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Report on cruises and fixed oceanographic data stations 2014

By Karen E. Gjertsen

HAVFORSKNINGSINSTITUTTET
INSTITUTE OF MARINE RESEARCH

Report on
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2014

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Photo: Institute of Marine Research

Bergen, April 2015

HAVFORSKNINGSINSTITUTTET
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Contents

PROSJEKTRAPPORT

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Tittel (norsk/engelsk):
Oversikt over tokt og faste oseanografiske stasjoner tatt i 2014
Report on cruises and fixed oceanographic data stations, 2014

Program:

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Forfatter(e):
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Charts made by Karen E. Gjertsen and Svein Erik Enersen (”G. M. Dannevig”)

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Sammendrag (norsk):Rapporten gir en oversikt over tokt i 2014 i regi av Havforskningsinstituttet og Universitetet i Bergen med ”G. O. Sars”, ”Johan Hjort”, ”Håkon Mosby”, ”G. M. Dannevig”, ”Helmer Hanssen” samt noen innleide fartøyer. En kort beskrivelse av toktet samt kurs- og stasjonskart – hovedsakelig CTD, plankton og trålstasjoner er vist. Tabeller viser når de faste snittene er tatt, og antall observasjoner pr. måned for de faste stasjonene. Toktene er innrapporterte til Det internasjonale råd for havforskning (ICES) i skjemaet ”Cruise Summary Report”: http://www.seadatanet.org/Metadata/CSR. Data fra toktene er tilgjengelig fra Norsk marint datasenter ved Havforskningsinstituttet. Kartene kan internt lastes ned fra instituttets intranettside/bildearkiv: http://hinnsiden.imr.no/ressurser/bilder/bildearkiv

Summary (English): The report gives an overview of cruises in 2014, by the Institute of Marine Research and University of Bergen, on board research vessels "G. O. Sars", "Johan Hjort", "G. M. Dannevig", ”Håkon Mosby”, "Helmer Hanssen" and some hired commercial vessels. Each cruise is described by a short description and a track chart mainly showing CTD, plankton and trawl stations. The coverage of the oceanographic sections is listed in a table. Another table shows the number of observations per month for the fixed stations. Meta data about the cruises are reported to the International Council for the Exploration of the Sea (ICES) using the form "Cruise Summary Report": http://www.seadatanet.org/Metadata/CSR . Research data are available from the Norwegian Marine Data Centre at Institute of Marine Research. The charts can internally at IMR be downloaded from the Institute Intranet/Archive: http://hinnsiden.imr.no/ressurser/bilder/bildearkiv

Emneord (norsk):	**Subject heading (English):**
1. Kurskart	**1.** Cruise track chart
2. Stasjonskart	**2.** Station chart
3. Toktmetadata	**3.** Cruise metadata

Prosjektleder

Faggruppeleder

1 Cruises 2014

1.1 G. O. Sars (Ship code no 10)

CRUISE NO	PERIOD OF CRUISES		PURPOSE	AREA	CTD ST		TRAWL ST		PAGE OF CHART	COMMENT
	Start	End			Start	End	Start	End		
2014101	14 Jan	19 Feb	IBTS quarter 1 multispecies bottom trawl survey, coordinated by ICES. The IBTS survey covers the North Sea and Skagerrak (except Kattegat) and involves 7 countries surveying at the same time; this section covers the Northeast, part of the Northwest and part of the Central East areas of the North Sea.	North Sea	1	62	1	33	27-29	
2014102	21 Feb	23 Feb	The marine geological survey is a training course for students within marine geology and marine geophysics: The GEOV231 marine geological field course aims to demonstrate how acquisition and processing of seismic data and sea bottom sample data takes place and give students practical experience in marine-geological/geophysical methods and laboratory investigations. It also aims to create an understanding of how field studies can be used to understand geological processes in marine environment.	Norwegian fjords: Hardangerfjord (inner part) and Sørfjord	63	64	-	-	30	
2014103	24 Feb	26 Feb	The main objective of the cruise is to test and upgrades the calypso corer system to improve the recovery and coring quality.	Norwegian fjords: Hardangerfjord (inner part) and Eidfjord	65	65	-	-	31	
2014104	04 Mar	17 Mar	Develop instrumentation and trawl gears that are less harmful to bottom habitats than presently used bottom trawls and methods to regulate trawl catches. Development of manoeuvrable pelagic trawl doors and camera systems which can identify species and sizes passing through the trawl while towing.	Norwegian Sea	66	66	34	68	32	
2014122	18 Mar	23 Mar	Base mapping. Vøringplatået.	Norwegian Sea	67	68	-	-	33	
2014105	24 Mar	08 Apr	International blue whiting spawning stock survey. Acoustic survey to monitor the spawning stock of blue whiting on the spawning grounds west of the British Isles.	Northeast Atlantic Ocean	69	109	69	76	34-35	

G. O. Sars (cont.)

CRUISE NO	PERIOD OF CRUISES		PURPOSE	AREA	CTD ST		TRAWL ST		PAGE OF CHART	COMMENT
	Start	End			Start	End	Start	End		
2014106	13 Apr	26 Apr	Mapping the seafloor sediment, polutants and benthic fauna in the Barents Sea for the MAREANO project.	Barents Sea	110	118	-	-	36-41	
2014107	03 May	31 May	2014-GFI-003: Measure chemical, physical and biological parameters that are important for picking up on changes in climate and the environment at station M. 2014-NOR-013: Monitor the environment and plankton at the Svinøy-section. 1014-NOR-003: The survey is part of the time series for ecosystem coverage of the Norwegian/Barents Sea in May, ICES WGNAPES. The survey is also the primary survey for monitoring the stock size of NSS-herring and blue whiting in the feeding areas. The survey also provides an index of recruitment for herring and blue whiting in the Barents Sea.	Norwegian Sea	119	186	77	131	42-43	
2014108	01 June	04 June	1) An oceanographic transect across the continental shelf offshore Vesterålen, North Norway. 2) Sediment sampling in the upper part of a canyon on the continental slope offshore Vesterålen. 3) Sediment sampling in a selected area on the SW Barents Sea continental slope.	Norwegian Sea, Greenland Sea	187	190	132	132	44	
2014109	05 June	15 June	Objective of the cruise was to investigate the present and past oceanographic flow regime and patterns around two contourite drifts located in the eastern side of the Fram Strait.	Greenland Sea, Arctic Ocean	191	250	-	-	45-46	
2014110	17 June	21 June	To sample standard section for physical oceanographic parameters (CTD casts, nutrients and chlorophyll) and phyto- and zooplankton.	Barents Sea	251	270	-	-	47	
2014111	21 June	28 June	This cruise is a part of a Norwegian monitoring program that will sample selected coral and sponge ecosystems on the shelf, coast and fjords at regular time intervals (every 3-5 years).	Norwegian Sea	271	300	-	-	48	

G. O. Sars (cont.)

CRUISE NO	PERIOD OF CRUISES		PURPOSE	AREA	CTD ST		TRAWL ST		PAGE OF CHART	COMMENT
	Start	End			Start	End	Start	End		
2014112	01 July	07 July	Method development, surface trawling. Cancelled	-	-	-	-	-	-	Cancelled
2014113	08 July	14 July	The main objective of the cruise was to provide TOPAS seismic data and sediment cores from Byfjorden and the Eastern North Sea in order to increase our understanding of the last deglaciation of this region.	North Sea, Skagerrak	-	-	-	-	49	
2014114	16 July	16 Aug	ROV Hydrotermale area.	Norwegian Sea	301	327	-	-	50-51	
2014115	18 Aug	04 Sep	Mapping of benthic fauna, seabed surface sediments, and sediment pollutants on the continental shelf along the coast of Finnmark in Northern Norway and in the Norwegian parts of the Barents Sea. Mareano.	Barents Sea	328	347	-	-	52-53	
2014116	05 Sep	24 Sep	Joint Norwegian-Russian Ecosystem survey cover the Barents Sea. The spatial distribution of zoo- and phytoplankton, pelagic and demersal fish are investigated. Fish stomachs are collected for analyze prey consumption. The area and permanent transects was covered with measures of CTD and related parameters for oceanographic and climatic investigations.	Barents Sea	348	385	133	213	54-55	
2014117	04 Oct	12 Oct	Field course in marine methods for master students.	Masfjorden, west of Norway	386	392	214	265	56	
2014118	14 Oct	20 Oct	A). Training cruise in BIO 240 – Fisheries Ecology. B). Hydroacoustic surveying for biomass estimation of pelagic and demersal fish.	North Sea	393	417	266	280	57-58	
2014119	21 Oct	03 Nov	Development of methods for more exact quantification of fish schools with fishery sonar before catching process starts. Year 2014 and 2015 on mackerel. Trials of broadband fish sizing with side mounted echo sounder. Equipment trials. Mapping of School structure and behaviour. TS measurements of mackerel in side aspect and dorsal aspect.	North Sea, Atlantic Sea	418	426	281	283	59	
2014123	06 Nov	07 Nov	Test of plankton abundance methods and technology.	Korsfjord	-	-	285	289	60	
2014121	08 Nov	17 Nov	The purpose was to collect specimens on the shelf around the Faroe Islands and in the northern North Sea. The cruise also served as a training cruise for students.	North Sea, Norwegian Sea	427	434	-	-	61	

1.2 Johan Hjort (Ship code no 12)

CRUISE NO	PERIOD OF CRUISES		PURPOSE	AREA	CTD ST		TRAWL ST		PAGE OF CHART	COMMENT
	Start	End			Start	End	Start	End		
2014201	18 Jan	28 Jan	The objectives of this cruise were to investigate the abundance zooplankton and phytoplankton as well as measuring the water physics and collecting water samples for chemical analyses using a CTD probe, on three of our oceanogr. secions and station M. Outside Vesterålen at Hola, investigations nearby observation platform doing two trawl stations and a transect from here, six hydrographical stations NW, all connected to LoVe project at IMR.	Barents Sea, Norwegian Sea	01	52	01	03	62-63	
2014202	31 Jan	09 Mar	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, haddock and redfish. 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, and genetic sampling of haddock. Sampling of cod and haddock for NIFES and CEFAS.	Barents Sea	53	135	04	199	64-65	
2014203	17 Mar	31 Mar	The main survey objective is to estimate abundance indices at age of the spawning stock of North East Arctic cod using the trawl acoustic method. The survey area is the shelf area from Malangsgrunnen south to Røsttunga and the shelf are of Vestfjorden connected to the Lofoten islands. Additional observations included the use of CTD and T80 net for sampling density and stage distribution of spawned eggs. The survey is a part of a time series.	Norwegian Sea	136	249	200	233	66-68	
2014204	-	-	Cancelled		-	-	-	-	-	Cancelled
2014205	04 Apr	20 Apr	Assess the status of commercial deepwater fish stocks, with particular focus on redfishes, greater argentine and greeenland halibut, using trawl and acoustics.	Norwegian Sea, Barents Sea	250	251	234	280	69	

Johan Hjort (cont.)

CRUISE NO	PERIOD OF CRUISES		PURPOSE	AREA	CTD ST		TRAWL ST		PAGE OF CHART	COMMENT
	Start	End			Start	End	Start	End		
2014206	16 May	24 May	Sea bottom and water column mapping with sampling of benthic fauna, sediments, pelagic fish, zoo and phytoplankton at selected stations in the Porsanger Fjord and at one station in the NEZ southern Barents Sea.	Porsanger Fjord, Barents Sea	252	275	281	290	70-73	
2014207	25 May	07 June	Environment and plankton investigations on the Fugløya-Bjørnøya section. Current moorings instrument exchange. Measure radioactivity pollution in the sediment near the Komsomolets wreck. Monitor environment and plankton on the extended Bjønøya west section.	Barents Sea	276	353	-	-	74	
2014209	09 June	14 June	The Activity regulations require the offshore petroleum industry to perform environmental monitoring of the water column. The condition monitoring shall document if fish from Norwegian ocean areas contain elevated levels of components that originate from discharges from the petroleum activity. The major objective is to document to what extent discharges from the oil and gas installations cause contamination of fish negatively affecting the quality. For both the petroleum industry and the Norwegian fishing industry it is important that safety and quality of Norwegian seafood is documented, as well as environmental health of the marine environment. Condition monitoring with fish from the Norwegian Continental Shelf are conducted every third year and shall document whether fish from Norwegian Seas are affected by pollution from oil and gas industry activities.	Norwegian Sea	354	371	291	310	75-76	

Johan Hjort (cont.)

CRUISE NO	PERIOD OF CRUISES		PURPOSE	AREA	CTD ST		TRAWL ST		PAGE OF CHART	COMMENT
	Start	End			Start	End	Start	End		
2014208	16 June	27 June	Mapping of benthic fauna, seabed surface sediments, and sediment pollutants on the continental shelf and slope off mid Norway. The mapping was performed using visual seabed observation and sampling of sediments and organisms using a variety of sampling tools (grab, box corer, multicorer, beam trawl and hyperbenthic sledge). Mareano.	Norwegian Sea	372	376	-	-	77-78	
2014210	30 June	28 July	Part 1: Herring acoustic survey, saithe acoustic survey, IBTS Q3 survey. Part 2: Saithe acoustic survey, IBTS Q3 survey, exploratory tows for IBTS along northern shelf edge. Part 3: To sample standard section for physical oceanographic parameters (CTD casts, nutrients and chlorophyll) and phyto- and zooplankton in the North Sea.	North Sea	377	499	311	416	79-81	
2014211	30 July	10 Aug	The objectives of this cruise were to investigate the abundance zooplankton and phytoplankton as well as measuring the water physics and collecting water samples for chemical analyses using a CTD probe, on two of our regular transects in the North Sea, Svinøya – NW and station M. pos. N 66º E 02º, Gimsøy-NW, Fugløya–Bjørnøya and Bjørnøya West.	Norwegian Sea, Barents Sea	500	565	-	-	82	
2014212	13 Aug	21 Sep	Annual ecosystem survey in the Barents Sea.	Barents Sea	566	708	417	661	83-84	
2014213	02 Oct	31 Oct	Annual combined acoustic and bottom trawl survey along the Norwegian coast.	Main Norwegian fjords and coastal banks	709	773	662	755	85-86	
2014215	03 Nov	03 Nov	The purpose of the cruise was to introduce the students in our « Physics of the Atmosphere and Ocean » GEOF105, to oceaongraphic field work.	Norwegian coast	774	780	-	-	87	
2014214	07 Nov	21 Nov	Standard sections: Utsira W, Svinøy NW, Gimsøy NW, Bjørnøya W, Fugløya–Bjørnøya and Station M.	Norwegian Sea, Barents Sea, North Sea	781	873	-	-	88-89	

1.3 Håkon Mosby (Ship code no 1)

CRUISE NO	PERIOD OF CRUISES		PURPOSE	AREA	CTD ST		TRAWL ST		PAGE OF CHART	COMMENT
	Start	End			Start	End	Start	End		
2014601	03 Jan	03 Jan	The objective of the cruise is to collect sediment cores from areas within the harbour area of Bergen (Norway) to study the transport of contaminated sediments using new fast analytical geochemical methods.	Norwegian Fjords	-	-	-	-	90	
2014602	07 Jan	07 Jan	Calibration of Saiv CTD.	Bergen area	01	03	-	-	91	
2014603	09 Jan	27 Jan	Annual shrimp survey	North Sea	04	61	01	69	92-93	
2014604	30 Jan	30 Jan	The cruise is a part of the education at the University of Bergen. The objective of the cruise was to give the students a broad introduction to marine observation systems that are in practical use today	Norwegian coast Vatlestraumen, Korsfjorden	62	67	-	-	94	
2014605	31 Jan	10 Feb	Oceanographic investigations in Førdefjorden and Sognefjorden to teach students how to run a scientific cruise. Deployment of the Wavescan NACO-Buoy for real time monitoring of the Norwegian Atlantic Current. Revovery of SeaGlider.	Norwegian Sea	68	161	-	-	95	
2014606	28 Feb	10 Mar	The objectives of this cruise were to investigate the abundance of zooplankton and phytoplankton as well as measuring the water physics and collecting water samples for chemical analyses using a CTD probe, standard sections and st. M.	Barents Sea, Norwegian Sea	162	189	-	-	96	
2014607	15 Mar	19 Mar	Recovery and re-deployment of RCM current meter moorings. CTD stations.	Norwegian Sea	190	192	-	-	97	
2014608	20 Mar	24 Mar	Recover Station-M mooring at 66°N 2'E. Hydrographic stations and water samples at Station-M.	Norwegian Sea	193	193	-	-	98	
2014625	27 Mar	30 Mar	To document the fauna of the Sognefjord using video documentation. From the greatest depths of about 1200 m and up to just below the seaweed belt.	Norwegian fjord	-	-	-	-	99	

Håkon Mosby (cont.)

CRUISE NO	PERIOD OF CRUISES		PURPOSE	AREA	CTD ST		TRAWL ST		PAGE OF CHART	COMMENT
	Start	End			Start	End	Start	End		
2014609	31 Mar	14 Apr	Estimate the distribution and abundance of herring larvae on the Norwegian shelf from Bergen to Tromsø. Additional environmental sampling of hydrography, nutrients, chlorophyll and zooplankton.	Norwegian shelf	194	346	70	70	100-101	
2014610	28 Apr	15 May	Collect data and samples on pre-selected stations as part of the IMR monitoring project «Climate and plankton in the North Sea and Skagerrak«. Sample standard sections for physical oceanographic parameters and phyto- and zooplankton in the Northern North Sea. In addition, to undertake two studies and Skagerrak) to investigate the spatial, vertical and diel distribution of fish eggs and larvae and their potential predators and prey.	North Sea	347	486	-	-	102-103	
2014611	24 May	04 June	Map sponge populations with the fjords and collect sponge individuals for laboratory experiments to investigate the impact of oil drilling activities on sponges.	Norwegian Sea and coast	487	492	-	-	104-105	
2014612	05 June	07 June	The cruise to Sognefjorden was the continuation of a long-term initiative for the marine biodiversity research group. The project is intended to investigate and map the poorly known marine benthos diversity of the fjord.	Sognefjorden	493	496	-	-	106	
2014614	08 June	10 June	Sampling of benthic invertebrates and fish for biodiversity research, including special fixation and preparation of samples for molecular work.	Norwegian coast	497	499	71	73	107-108	
2014613	12 June	15 June	Deploy Polar Buoy and mooring.	Norwegian Sea	500	501	-	-	109	
2014615	06 July	18 July	The objective of the cruise is to investigate the origins of the overflow water from the Iceland Sea to the North Atlantic, and the inflow of low salinity water from the Iceland Sea to the Norwegian Sea.	Iceland Sea, Norwegian Sea	502	557	-	-	110-111	

Håkon Mosby (cont.)

CRUISE NO	PERIOD OF CRUISES		PURPOSE	AREA	CTD ST		TRAWL ST		PAGE OF CHART	COMMENT
	Start	End			Start	End	Start	End		
2014616	20 July	12 Aug	The ocean bottom seismometer survey to study crustal structure in the western Barents Sea. We aim to find out how the Scandinavian caledonides propagate into the Barnets Sea and Svalbard. This study is particularly relevant for paleo geography of the Barents Sea area i a mid-devonian time. That is critically important for new petroleum play models in the study region.	Barents Sea	-	-			112	
2014617	14 Aug	24 Aug	Acquisition of marine, multichannel seismic data in Van Mijenfjorden and Isfjorden, Svalbard, as part of the student course SVALEX.	Barents Sea	-	-	-	-	113	
2014618	25 Aug	05 Sep	Student cruise for the course AGF-214 Polar Ocean Climate at the University Center in Svalbard.	Greenland Sea	558	837	-	-	114-115	
2014619	06 Sep	15 Sep	A physical oceanography cruise for ocean mixing processes studies north of Svalbard.	Fram Strait, Yermak Plateau, Isfjord in Svalbard.	838	903	-	-	116	
2014620	19 Sep	21 Sep	The cruise comprises seismic data acquisition and gravity measurements in the Andfjorden.	Andfjorden, Northern coast of Norway.	-	-	-	-	117	
2014621	26 Sep	23 Oct	Acoustic estimation of the abundance of saithe, cod and haddock along the Norwegian coast from Grense Jakobselv to Stad.	Norwegian Sea, Barents Sea	904	966	74	167	118-119	
2014623	27 Oct	27 Oct	The purpose of the cruise was to introduce the students in our « Physics of the Atmosphere and Ocean » GEOF105, to oceaongraphic field work.	Norwegian coast Osterfjorden / Sørfjorden	937	945	-	-	120	
2014622	28 Oct	02 Nov	Recovery and and redeployment of the Wavescan NACO-Buoy. Recovery and re-deployment of ADCP current meter mooring .Recovery and re-deployment of standard RCM-mooring S1-N. Recovery of Seaglider	Norwegian Sea	946	946	-	-	121	
2014624	18 Nov	21 Nov	Explore, map and characterize the hard-bottom benthic fauna habitates of the slopes of the deeper parts of the Sognefjord using video technology to survey the fjord bottom .	Sognefjorden	-	-	-	-	122	

1.4 Helmer Hanssen (Ship code no 19)

CRUISE NO	PERIOD OF CRUISES		PURPOSE	AREA	CTD ST		TRAWL ST		PAGE OF CHART	COMMENT
	Start	End			Start	End	Start	End		
2014805	22 Jan	02 Mar	Abundance and distribution of cod, haddock and capelin. Vardø-North section.	Greenland Sea, Barents Sea	64	181	13	202	123-124	
2014806	19 Aug	07 Sep	Conduct a baseline study of the Arctic Ocean ecosystem (oceanography, nutrients, phyto-plankton, zooplankton, fish, benthos, marine mammals and birds). Conduct the northern part of the joint Barents Sea ecosystem survey.	Barents Sea Arctic Ocean	539	597	01	57	125-127	

1.5 G.M. Dannevig (Ship code no 16)

CRUISE NO	PERIOD OF CRUISES		PURPOSE	AREA	CTD NO		PAGE OF CHART	COMMENT
	Start	End			Start	End		
2014301/ 302/303	14 Jan	21 Jan	Hydrographic standard section “Torungen-Hirtshals”, environmental investigation. Long-term environmental monitoring on a near-shore station outside Arendal and in the fjords along the Norwegian Skagerrak coast.	Skagerrak, Norwegian coast of Skagerrak	1	23	128	
2014304/ 305/306	03 Feb	10 Feb	Hydrographic standard section “Torungen-Hirtshals”, environmental investigation. Long-term environmental monitoring on a near-shore station outside Arendal and in the fjords along the Norwegian Skagerrak coast.	Skagerrak, Norwegian coast of Skagerrak	24	58	129	
2014307/ 308	11 Mar	15 Mar	Hydrographic standard section “Torungen-Hirtshals”, environmental investigation. Long-term environmental monitoring on a near-shore station outside Arendal and in the fjords along the Norwegian Skagerrak coast.	Skagerrak, Norwegian coast of Skagerrak	59	76	130	
2014309	20 Mar	01 Apr	Mapping distribution area of coastel cod.	Sogn og Fjordane	-	-	131	
2014310	22 Apr	12 May	Environmental investigation in the eastern North Sea, the Skagerrak and Cattegat after the spring bloom.Long-term environmental monitoring on a near-shore station outside Arendal and in the fjords along the Norwegian Skagerrak coast.	Eastern North Sea/ Skagerrak/ Cattegat	77	193	132	
2014311/ 312/313/ 314	12 Jun	19 Jun	Hydrographic standard section “Torungen-Hirtshals”, environmental investigation. Long-term environmental monitoring on a near-shore station outside Arendal and in the fjords along the Norwegian Skagerrak coast.	Skagerrak, Norwegian coast of Skagerrak	194	228	133	
2014315/ 316/317	30 Jun	06 Jul	Hydrographic standard section “Torungen-Hirtshals”, environmental investigation. Long-term environmental monitoring on a near-shore station outside Arendal and in the fjords along the Norwegian Skagerrak coast.	Skagerrak, Norwegian coast of Skagerrak	229	263	134	
2014318/ 319/320/ 321	12 Aug	28 Aug	Hydrographic standard section “Torungen-Hirtshals”, environmental investigation. Long-term environmental monitoring on a near-shore station outside Arendal and in the fjords along the Norwegian Skagerrak coast. Monitoring lobster/MPA.	Skagerrak, Norwegian coast of Skagerrak	264	301	135	

G.M. Dannevig (cont.)

CRUISE NO	PERIOD OF CRUISES		PURPOSE	AREA	CTD NO		PAGE OF CHART	COMMENT
	Start	End			Start	End		
2014322	13 Sep	14 Sep	Hydrographic standard section “Torungen-Hirtshals”, environmental investigation. Long-term environmental monitoring on a near-shore station outside Arendal	Skagerrak, Norwegian coast of Skagerrak	302	313	136	
2014323	15 Sep	03 Oct	Long-term environmental monitoring on a near-shore station outside Arendal and in the fjords along the Norwegian Skagerrak coast. Beach seine studies.	Skagerrak, Norwegian coast of Skagerrak	314	374	137	
2014324	04 Oct	06 Oct	Hydrographic standard section “Torungen-Hirtshals”, environmental investigation. Long-term environmental monitoring on a near-shore station outside Arendal	Skagerrak, Norwegian coast of Skagerrak	375	387	138	
2014325	08 Oct	11 Oct	Observe the part of the Coastal Current off Torungen and Kragerø according to hydrographic properties. The areas of interest are connected with the location of the Skagerrak-buoy (ref. Interreg “Land-møter-hav”). Drifters were deployed to study the surface currents and several other instruments were tested..	Skagerrak, Norwegian coast of Skagerrak	-	-	139	
2014326	11 Nov	12 Nov	Hydrographic standard section “Torungen-Hirtshals”, environmental investigation. Long-term environmental monitoring on a near-shore station outside Arendal	Skagerrak, Norwegian coast of Skagerrak	388	399	140	
2014327	12 Nov	05 Dec	Fish community studies in marine protected area and resource studies in coastel cod. Long-term environmental monitoring on a nearshore station outside Arendal and in the fjords along the Norwegian Skagerrak coast.	Skagerrak, Norwegian coast of Skagerrak	400	424	141	
2014328	08 Dec	09 Dec	Long-term environmental monitoring on a near-shore station outside Arendal and in the fjords along the Norwegian Skagerrak coast.	Skagerrak, Norwegian coast of Skagerrak	425	431	142	

1.6 Selected cruises carried out by fishing vessels hired by IMR

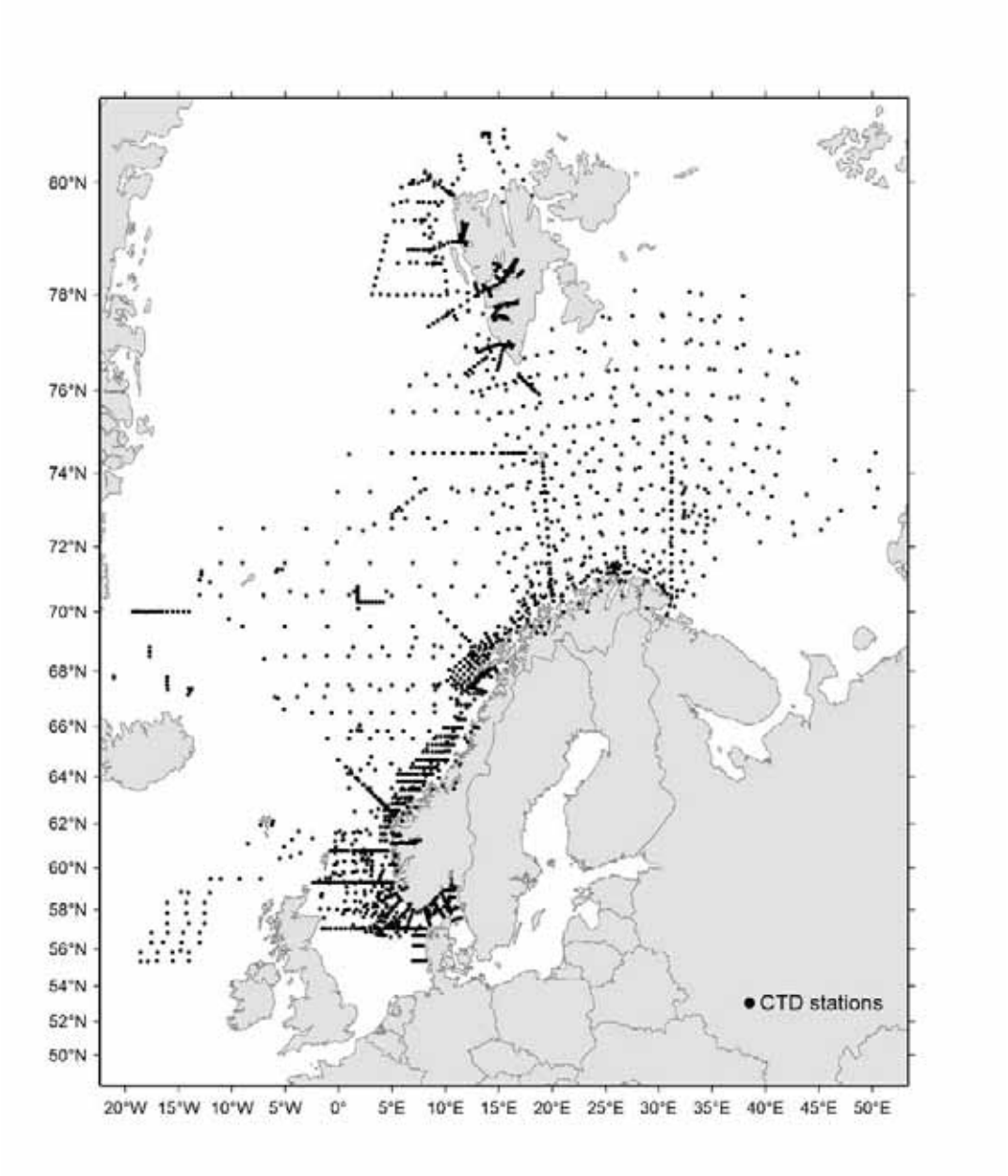
CRUISE NO	PERIOD OF CRUISES		VESSEL	PURPOSE	AREA	CTD ST		TRAWL ST		PAGE OF CHART	COMMENT
	Start	End				Start	End	Start	End		
2014001	18 Jan	18 Feb	Saga Sea	One of a series of cruises at South Orkney Islands to study: 1) Density and distribution of antarctic krill 2) Density and distribution of other zoo plankton and apex predators 3) Trawl gear`s influence on unaccounted mortality of Antarctic krill 4) Deploy acoustic mooring for 12 months recording of macro-zooplankton flux	Waters around South Orkney Islands	-	-	-	-	143	
2014807	28 Apr	15 May	Eros	Measuring the abundance, distribution and age composition of sandeel Dredge sampling for burrowed sandeels Bottom trawls, pelagic trawls Echo sounder and sonar sampling Zooplankton sampling Fish larvae sampling (Krill trawl) Mapping of hydrographical conditions	North Sea	01	32	01	39	144-145	
2014813	01 July	28 July	Vendla	Ecosystem cruise with abundance estimation and biological sampling of Northeast Atlantic (NEA) mackerel and Norwegian spring-spawning (NSS) herring mammal observations.	Norwegian Sea, Barents Sea,	01	54	01	56	146-147	
2014812	01 July	28 July	Brennholm	Ecosystem cruise with abundance estimation and biological sampling of Northeast Atlantic (NEA) mackerel and Norwegian spring-spawning (NSS) herring mammal observations.	Norwegian Sea, Barents Sea, North Sea	01	77	01	77	148-149	
2014810	16 June	24 Aug	Tromsøy	The objective of the cruise is to collect sightings information for estimating abundance of whales.	Norwegian Sea, Greenland Sea, Barents Sea	-	-	-	-	150	

Selected cruises carried out by fishing vessels hired by IMR (cont.)

