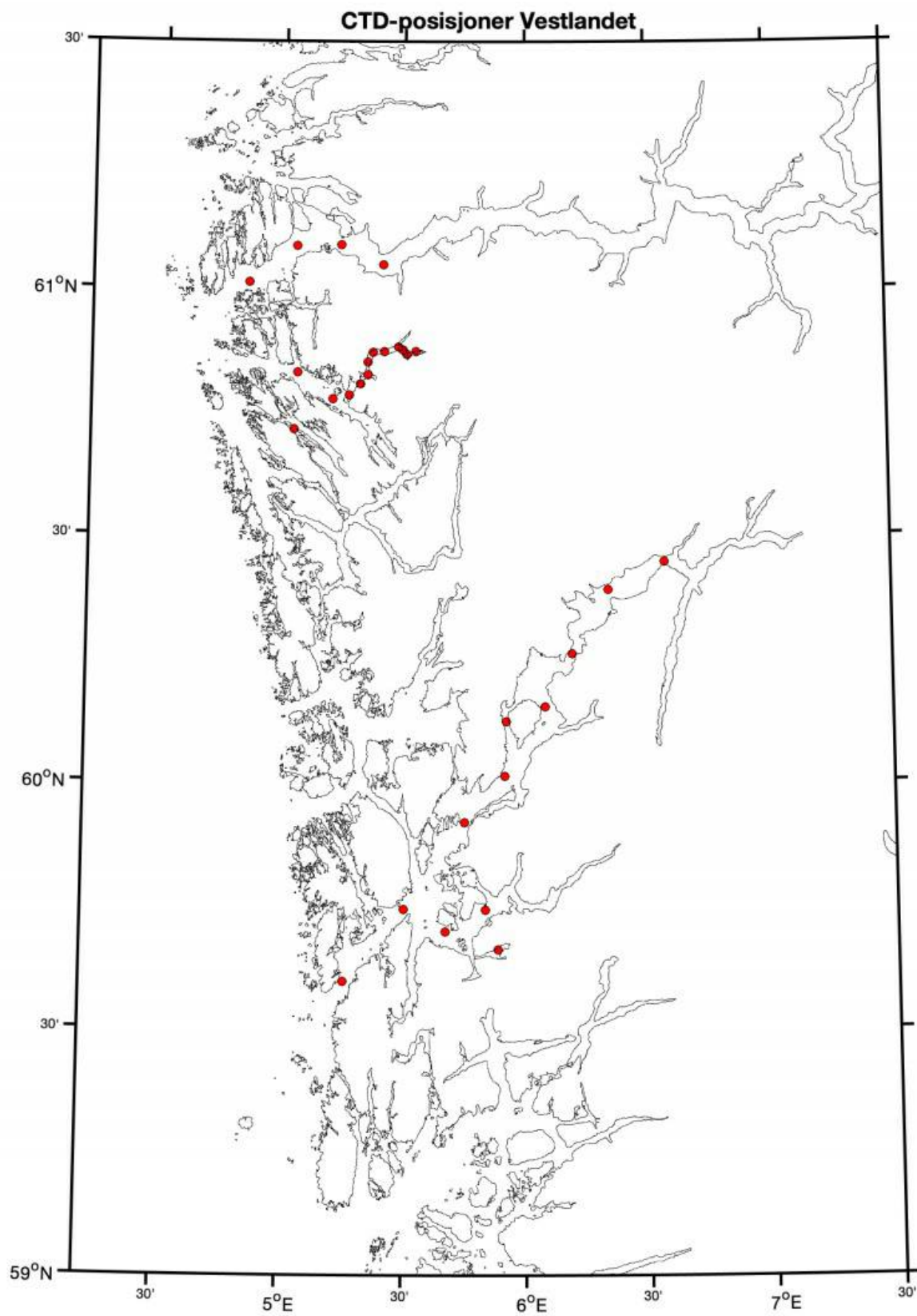
- z CTD (st.no 863-1133)
- z CTD with water sampler (st.no 867-1134)



16 - "Hans Brattstrøm" Cruises 2022

Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022936	27/06 - 06/07	2022-AKV-005: Overvåkning av det fysiske fjordmiljøet + opptak av smoltburforankringer	Norskekysten: Vestlandet	196-240	

17 - "Hans Brattstrøm" Charts for 2022



CTD stations for cruise 2022936 in Sognefjorden, Masfjorden and Hardangerfjorden (figure by Lars Asplin)

18 - Hired vessels – Cruises 2022

Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022802	27/02 - 13/03	Acoustic trawl monitoring survey for biomass estimation of the capelin spawning stock.	Norwegian Sea	17-30	20-36
2022803	27/02 - 13/03	Acoustic trawl survey on Capelin spawning stock. Methodological survey using a stratified survey design aiming to measure the abundance of Capelin during the spawning season. Project name: Managing strategies for the Barents SeaCoordinating body: Institute of Marine Research, Norway	Barents Sea	19-31	17-24
2022807	25/01 - 25/02	Conduct annual survey (since 2011) to collect acoustic and biological data on krill, other macrozooplankton and krill predator data from sector 48.2 in the Southern Ocean. The study uses the same design as surveys conducted by the US AMLR Program and the British Antarctic Survey in areas 48.1 and 48.3. Integrated monitoring links these three main areas where krill fishing is mainly conducted today. We depend on the logistics administration of Aker Biomarine AS that offers a vessel with crew free of charge for implementing this survey. Project name: Project KRILL (14246). Coordinating body: Institute of Marine Research, Bergen, Norway	Southern Ocean	-	-
2022808	30/05 - 02/06	Survey of potentially human pathogenic (i. e. anisakids nematodes) and other important parasites (i.e. Ichthyophonous) in North Sea herring intended for human consumption.In addition, a small sample of bycatch (i.e. mackerel) was studied.	Northeast Atlantic Ocean (40W)	-	-
2022809	05/09 - 09/09	Monitore parasites in Atlantic mackerel stocks fished for commercial purposes. Parasites examined in detail were Kudoa thyrssites, Ichthyophonous sp. And Anisakis in Atlantic mackerel. Project name: 15242 - Surveillance for biohazards of wild marine fish reflecting authentic fishing conditions. Coordinating body: Institute of Marine Research v/Arne Levsen	North Sea	-	-
2022812	13/02 - 17/02	The objective of the SpawnSeis MV project is to study effects of a new method of seismic imaging: by using a marine vibrator, using continuous sounds to get an image of the subsurface to explore oil and gas reserves. We would like to study whether this sound disrupt spawning behaviour of wild, free ranging, spawning cod using acoustic telemetry in Austevoll, Norway. The objective of the cruise is to deploy a marine vibrator from the vessel and expose the experimental area and to monitor the resulting noise patterns in the area where the cod is tagged. CTD stations were also taken in the area to characterise the propagation properties of the water column. The behavioural data will be downloaded from the listening buoys for the fish tags later and is not part of this survey. Project name: SpawnSeis MV Coordinating body: Institute of Marine Research	North Sea	-	-
2022816	04/07 - 07/08	2022-NOR-029: Mengdemåling av makrellbestanden med swept area pelagisk tråling 0-35m dyp Akustisk mengdemåling nvg-sild 0-200 m Akustisk mengdemåling kolmule 0-500 m Laks og rognkjeks fokus. Økologiske studier (temp, plankton, hval) i forhold til pelagiske fisk	Norwegian Sea	62-120	58-132
2022817	04/07 - 07/08	Trawl survey to monitor the stock of Atlantic mackerel using swept area methodology. Acoustic survey to monitor the spawning stock of Norwegian spring spawning herring and the stock of blue whiting in the Nordic Seas. Ecological studies (temperature, plankton, whale observations) in relation to pelagic fish. Cruise coordinator: Leif Nøttestad, Institute of Marine Research Project name: International Ecosystem Summer Survey in the Nordic Seas (IESSNS). Coordinating body: ICES	Northeast Atlantic Ocean (40W)	35-90	26-92
2022818	22/03 - 08/04	2022-NOR-005: Trålkustisk tokt for å måle gytebestanden av kolmule vest av de Britiske Øyer. Samarbeidstokt innen WGIPS, ICES (tidligere WGNAPES)	-	31-61	37-57