CRUISE NO	PERIOD OF CRUISES		VESSEL	PURPOSE	AREA	CTD ST		TRAWL ST		PAGE OF CHART	COMMENT
	Start	End				Start	End	Start	End		
2014820	01 Sep	12 Sep	Johan Ruud	Stock assessment of red king crab.	Barents Sea East Finnmark	-	-	-	-	151	
2014817	06 Oct	17 Oct	Johan Ruud	Stock assessment of red king crab.	Barents Sea East Finnmark	-	-	-	-	152	
2014825	07 Oct	20 Oct	Gadus Poseidon	Developing/testing environmently friendly trawling techniques for cod and haddock.	Barents Sea Svalbard area	-	-	-	-		No chart
2014824	20 Oct	01 Nov	Kings Bay	Collection of acoustic data from fisheries sonar for biomass estimation of individual mackerel schools. Purse seine catch of individual mackerel schools for comparison with sonar estimates. Acoustic and environmental measurements of mackerel and water inside purse seine during trial catches.	North Sea, Northwestern Passages	-	-	-	-		No chart
2014828	28 Oct	04Noc	Ida Beate	The overall objective of the project is to develop method(s) to catch pleuronectidae species while avoiding catches of coastal cod.	Norwegian Sea, Northeast Atlantic Ocean	-	-	-	-		No chart

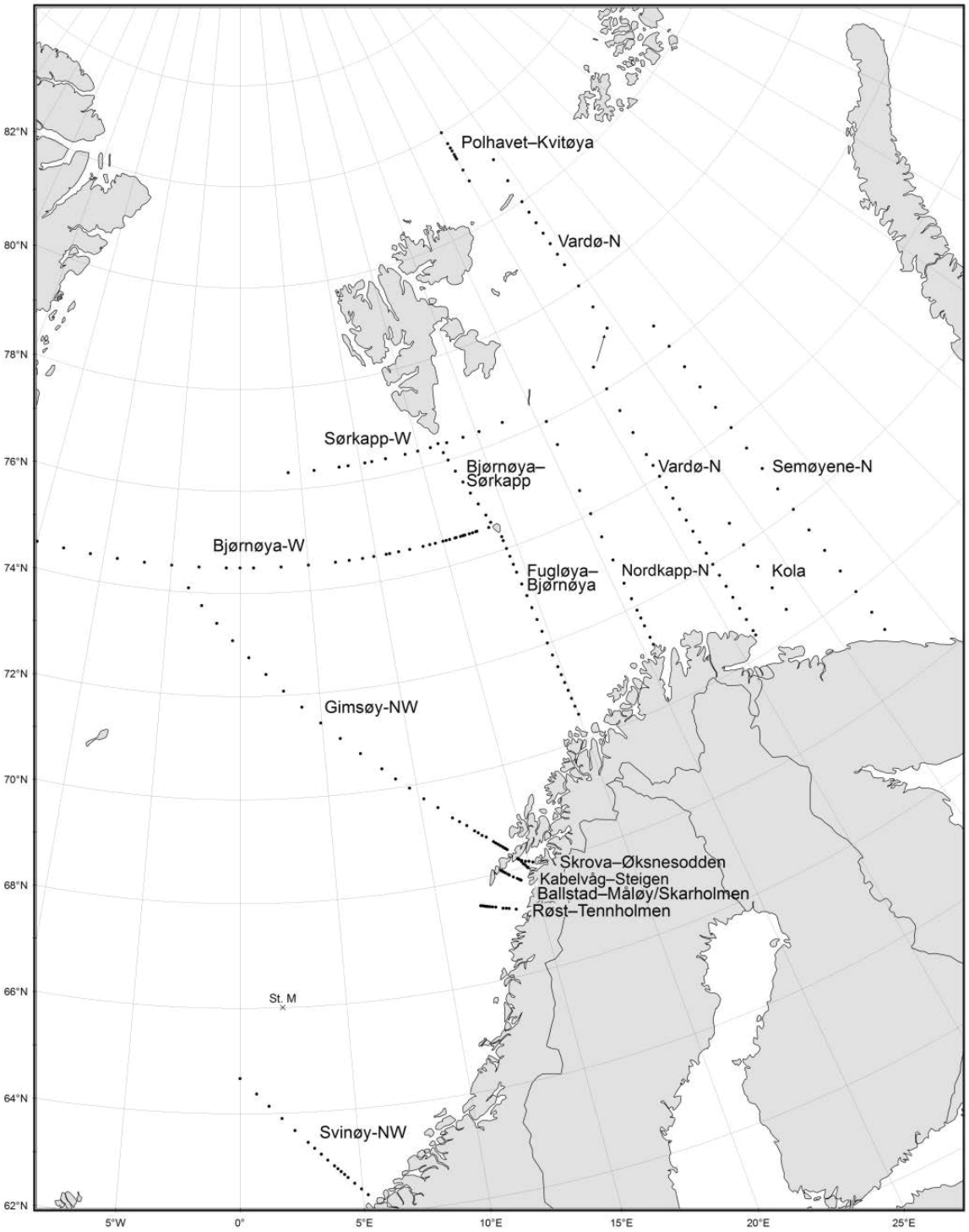
2 Charts – overview

2.1 CTD stations 2014

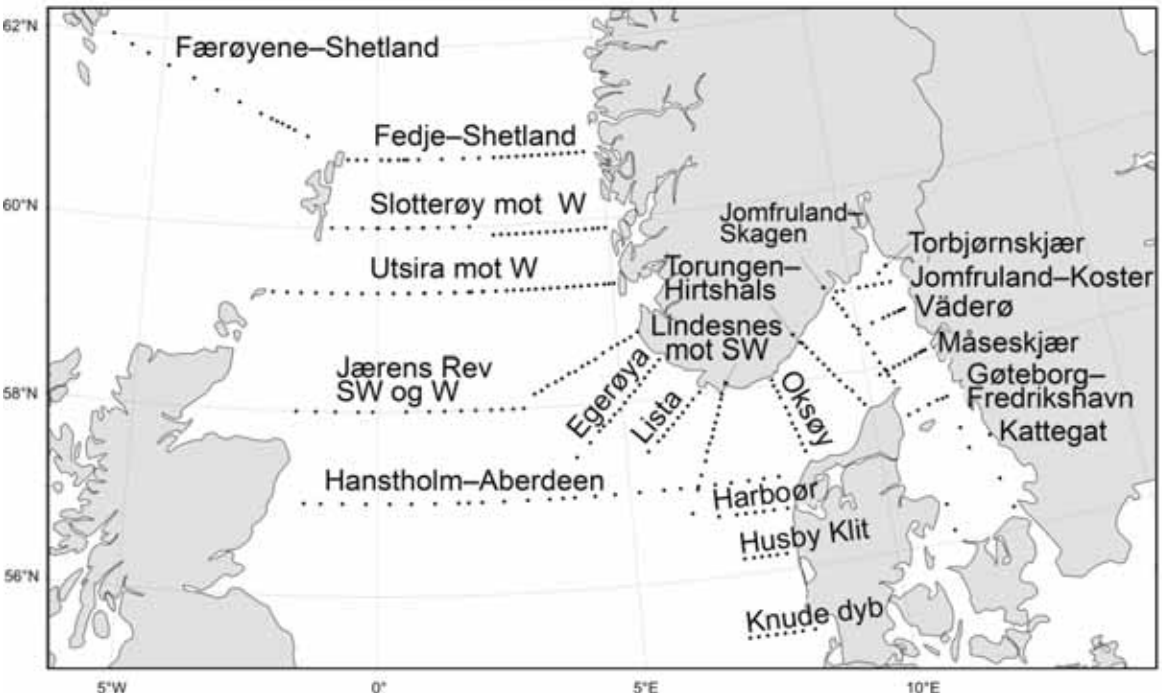


	Ship	Stations
Research vessels	G.O. Sars	434
	Johan Hjort	873
	Håkon Mosby	966
	Helmer Hanssen	177
	G. M. Dannevig	431
Hired fishing vessels	Eros	32
	Brennholm	77
	Vendla	54
	Total 2014	3044

2.2 Oceanographic sections

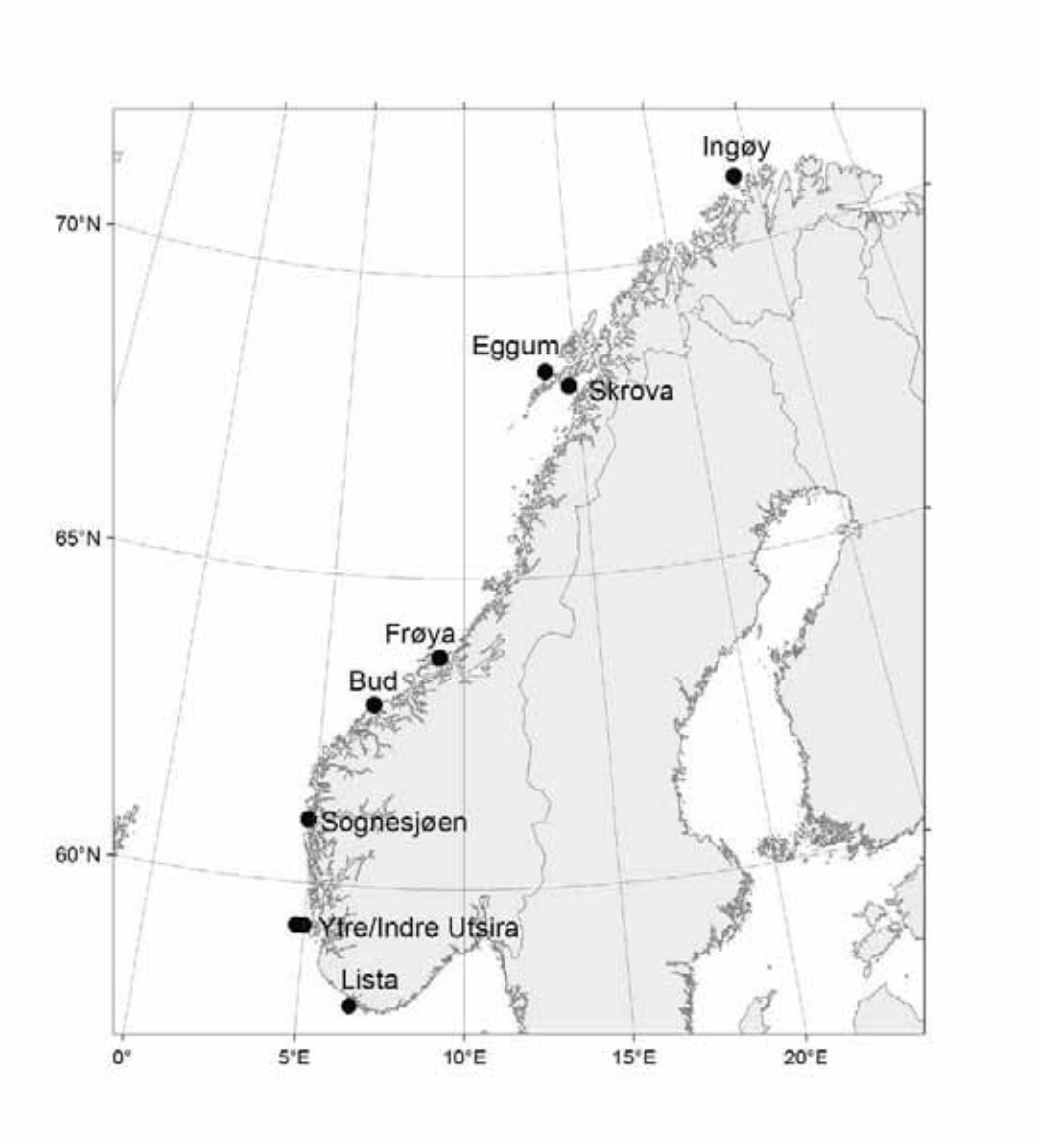


Norwegian Sea and Barents Sea



North Sea, Skagerrak and Kattegat

2.3 Fixed oceanographic stations



3 Tables – Observations in 2014

3.1 Oceanographic sections 2014 (Cruise no/ship)

Area	Oceanogr. sec.	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
North Sea	Fedje–Shetland				2014610						2014118		
	Slotterøy-West												
	Utsira-West	2014101				2014610	2014210					2014214	
	Jærens Rev-SW and W					2014610							
	Egerøya-SW					2014610							
	Lista-SW					2014610							
	Lindesnes-SSW					2014610							
	Hanstholm–Aberdeen												
	Harboør												
	Hysby Klit												
	Knude-Dyb												
Skagerrak and Kattegat	Torungen–Hirtshals	2014303	2014304	2014307	2014310	2014310	2014314	2014315	2014318	2014322	2014324	2014326	
	Oksøy–Hanstholm												
	Jomfruland–Skagen												
	Jomfruland–Koster												
	Torbjørnskjær												
	Väderø												
	Måseskjær												
	Gøteborg–Fredrikshavn												
	Kattegat												

Area	Oceanogr. sec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
The Norwegian Sea and Vestfjorden	Svinøy-North/West	2014201	2014606			2014107		2014211				2014214	
	Gimsøy-North/West	2014201		2014606		2014207			2014211			2014214	
	Bjørnøya-West					2014207			2014211			2014214	
	Sørkapp-West												
	Færøyene–Shetland												
	Skrova–Øksnesodden												
	Kabelvåg–Steigen			2014203									
	Ballstad–Måløy/Skarholmen			2014203									
	Røst–Tennholmen			2014203									
The Barents Sea	Fugløya–Bjørnøya	2014201		2014606		2014207	2014110		2014211			2014214	
	Vardø-North			2014805						2014212			
	Semøyene-North												
	Bjørnøya–Sørkapp												
	Nordkapp-North												
	Polhavet–Kvitøya												
	Kola												

3.2 Fixed oceanographic stations 2014

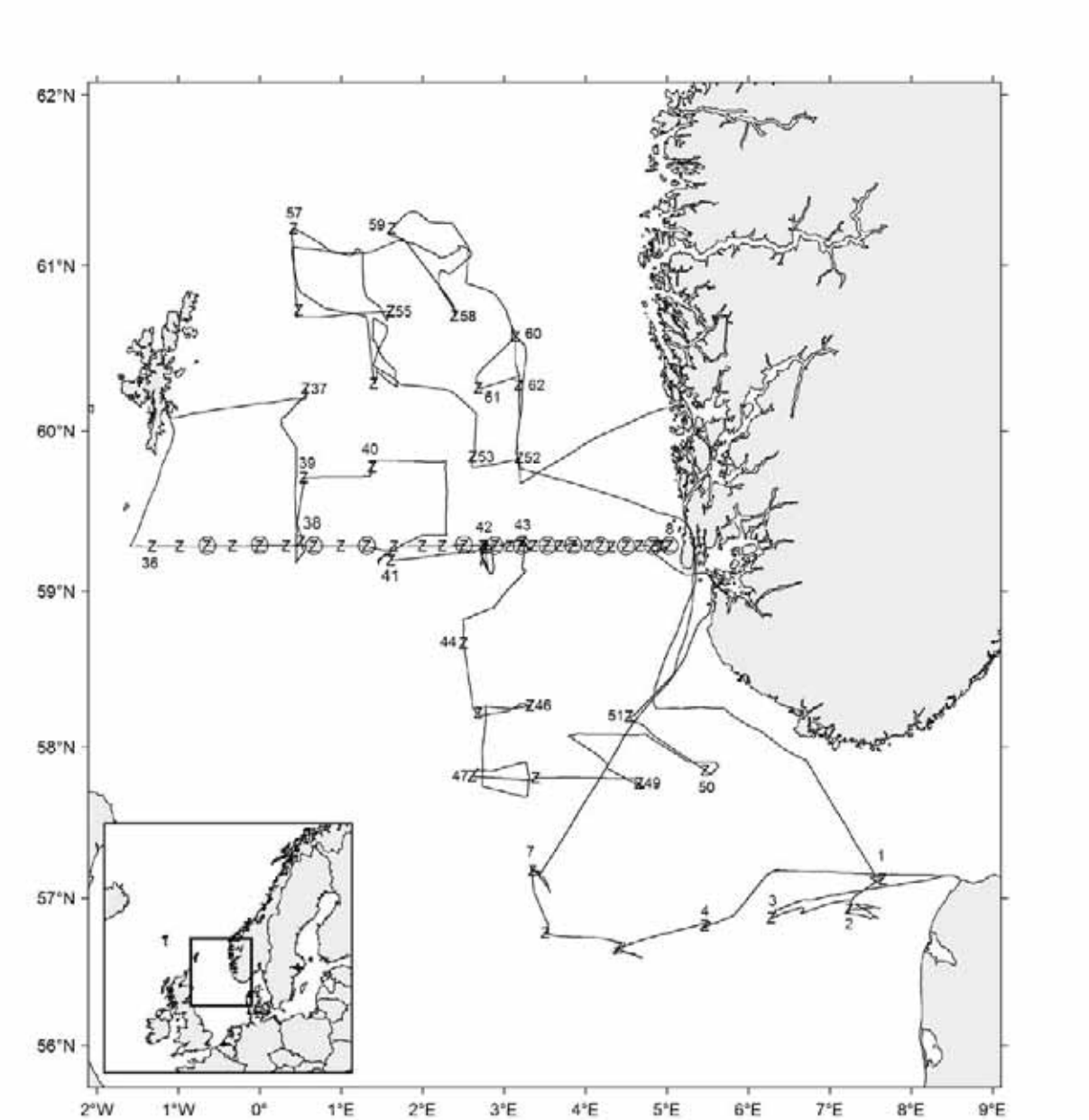
3.2 Fixed oceanographic stations 2014

(No of observations)

Fixed stations	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
LISTA N58° 05,1′ E06° 32,5′	2	2	2	3	3	3	3	3	3	2	4	3	33
UTSIRA Y N59° 19′ E04° 44′	0	0	2	2	3	2	3	1	2	3	2	2	22
UTSIRA I N59° 19′ E04° 59′	0	0	2	2	3	2	3	1	2	3	2	2	22
SOGNESJØEN N61° 01′ E04° 50′	1	1	2	2	3	2	1	4	4	2	1	0	23
BUD N62° 56′ E06° 47′	0	1	1	0	2	0	0	1	1	1	1	1	9
SKROVA N68° 07′ E14° 39′	0	2	3	5	4	4	3	5	4	5	4	4	43
EGGUM N68° 23′ E13° 38′	2	2	2	2	3	2	2	3	3	3	2	1	27
INGØY N71° 08′ E24° 01′	3	2	1	2	3	2	0	1	1	3	3	1	22
Frøya N63° 44,6′ E09° 05,1′	0	0	0	0	0	0	0	0	1	1	2	1	5

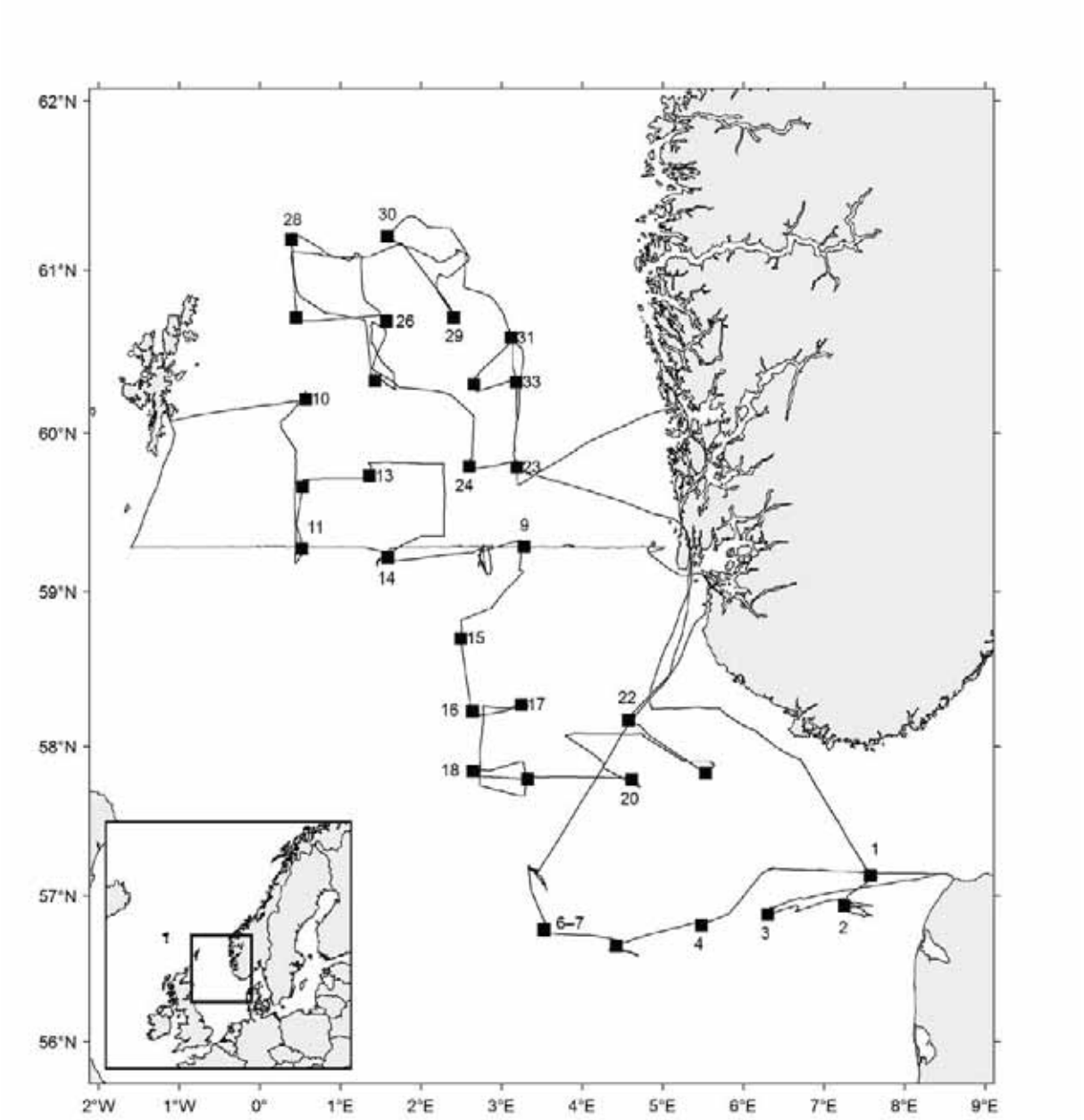
4 Charts for cruises 2014

4.1 G.O. Sars



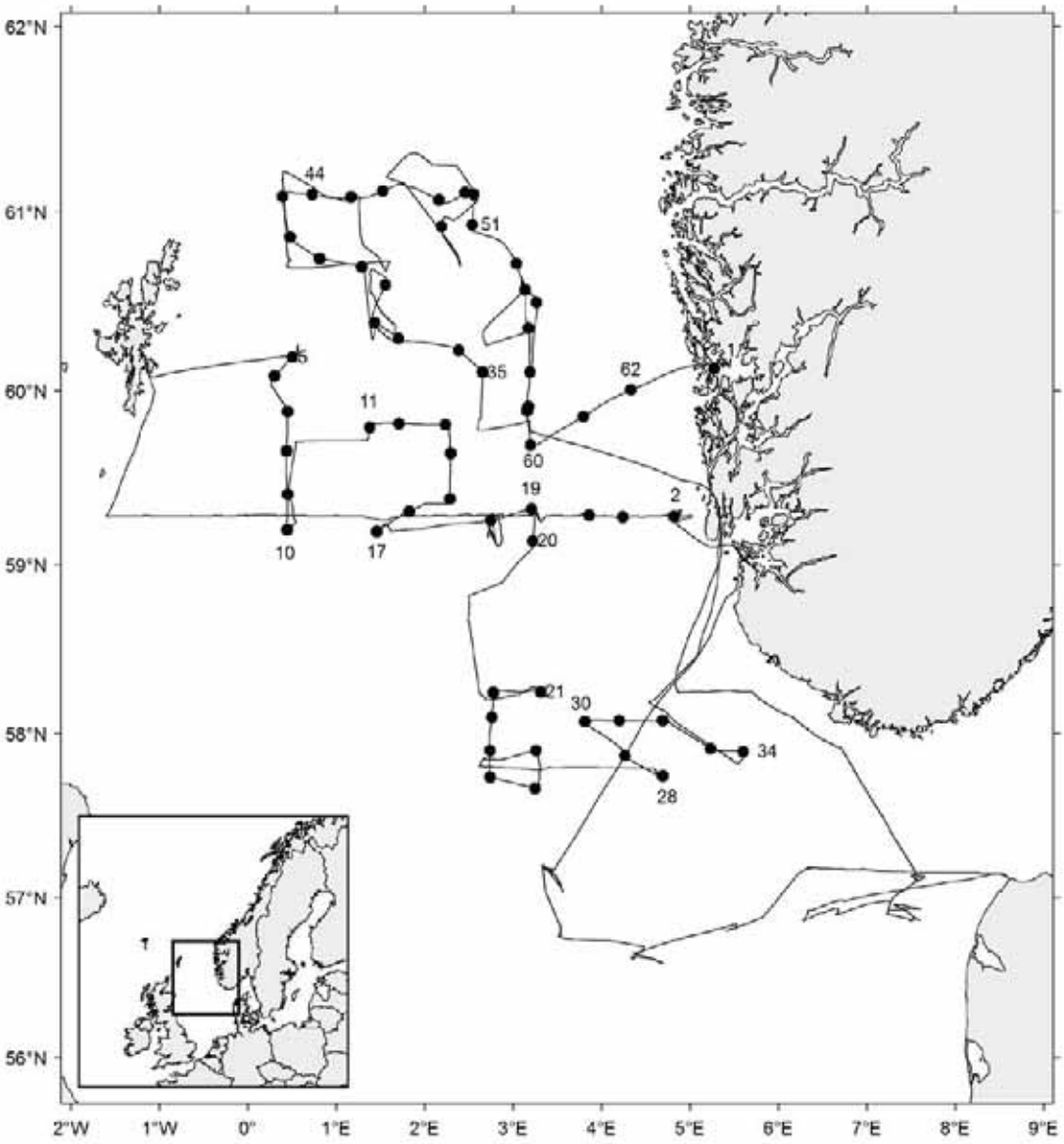
Cruise no 2014101 "G.O.Sars"
14 January–19 February 2014

z CTD st.no 1–62
○ Plankton st (WP-II-net)
Standard section Utsira West st.no 8–36



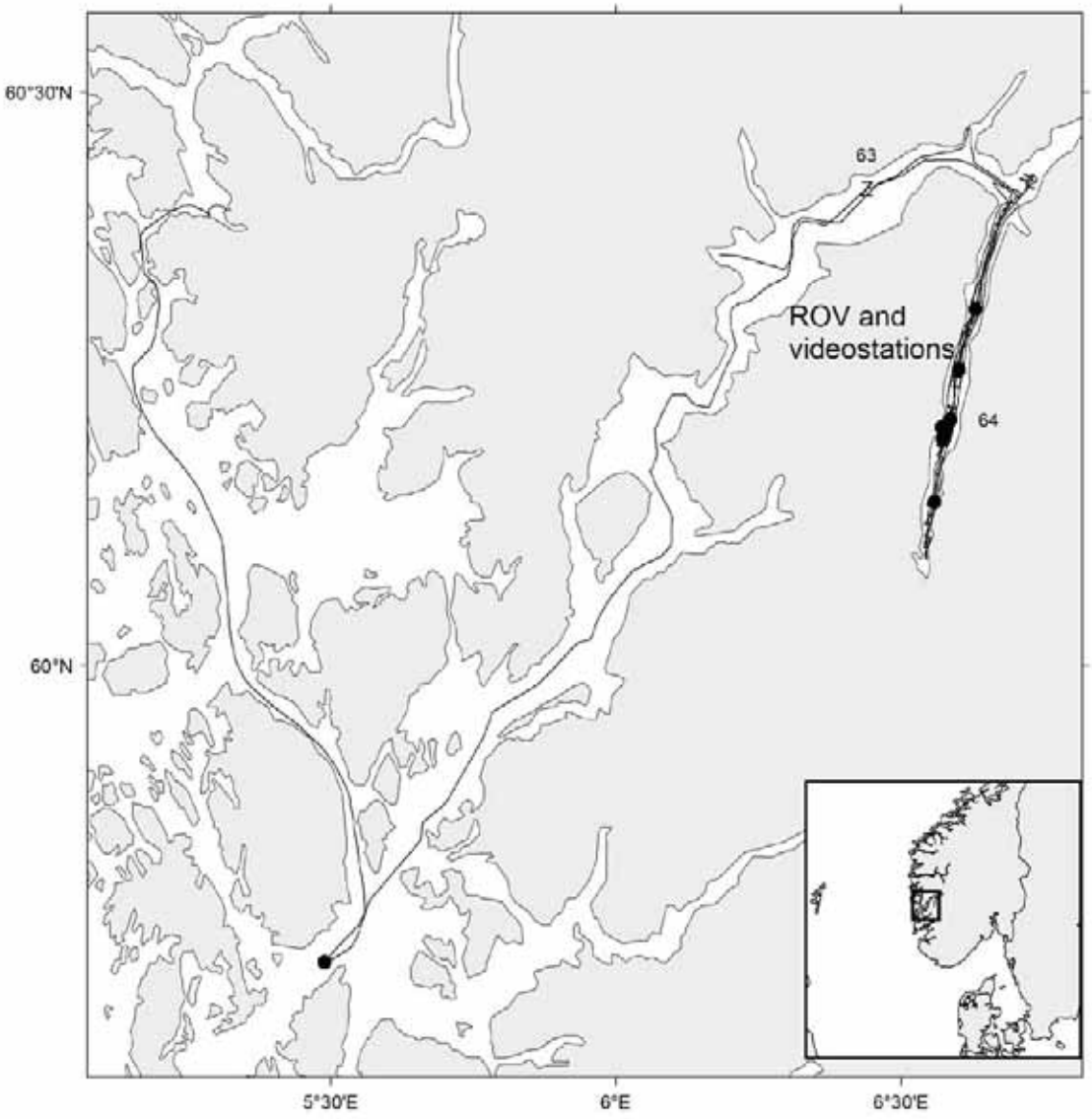
Cruise no 2014101 "G.O.Sars"
14 January–19 February 2014

■ Bottom trawl st.no 1–33



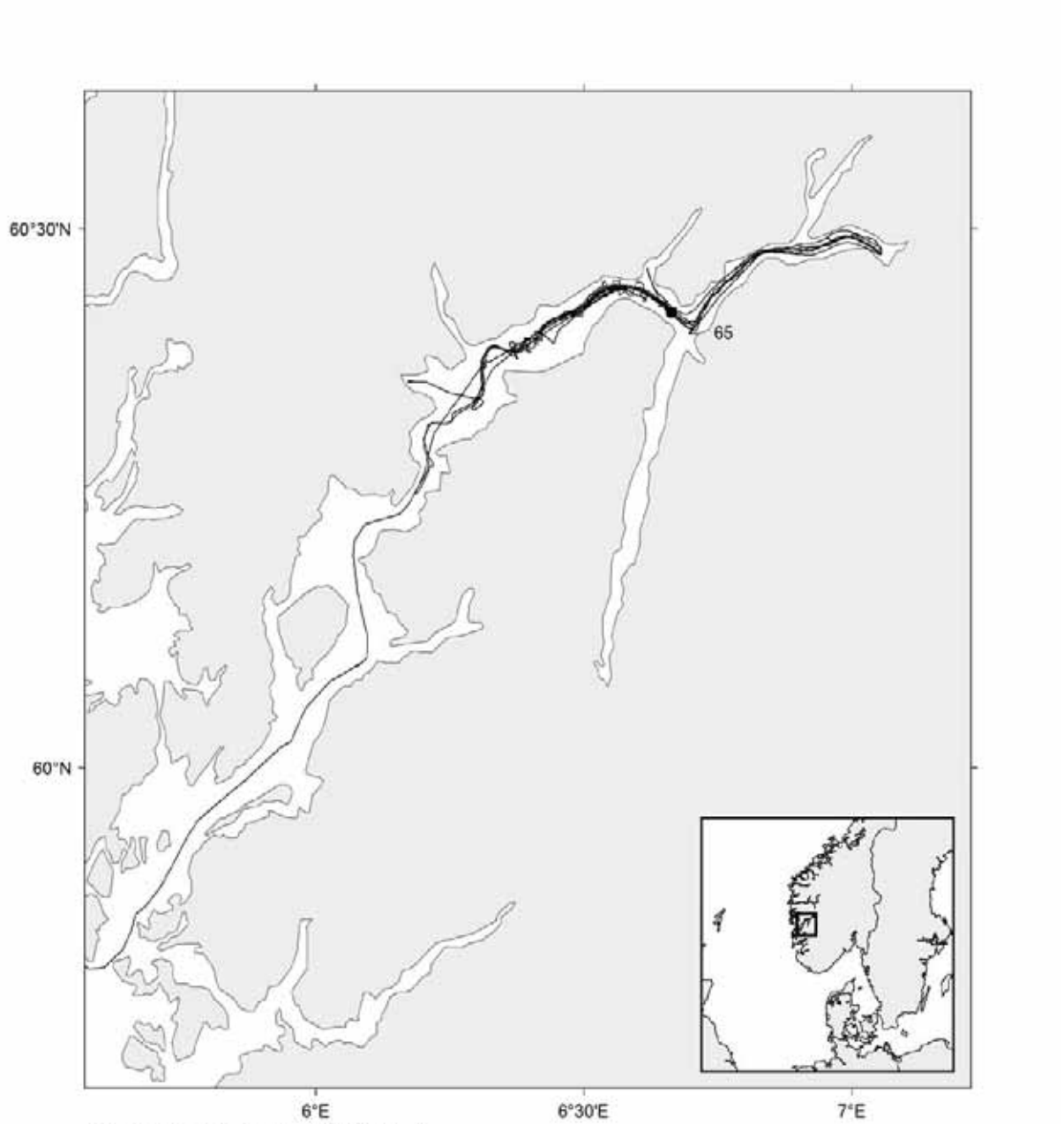
Cruise no 2014101 "G.O.Sars"
14 January–19 February 2014

• Mik stations st.no 1–62



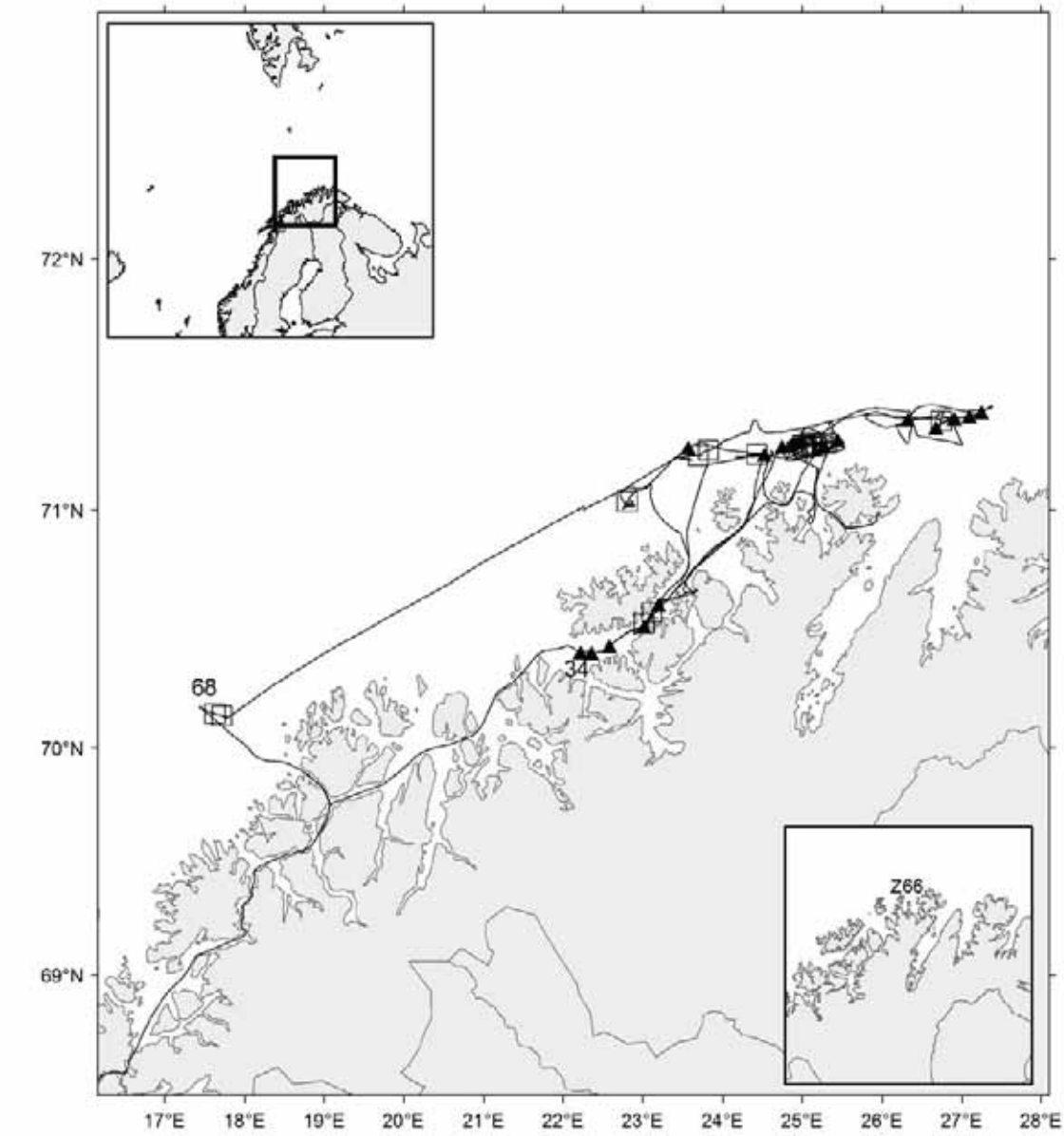
Cruise no 2014102, "G.O.Sars"
21–23 February 2014

z CTD st.no 63–64
● ROV and videostations



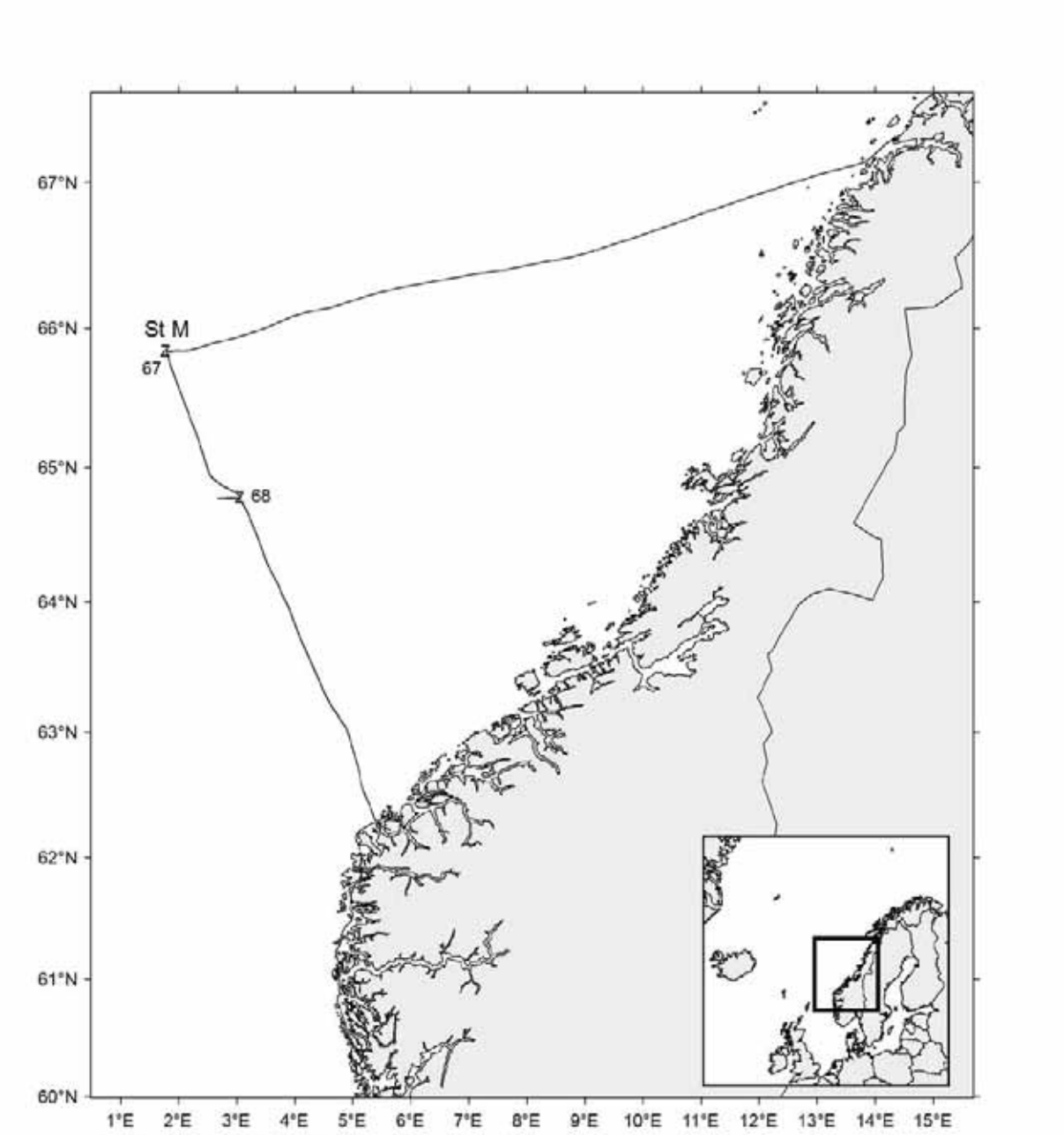
Cruise no 2014103, "G.O.Sars"
24–26 February 2014

z CTD st.no 65
● Calypsocorer



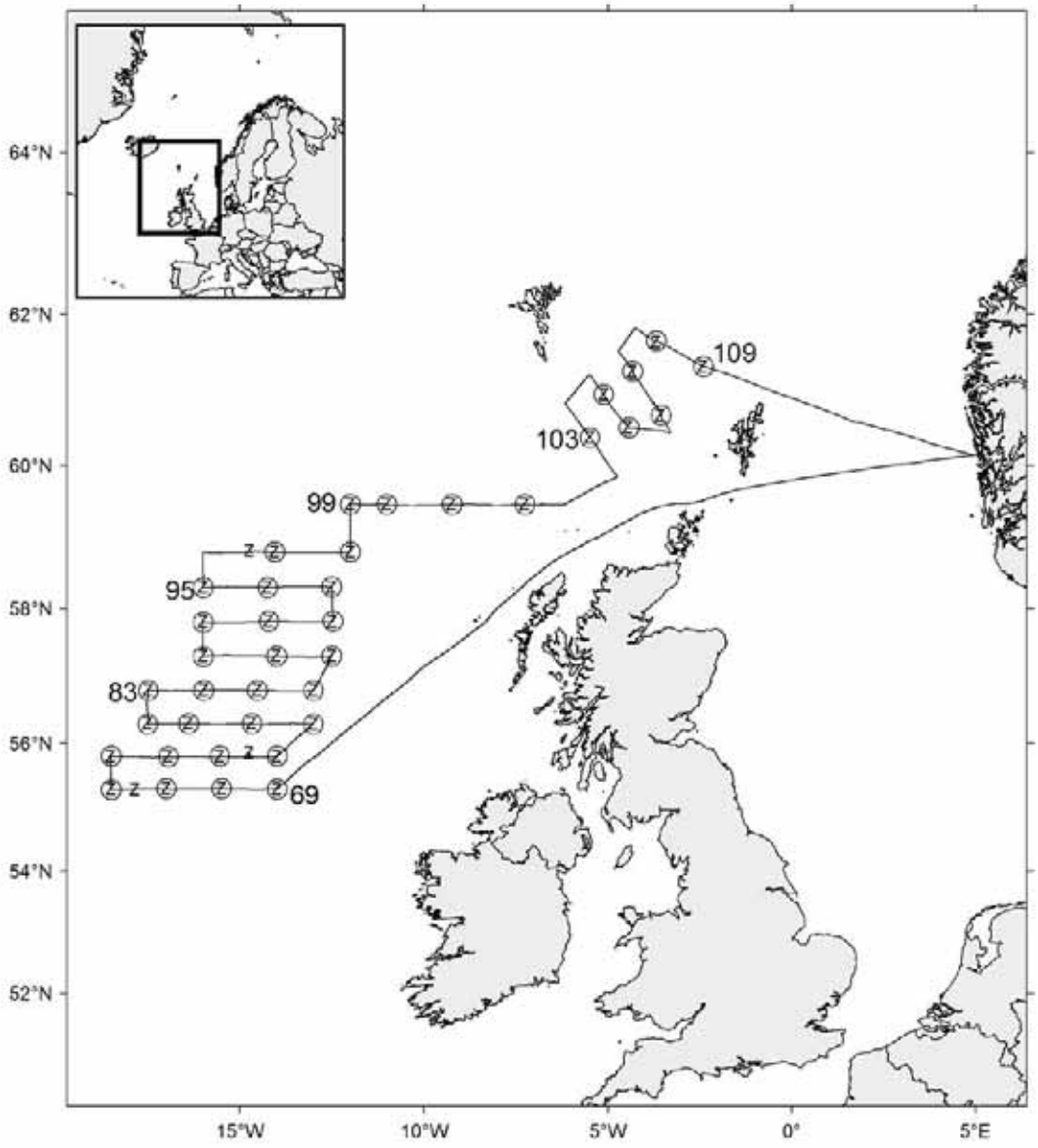
Cruise no 2014104 "G.O.Sars"
4–17 March 2014

z CTD st.no 66
Trawl st.no 34–68
▲ Pelagic tr.
□ Bottom tr.



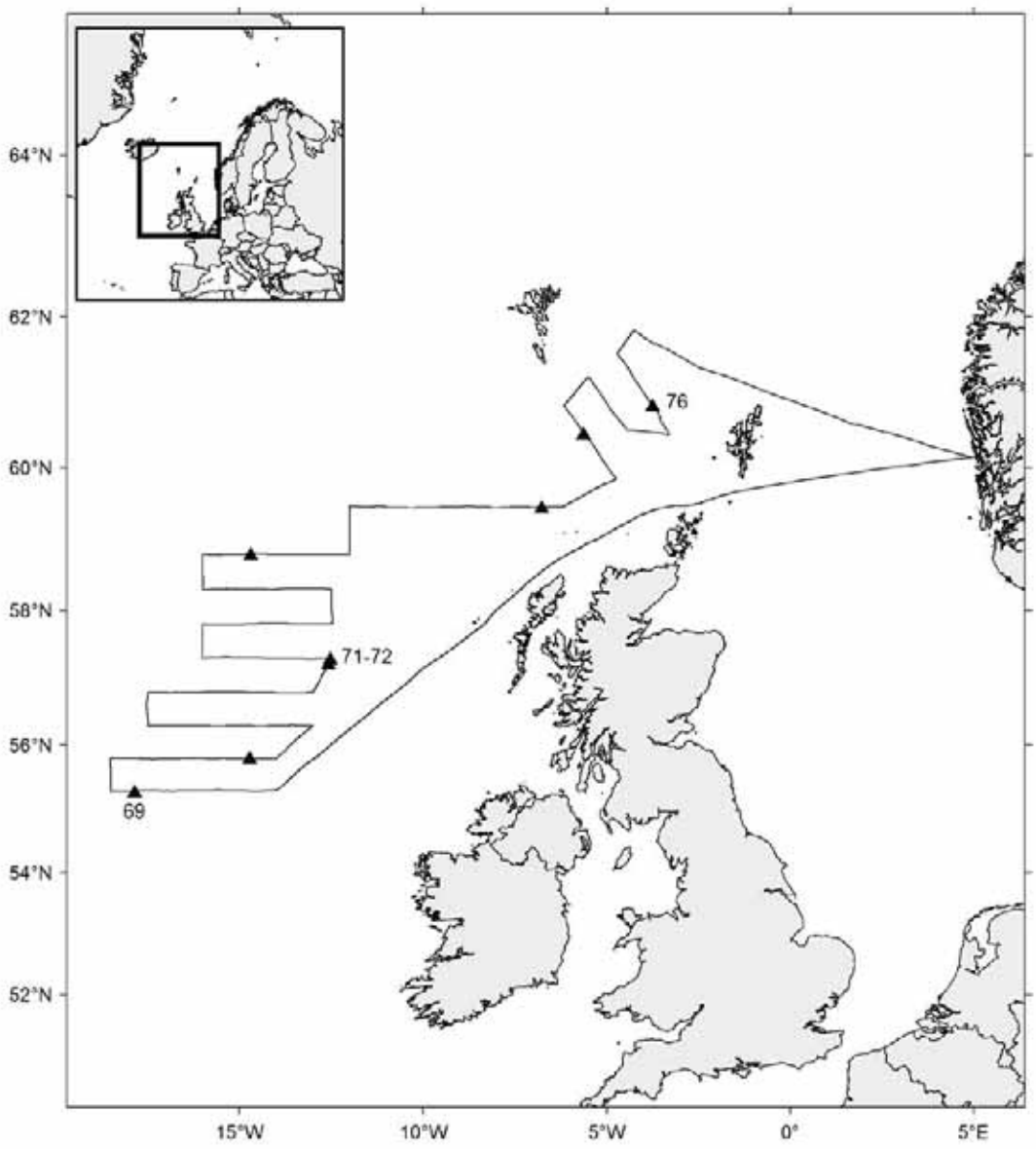
Cruise no 2014122 "G.O.Sars"
18–23 March 2014

z CTD st.no 67-68



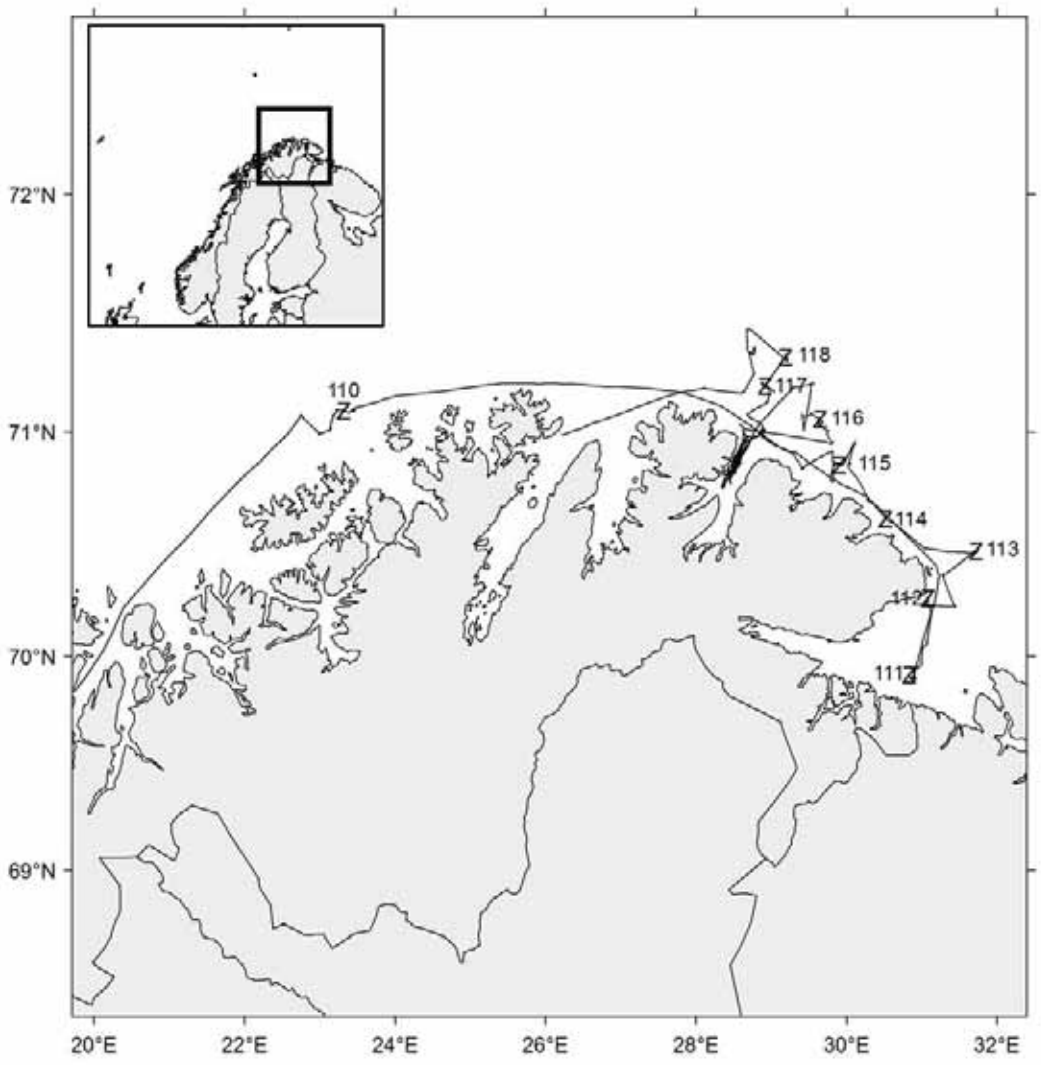
Cruise no 2014105 "G.O.Sars"
24 March–8 April 2014

z CTD st.no 69–109
○ Egg and larvae st. (WP-II-net)



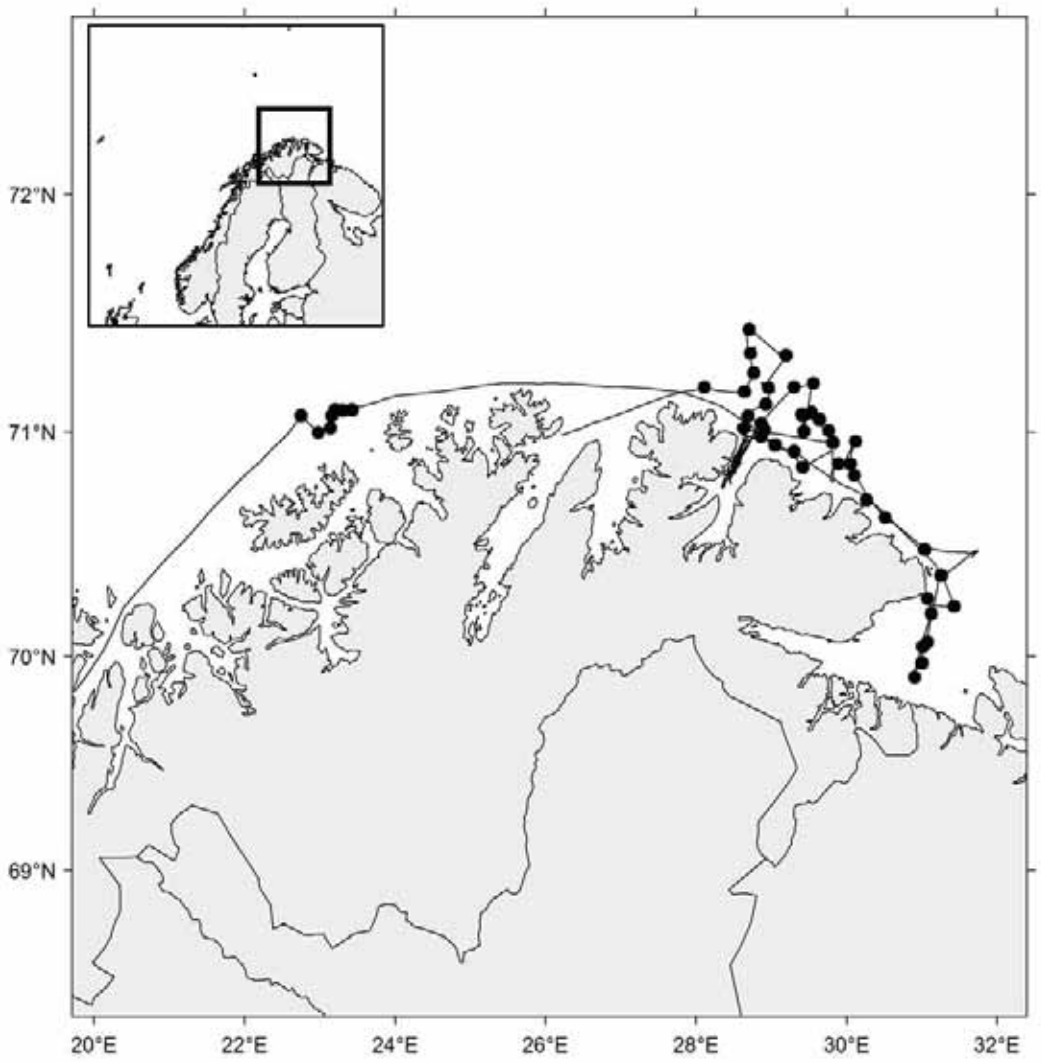
Cruise no 2014105 "G.O.Sars"
24 March–8 April 2014

▲ Pelagic trawl st.no 69–76



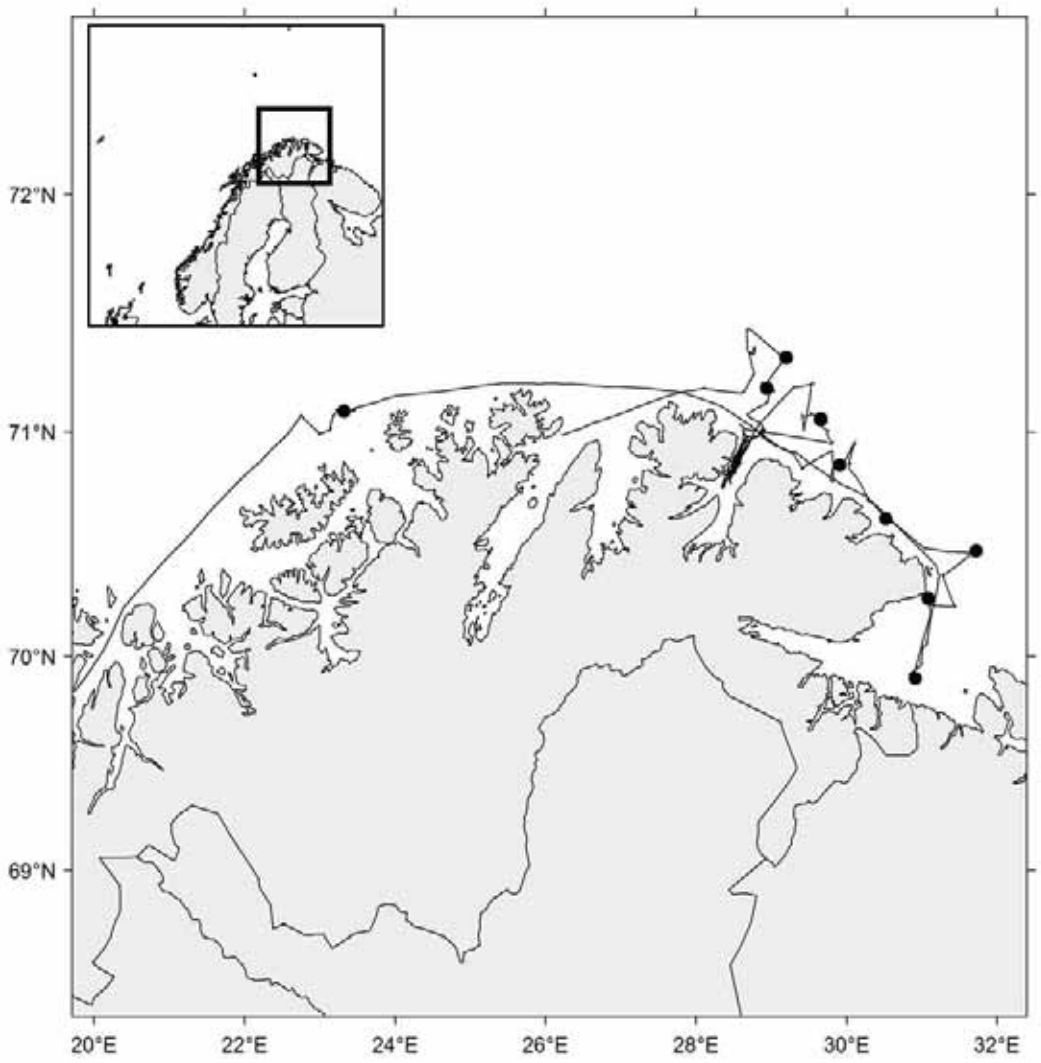
Cruise no 2014106 "G.O.Sars"
13–26 April 2014

z CTD st.no 110–118



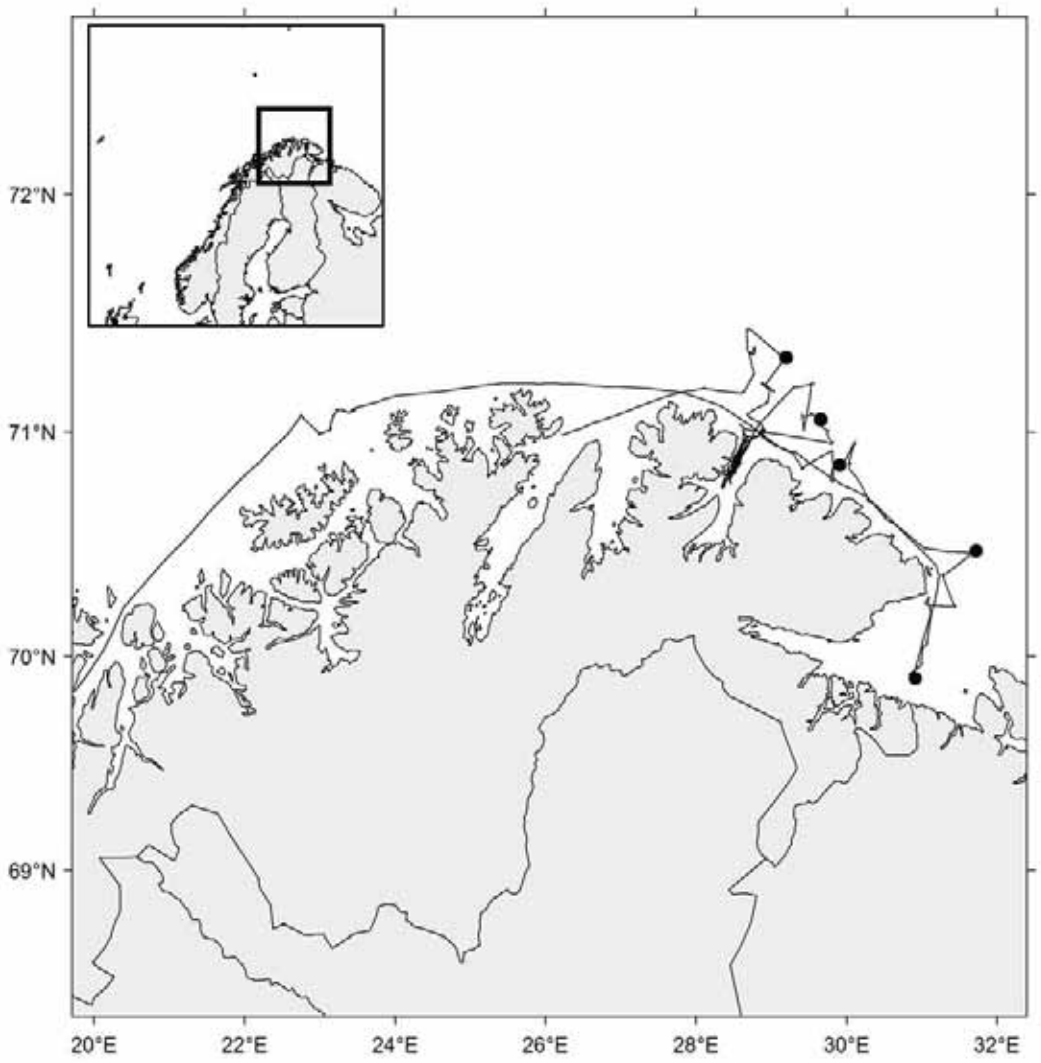
Cruise no 2014106 "G.O.Sars"
13–26 April 2014

● Video stations



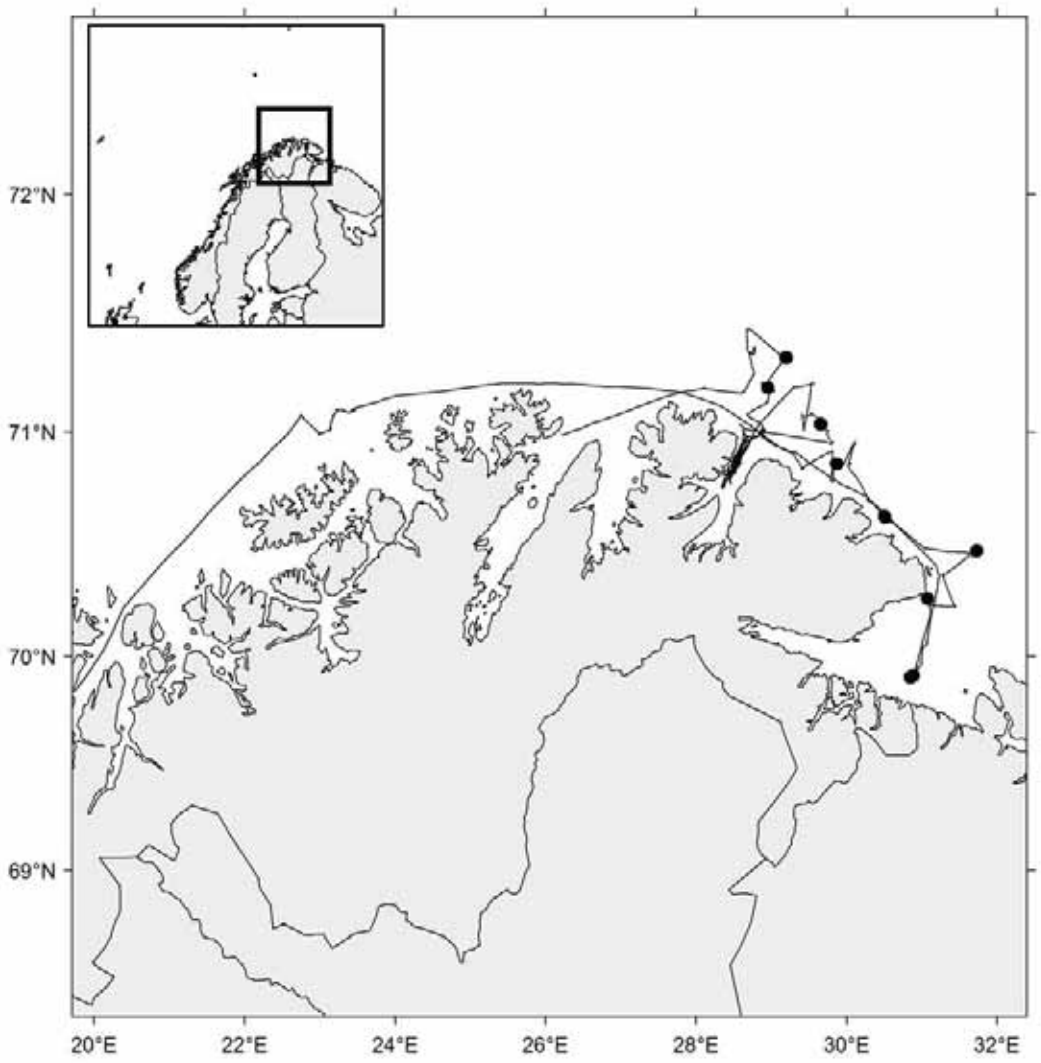
Cruise no 2014106 "G.O.Sars"
13–26 April 2014

● Grab stations



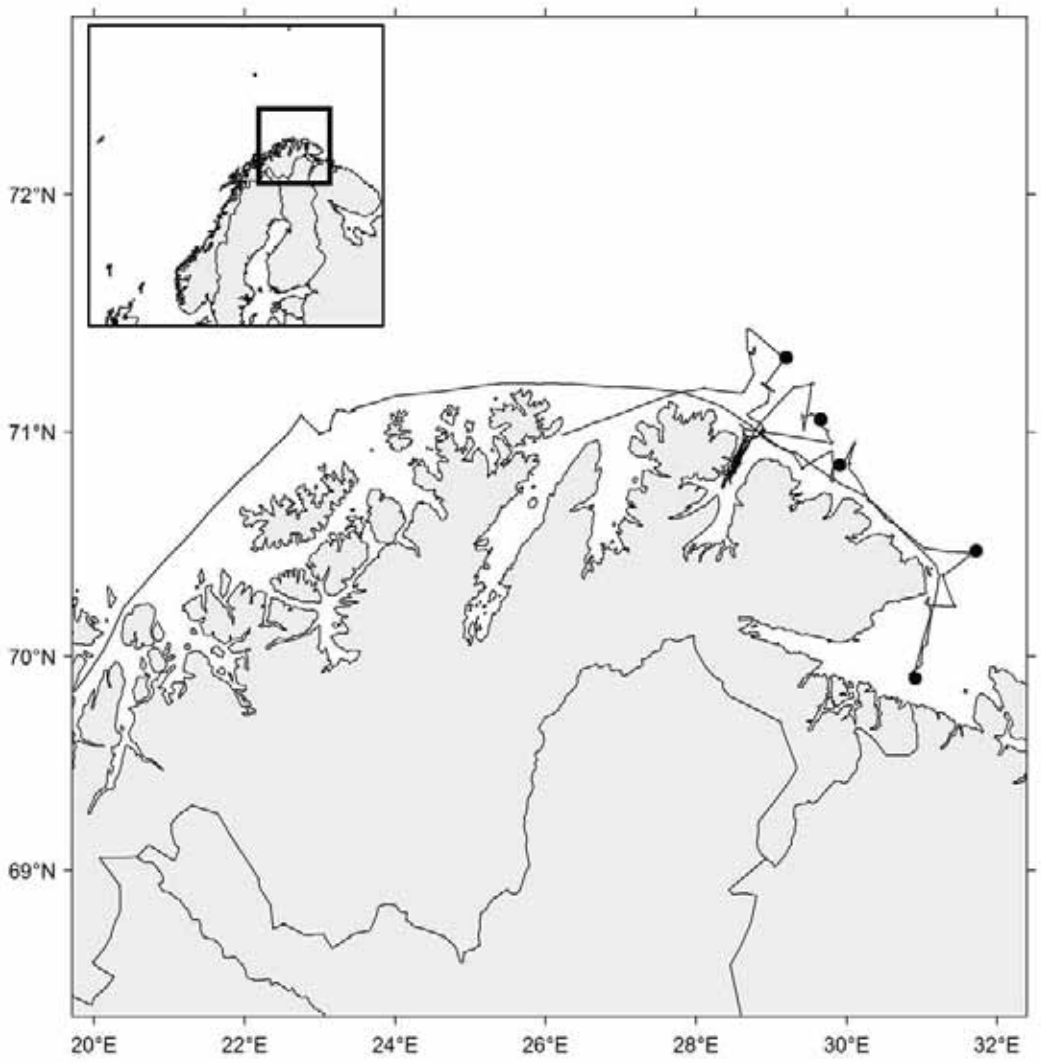
Cruise no 2014106 "G.O.Sars"
13–26 April 2014

● Box cores stations



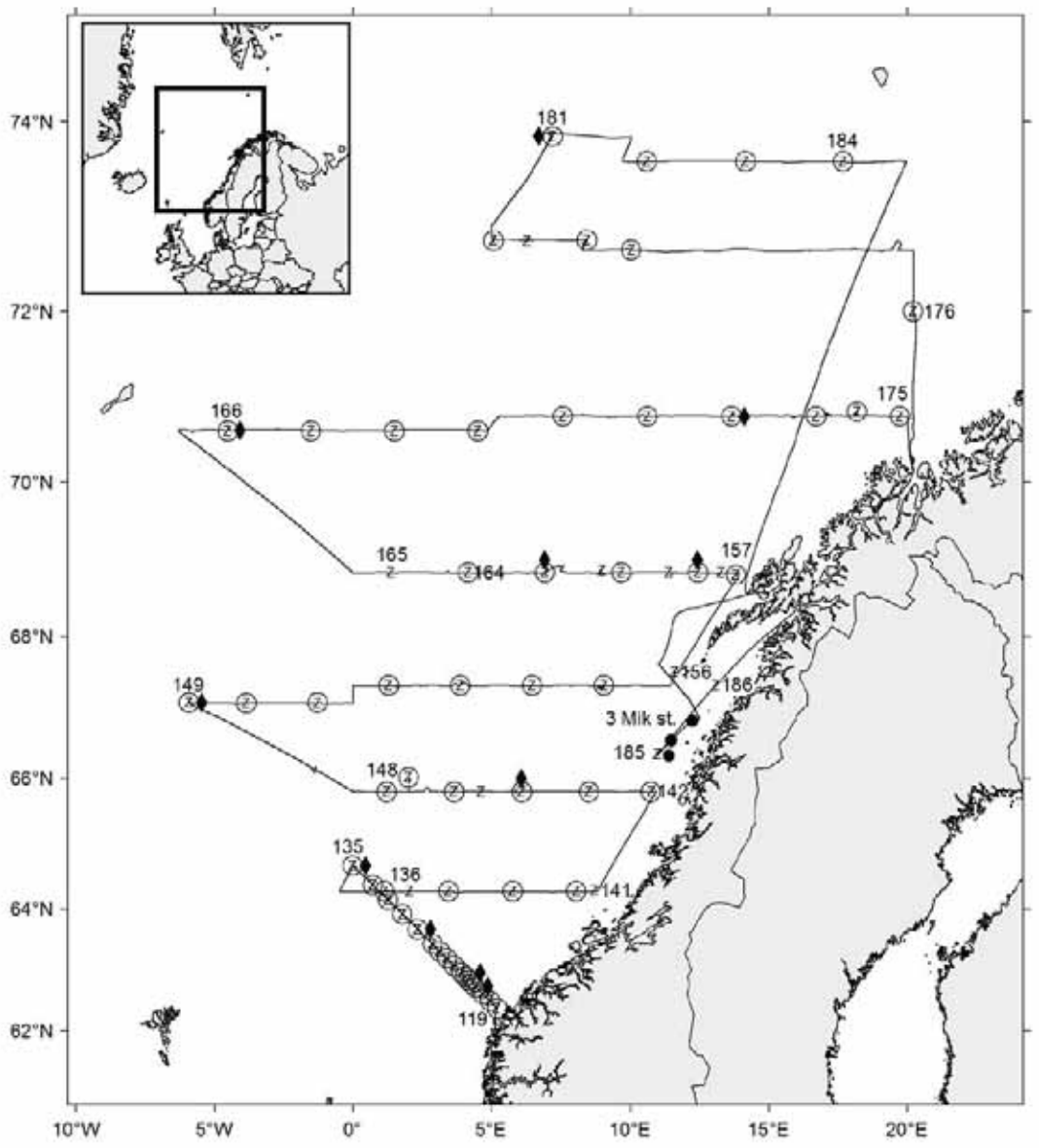
Cruise no 2014106 "G.O.Sars"
13–26 April 2014

● Sledge stations



Cruise no 2014106 "G.O.Sars"
13–26 April 2014

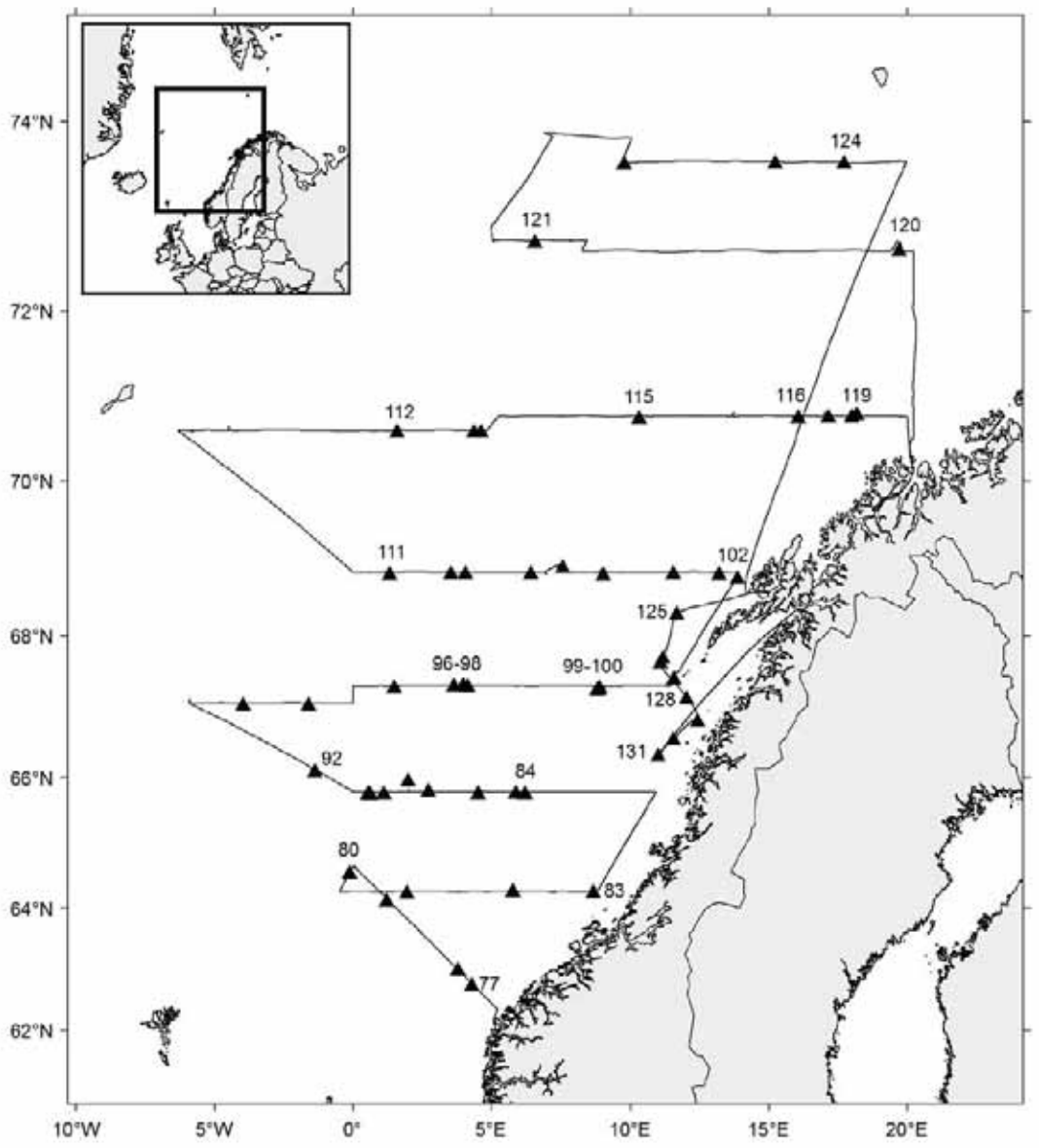
● Multicores stations



Cruise no 2014107 "G.O. Sars"
3–31 May 2014

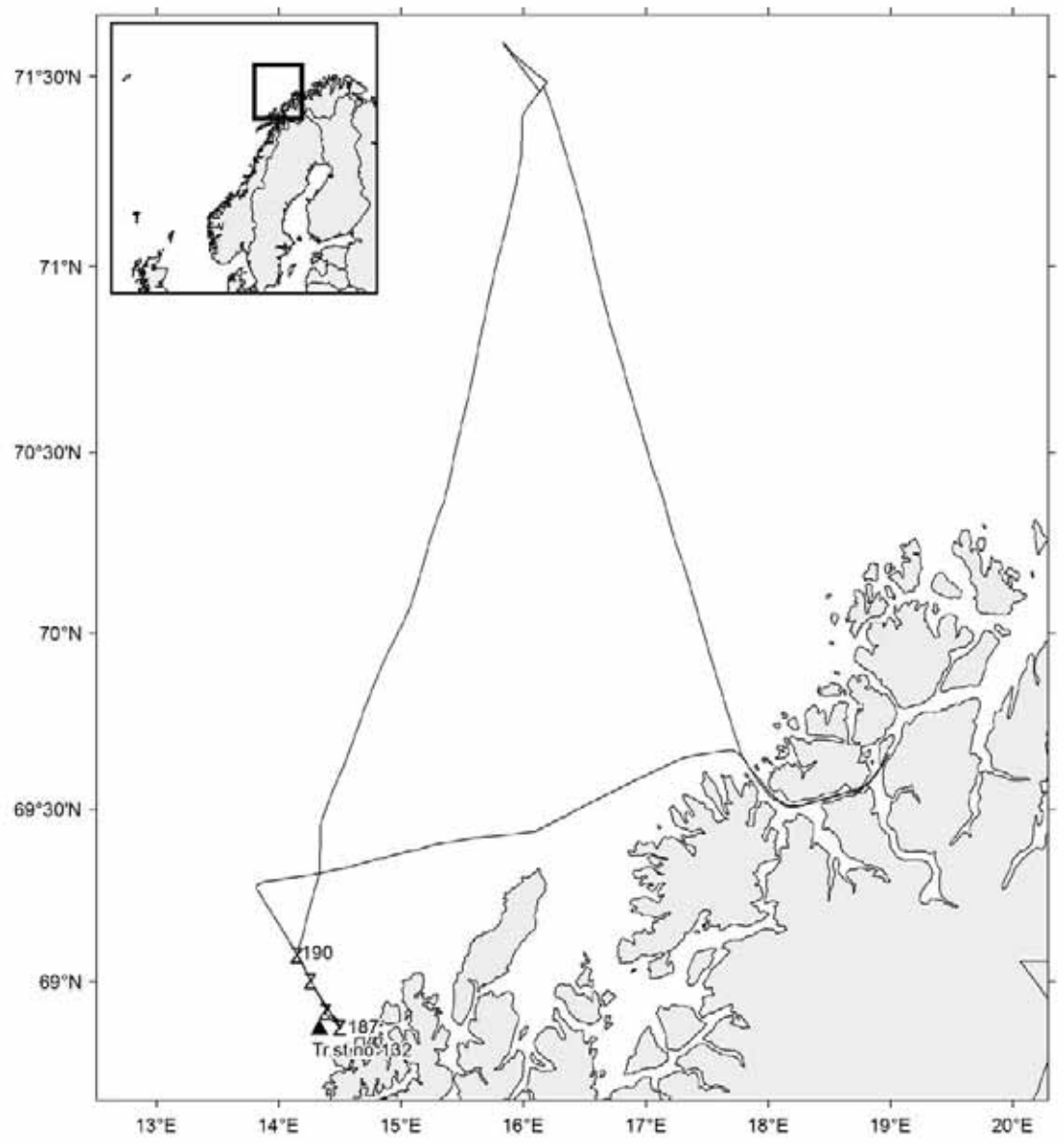
z CTD st.no 119–186
○ Plankton st. (WP-II-net)
♦ Plankton st. (Mocness)
● Mik st.