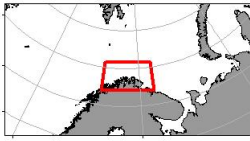
Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022819	19/11 - 07/12	Catch and release tagging of Norwegian Spring Spawning herring with RFID tags on their wintering grounds. Herring are caught with a purse seine, pumped into holding tanks on the boat via a vacuum pump system. The fish are then measured for length and tagged with a RFID chip and released after tagging. A sample of fish is taken av 20 individuals per cm group to be used for age-length estimation. Cruise coordinator: Aril Slotte, Institute of Marine Research Norway.	Norwegian Sea	-	-
2022820	27/04 - 27/05	Tagging with RFID technology and biological sampling of mackerel in the spawning areas west of Shetland and the Hebrides and west of Ireland. Project name: Tagging and biological sampling of mackerel as part of studies on the European mackerel stocks. Coordinating body: Institute of Marine Research, Bergen, Norway.	Atlantic Ocean	-	-
2022821	14/02 - 27/02	Provide acoustic estimates of abundance and distribution of Norwegian spring spawning herring during the spawning migration along the Norwegian coast.	Norwegian Sea	1-16	1-19
2022822	14/02 - 27/02	Collection of acoustic data from echo sounder for biomass estimation of herring. Collection of biological samples for estimation of species and size composition in the acoustic observations. Collection of hydrographic data (CTD)	Norwegian Sea	1-18	1-16
2022824	08/06 - 02/08	The objective of the cruise is to collect sightings information for estimating abundance of whales, especially minke whales, as part of a long-term survey program to cover the Northeast Atlantic over the years 2020-2025. The survey vessel has followed predetermined tracklines on which observations of whales have been recorded by dedicated observers. Data collected for each observation include: Species, position, position relative to vessel, weather data and other covariates. In total, around 3954 nautical miles were surveyed in the waters around Svalbard and the Barents Sea. Combined for the two platforms, 231 minke whale observations were recorded. Other species recorded were fin whale (119 observations), humpback whale (297 observations), blue whale (6 observations), sei whale (2 observations), harbor porpoise (188 observations), killer whales (10 observations), white-beaked dolphin (1522 observations), and sperm whale (21 observations).	Barents Sea	-	-
2022825	22/03 - 04/04	This cruise was a collaboration between the Norwegian Directorate of Fisheries and the Institute of Marine Research. The aim of this research cruise was to further develop the catch control methods and technologies initially investigated in cruise Nos. 2019862 and 2021825 by addressing the following objectives: 1. Investigate the effectiveness of a catch control rigs to retain target catch during fishing operations and then release excess catch once the catch limited is reached. 2. Investigate the effectiveness of a catch limit release technology on the trawl codend (Prototype by Foss Tech). 3. Ground-truth fishing instrumentation (i.e. catch sensors and trawl-eye echosounders) for determining when the codend is full. 4. Monitor the geometry and dynamics of the trawl and codend, particularly during haul-back. 5. Investigate the effectiveness of a prototype technology for the rapid release of the pump from the trawl codend, as a countermeasure to sinking codends (Prototype by Foss Tech). 6. Investigate the effectiveness of a prototype bycatch reduction device for excluding large bycatch fauna (e.g. sharks and tuna) from the catch. Project Leader and Cruise Coordinator: Olafur Ingolfsson (Institute of Marine Research) Project name: Catch Control in Blue Whiting Pelagic Trawl Fishery Coordinating body: Institute of Marine Research	Celtic Sea	-	-

Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022826	22/08 - 09/09	The objective was to quantify the survival rate of shrimp (<i>Pandalus borealis</i>) that are selected out from a trawl bag at the sea surface under commercial fishing conditions. Shrimp escaping the codend at the surface were collected with one of two methods: either with a small meshed codend cover or with by manual «washing» of the codend in a tank, after bringing in onboard. Survival of shrimp was then monitored over the proceeding two days using onboard and laboratory based aquarium observations. Main tasks: Quantify differences in survival rates between short (~1 hour) and long (~7 hours) haul durations Quantify differences in survival rates between different sampling methodologies (codend cover vs manual «washing»). Project name: Quantifying the survival of shrimp that are selected from a trawl bag at the fishing depth and at the sea surface (Project No.: 14785). Coordinating body: Institute of Marine Research	Skagerrak	-	-
2022829	24/01 - 13/04	2022-BAR-027: Prøvetaking av kommersielle fangstar av bunnfisk (særleg torsk, sei, hyse, blåkveite, uer) landa på strekninga Helgeland-Varanger. Prøvetaking 180 døgn per år fordelt på alle kvartal, men med hovudvekt på 1 og 2 kvartal.	Norwegian Sea	-	-
2022834	10/06 - 30/06	Sampling of DNA from live harbor seal pups in breeding colonies in order to study population structure of the species in Norwegian coastal waters.	North Sea	-	-
2022835	10/08 - 01/09	2022-KST-005: Oppstart ny landsdekkende telleperiode for steinkobbe langs norskekysten, som forventes å bli fullført i 2026. HI er ansvarlig for forvaltningsrådgivning av steinkobbe, herunder rådgivning om jaktkvoter langs hele kysten.	North Sea	-	-
2022838	02/05 - 16/05	There were conducted gear investigations to look at the effect of cod end extensions and twine thickness on relative selection of haddock at fishing depth, with a square mesh codend to reduce accidental mortality of undersized fish in demersal seine fishing. 3 different setups were tried out. A black tunnel was mounted in one of the codend extensions to see if it could further contribute to increased sorting of haddock. Video observations were made with GoPro cameras. The catch was length measured and weighed. Project name: Selection in demersal seines Coordinating body: Institute of Marine Research Bergen, Norway	Barents Sea	-	-
2022839	20/09 - 26/09	The goal of the IMR cruise no 2022839 was to survey the areas north of Moffen and on the Parryflaket where beds of Iceland scallops (<i>Chlamys islandica</i>) are known to occur based on survey and fisheries data from the late 1980ies. Especially Moffen was a key area in the former fishery for Iceland scallops and has been therefore selected for a mapping survey. The survey used a video sledge and dredging to collect data on the abundance of Iceland scallops and biological samples. The specific aim of cruise no 2022839 were as follows: 1. Map the distribution and density of Iceland scallops in the Moffen and Parryflaket areas using video transects and dredge stations. 2. Estimate total abundance in the areas based on density information and potential explanatory variables such as bottom depth. 3. Compare observed shell counts from dredge stations and video transects at the same locations to determine catchability coefficients and evaluate the representativeness of dredge catches for abundance estimation. 4. Gather representative individual data to create size frequency distributions and age-size keys, as well as collect and tissue samples for population genetic and contaminants analyses. 5. Investigate the spread of snow crab in inshore areas north(-west) of Svalbard. Project name: Haneskjell Coordinating body: Institute of Marine Research, Norway	Barents Sea	-	-
2022840	18/01 - 16/02	Annual combined acoustic and bottom trawl survey of the Barents Sea: * map the distribution and calculate acoustic and swept area abundance indices, length, weight and maturity at age for cod and haddock * map the distribution of blue whiting, capelin, polar cod, redfish sp., and Greenland halibut * map the general hydrographical regime by using a CTD-sonde to monitor the temperature and salinity at one at bottom trawl stations and/or at fixed intervals (about 30 NM)	Norwegian Sea	1-56	1 - 157

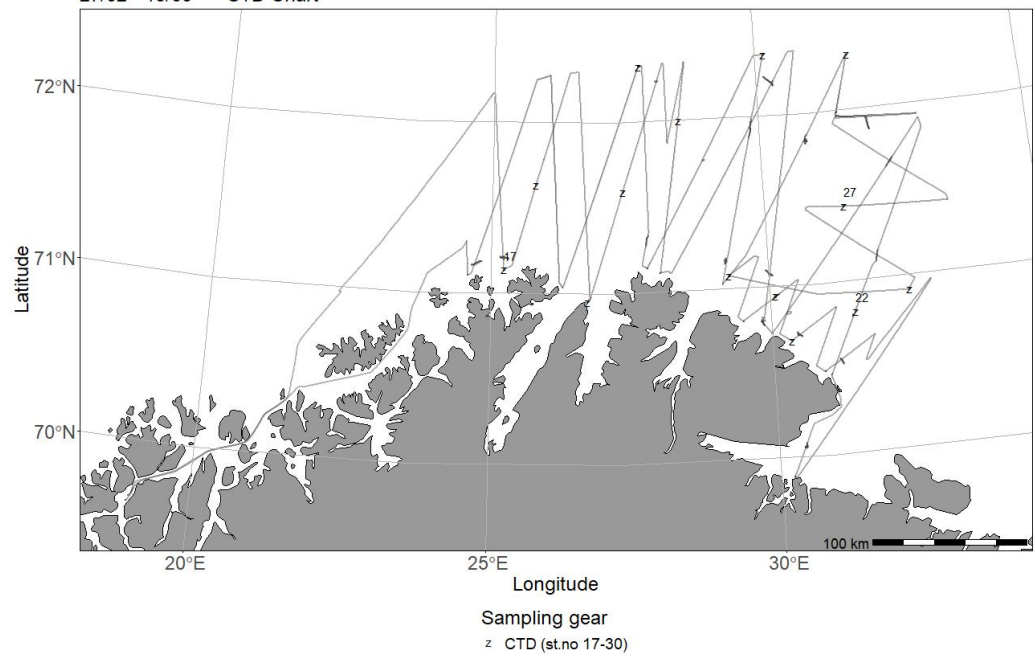
Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022841	07/06 - 21/06	This was a mackerel egg survey which gives important data for the estimation of the Mackerel spawning biomass. The data are used by ICES for assessment purposes. The survey was a part of a larger effort performed by the countries participating in the ICES WGMEGS group. The survey takes place every third year. Project name: Triannual Mackerel egg survey. Coordinating body: Working Group on Mackerel and Horse Mackerel Egg Surveys (WGMEGS), ICES	North Sea	-	-
2022844	10/10 - 23/10	2022-KST-030: Undersøke forekomst av kysttorsk og andre arter på gruntvann langs Norskekysten fra Nordland til Ryfylke. Videreføring av tidsserie. Fisket foregår med finmaska trollgarn og åluser. Er spesielt viktig for å kartlegge rekruttering av kysttorsk m.m.	North Sea	-	-
2022845	17/10 - 27/10	Investigate the potential of fluorescent materials and LED as measures to increase catchrates of cod, tusk, haddock and saithe in commercial coastal longlining. During a 10 day cruise comparative fishing trials were conducted onboard a 10 meter commercial longliner. In addition behavioural studies were conducted using a low light camera system.	Barents Sea	-	-
2022846	20/08 - 16/09	2022-MP-003: Levere kunnskap om biologisk mangfold, arters utbredelse, miljøkjemi og bunnsedimenter, i prioriterte områder nord av Svalbard til forvaltningsplaner for havområdet og grunnlag for overvåking. Innsamling av vann, bunnprøver og film av bunn.	Svalbardsonen	1-10	1-7
2022847	10/08 - 23/08	To document potential and/or verify known nursery areas in Vikna (the area around Nordøyan) with the use of remote underwater video riggs, fish traps, and snurrevad. This is part of a bigger, long-term program on the mapping of spawning and nursery areas for commercially important fish species in Norway. Project name: Program om gytefelt og oppvekst område kartlegging. Coordinating body: Fiskeridynamikk/Institute of Marine Research, Norway	Norwegian Sea	-	-
2022849	05/09 - 02/10	På lang sikt er formålet med toktserien å etablere en bestandsindeks for pigghå basert på fangstrater i standardiserte årlige survey. Toktet samler også inn informasjon om sammensetning av bestanden for å ytterligere underbygge bestandsanalysen	Norskekysten: Annet	-	-
2022850	15/08 - 20/08	Diving survey, flora and fauna hard bottom on set survey stations. The cruise is conducted by rental vessel Johan Ruud.	Skagerrak	-	-
2022851	17/10 - 28/10	Følge bestandsutviklingen til sjøkreps i et nullfiskeområde og et kontrollområde	Frohavet	-	-
0155_2022_UFJN_VILN	21/01 - 22/02	-	-	-	-
0156_2022_UFJN_VILN	23/10 - 01/12	-	-	-	-
2022001	02/05 - 29/05	2022-AKV-018: Toktet har som hensikt å fange utvandrende vill laksesmolt som en del av den nasjonale overvåkingen av lakselus på vill laksefisk. Laksesmolt fanges i ytre deler av utvalgte fjordsystem med en spesialbygget pelagisk trål.	North Sea	-	-
2022002	16/05 - 12/06	2022-AKV-022: Toktet har som hensikt å fange utvandrende vill laksesmolt som en del av den nasjonale overvåkingen på vill laksefisk. Laksesmolt fanges i ytre deler av utvalgte fjordsystem med en spesialbygget pelagisk trål	Norwegian Sea	-	-
2022003	16/05 - 12/06	2022-AKV-023: Toktet har som hensikt å fange utvandrende vill laksesmolt som en del av den nasjonale overvåkingen på vill laksefisk. Laksesmolt fanges i ytre deler av utvalgte fjordsystem med en spesialbygget pelagisk trål	Norwegian Sea	-	-
2022004	20/06 - 17/07	2022-AKV-024: Toktet har som hensikt å fange utvandrende vill laksesmolt som en del av den nasjonale overvåkingen på vill laksefisk. Laksesmolt fanges i ytre deler av utvalgte fjordsystem med en spesialbygget pelagisk trål	Barents Sea	-	-