Standard section Svinøy NW st.no 119–135



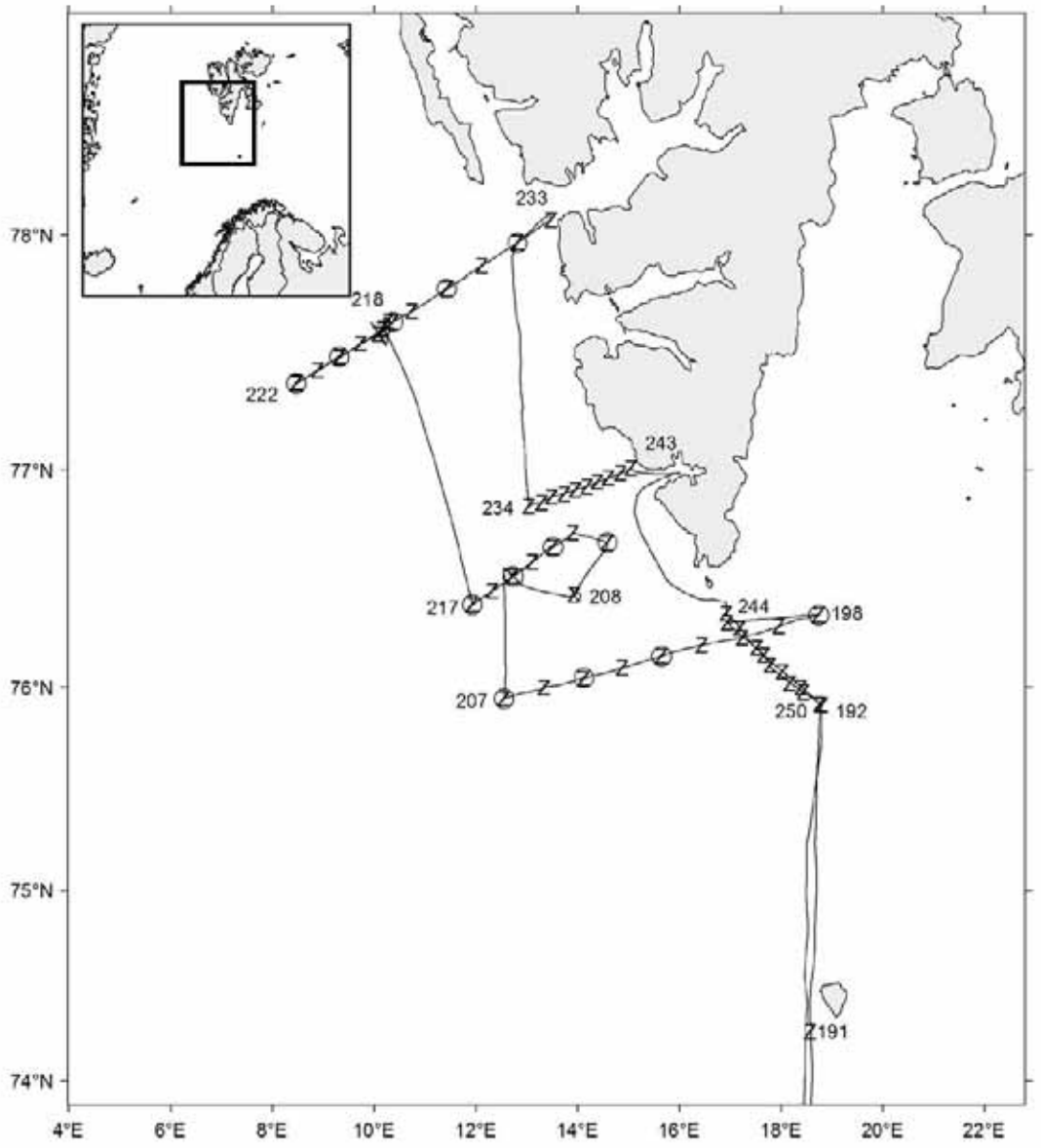
Cruise no 2014107 "G.O. Sars"
3–31 May 2014

▲Pelagic trawl st.no 77-131



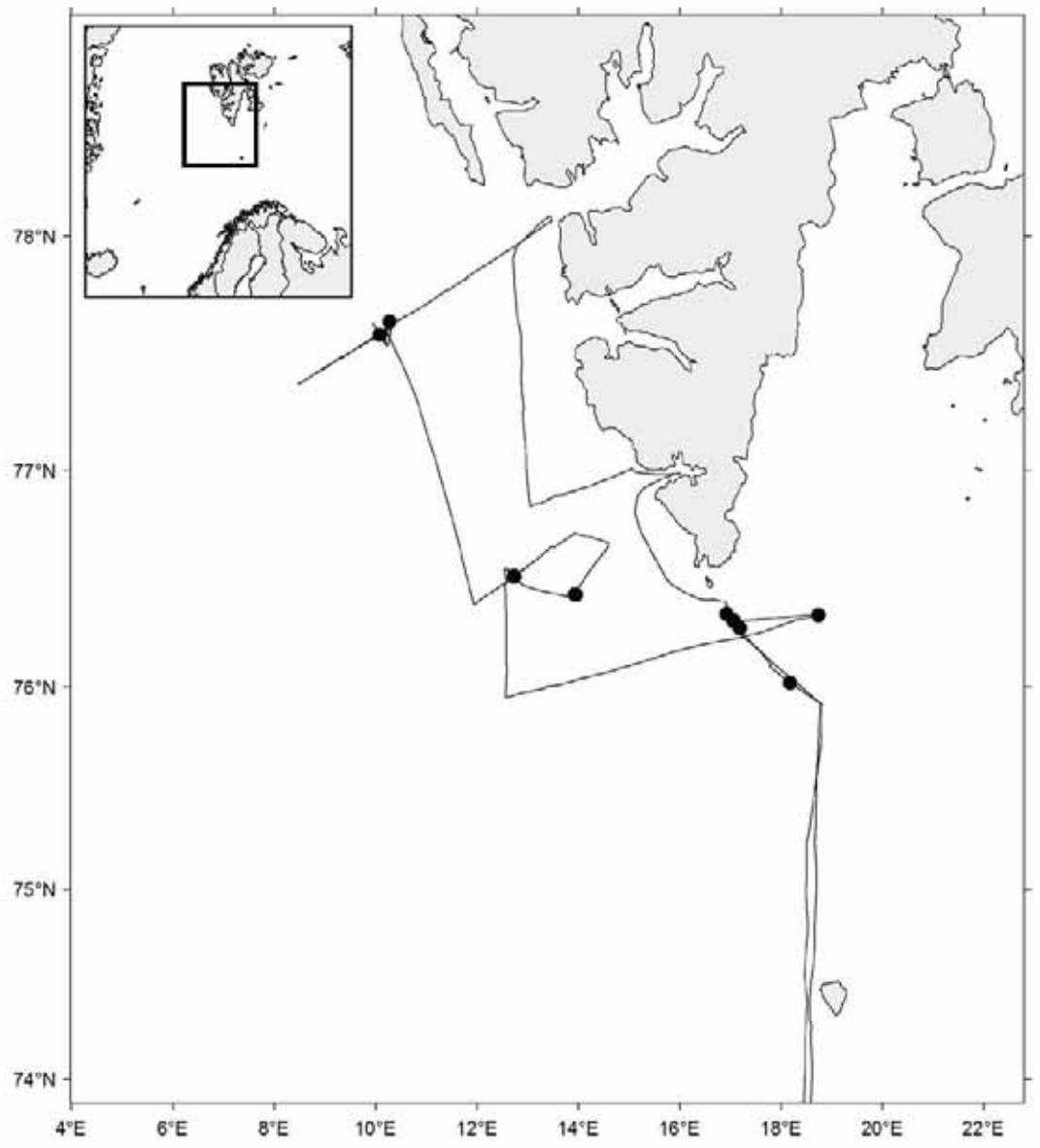
Cruise no 2014108 "G.O.Sars"
1–4 June 2014

z CTD st.no 187–190
▲ Pelagic trawl st.no 132



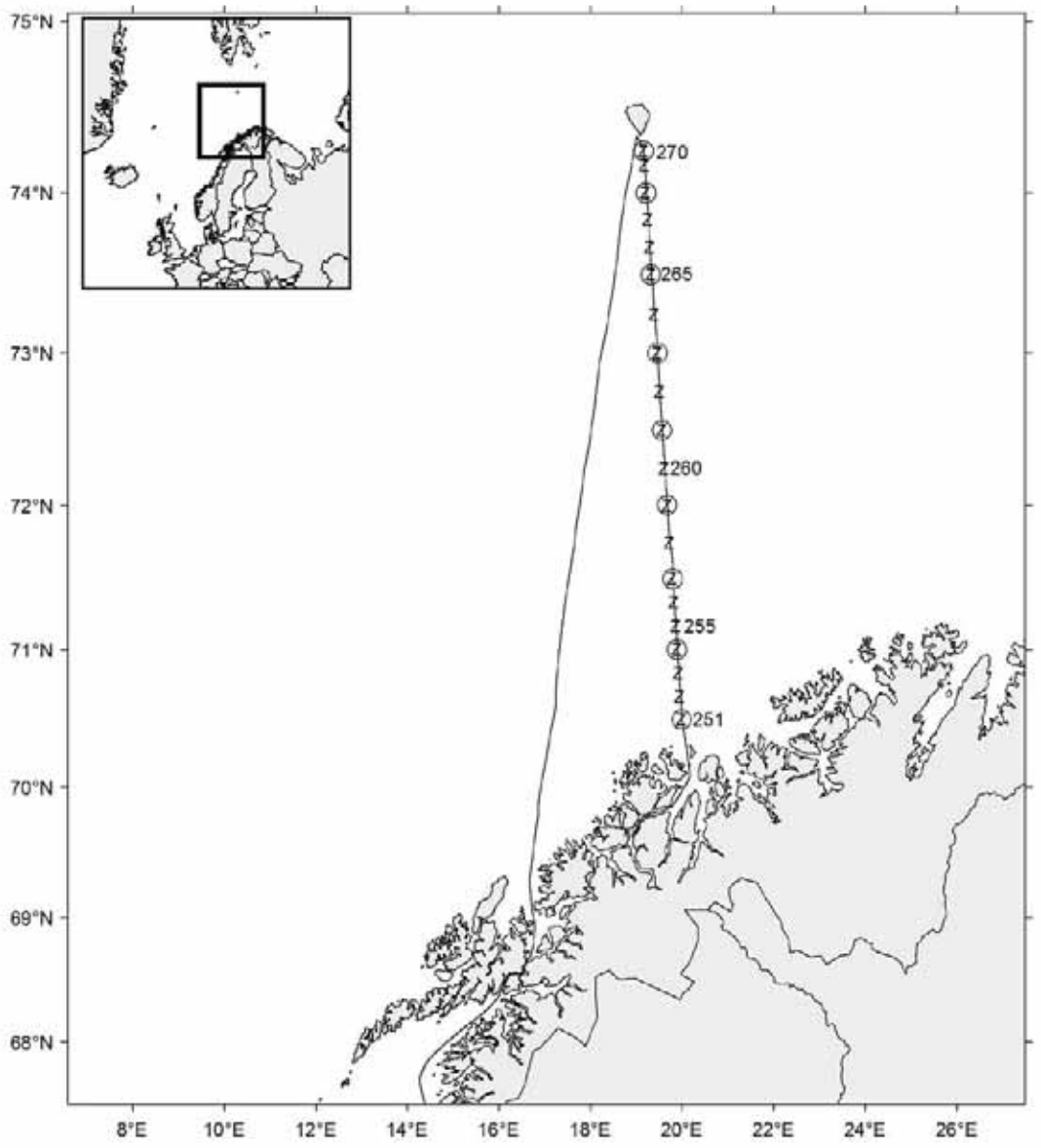
Cruise no 2014109 "G.O.Sars"
5–15 June 2014

z CTD st.no 191–250
○ Plankton st. (WP-II-net)



Cruise no 2014109 "G.O.Sars"
5–15 June 2014

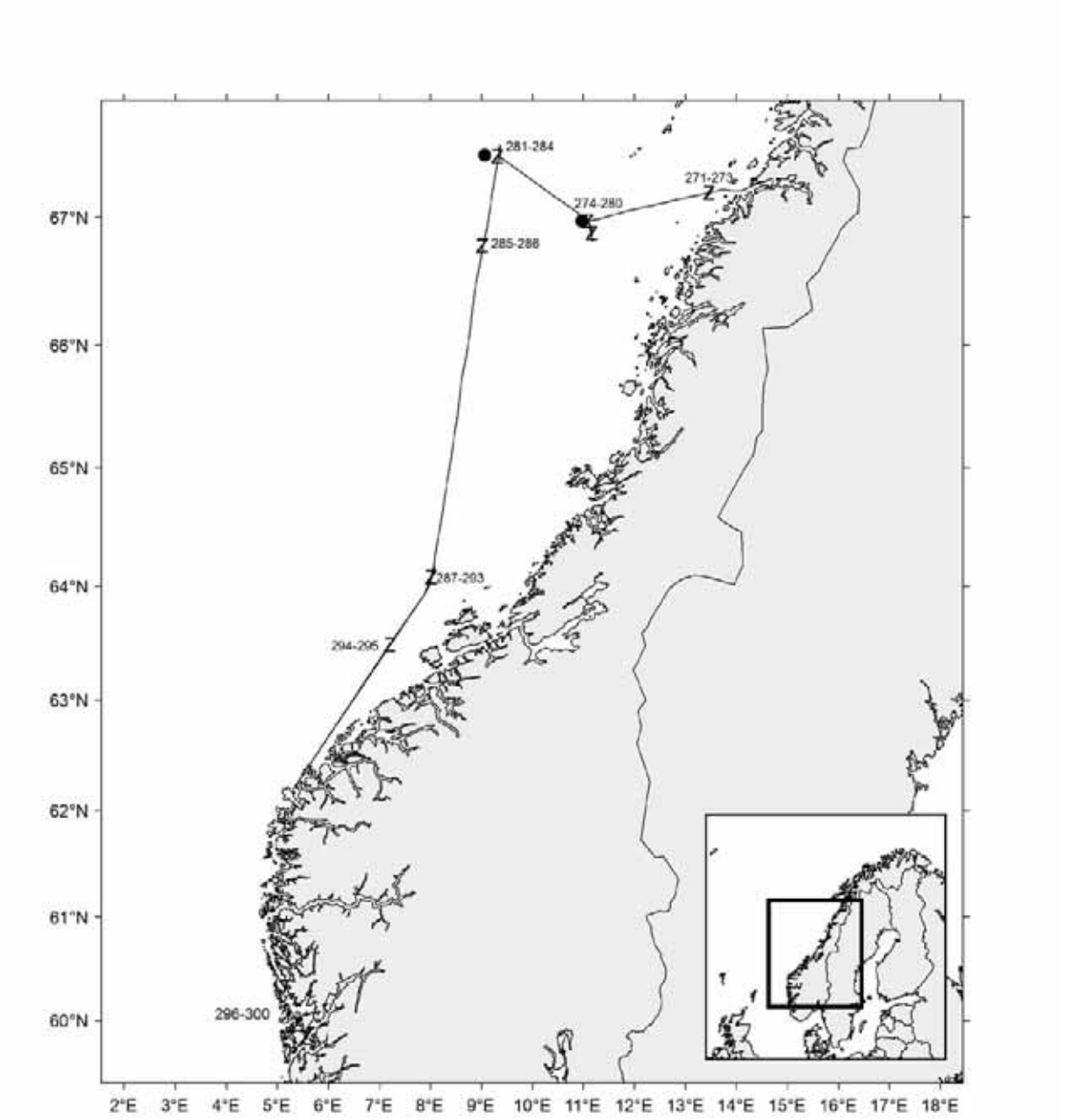
● Mik st.



Cruise no 2014110 "G.O.Sars"
17–21 June 2014

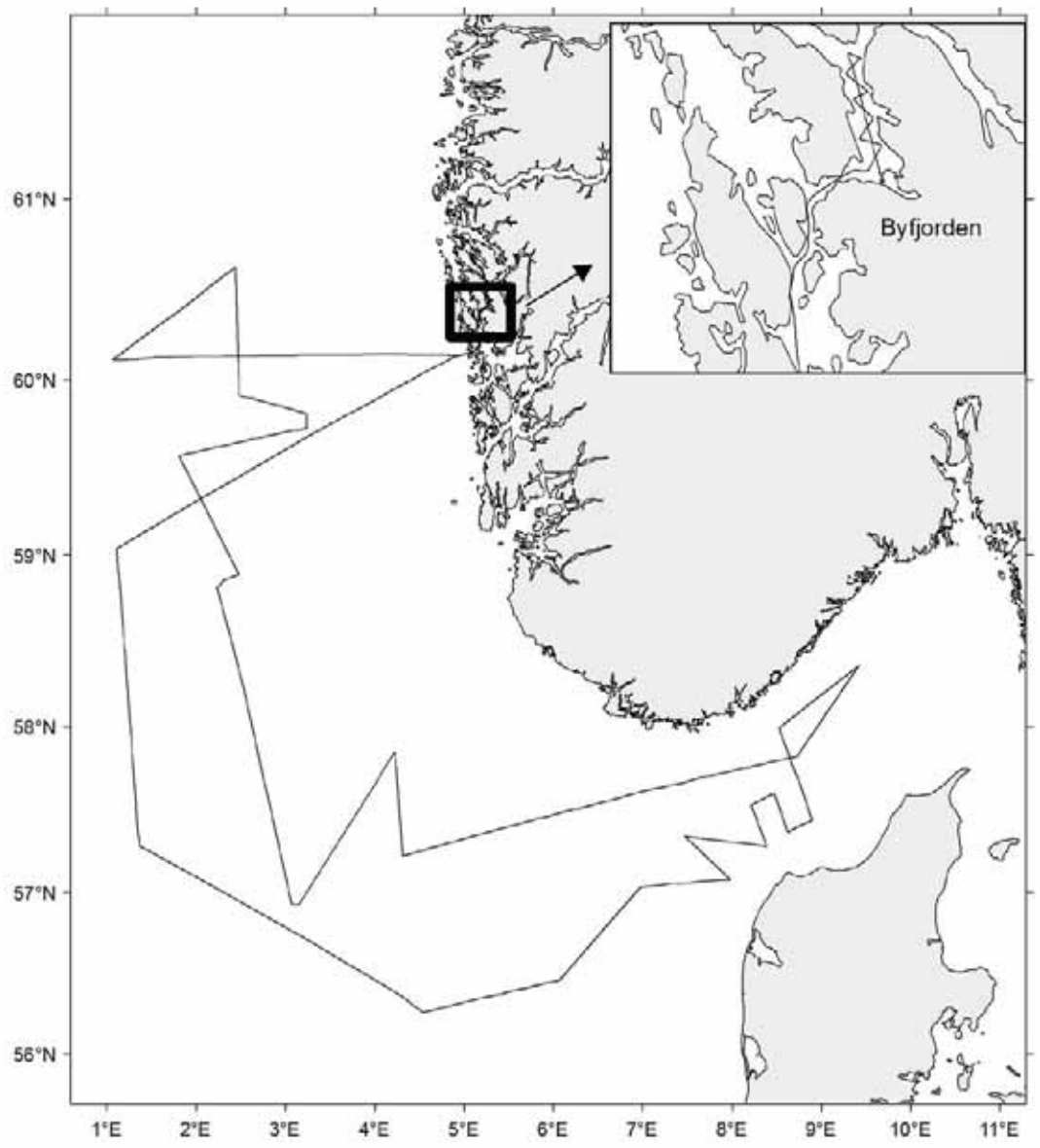
z CTD st.no 251–270
○Plankton st. (WP-II-net)

Standard section Fugløya–Bjørnøya st.no 251–270

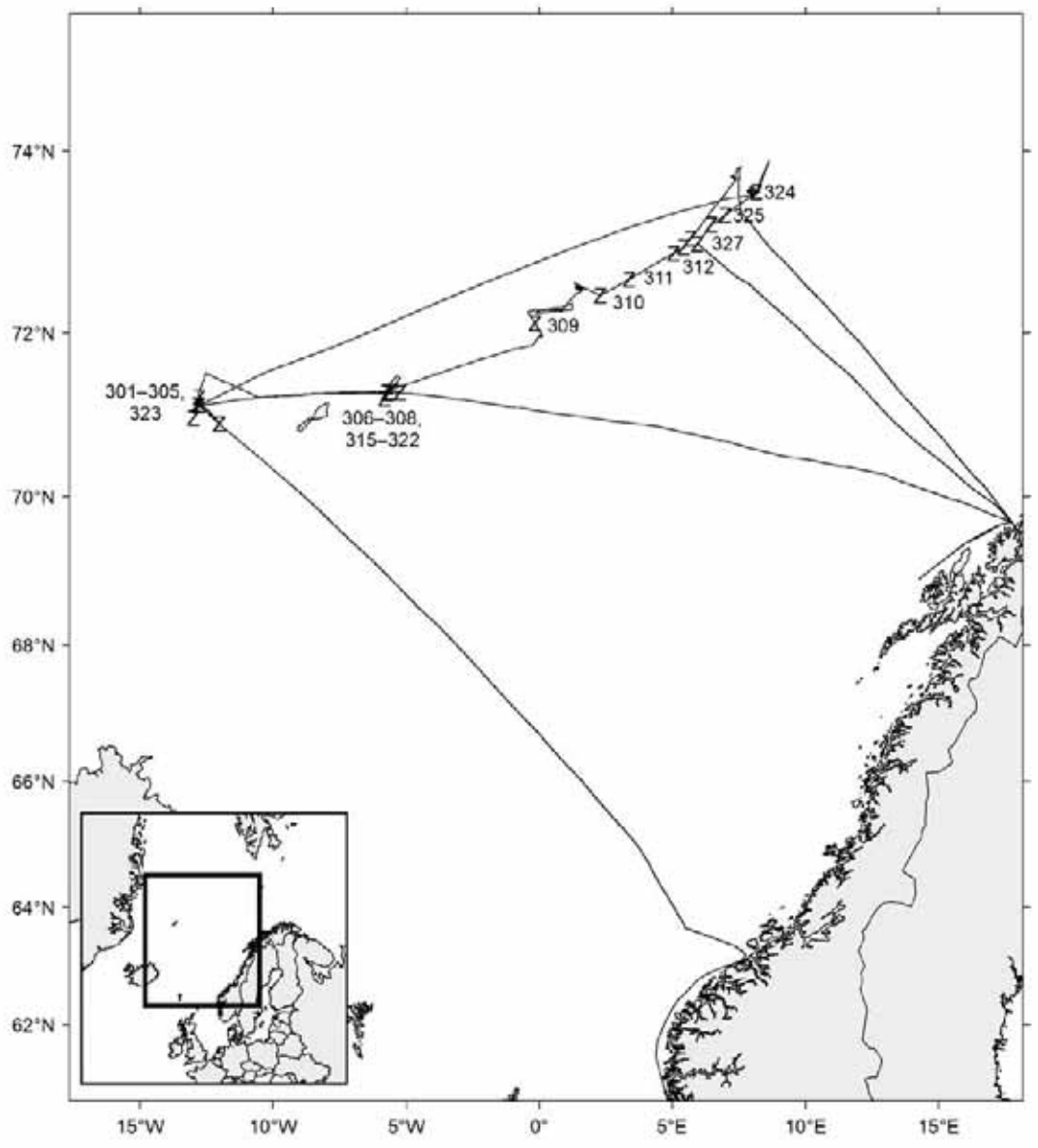


Cruise no 2014111 "G.O.Sars"
21–28 June 2014

z CTD st.no 271-300
• Grab stations

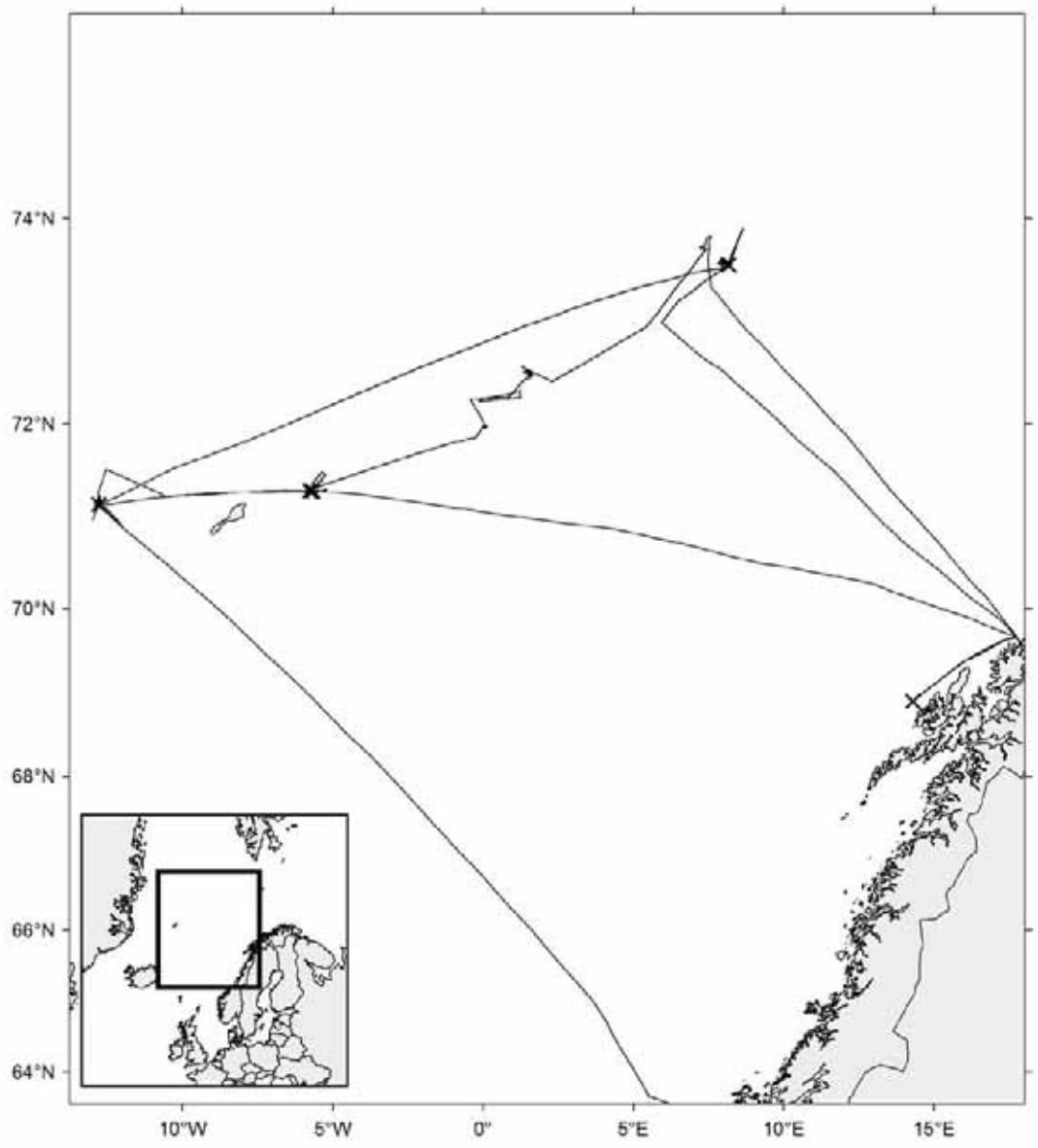


Cruise no 2014113 "G.O.Sars"
8–14 July 2014
——— Cruise track
The main objective of the cruise was to provide TOPAS seismic data and sediment cores from Byfjorden and the Eastern North Sea.



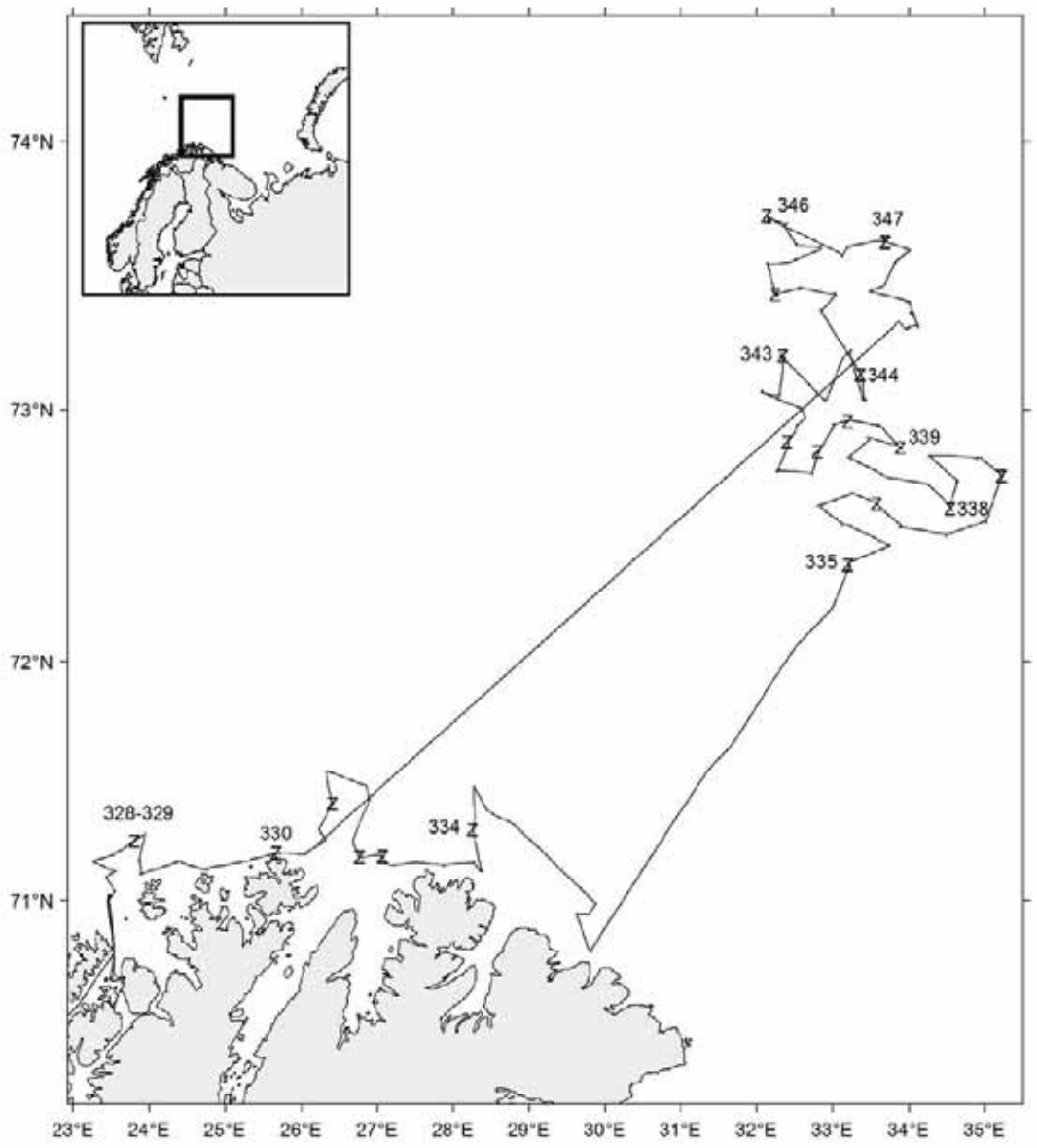
Cruise no 2014114 "G.O.Sars"
16 July–16 August 2014

z CTD st.no 301–327



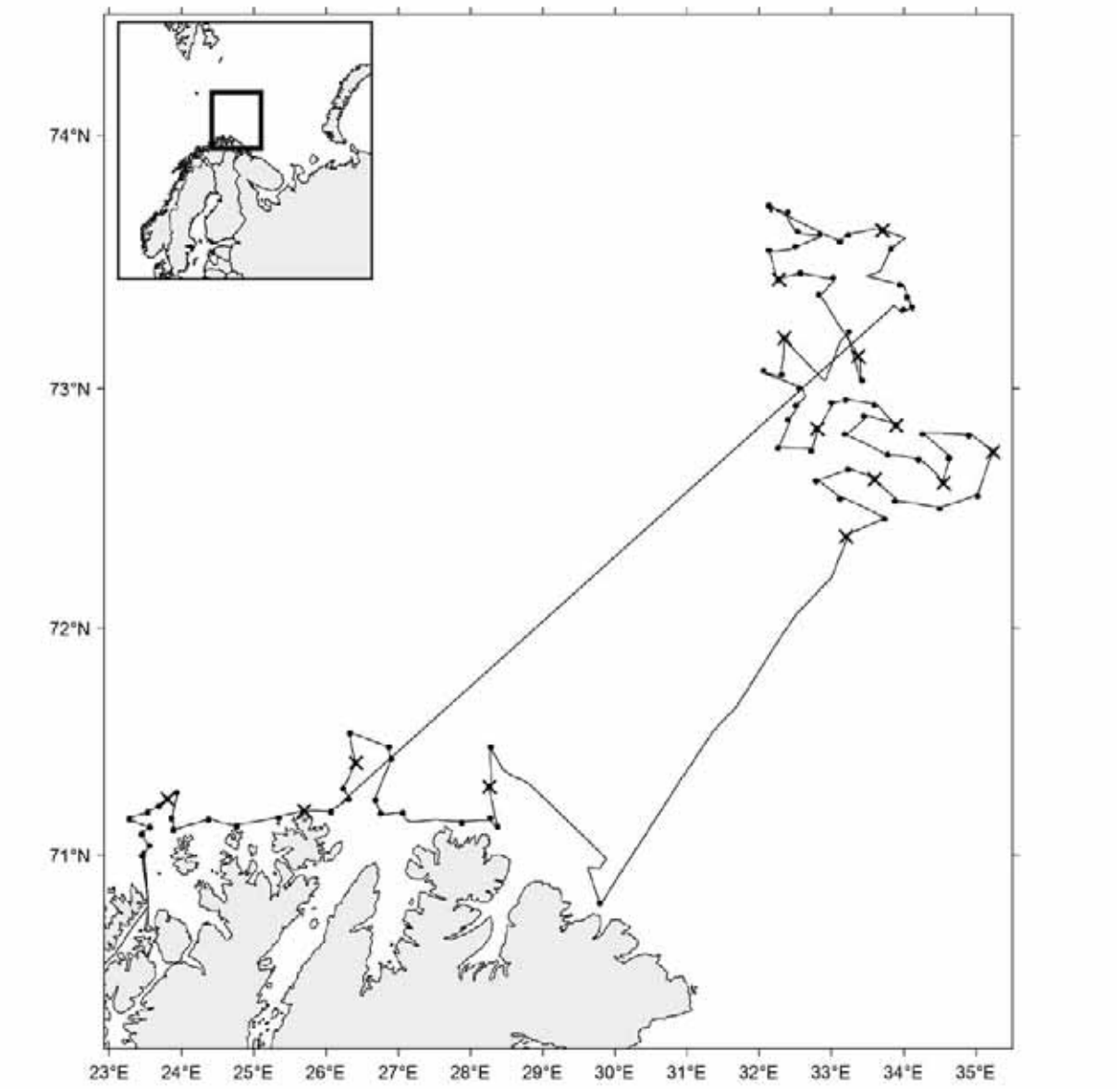
Cruise no 2014114 "G.O.Sars"
16 July–16 August 2014