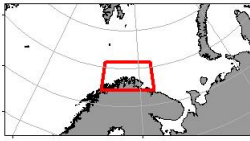
Cruise no	Period	Purpose	Area	CTD st.no	Trawl st.no
2022005	24/03 - 02/04	Samle inn data om artssammensetning, mengde og utbredelse av fisk i Hywind Tampen området før utbygging av vindfarmen starter.	North Sea	-	-
2022751	05/09-10/09	2022-AKV-012: Overvåkning av det fysiske fjordmiljøet, havforsuring.	Norskekysten: Troms/Finnmark	1-88	-
2022753	08/10-12/10	2022-AKV-013: Overvåking av det fysiske fjordmiljøet.	Norskekysten: Troms/Finnmark	89-170	-

19 - Hired vessels – Charts for 2022

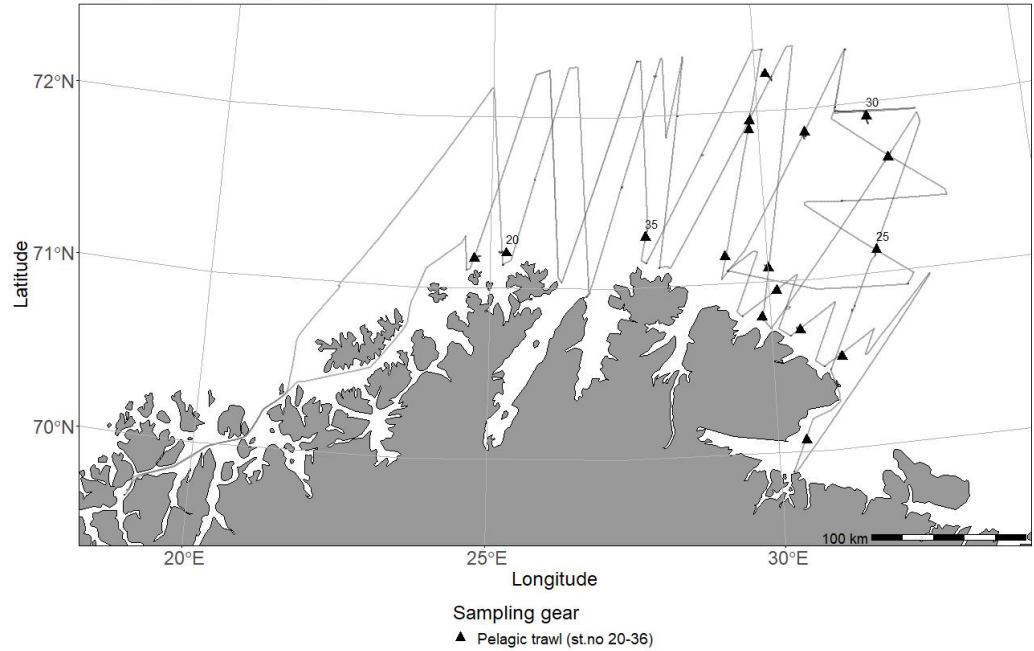


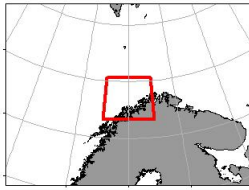
2022802 - Vendla
27/02 - 13/03 - CTD Chart



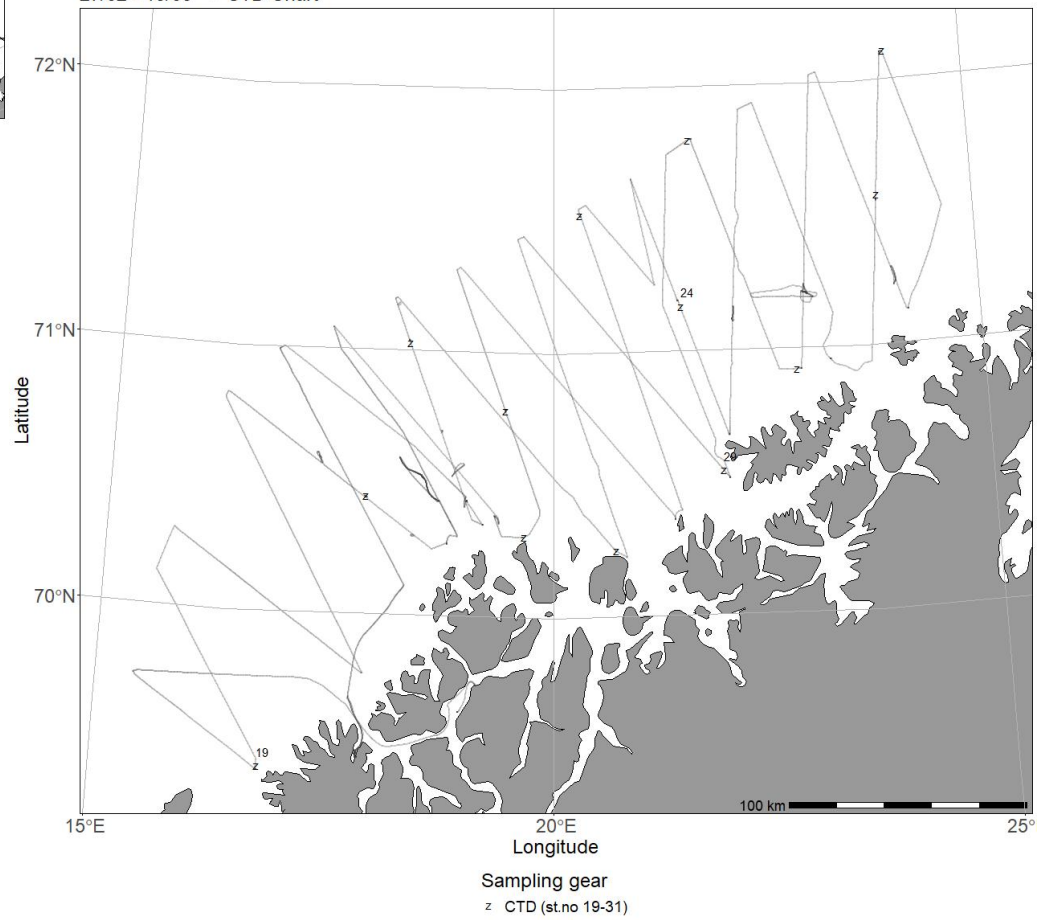


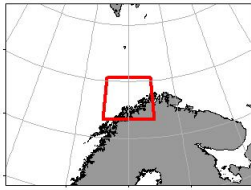
2022802 - Vendla
27/02 - 13/03 - Trawl Chart