× ROV stations



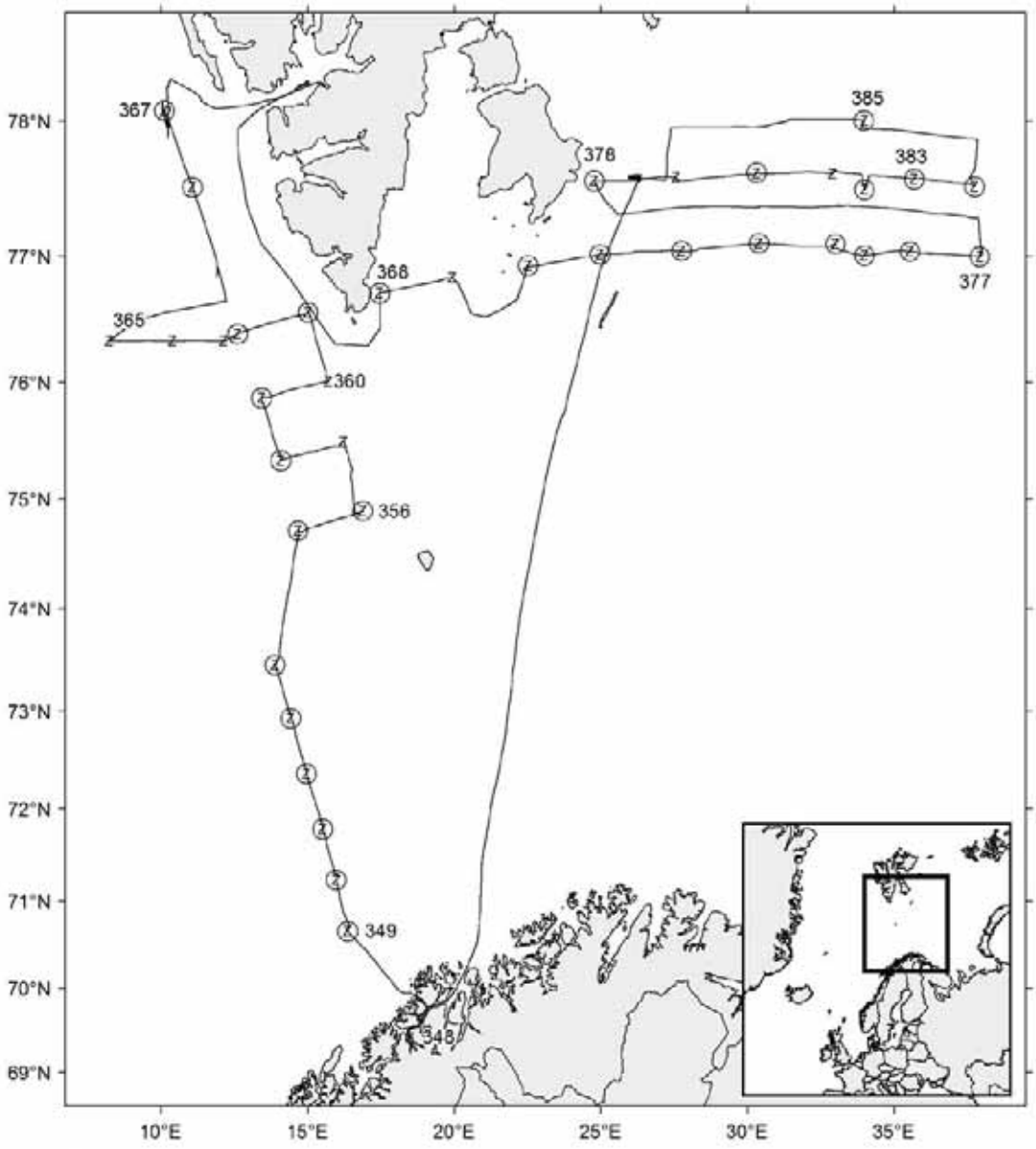
Cruise no 2014115 "G.O.Sars"
18 August–4 September 2014

z CTD st.no 328–347



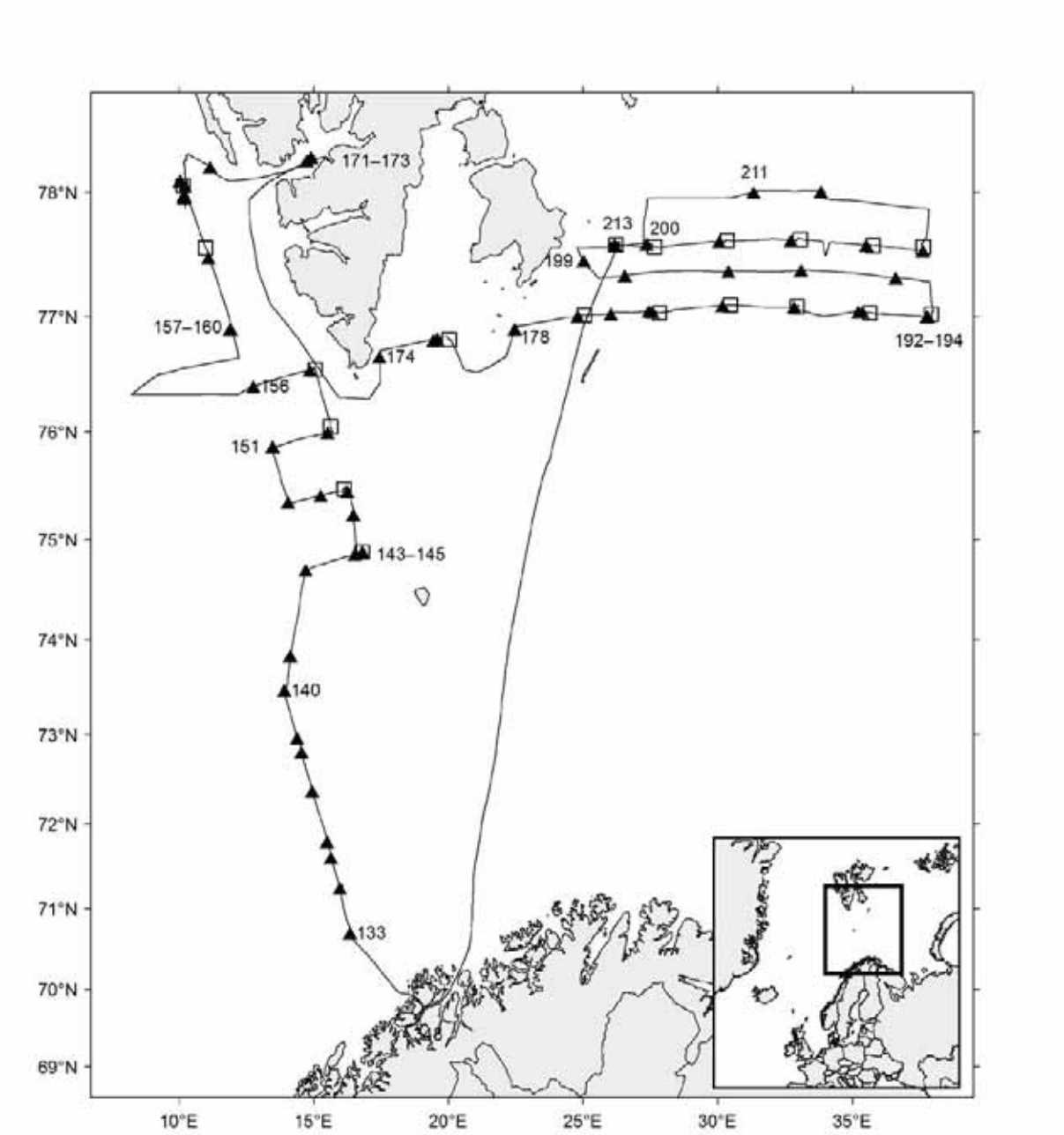
Cruise no 2014115 "G.O.Sars"
18 August–4 September 2014

• Videostations
× Fullstations:
Grab, Boxcorer, Multicorer, Beamtrawl, Epibenthic sledge.
(As many as possible depending of sea floor quality)



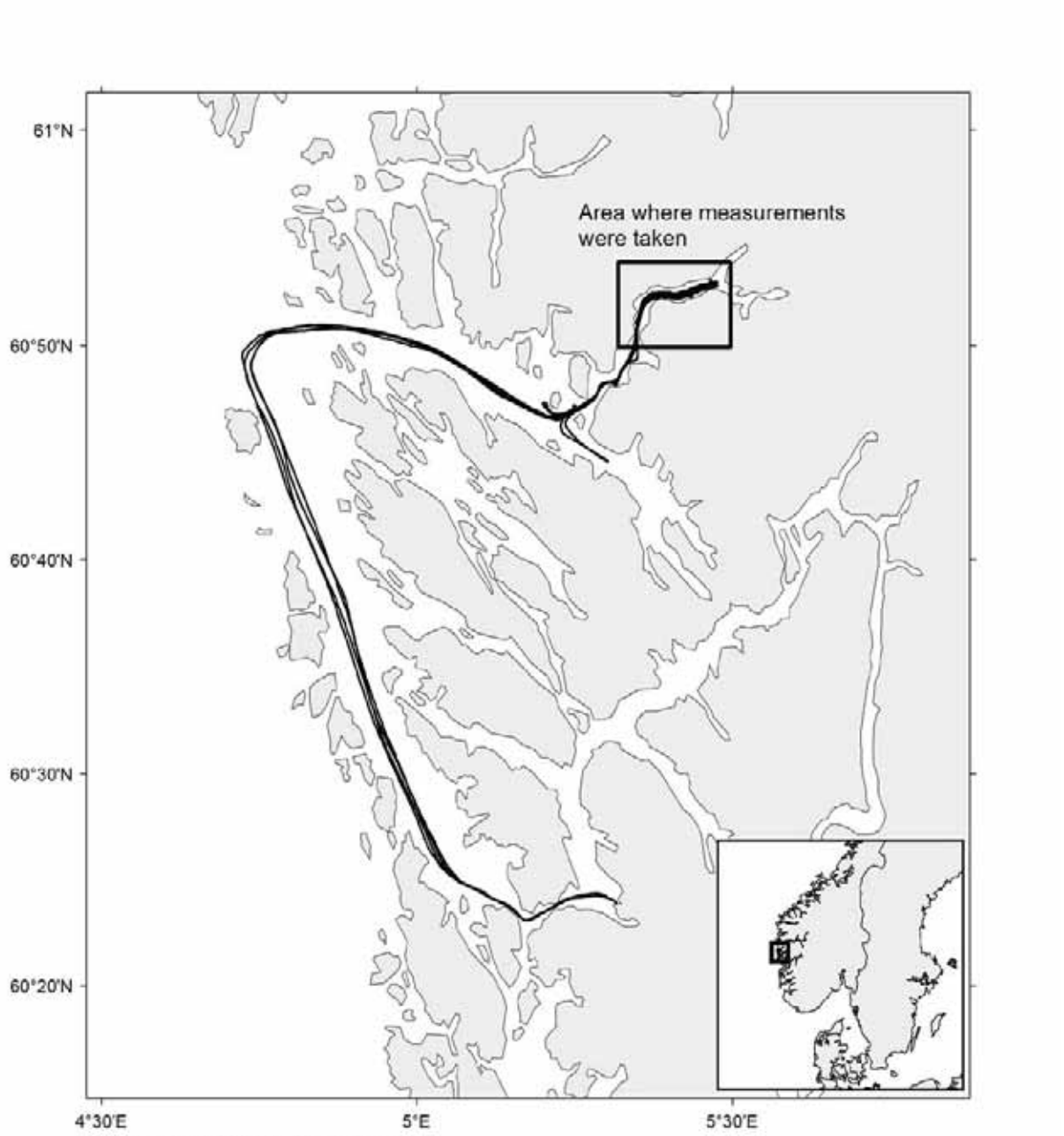
Cruise no 2014116 "G.O.Sars"
5–24 September 2014

z CTD st.no 348–385
○ Plankton st. (WP-II-net)

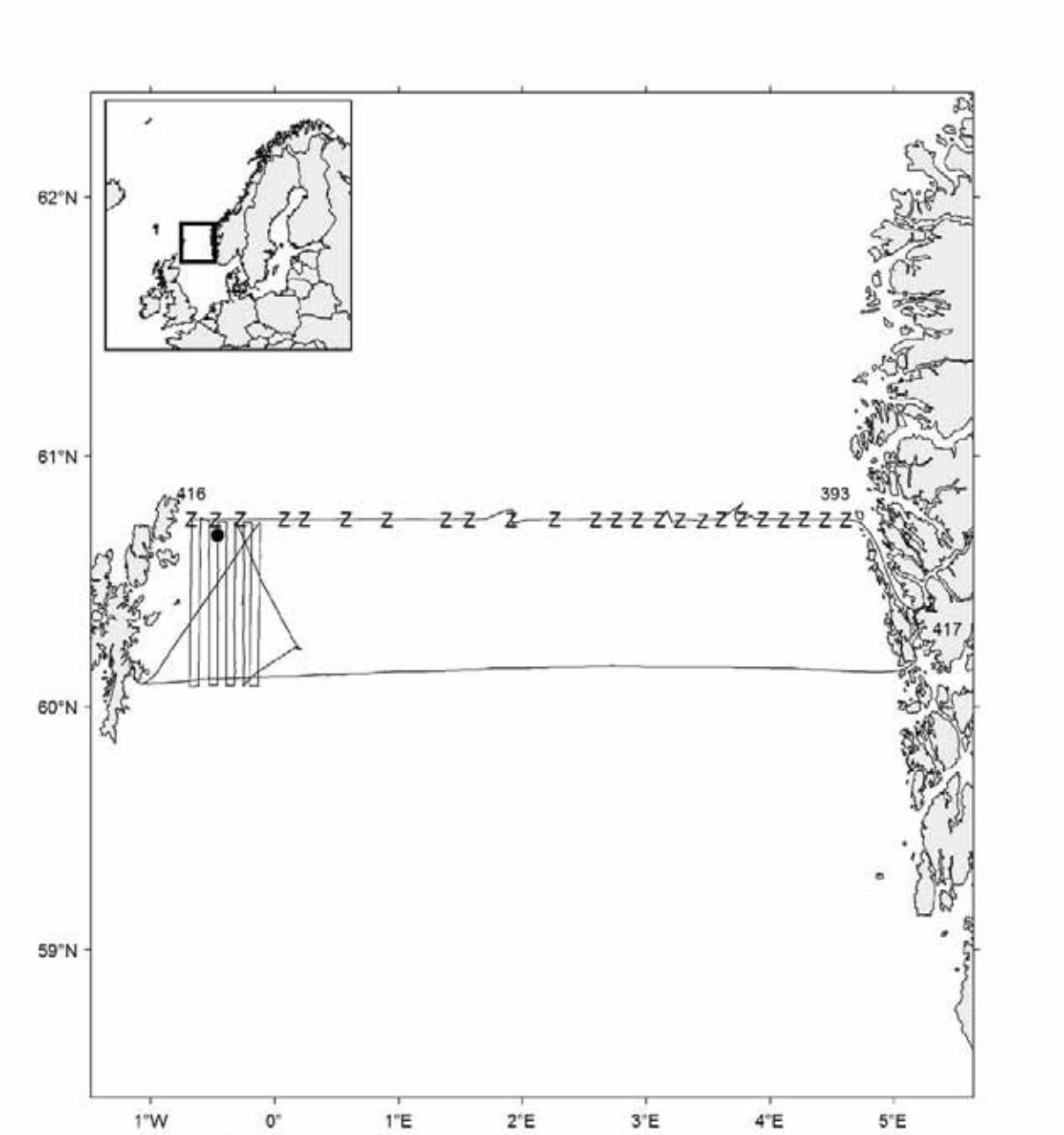


Cruise no 2014116 "G.O.Sars"
5–24 September 2014

Trawl st.no 133–213
▲ Pelagic trawl
□ Bottom trawl

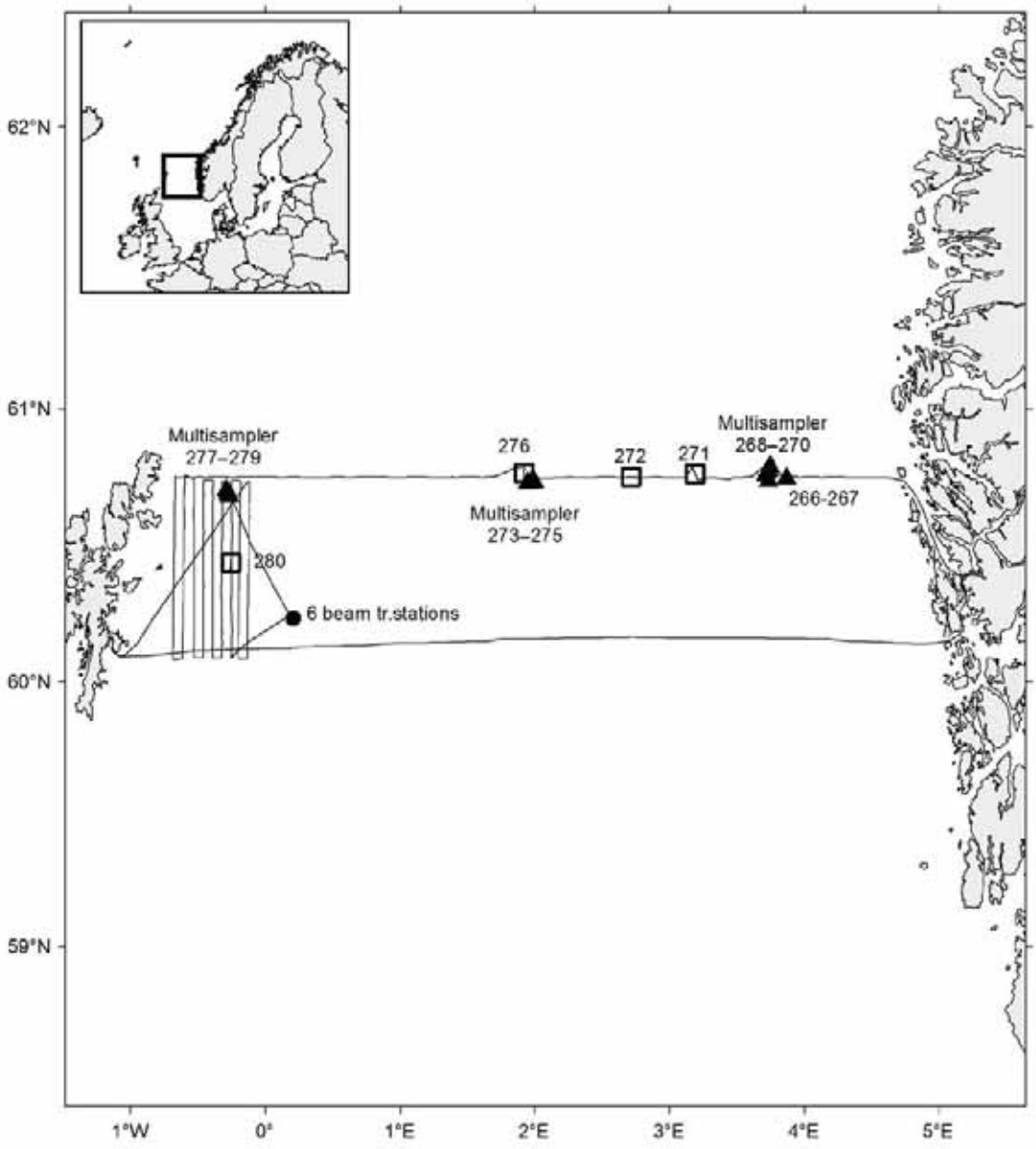


Cruise no 2014117 "G.O.Sars"
4–12 October 2014
CTD st.no 386–392
Trawl st.no 214–265
(Other sampling gear used: Grab, sledge, multinet)



Cruise no 2014118 "G.O.Sars"
14–20 October 2014

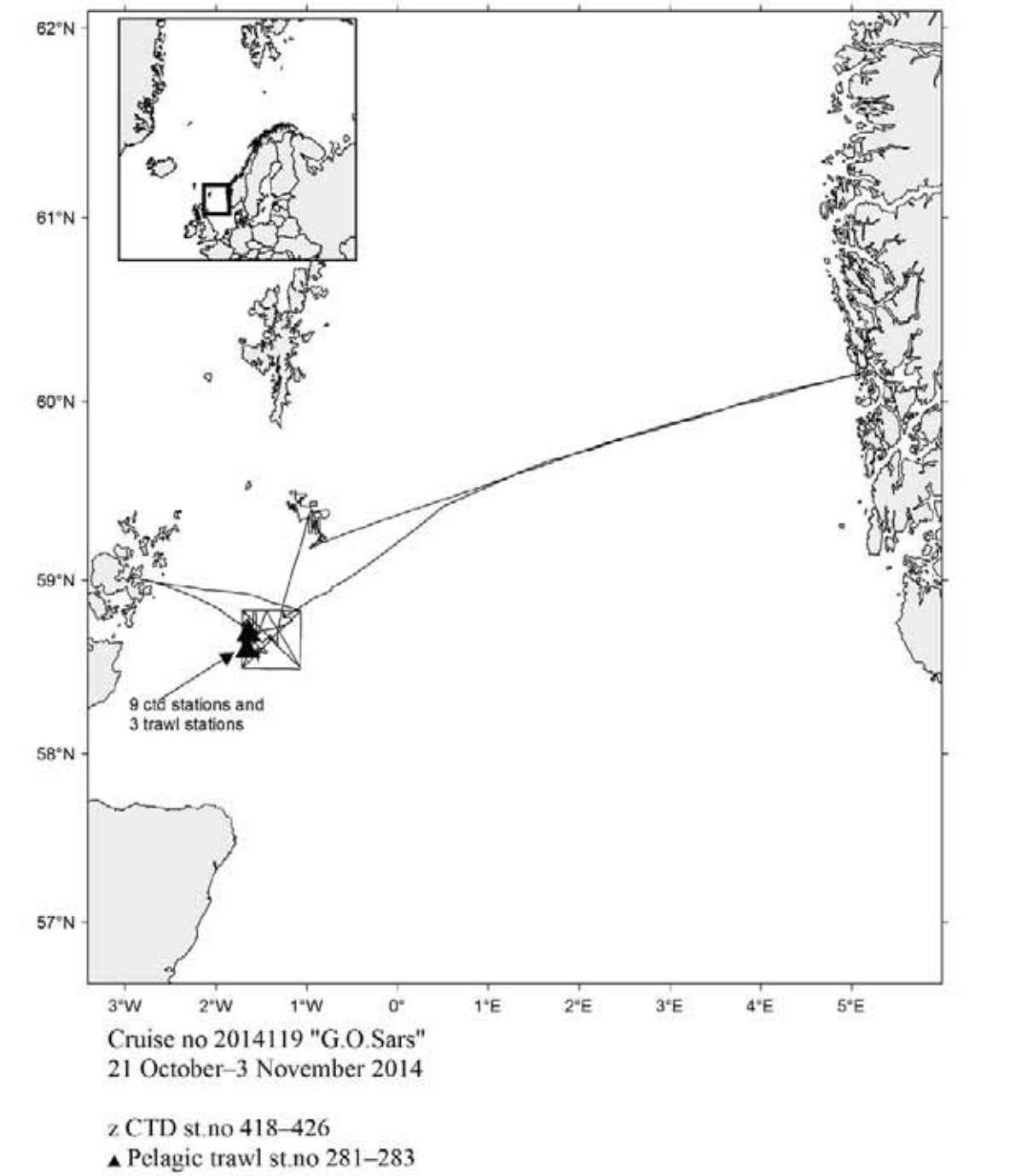
z CTD st.no 393–417
● Mik station
Standard section Fedje–Shetland st.no 393–416



Cruise no 2014118 "G.O.Sars"
14–20 October 2014

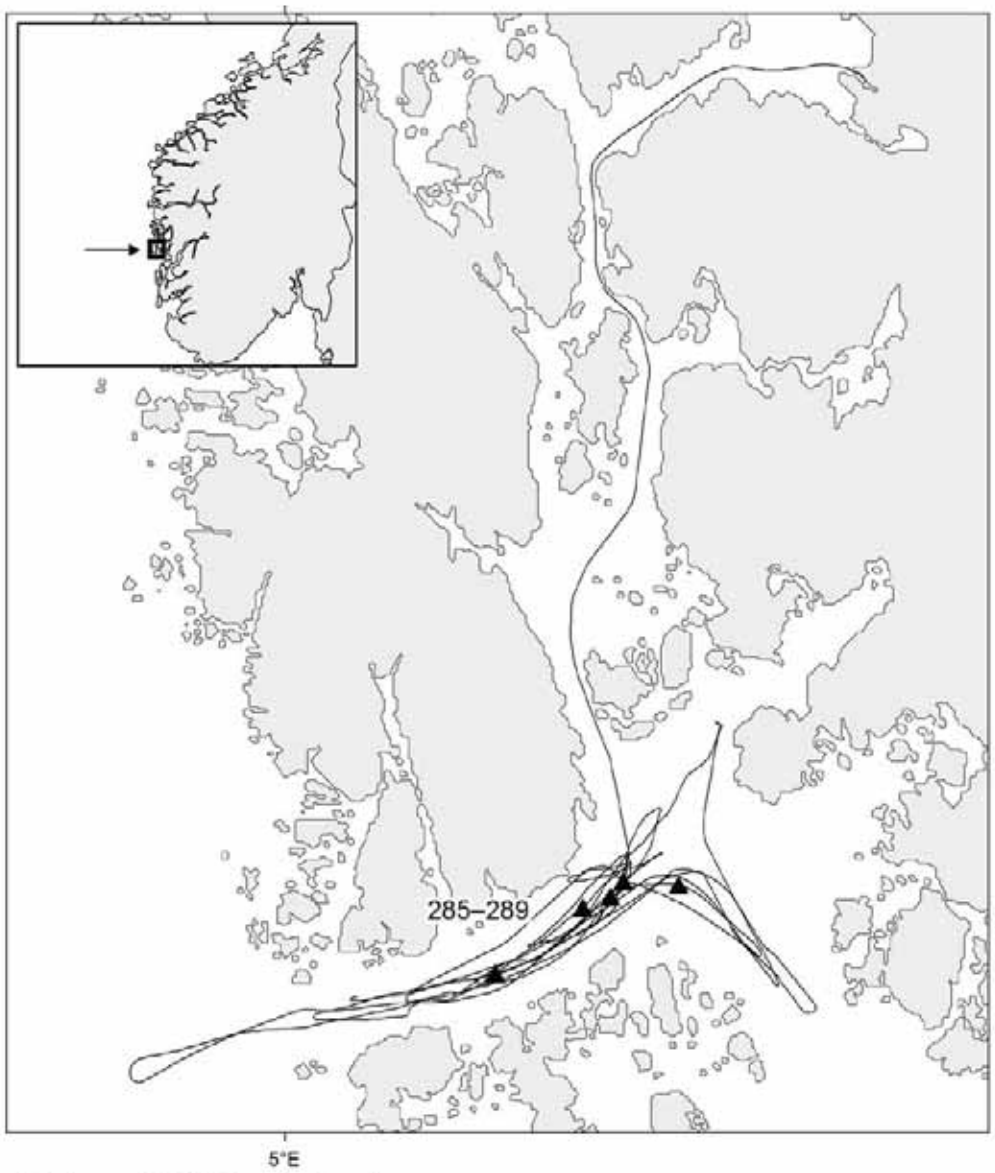
Trawl st.no 266–280

- ▫ Bottom trawl: st.no 271,272,276,280
- ▲ Pelagic trawl: 266-267
- ▲ Pelagic trawl (Multisampler with 3 nets): st.268-270,273-275 and 277-279
- ● Beam trawl



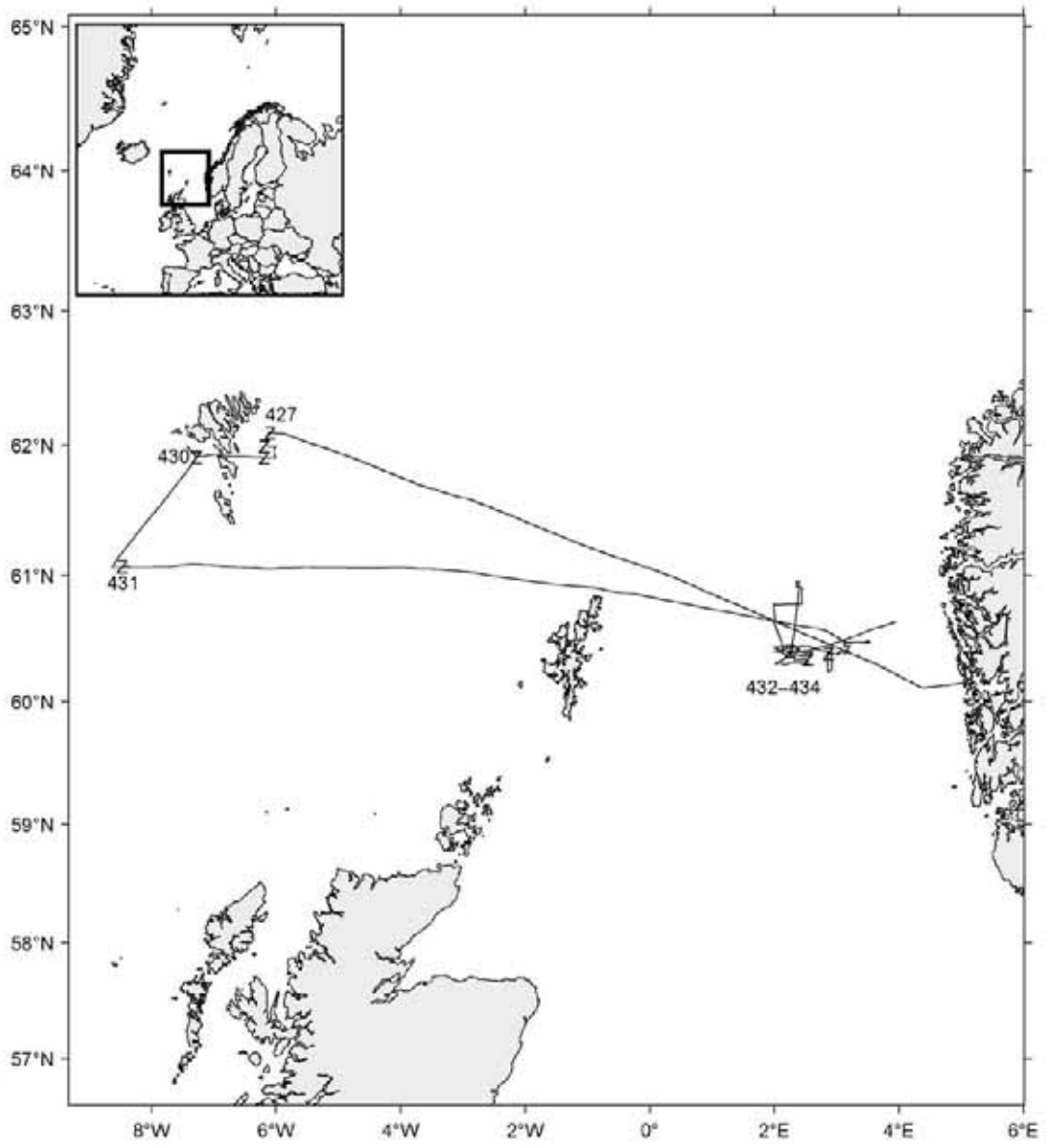
Cruise no 2014119 "G.O.Sars"
21 October–3 November 2014