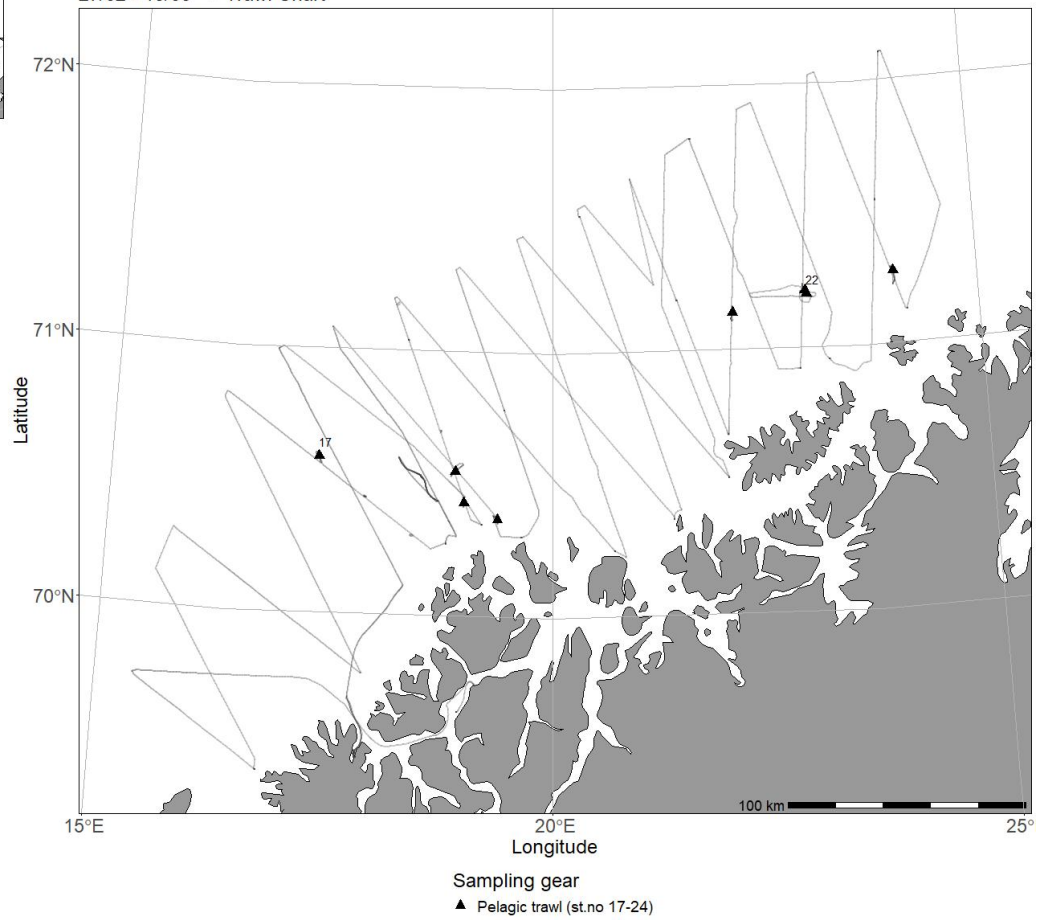


2022803 - Eros
27/02 - 13/03 - CTD Chart

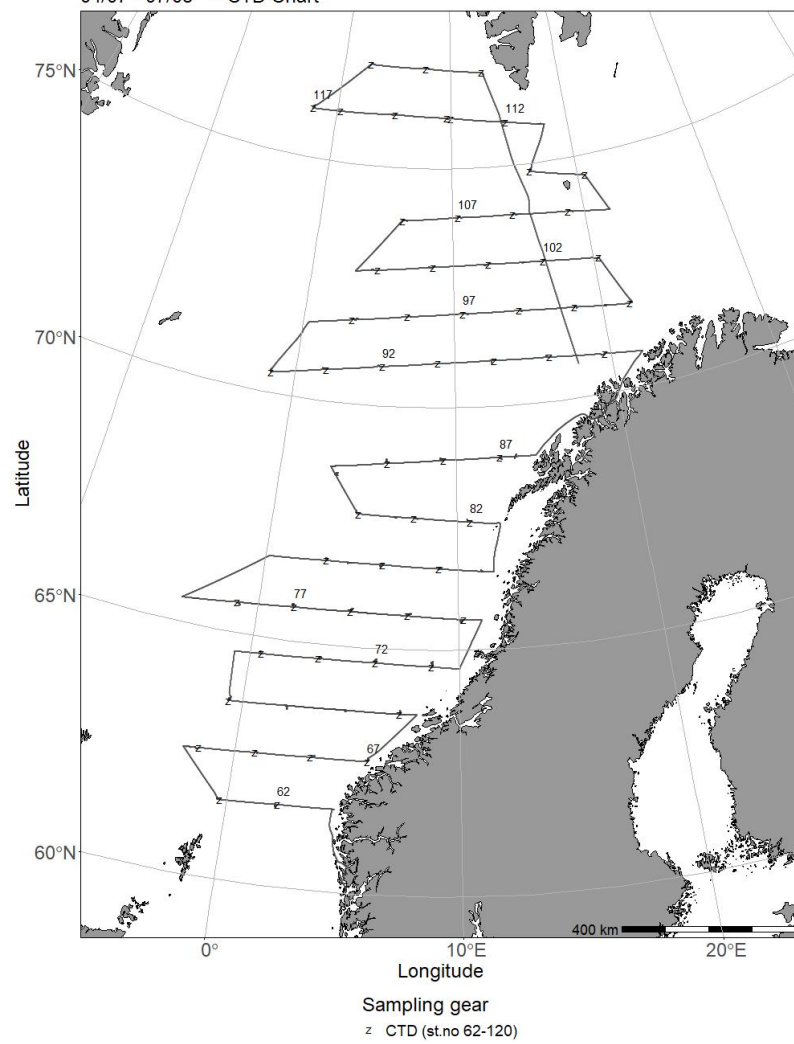




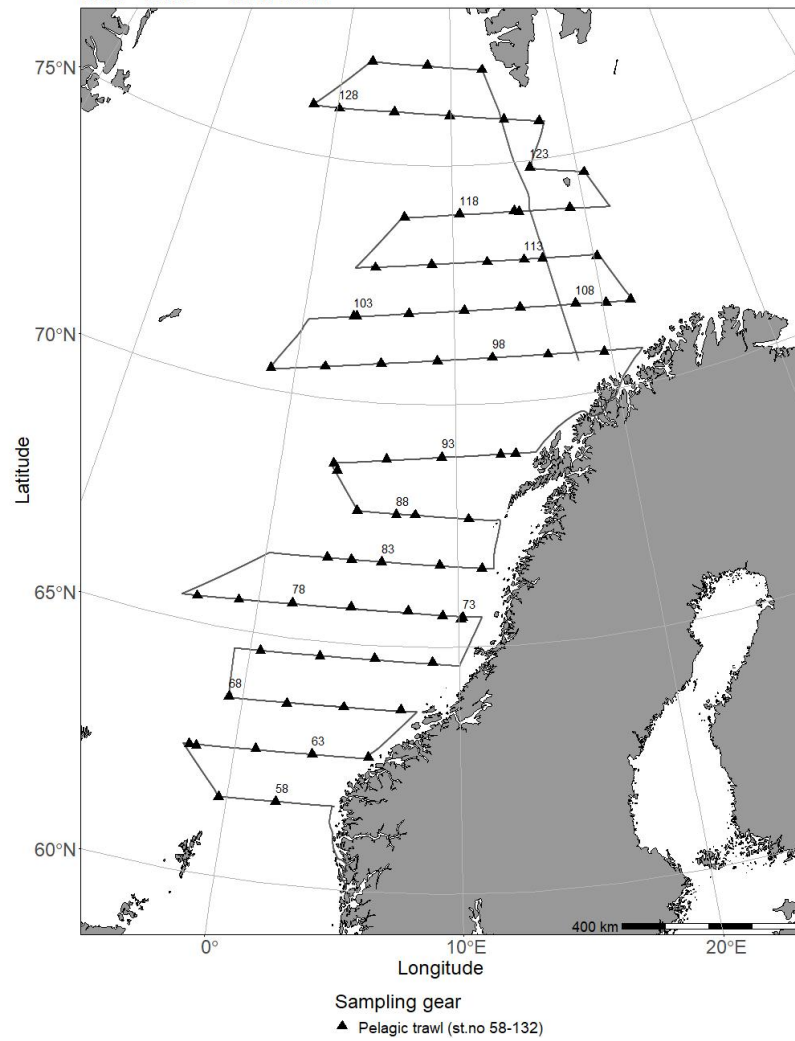
2022803 - Eros
27/02 - 13/03 - Trawl Chart



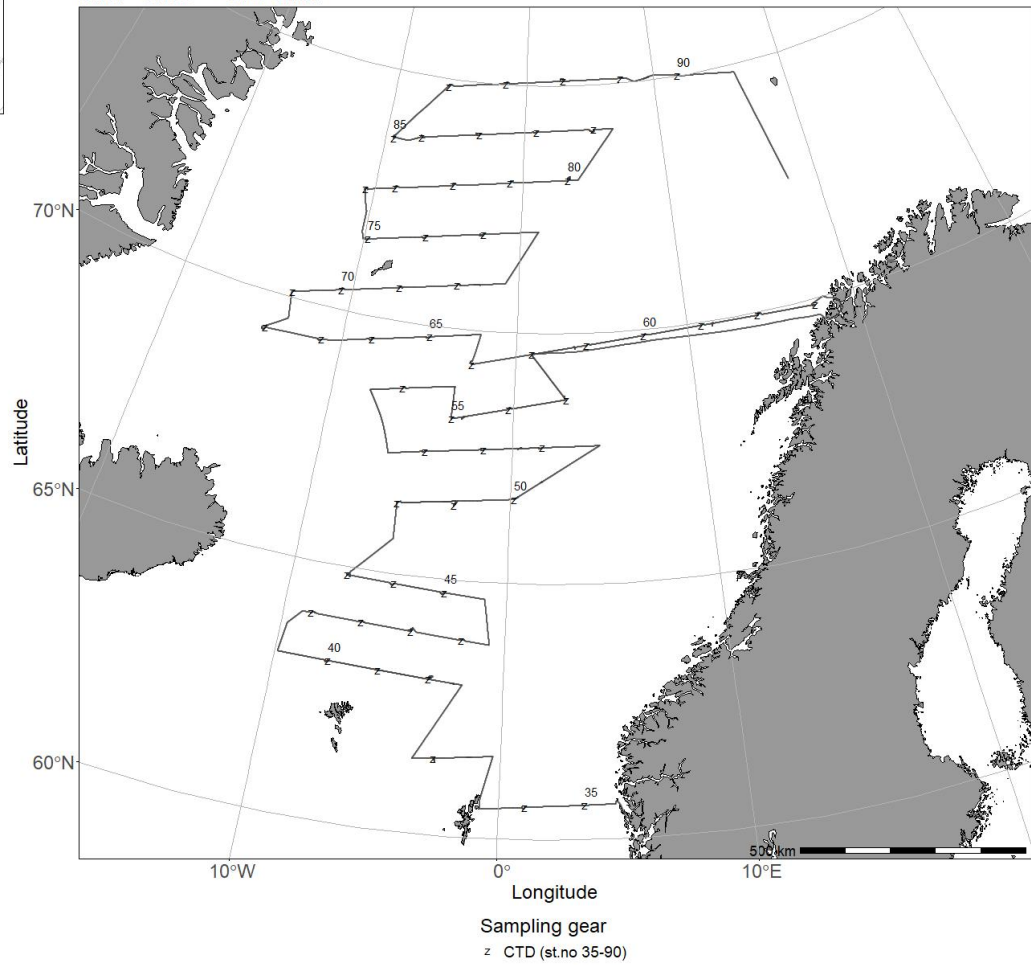
2022816 - Vendla
04/07 - 07/08 - CTD Chart



2022816 - Vendla
04/07 - 07/08 - Trawl Chart

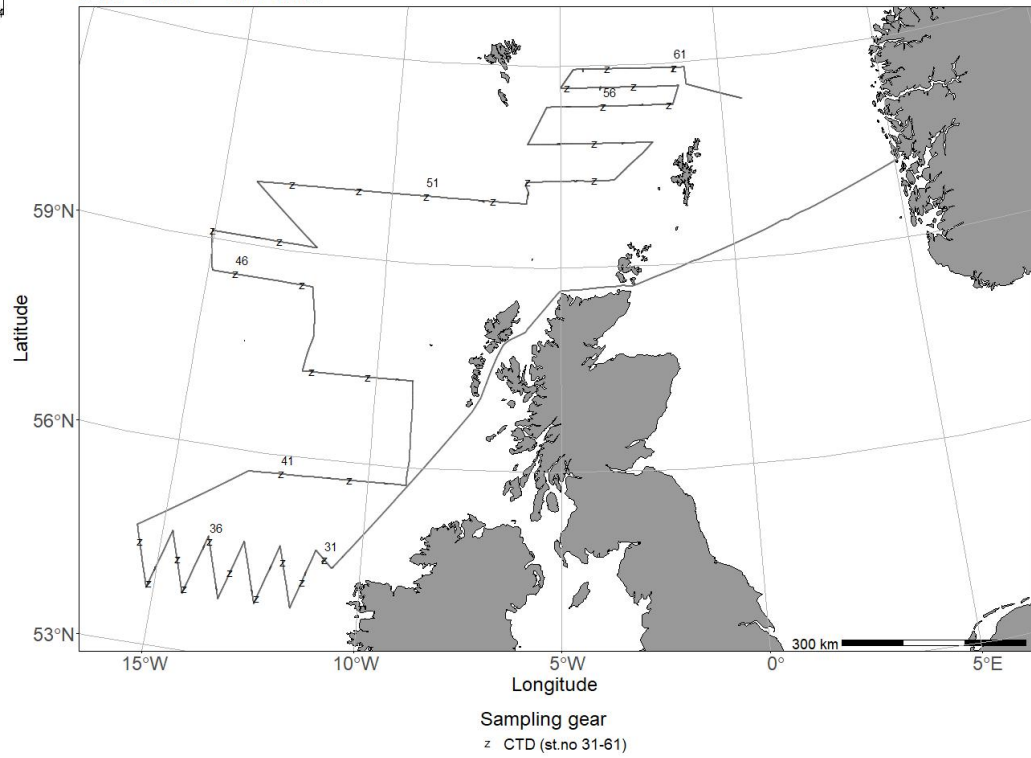


2022817 - Eros
04/07 - 07/08 - CTD Chart



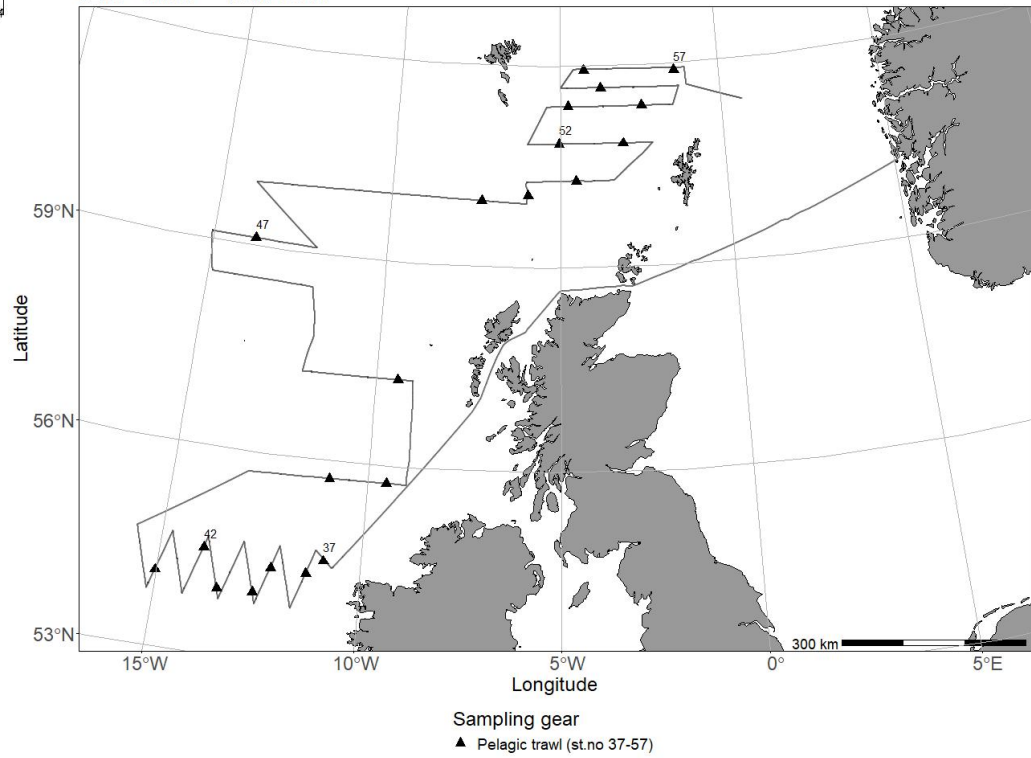


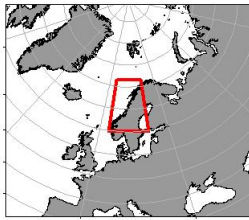
2022818 - Vendla
22/03 - 08/04 - CTD Chart



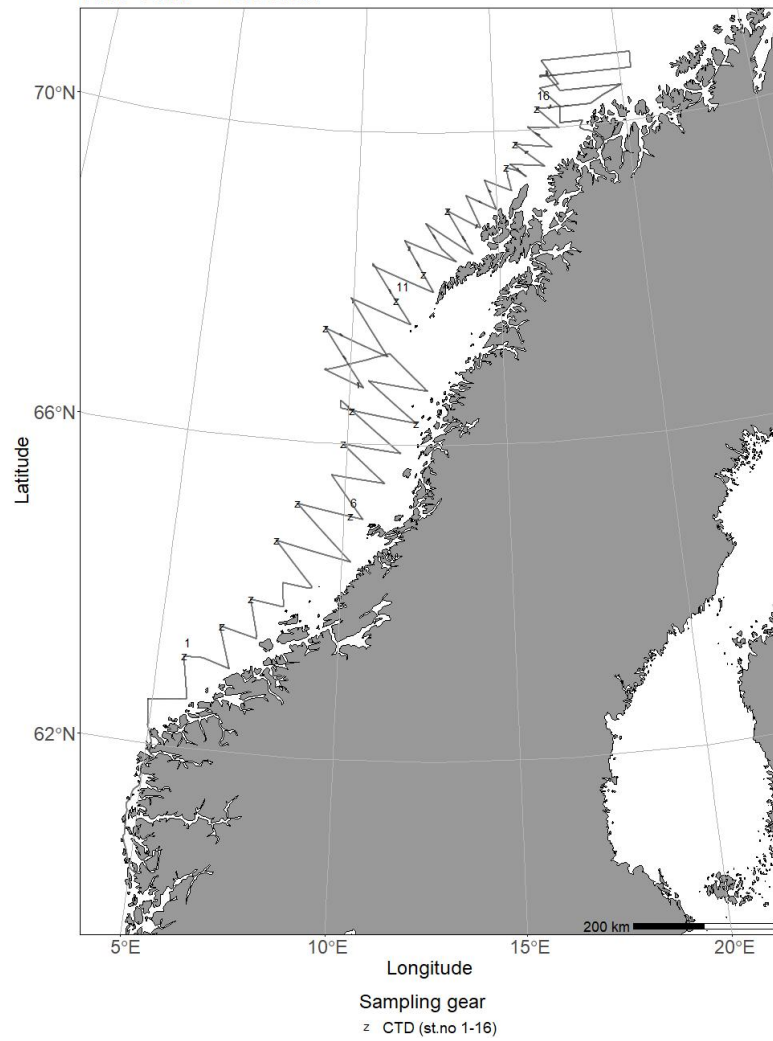


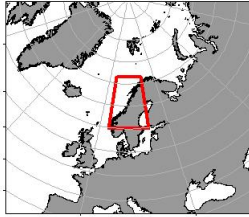
2022818 - Vendla
22/03 - 08/04 - Trawl Chart