z CTD st.no 418–426
▲ Pelagic trawl st.no 281–283



Cruise no 2014123 "G.O.Sars"
6–7 November 2014

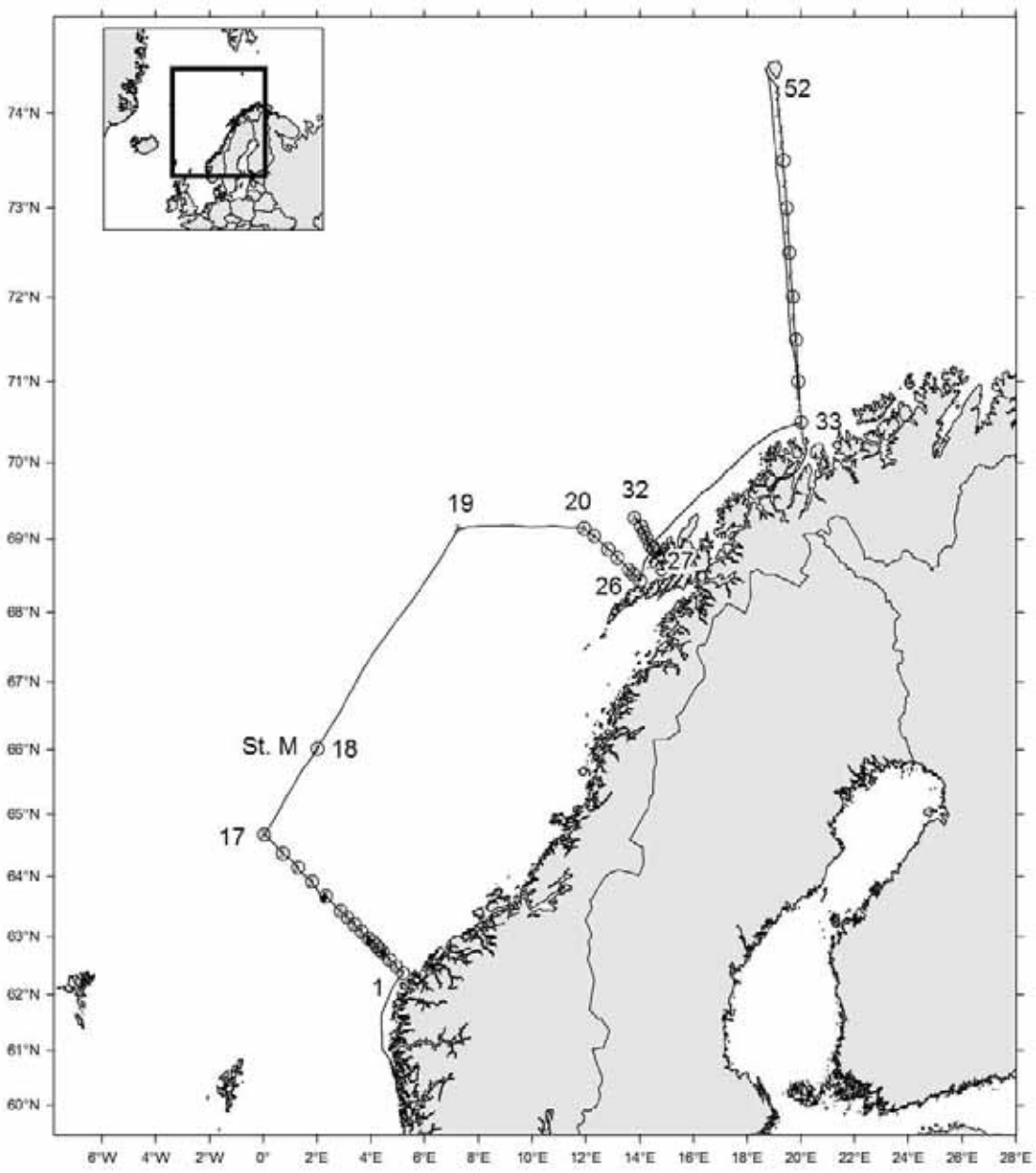
▲Pelagic trawl st.no 285–289



Cruise no 2014121 "G.O.Sars"
8–17 November 2014

z CTD st.no 427–434

4.2 Johan Hjort

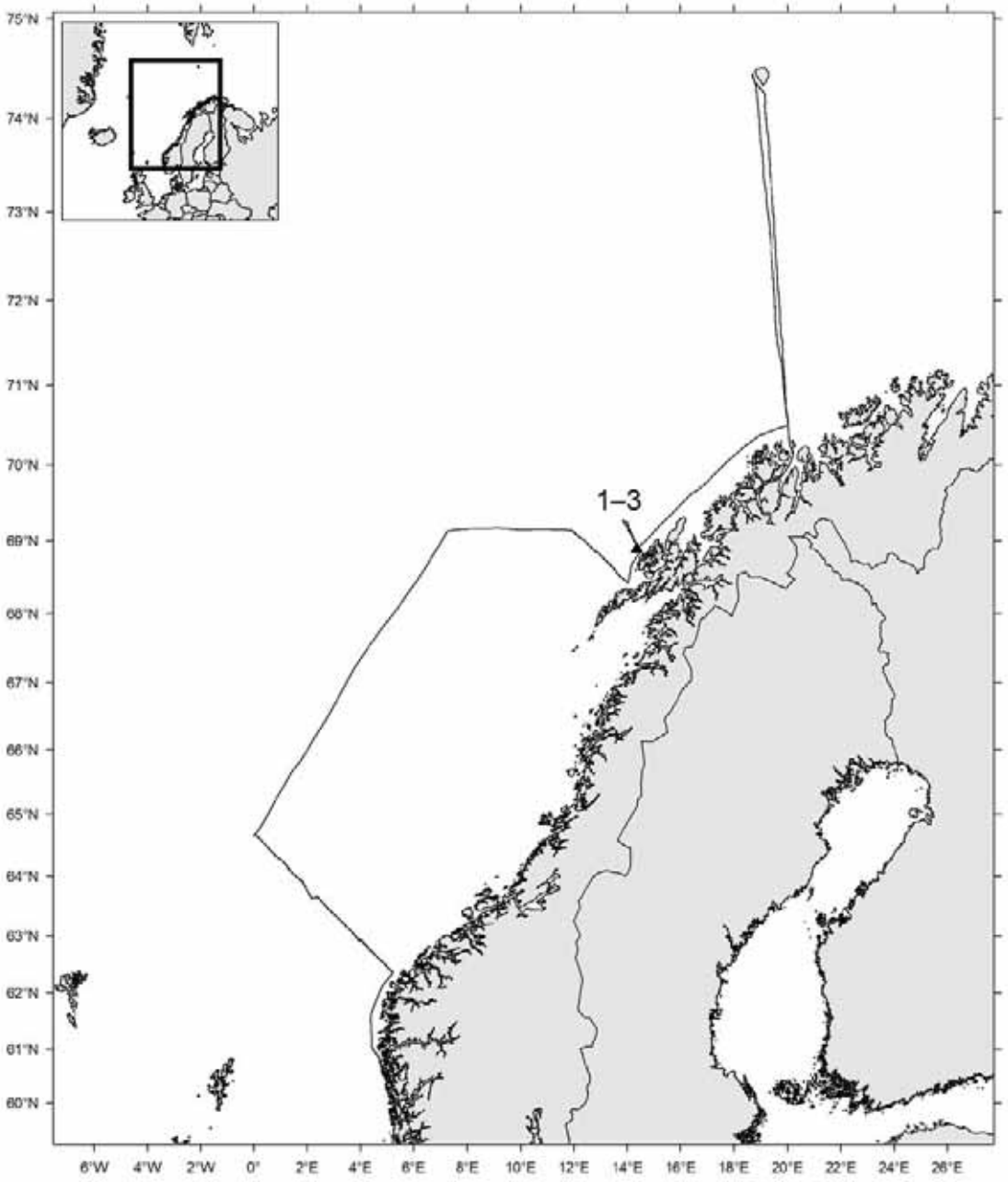


Cruise no 2014201
"Johan Hjort"
18–28 January 2014

z CTD st.no 1–52

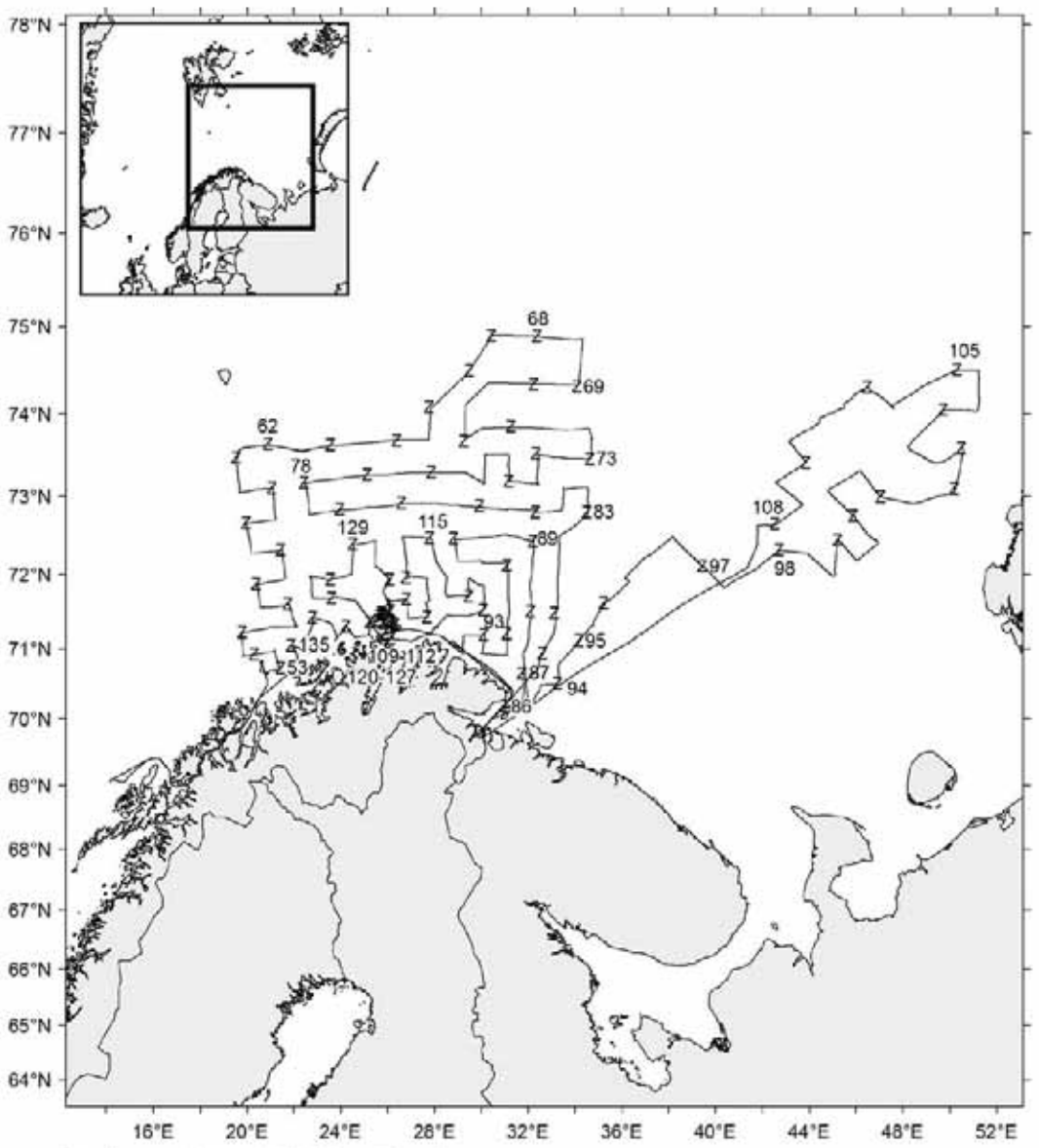
Standard sections:
Svinøy-NW st.no 1–17
Gimsøy-NW (partly) st.no20–26
Fugløya–Bjørnøya st.no 33–52

St.M st.no18
Project LoVe st.no27–32



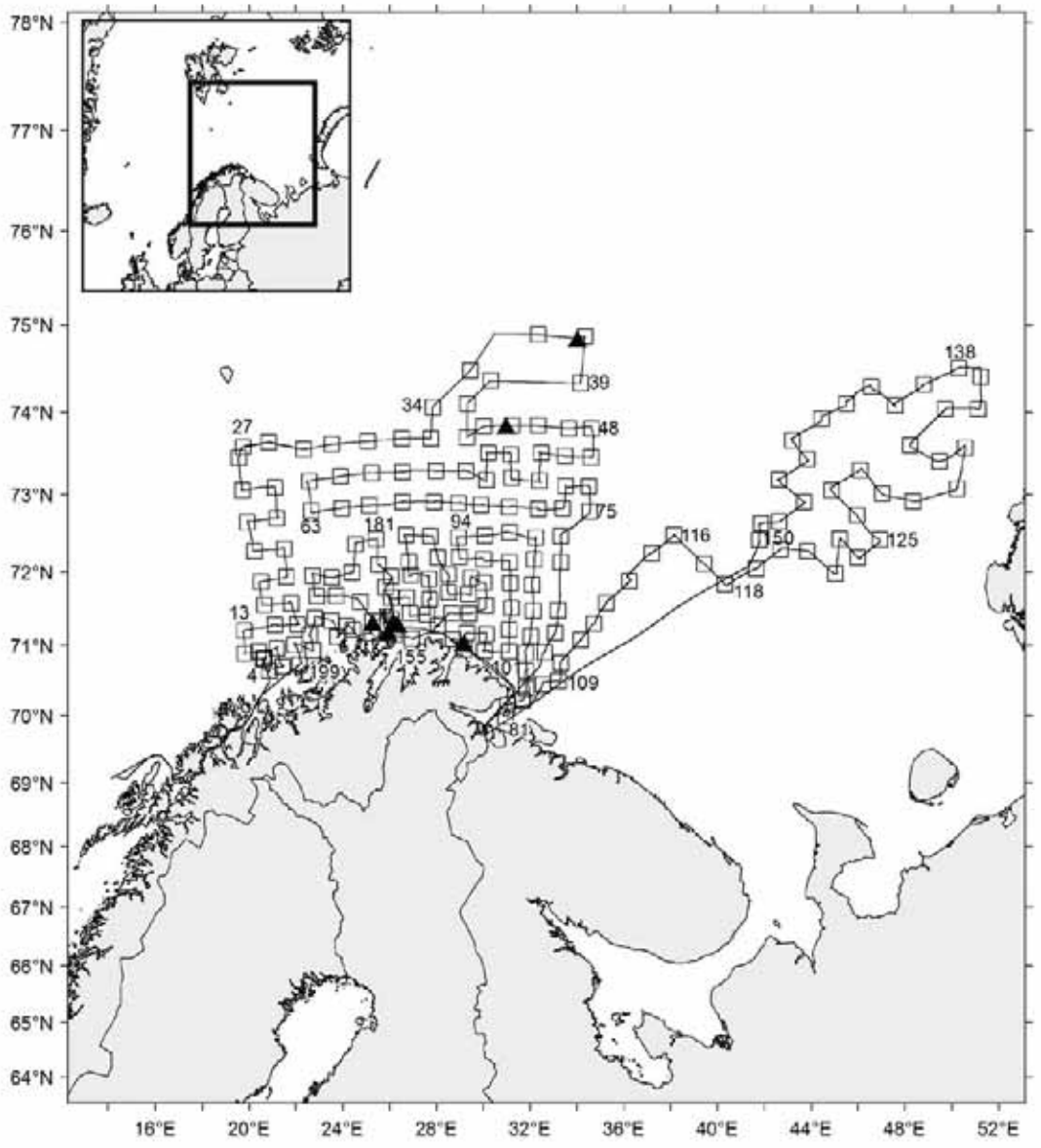
Cruise no 2014201
"Johan Hjort"
18–28 January 2014

▲ Trawl(krill trawl and Åkra trawl)
st.no 1–3. LoVe projekt



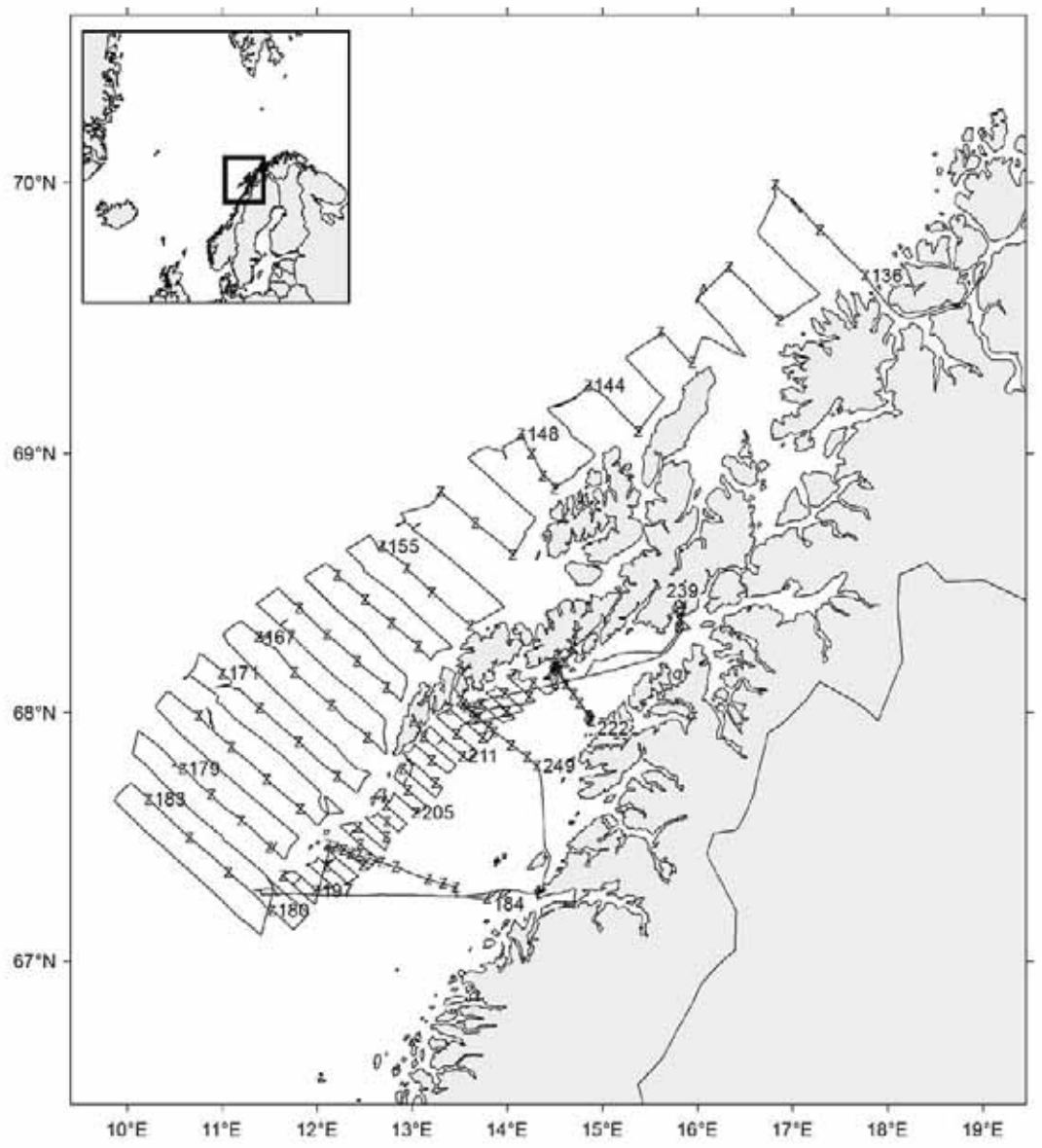
Cruise no 2014202 "Johan Hjort"
31 January–9 March 2014

z CTD st.no 53–135



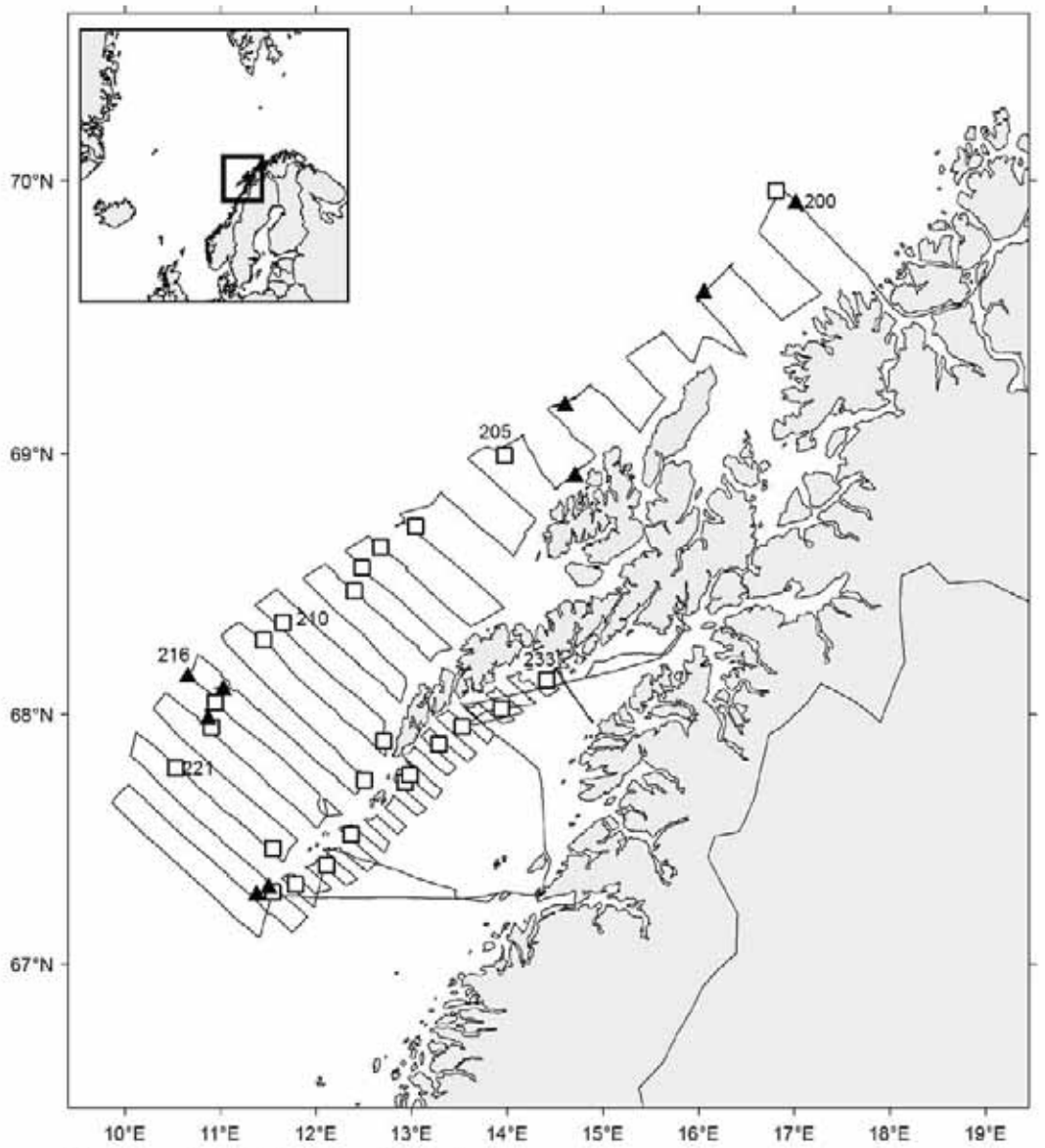
Cruise no 2014202 "Johan Hjort"
31 January–9 March 2014

Trawl st.no 4–199
□ Bottom trawl
▲ Pelagic trawl



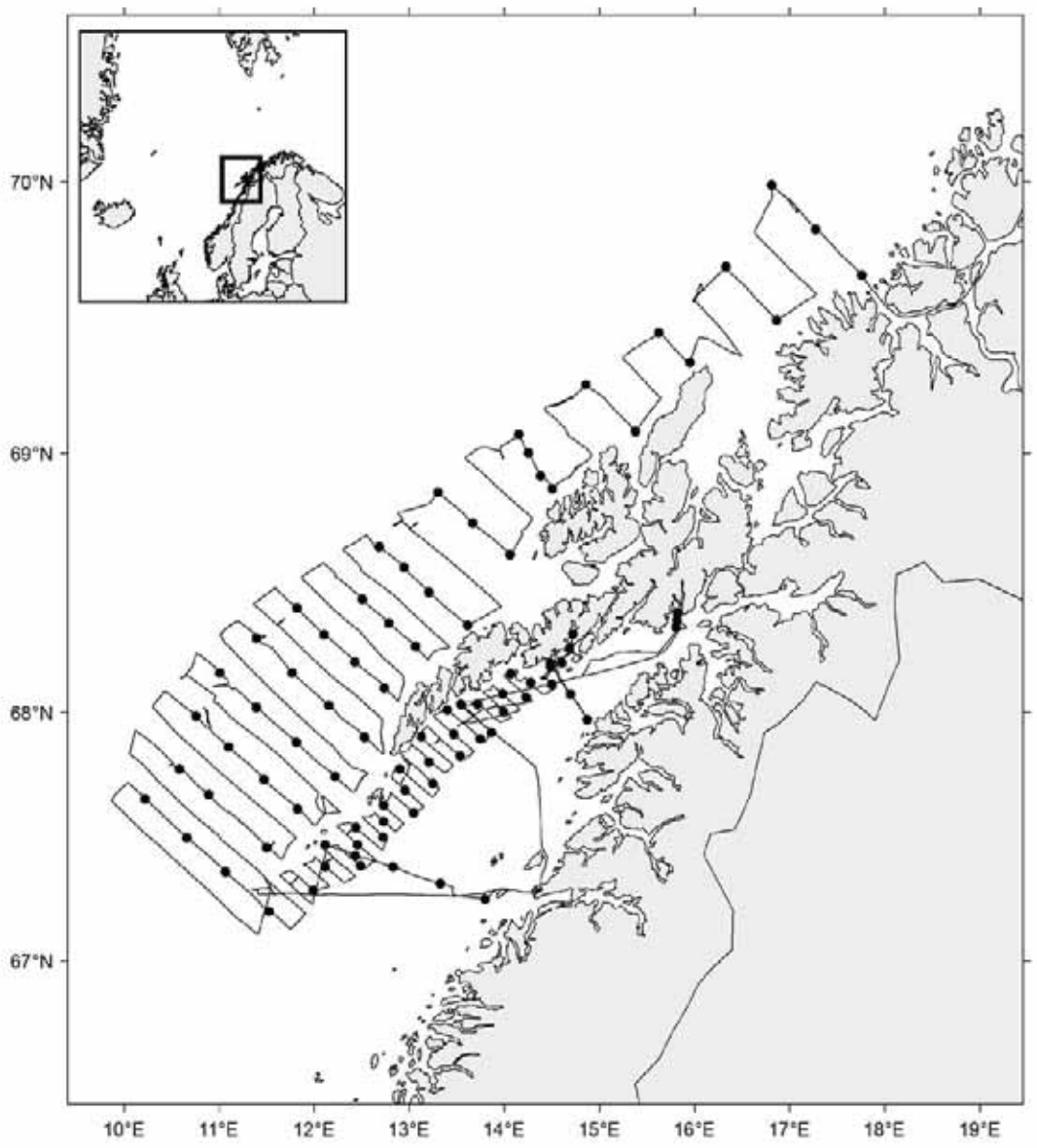
Cruise no 2014203 "Johan Hjort"
17–31 March 2014

z CTD st.no 136–249.
Standard sections:
Tennholmen–Røst st.no 184–195
Ballstad–Måløy/Skarholmen st.no 240-249
Kabelvåg–Steigen st.no 222–232



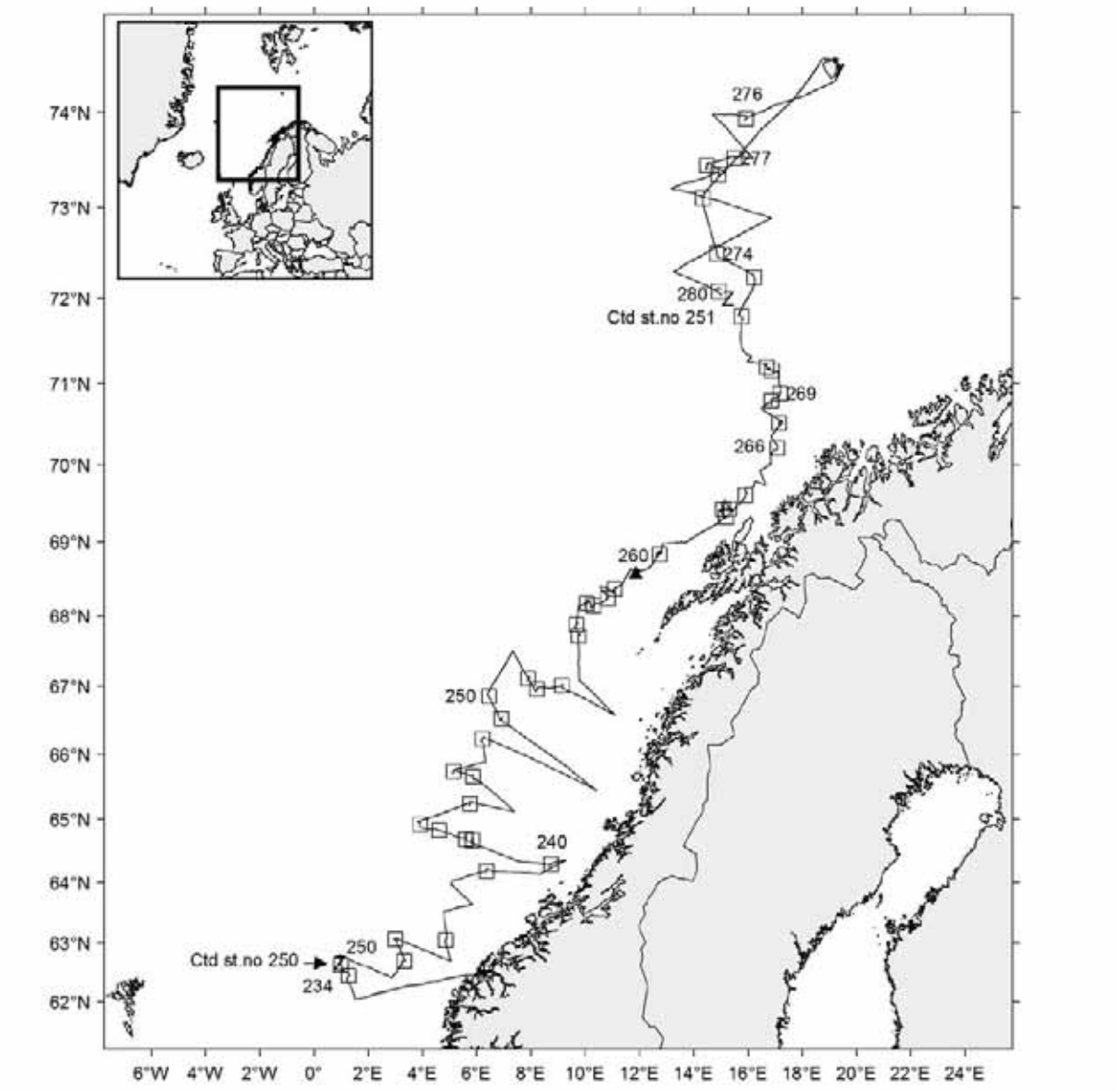
Cruise no 2014203 "Johan Hjort"
17–31 March 2014

Trawl st.no 200–233
▲ Pelagic trawl
□ Bottom trawl



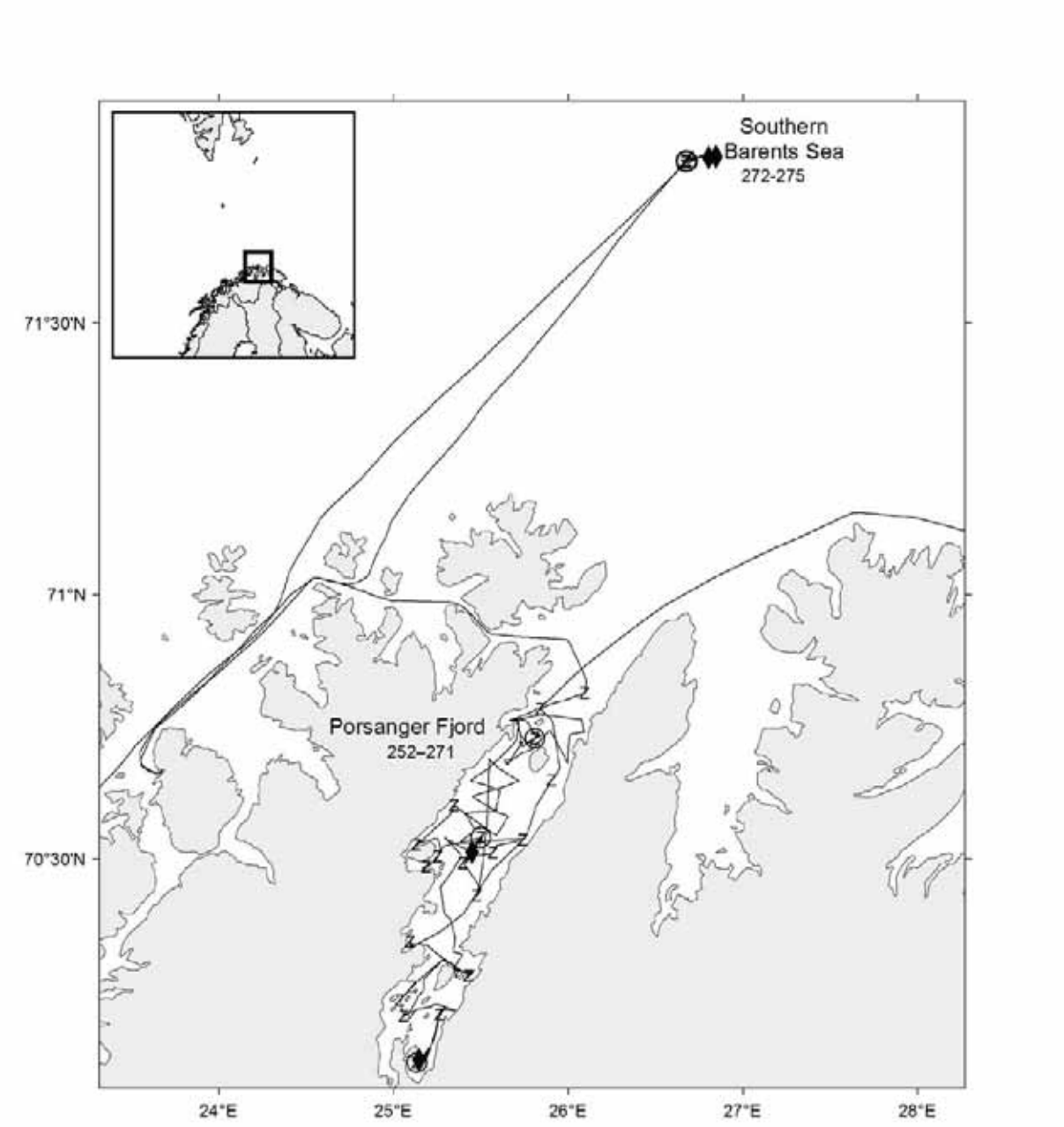
Cruise no 2014203 "Johan Hjort"
17–31 March 2014

● Egg st. (WP-II-net)



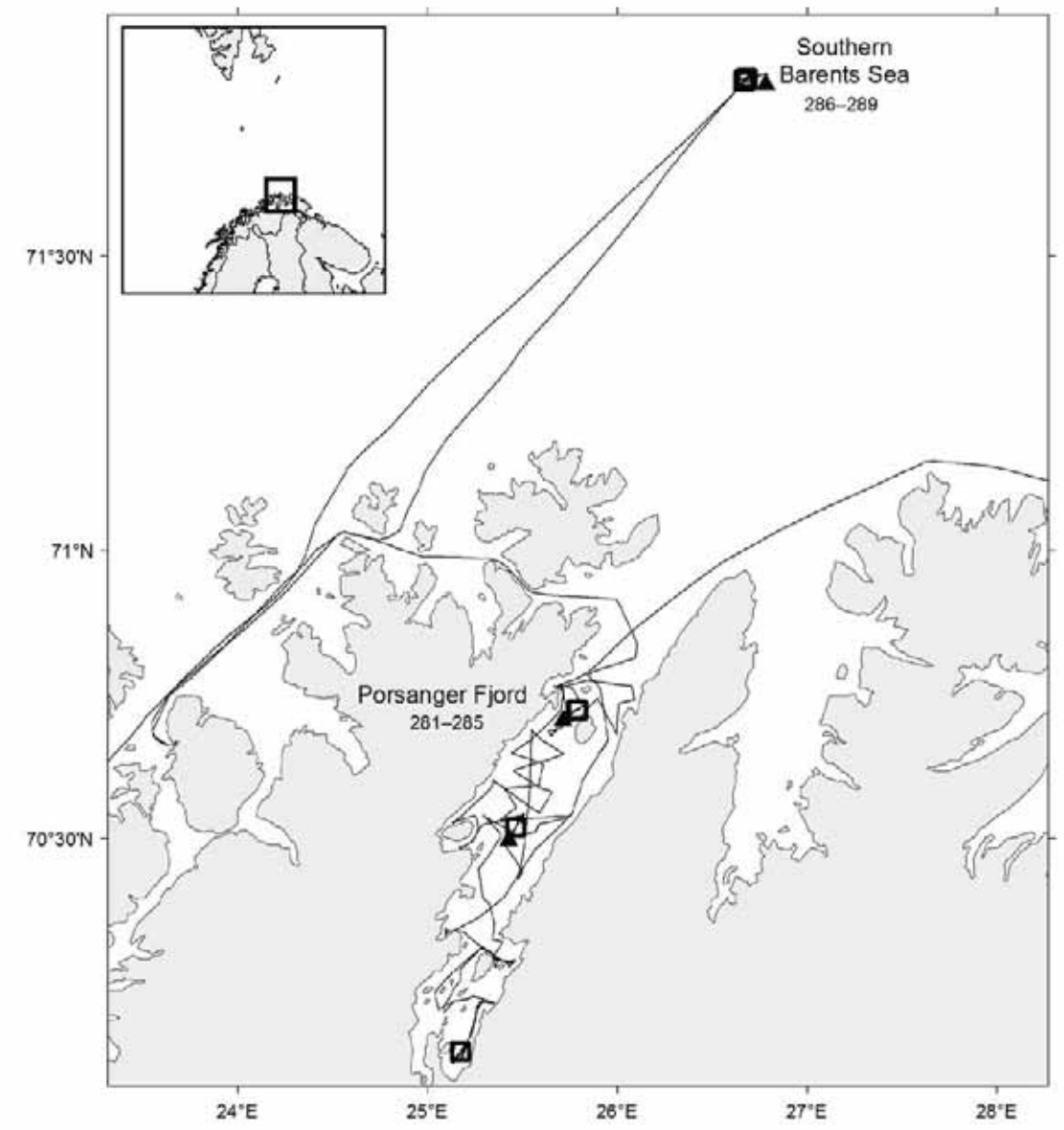
Cruise no 2014205 "Johan Hjort"
4–20 April 2014

z CTD st.no 250–251
Trawl st.no 234-280
□ Bottom trawl
▲ Pelagic trawl



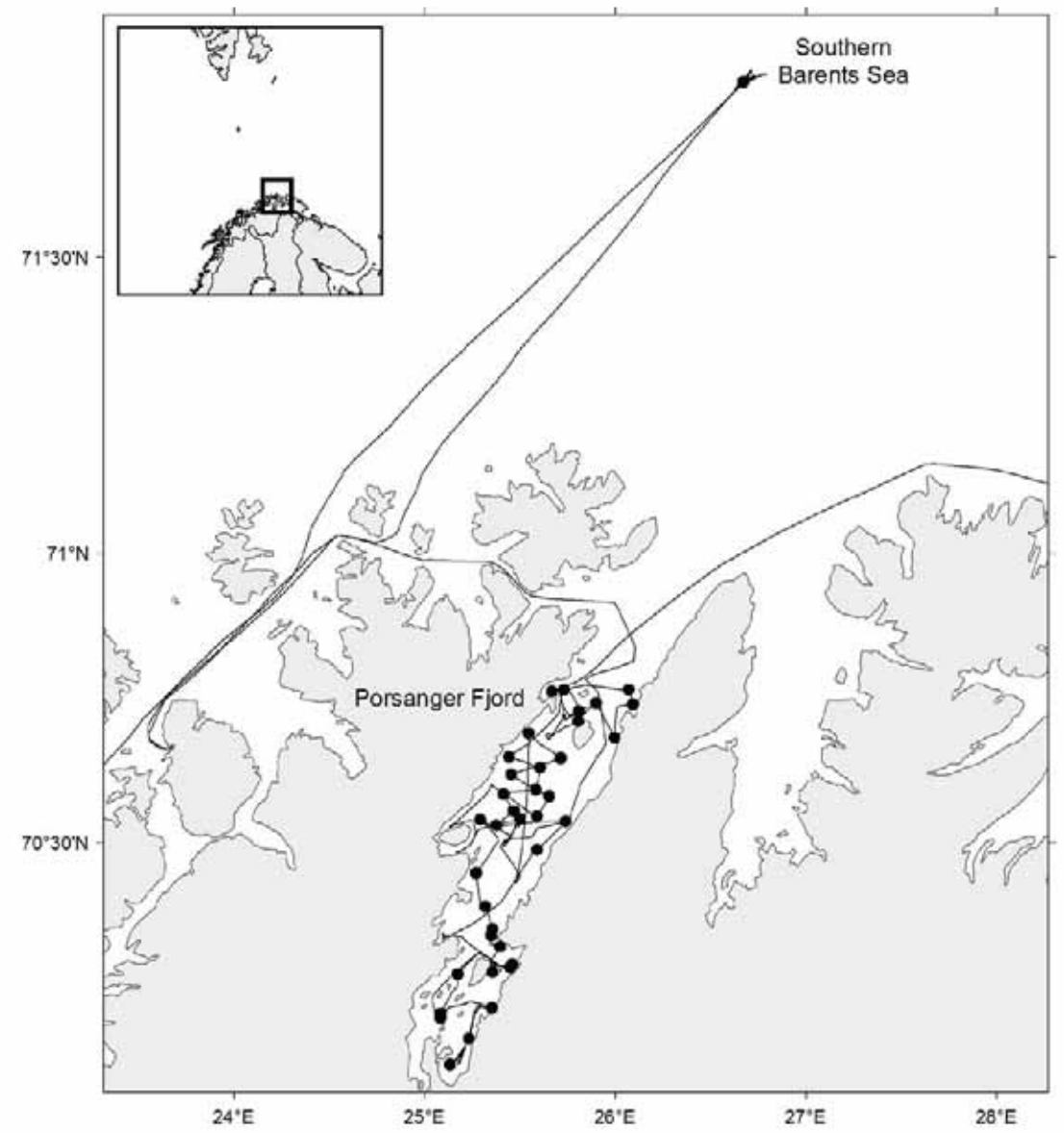
Cruise no 2014206 "Johan Hjort"
16–24 May 2014

z CTD st.no 252–275
○ Plankton st. (WP-II-net)
♦ Plankton st. (Mocness)



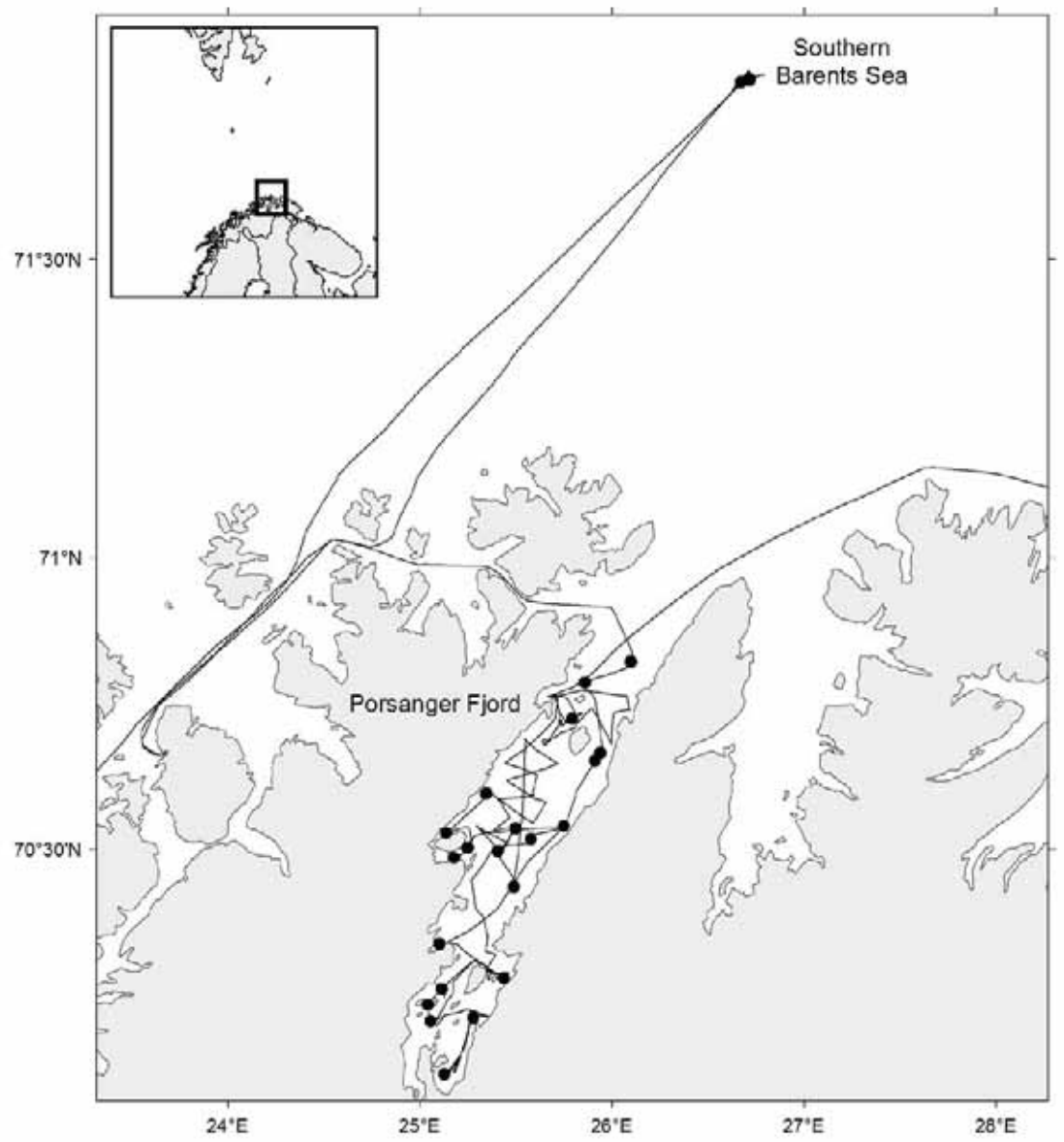
Cruise no 2014206 "Johan Hjort"
16–24 May 2014

Trawl st.no 281–290
□ Bottom trawl
▲ Pelagic trawl



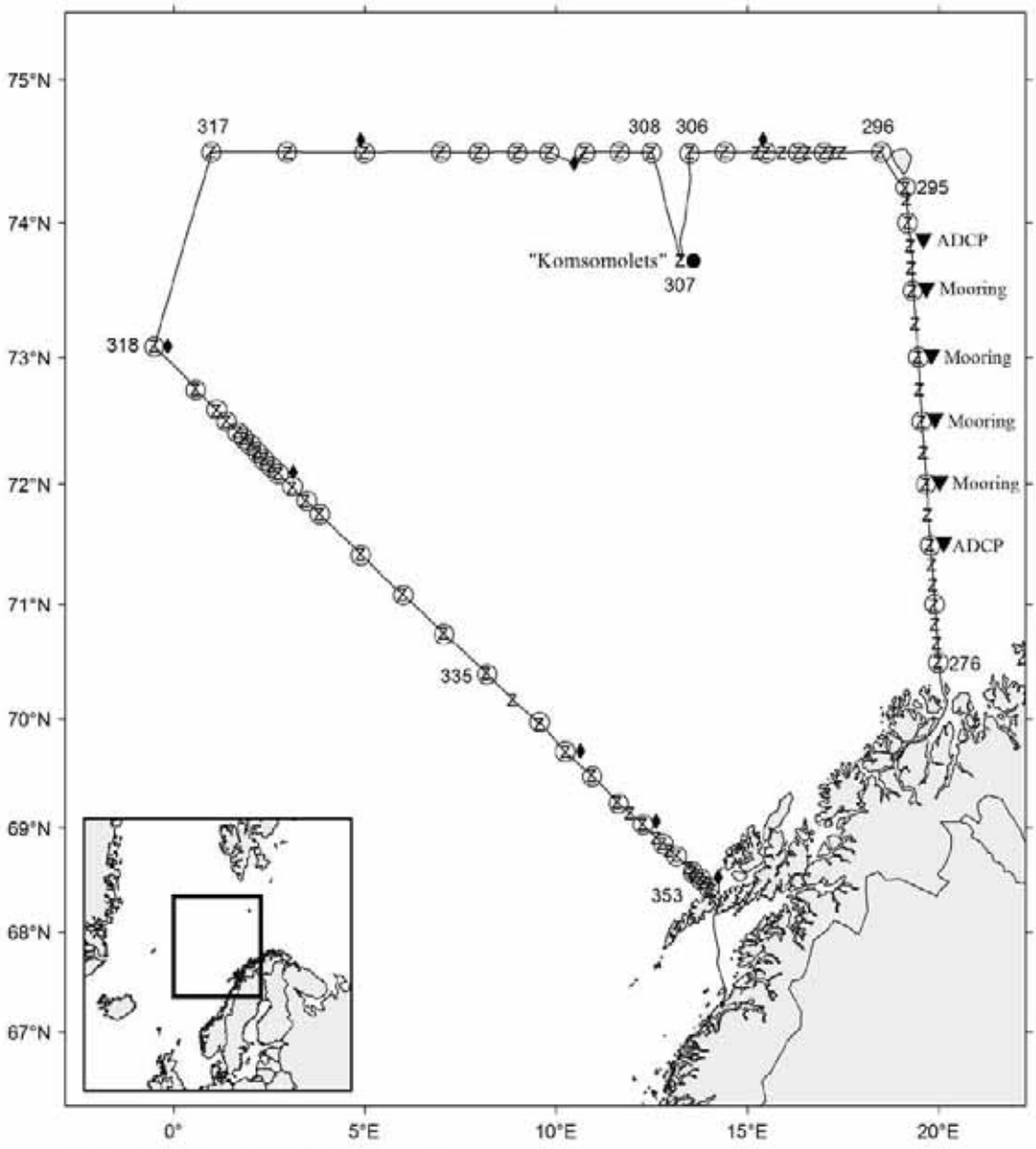
Cruise no 2014206 "Johan Hjort"
16–24 May 2014

●Grab st.



Cruise no 2014206 "Johan Hjort"
16–24 May 2014

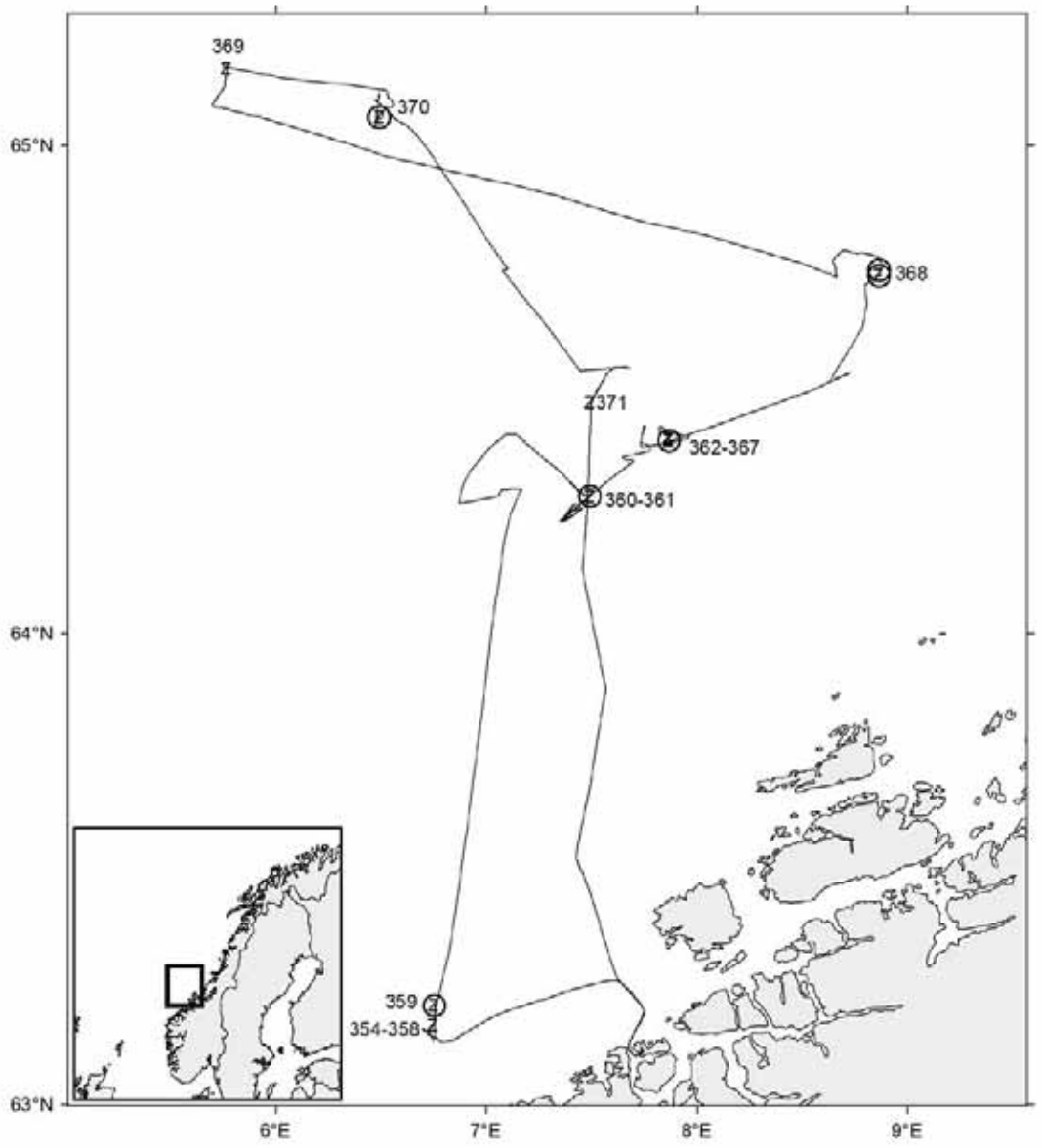
● Beam trawl



Cruise no 2014207 "Johan Hjort"
25 May–7 June 2014

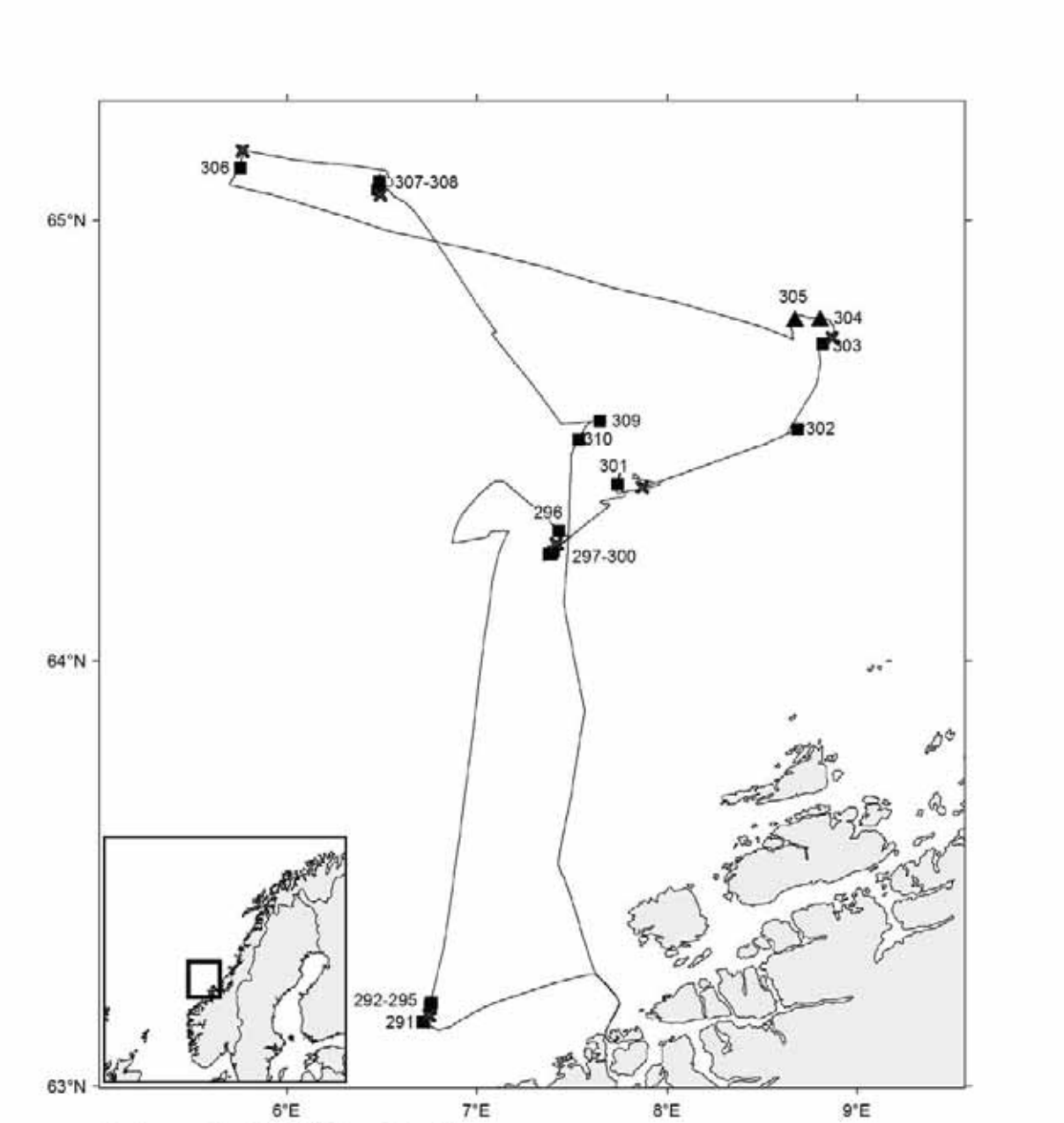
z CTD st.no 276–353
○ Plankton st. (WP-II-net)
♦ Plankton st. (Mocness)
● Grab
▼ Current mooring and ADCP

Standard sections:
Fugløya–Bjørnøya st.no 276–295
Bjørnøya W st.no 296–317
Gimsøy NW st.no 318–353



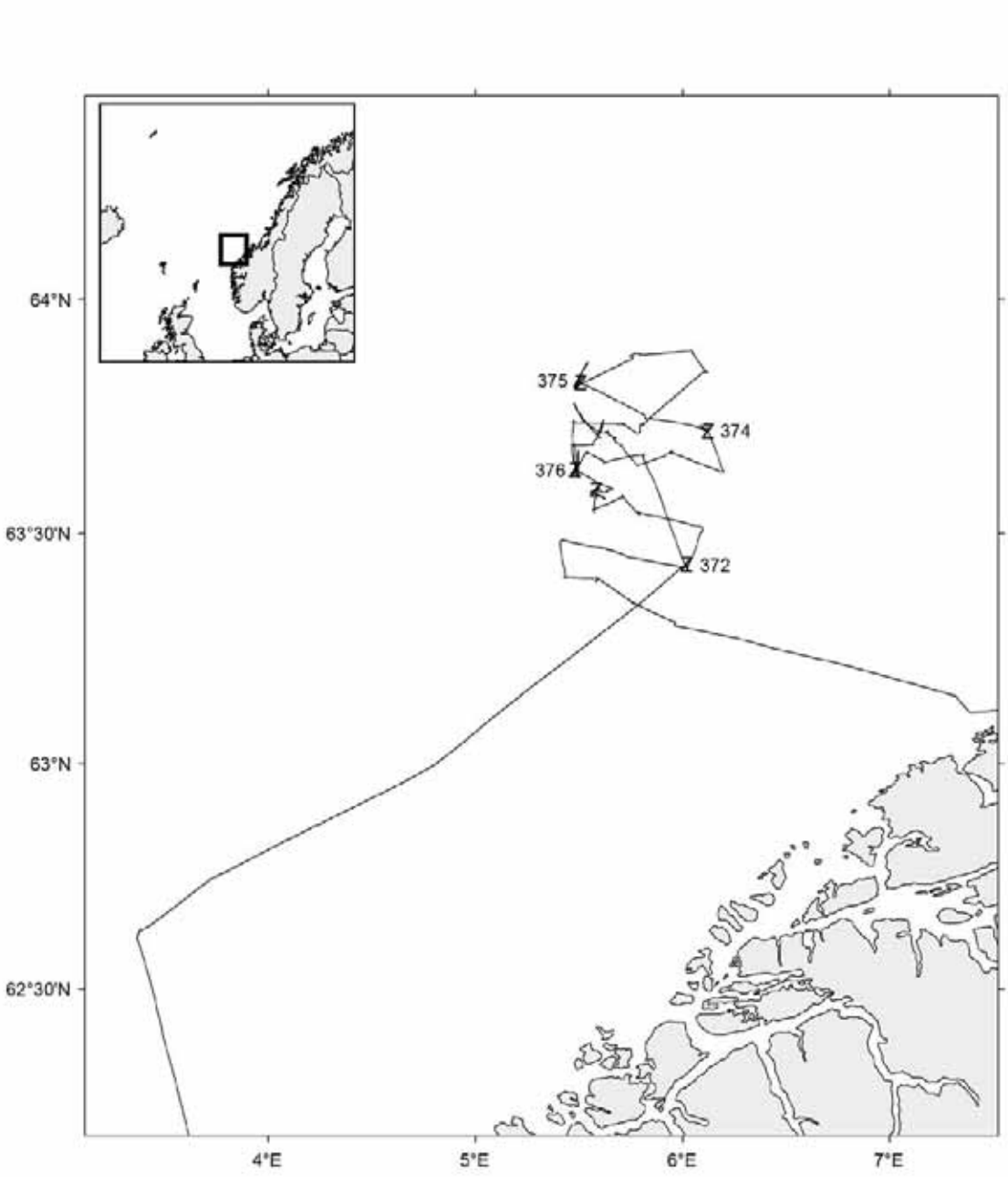
Cruise no 2014209 "Johan Hjort"
10–14 July 2014

z CTD st.no 354-371
○ Plankton st. (WP-II-net)



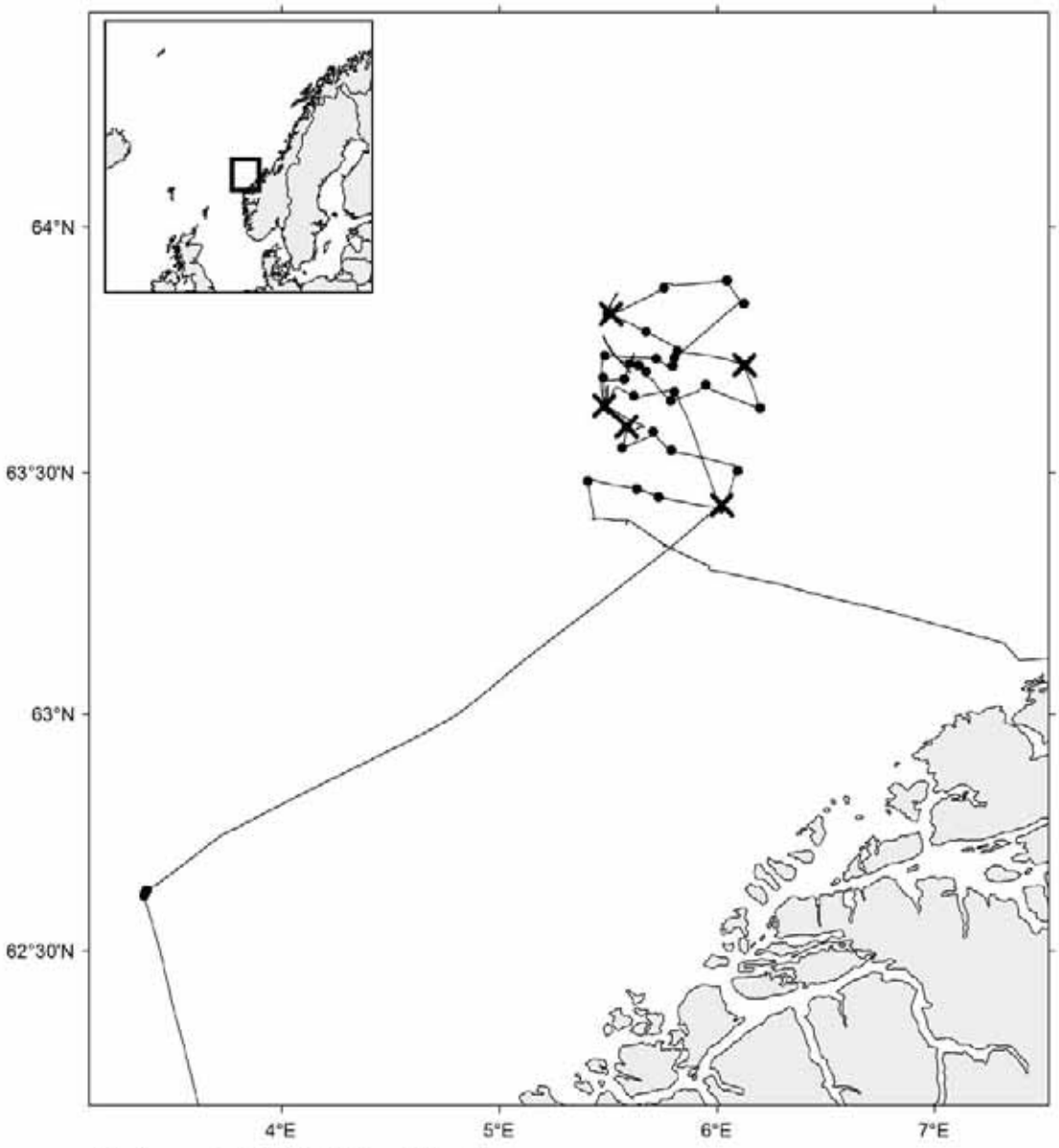
Cruise no 2014209 "Johan Hjort"
10–14 July 2014

Trawl st.no 291–310
■ Bottom trawl
▲ Pelagic trawl
× Rov station



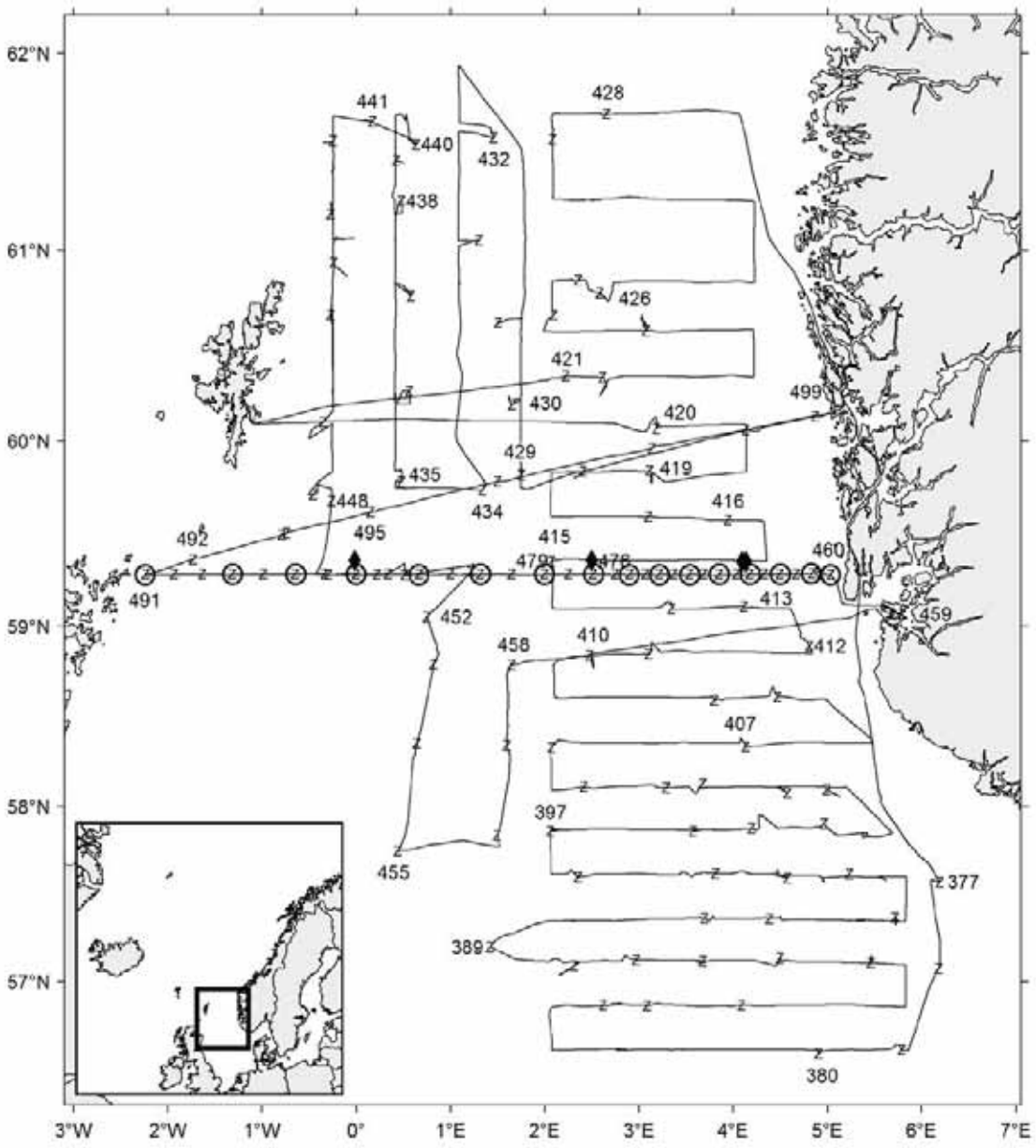
Cruise no 2014208 "Johan Hjort"
16–27 June 2014

z CTD st.no 372–376



Cruise no 2014208 "Johan Hjort"
16–27 June 2014

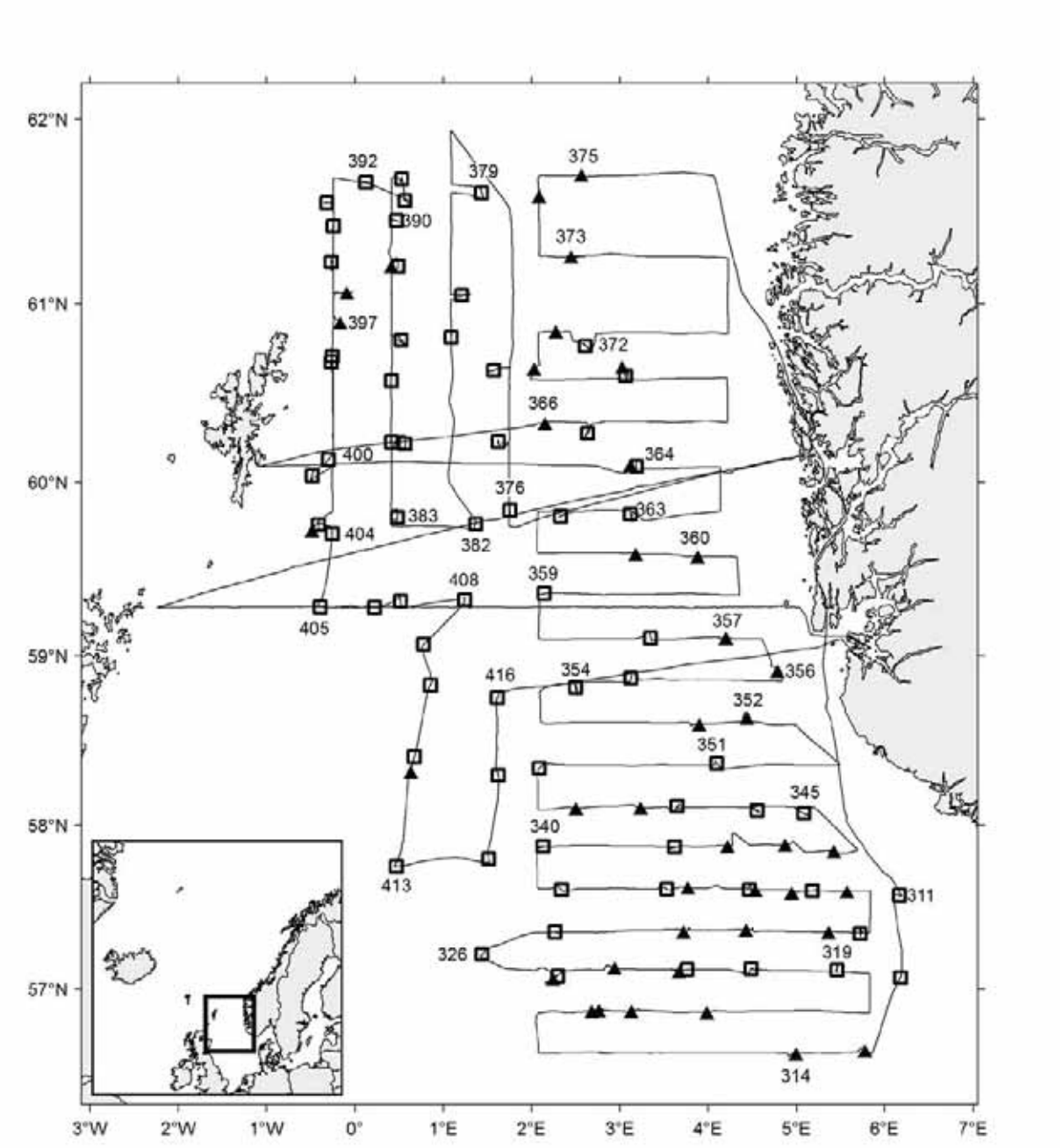
● Videostations
✖ Fullstations:
Grab, Boxcorer, Multicorer, Beamtrawl, Epibenthic sledge.
(As many as possible depending of sea floor quality)



Cruise no 2014210 "Johan Hjort"
30 June–28 July 2014

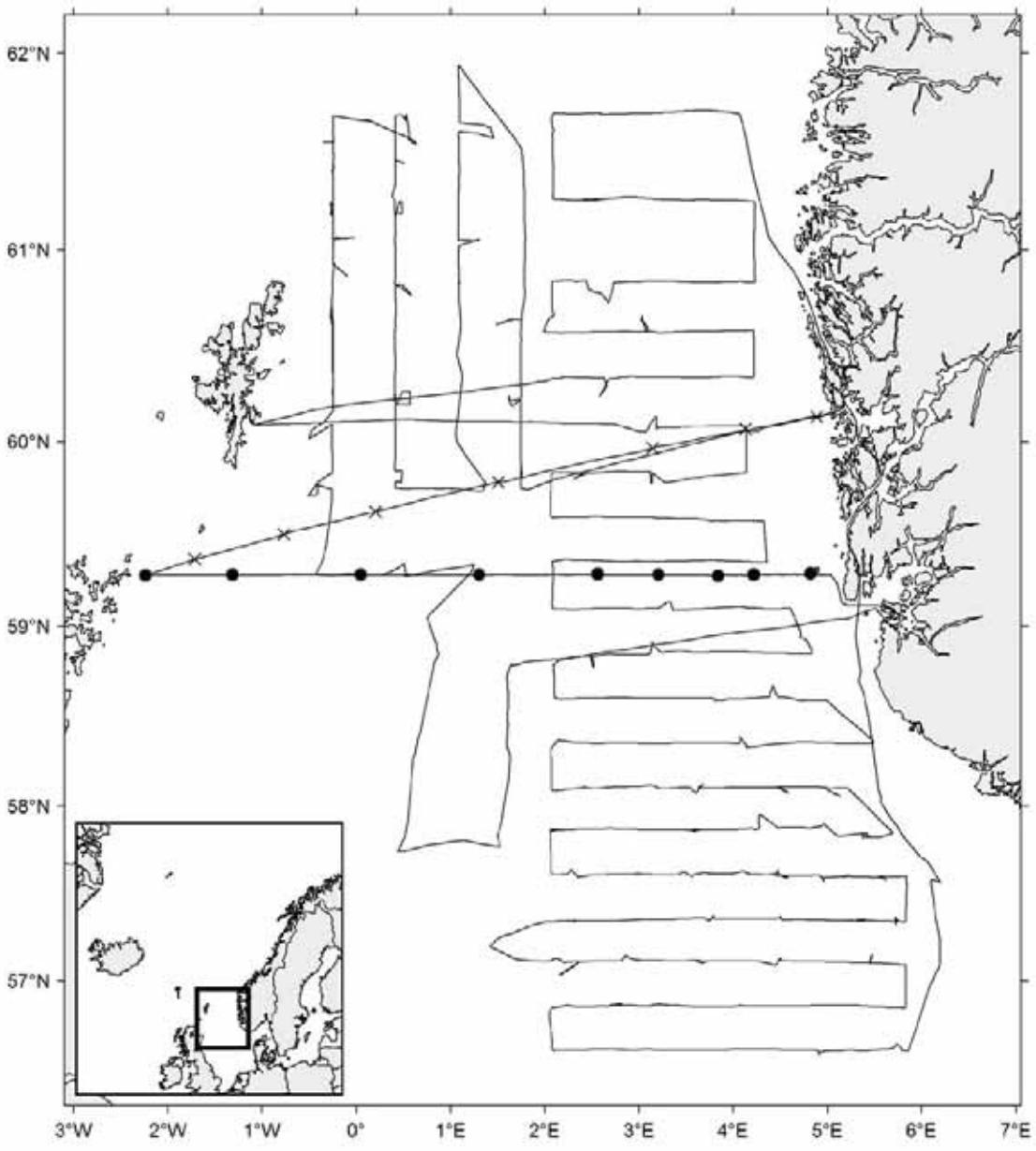
z CTD st.no 377-499
♦ Plankton st. (WP-II-net)
○ Plankton st. (Mocness)