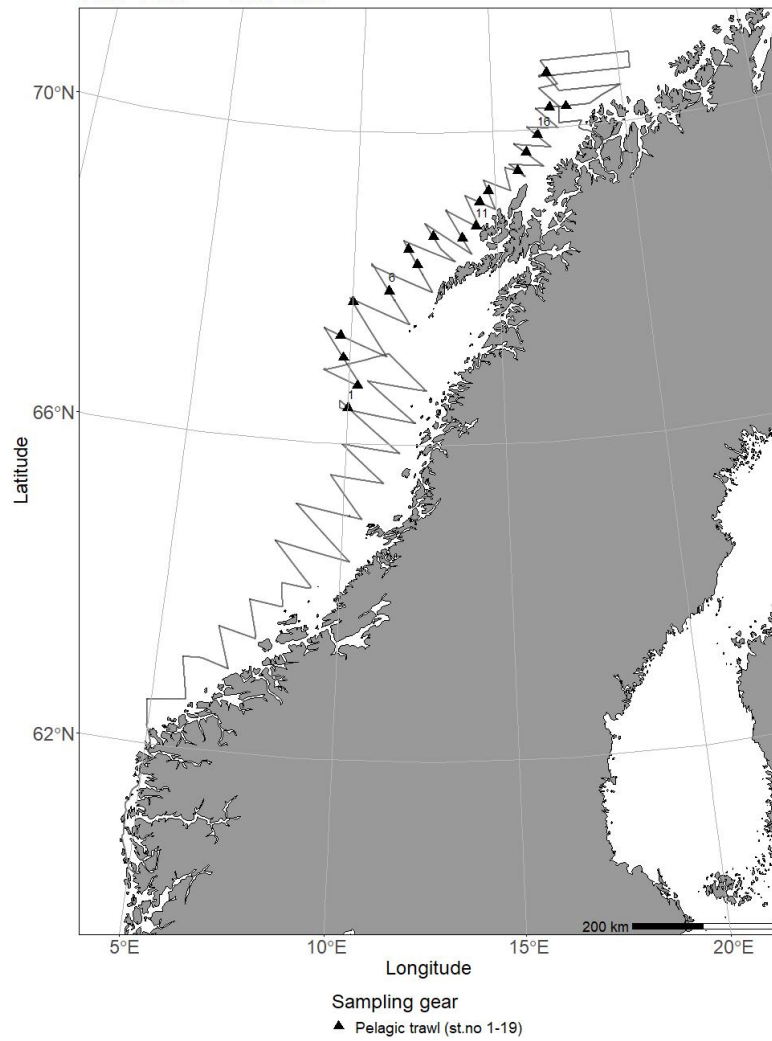


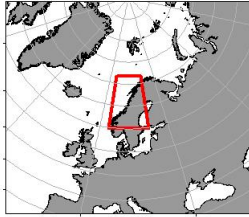
2022821 - Vendla
14/02 - 27/02 - CTD Chart





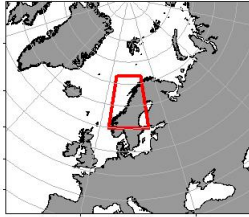
2022821 - Vendla
14/02 - 27/02 - Trawl Chart



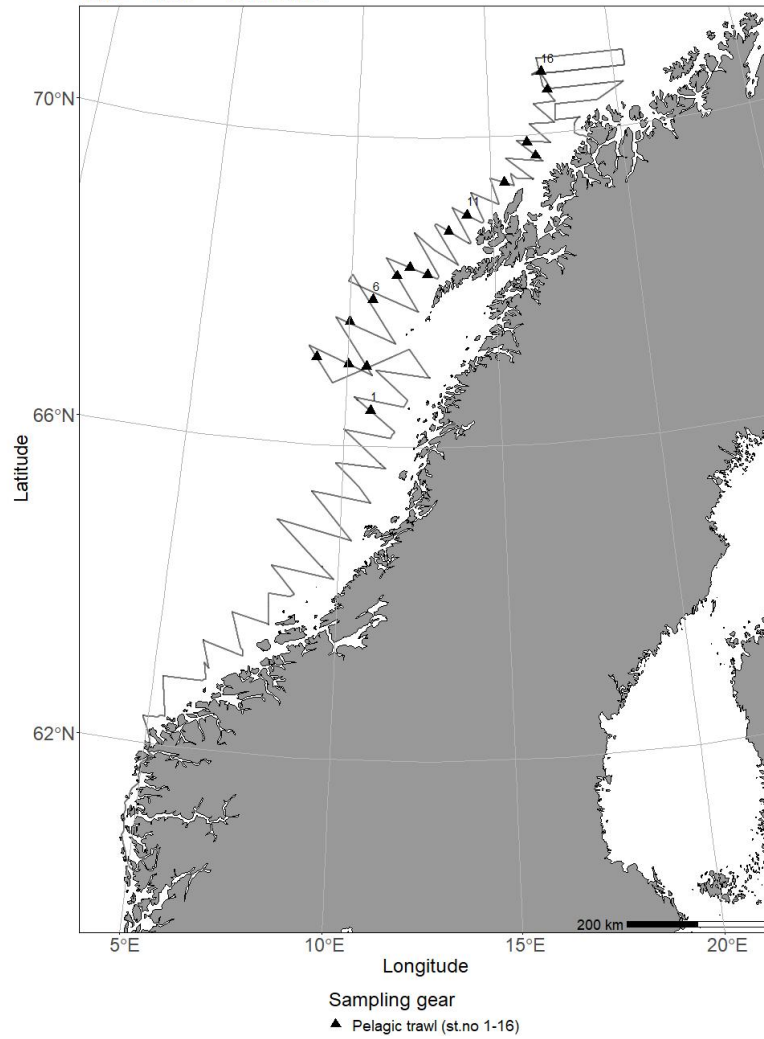


2022822 - Eros
14/02 - 27/02 - CTD Chart

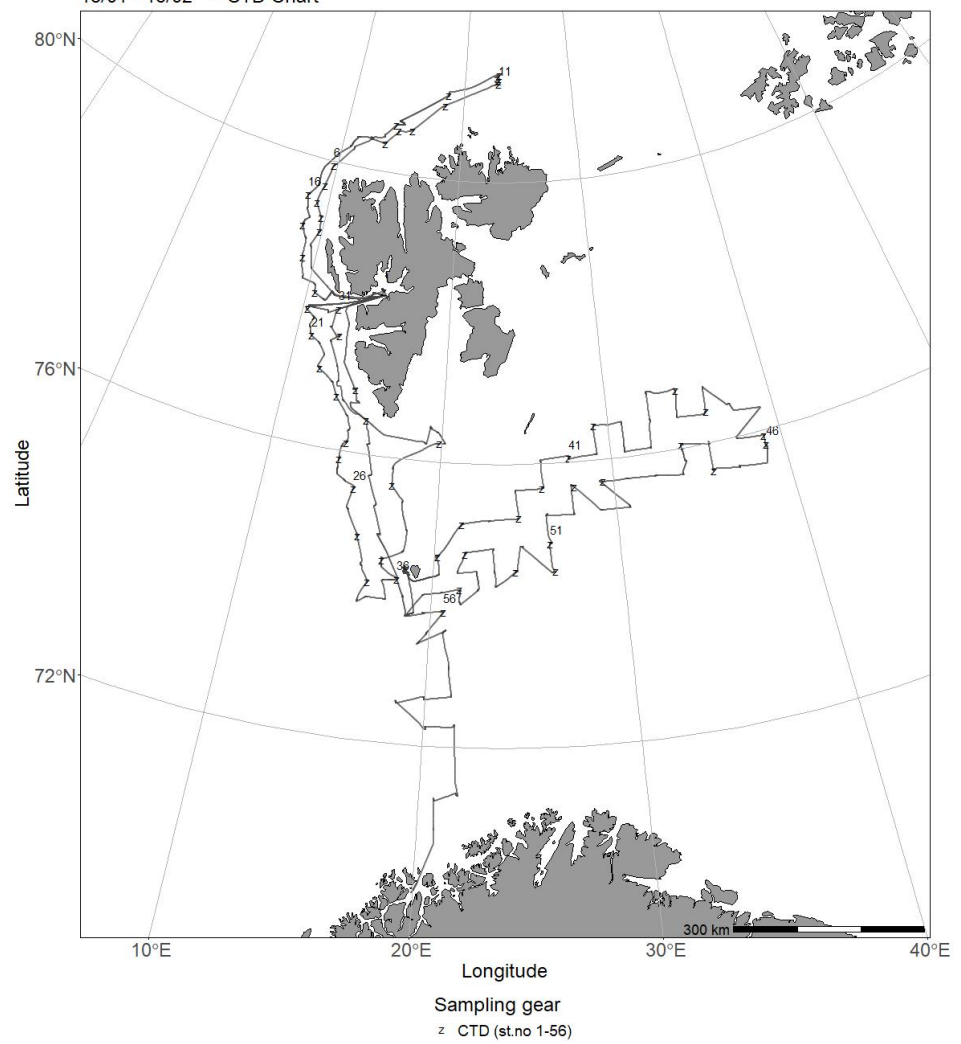
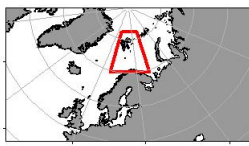




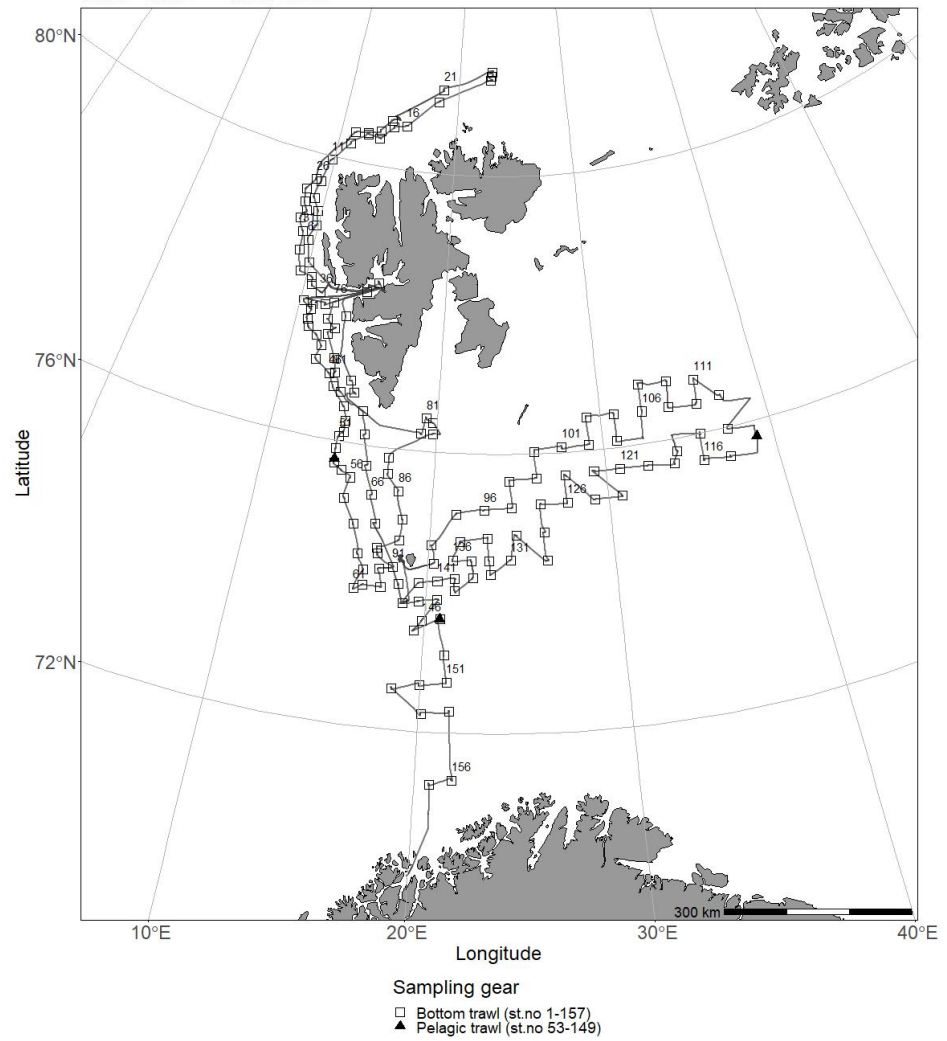
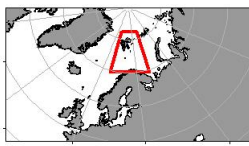
2022822 - Eros
14/02 - 27/02 - Trawl Chart



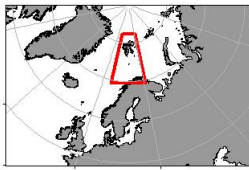
2022840 - Helmer Hanssen
18/01 - 16/02 - CTD Chart



2022840 - Helmer Hanssen
18/01 - 16/02 - Trawl Chart

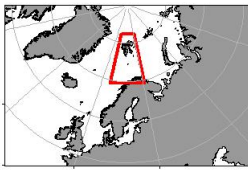


2022846 - Celtic Explorer
20/08 - 16/09 - CTD Chart



Sampling gear
z CTD with water sampler (st.no 1-10)

2022846 - Celtic Explorer
20/08 - 16/09 - Trawl Chart



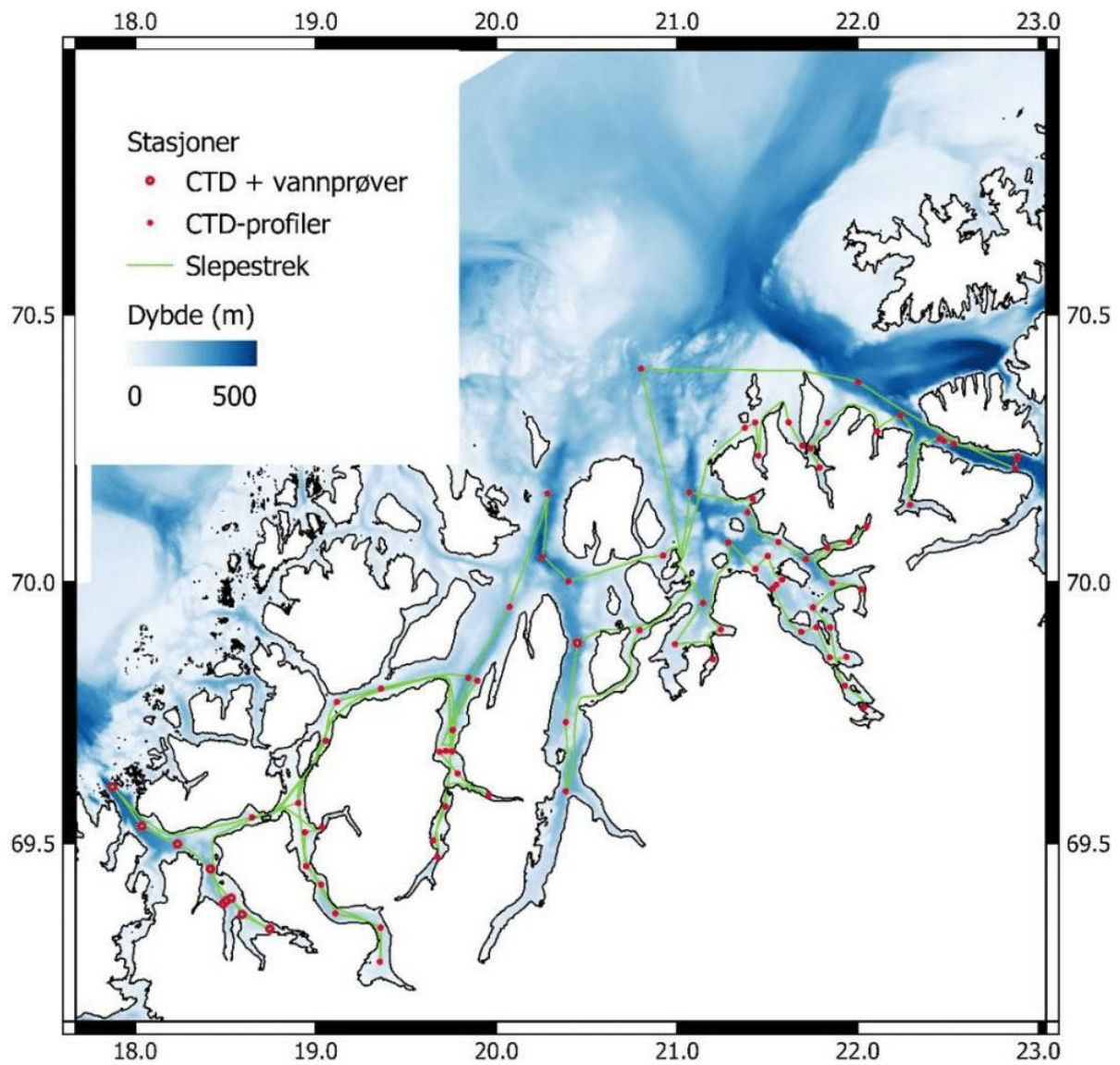


Chart for cruise 2022751 with CTD stations (red), cruisetrack (green) and watersample (green dot in red ring) Figure by Lars Asplin.

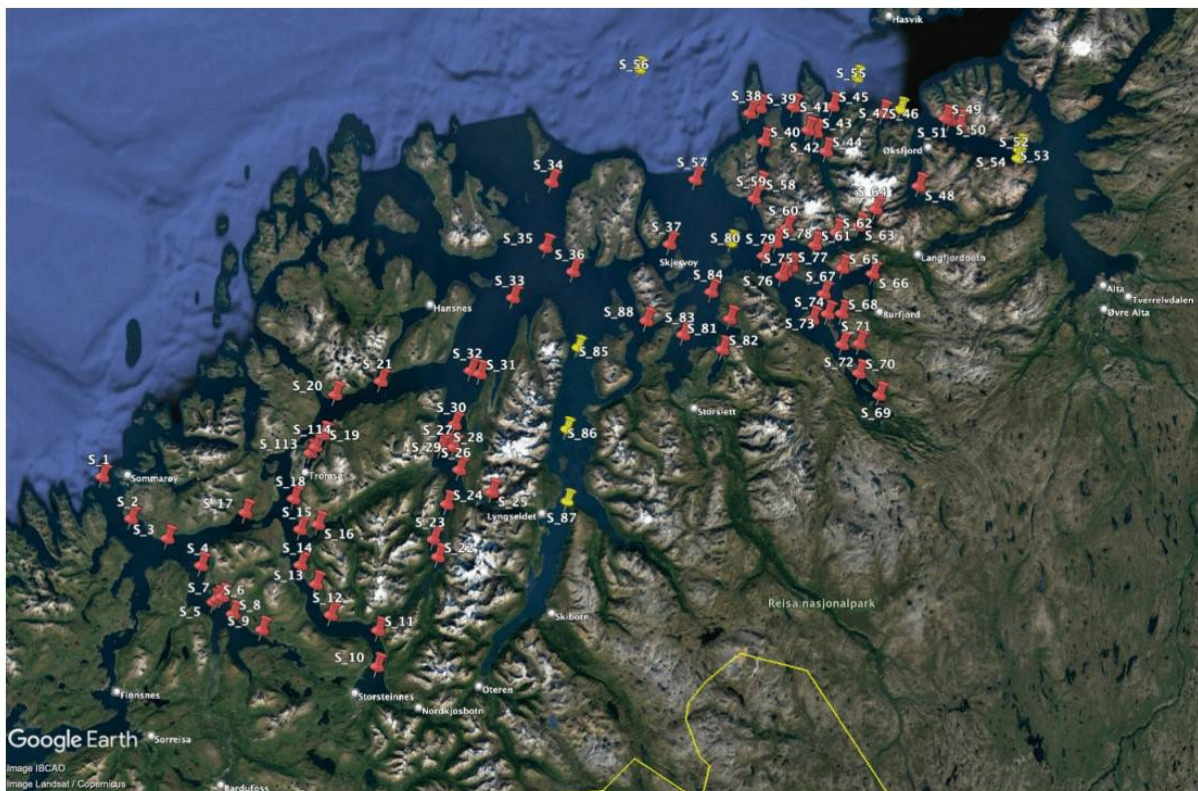
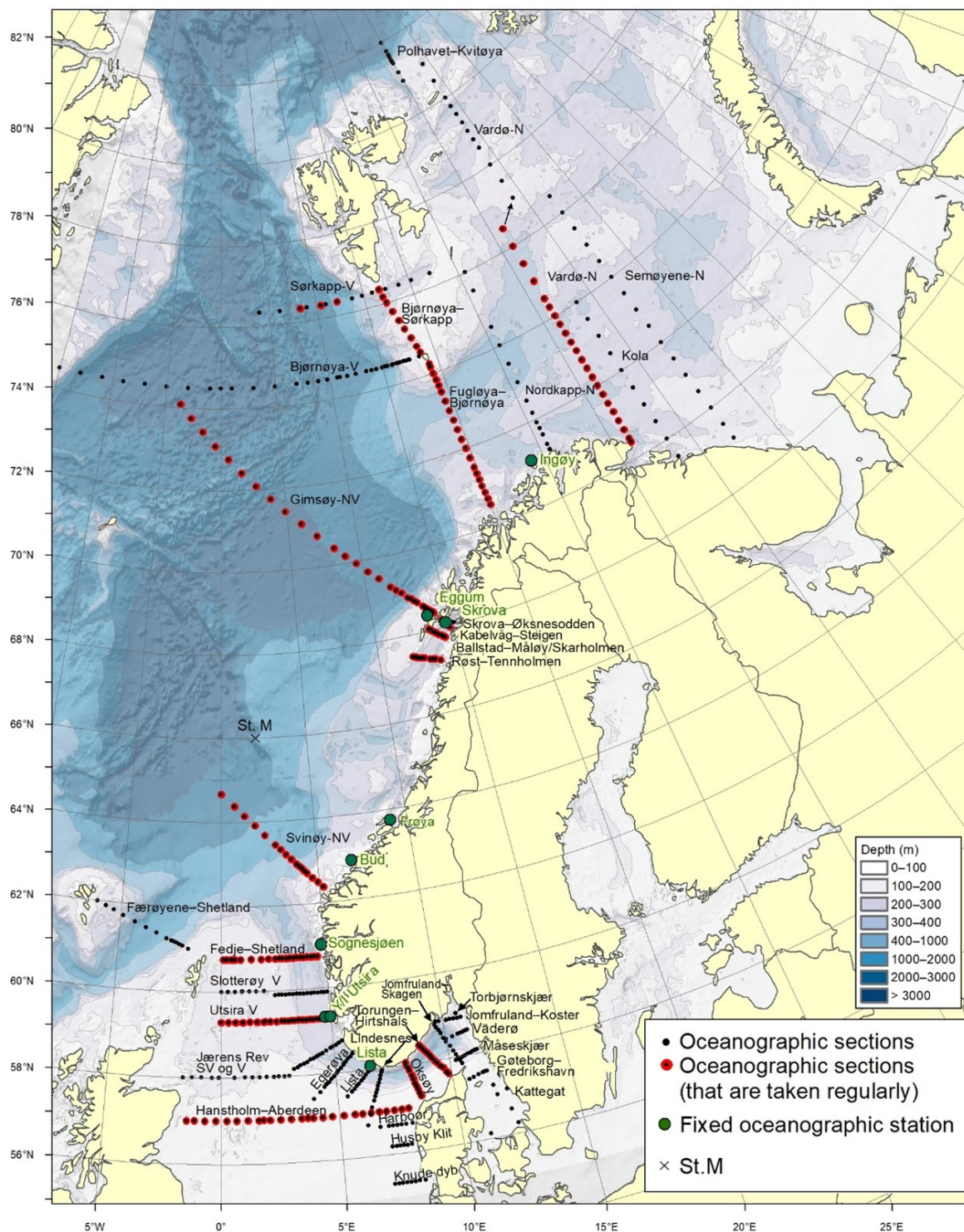


Chart for cruise 2022753. red pins indicate stations from this cruise, yellow pins indicate stations from cruise 2022751. Figure by Lars Asplin

20 - Oceanographic sections and Fixed oceanographic stations map



21 - Tables – Observations in 2022. Oceanographic sections and fixed oceanographic stations

Oceanogr. sec.	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
North Sea												
Fedje–Shetland				2022206								
Slotterøy-West				2022206								
Utsira-West	2022202			2022206				2022619			2022212	
Jærens Rev-SW and W					2022206							
Egerøya-SW					2022206							
Lista-SW												
Lindesnes-SSW					2022206							
Hanstholm–Aberdeen	2022202			2022206			2022619					
Harboør												
Hysby Klit												
Knude-Dyb												

Oceanogr. sec.	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Skagerrak and Kattegat												
Torungen–Hirtshals	2022301	2022302	2022303	2022305	2022307	2022309	2022310	2022311	2022314	2022316	2022317	2022319
Oksøy–Hanstholm					2022206							
Jomfruland–Skagen												
Jomfruland–Koster												
Torbjørnskjær												
Väderø												
Måseskjær												
Göteborg–Fredrikshavn												
Kattegat												

Oceanogr. sec.	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
The Norwegian Sea and Vestfjorden												
Svinøy-North/West	2022203					2022207	2022209				2022213	
Gimsøy-North/West						2022207		2022209			2022213	
Bjørnøya-West								2022209				2022213
Sørkapp-West												
Færøyene–Shetland												
Skrova–Øksnesodden												
Kabelvåg–Steigen												
Ballstad– Måløy/Skarholmen												
Røst–Tennholmen												

Oceanogr. sec.	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
The Barents Sea												
Fugløy–Bjørnøya				2022610	2022207			2022209				2022213
Vardø-North		2022204								2022210		
Semøyene-North												
Bjørnøya–Sørkapp												
Nordkapp-North												
Polhavet–Kvitøya												
Kola												
Fair Isle-Pentland												

Fixed stations	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
LISTA N58° 05,1' E06° 32,5'	4	2	3	3	4	3	3	3	3	3	3	3	37
UTSIRA Y N59° 19' E04° 44'	3	2	5	4	4	4	5	4	4	3	3	3	44
UTSIRA I N59° 19'E04° 59'	3	2	5	4	4	4	4	4	4	2	3	3	42
SOGNESJØEN N61° 01' E04° 50'		1	2	2	3	2	3	2	2	2	1	2	22
BUD N62° 56' E06° 47'	2	3	3	3	3	3	3	3	3	3	3	3	35
SKROVA N68° 07' E14° 39'	3	3	4	2	4	1	4	3	4	4	5	3	40
EGGUM N68° 23' E13° 38'	1	4	4	4	4	5	4	5	4	4	4	2	45
INGØY N71° 08' E24° 01'	2	2		2	2	2	1	1	1	2	1		16



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