Standard section Utsira W st.no 460-491



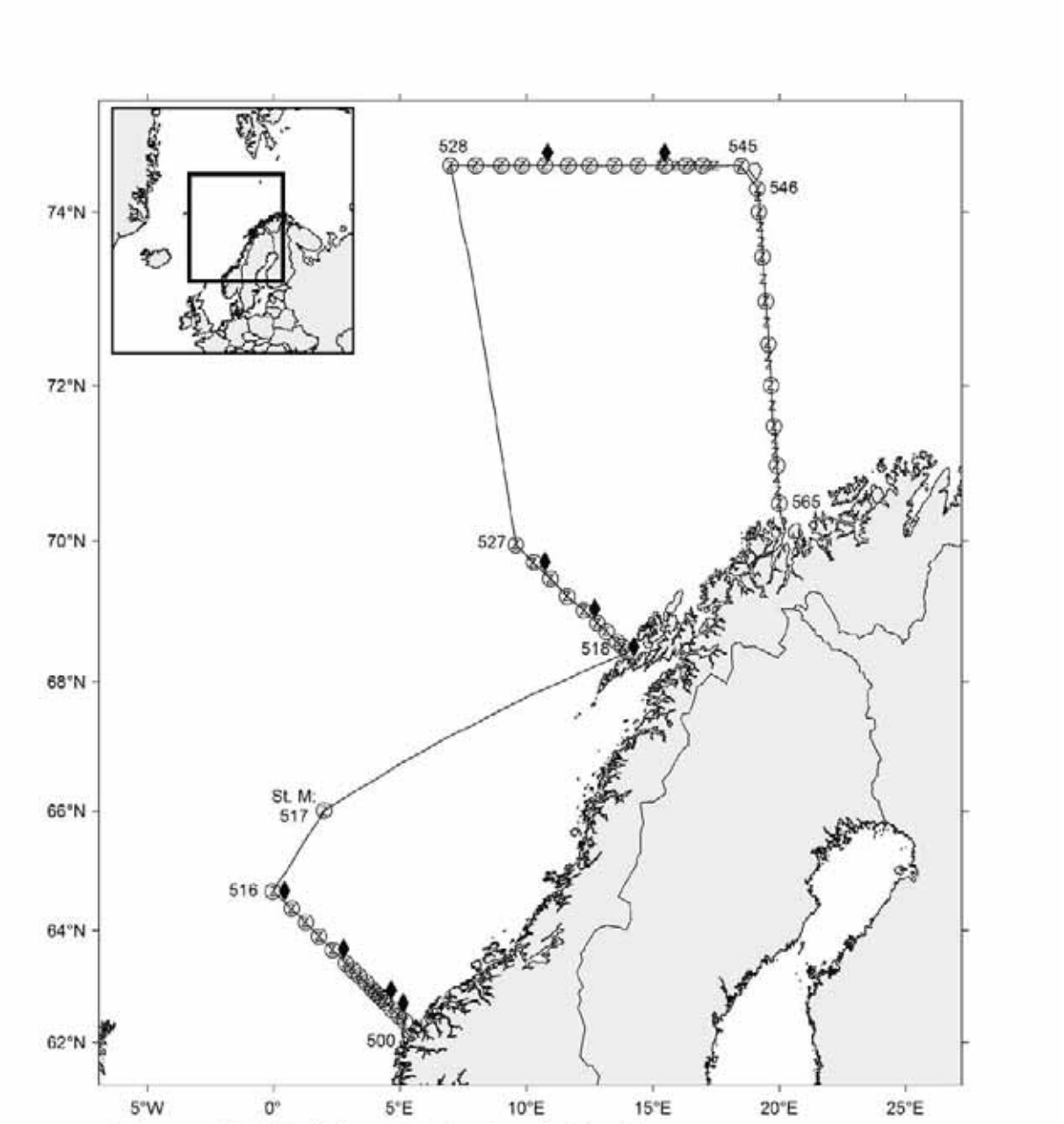
Cruise no 2014210 "Johan Hjort"
30 June–28 July 2014

Trawl st.no 311-416
□ Bottom trawl
▲ Pelagic trawl



Cruise no 2014210 "Johan Hjort"
30 June–28 July 2014

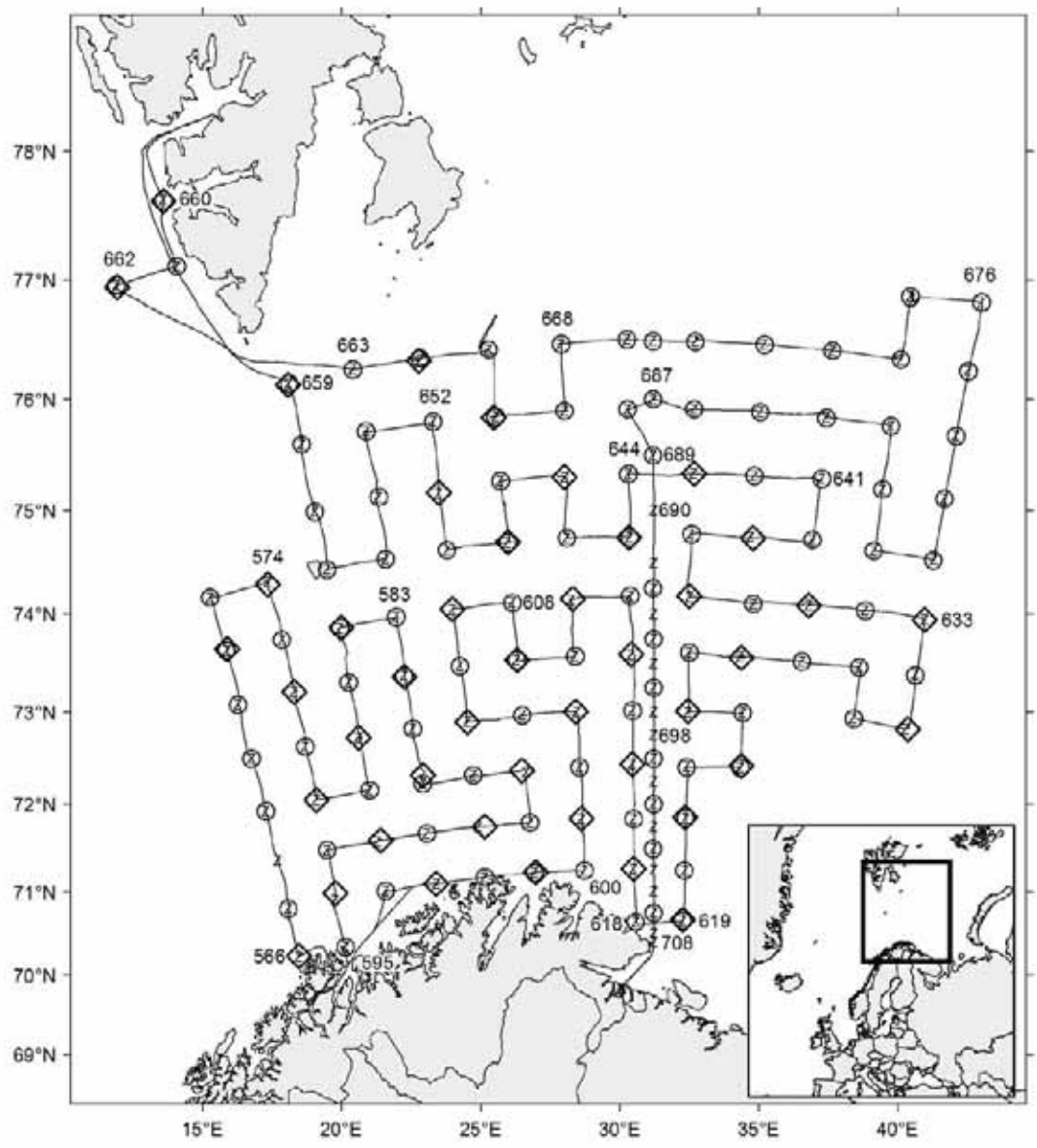
● Mik st.
× Multinet st.



Cruise no 2014211 "Johan Hjort"
30 July–10 August 2014

z CTD st.no 500–565
○ Plankton st. (WP-II-net)
♦ Plankton st. (Mocness)

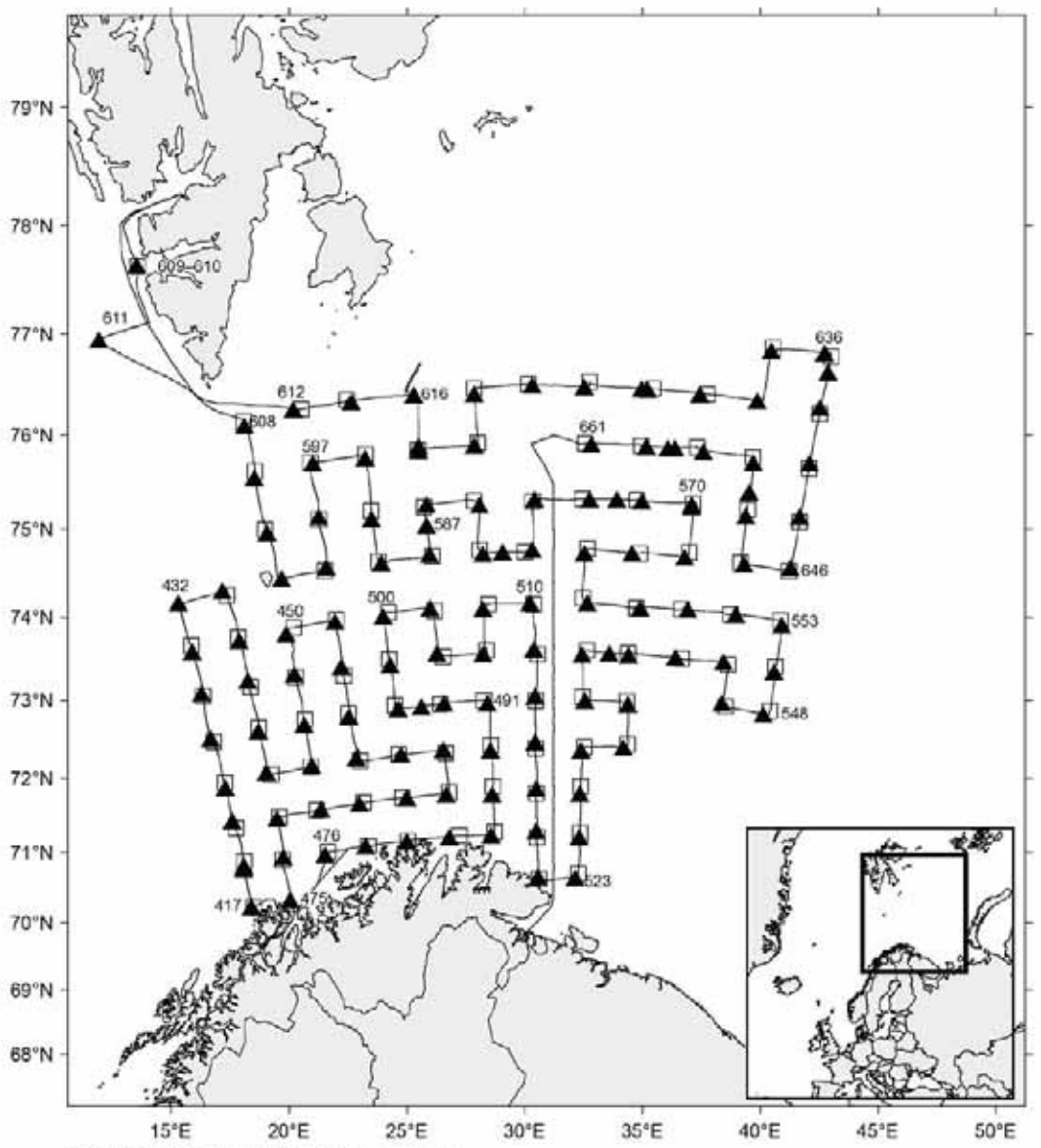
Standard sections:
Svinøy NW st.no 500–516
Gimsøy NW st.no 518–527
Bjørnøya W st.no 528–545
Fugløya–Bjørnøya st.no 546–585



Cruise no 2014212 "Johan Hjort"
13 August–21 September 2014

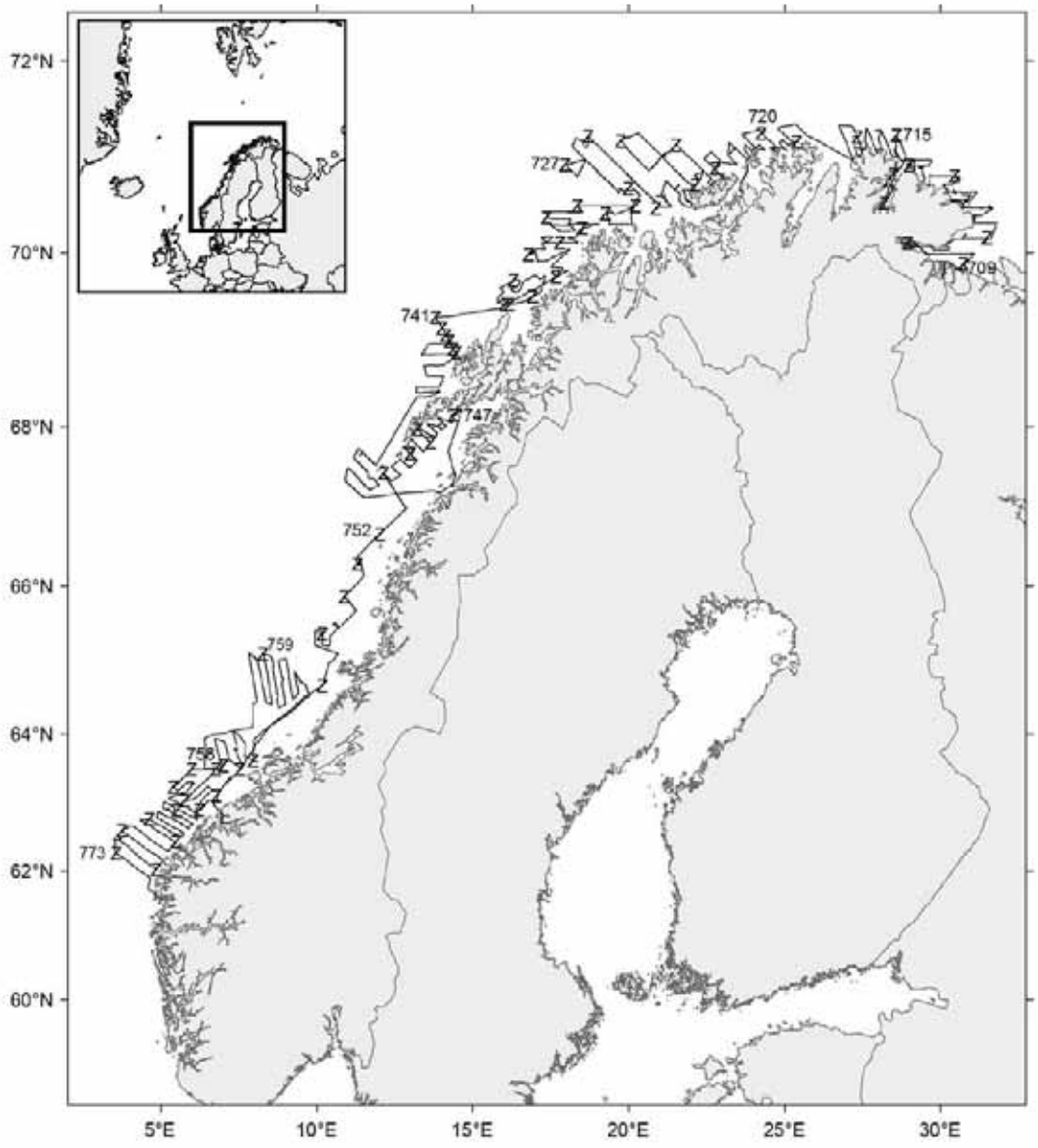
z CTD st.no 566–708
○Plankton st. (WP-II-net)
◇Plankton st. (Mocness)

Standard section Vardø N st.no 687–708



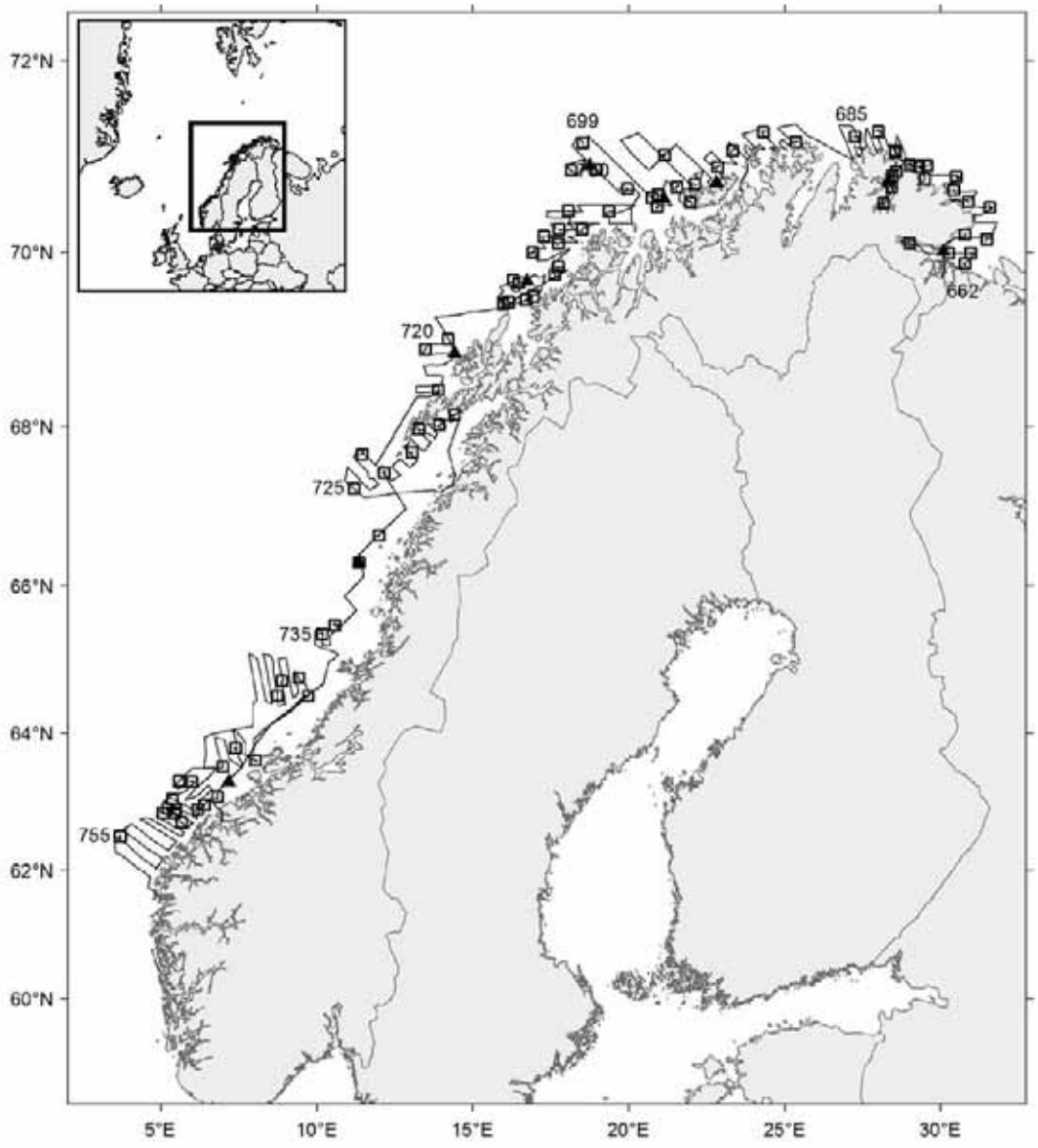
Cruise no 2014212 "Johan Hjort"
13 August–21 September 2014

Trawl st.no 417–661
▲ Pelagic tr.
□ Bottom tr.



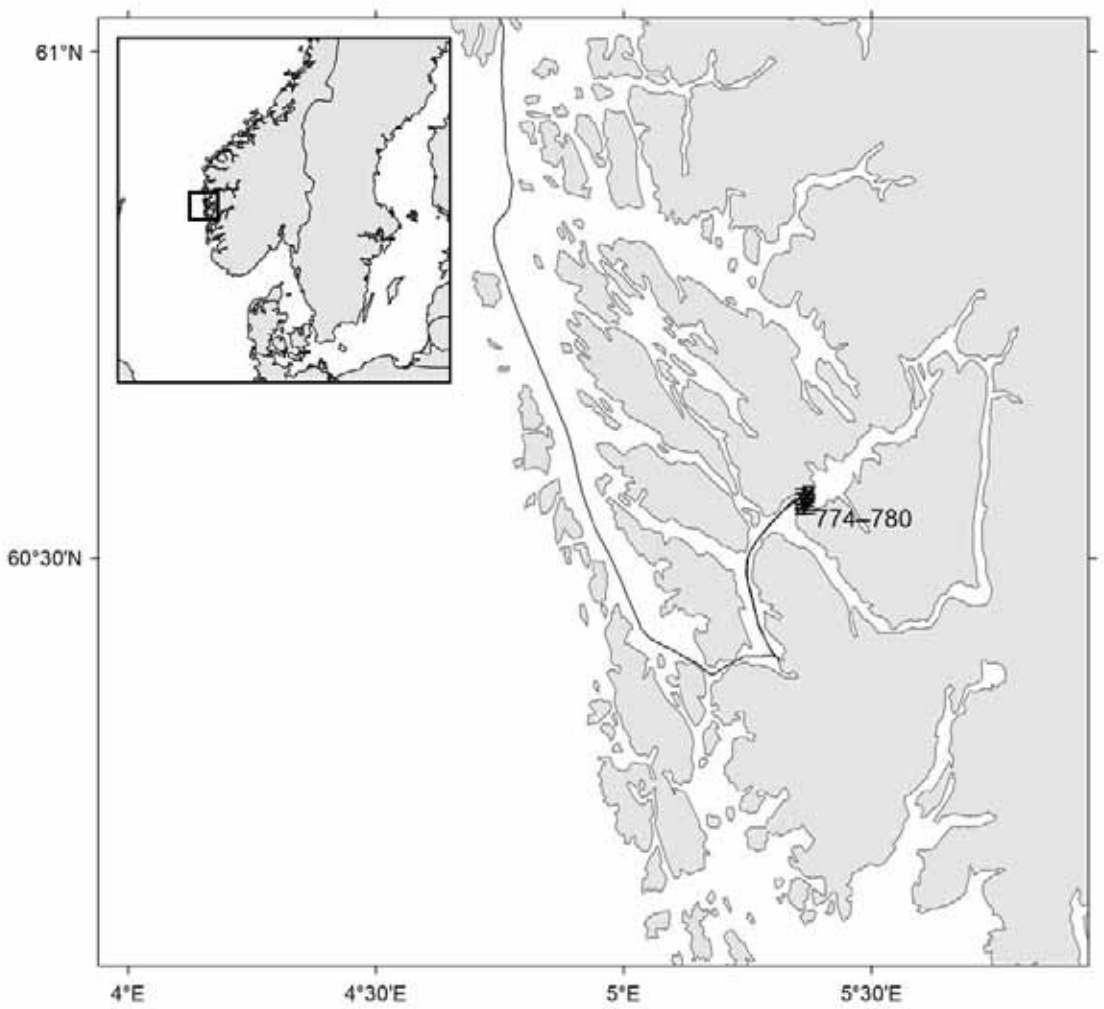
Cruise no 2014213 "Johan Hjort"
2–31 October 2014

z CTD st.no 709–773



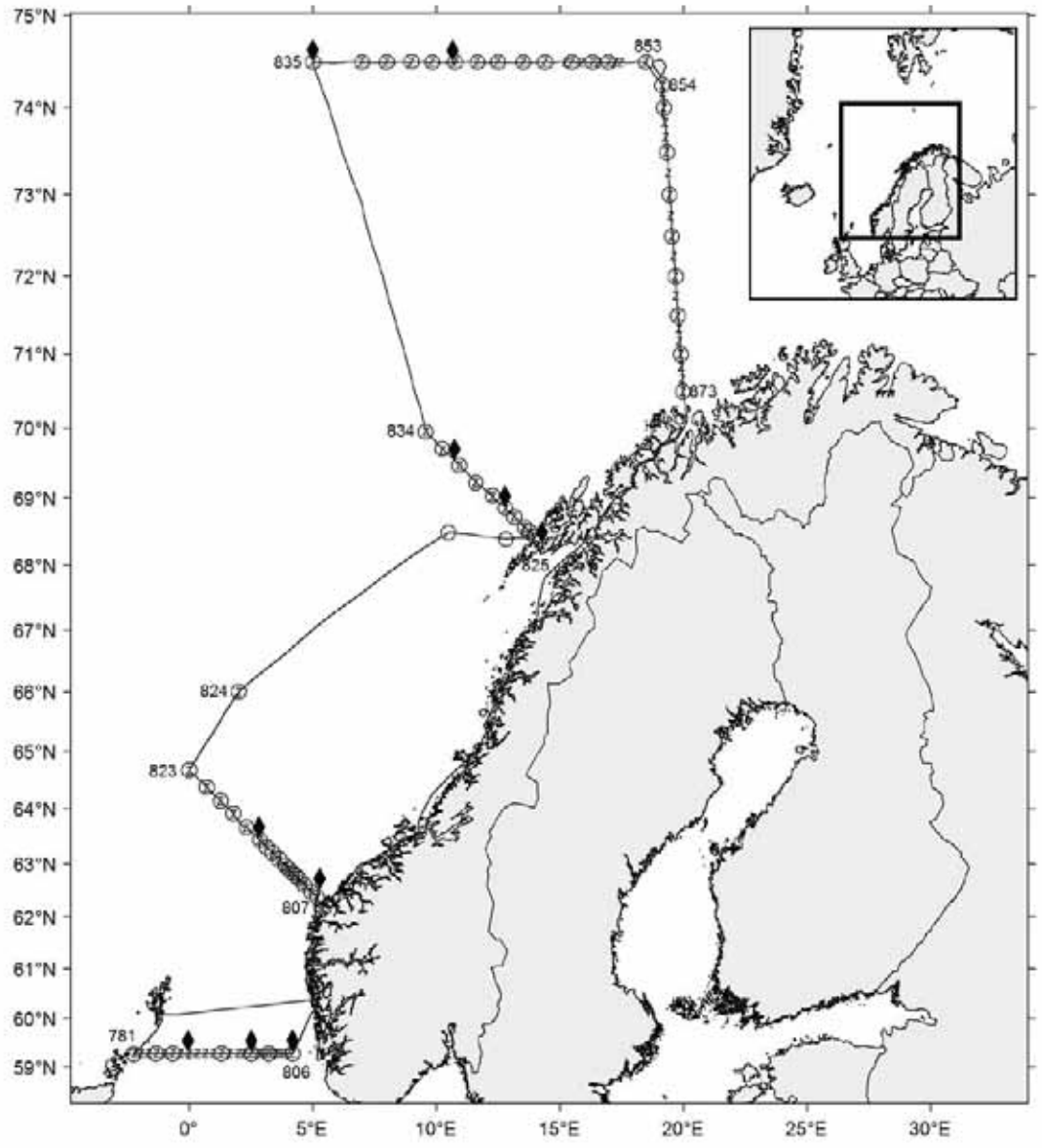
Cruise no 2014213 "Johan Hjort"
2–31 October 2014

Trawl st.no 662–755
□ Bottom trawl
▲ Pelagic trawl



Cruise no 2014215 "Johan Hjort"
3 November 2014

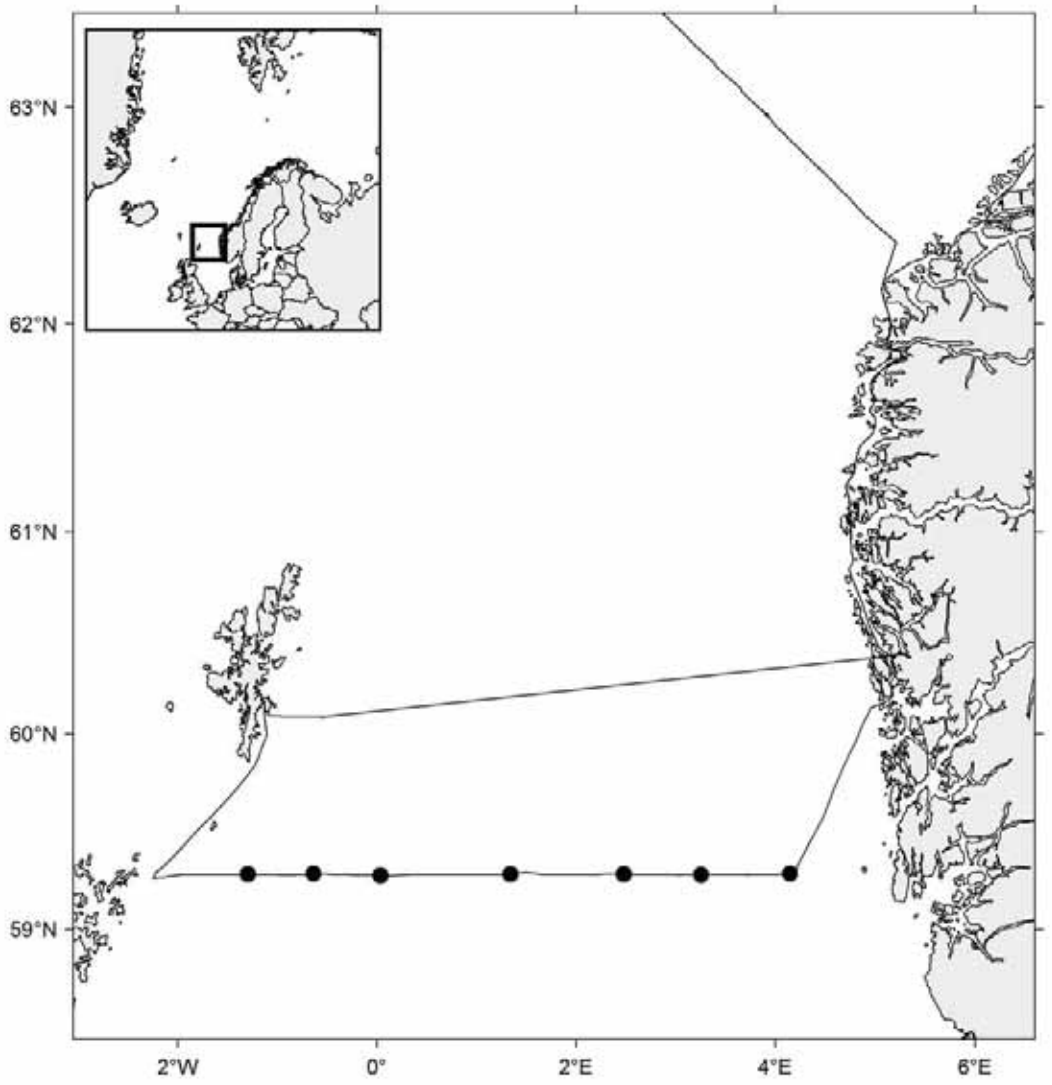
z ctd st.no 774–780



Cruise no 2014214
"Johan Hjort"
7–21 November 2014

z CTD st.no 781–873
○ Plankton st. (WP-II-net)
♦ Plankton st. (Mocness)

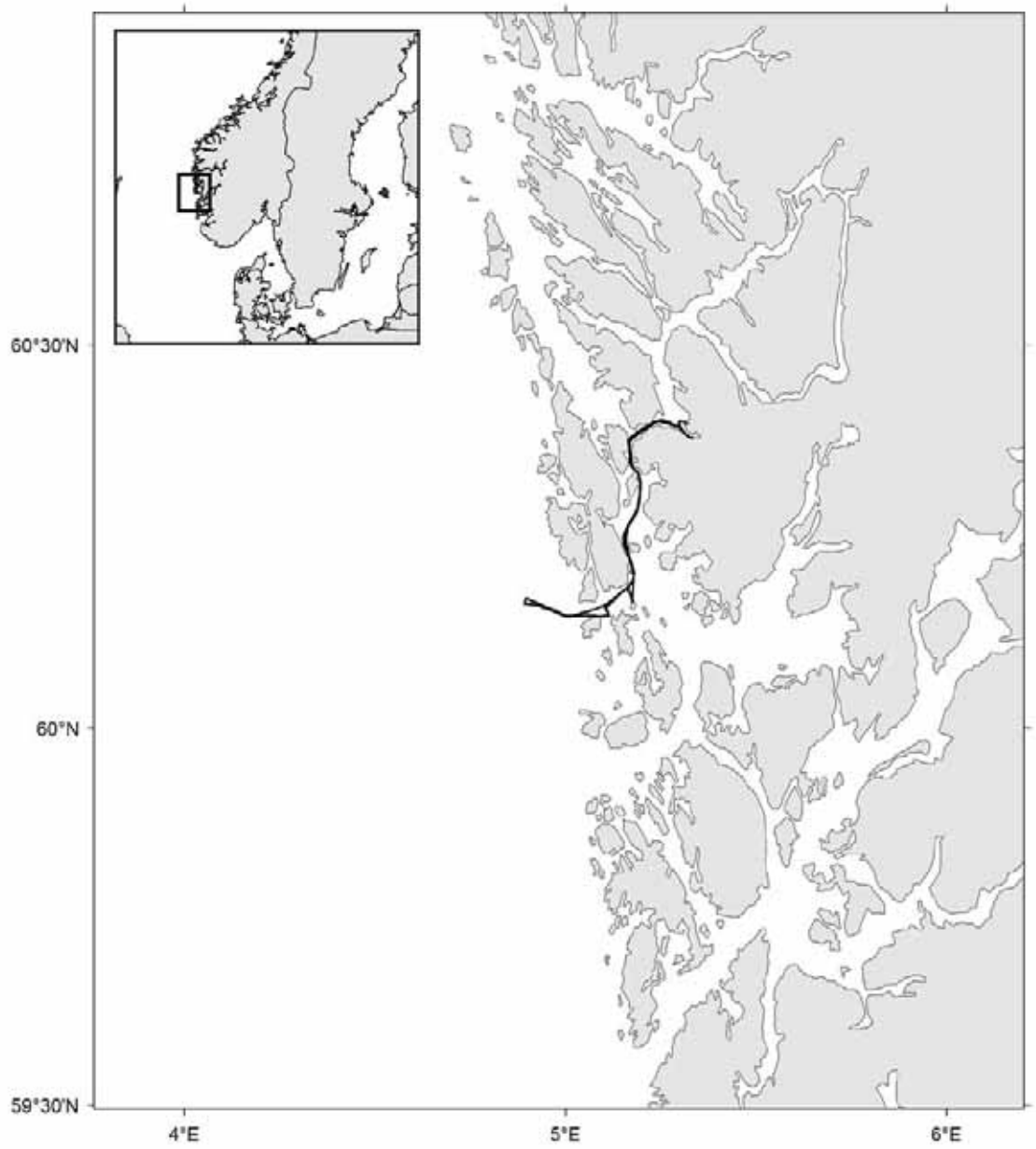
Standard sections:
Utsira W st.no 781–806
Svinøy NW st.no 807–823
Gimsøy NW st.no 825–834
Bjørnøya W st.no 835–853
Fugløya–Bjørnøya st.no 854–873
St M st.no 824



Cruise no 2014214
"Johan Hjort"
7–21 November 2014

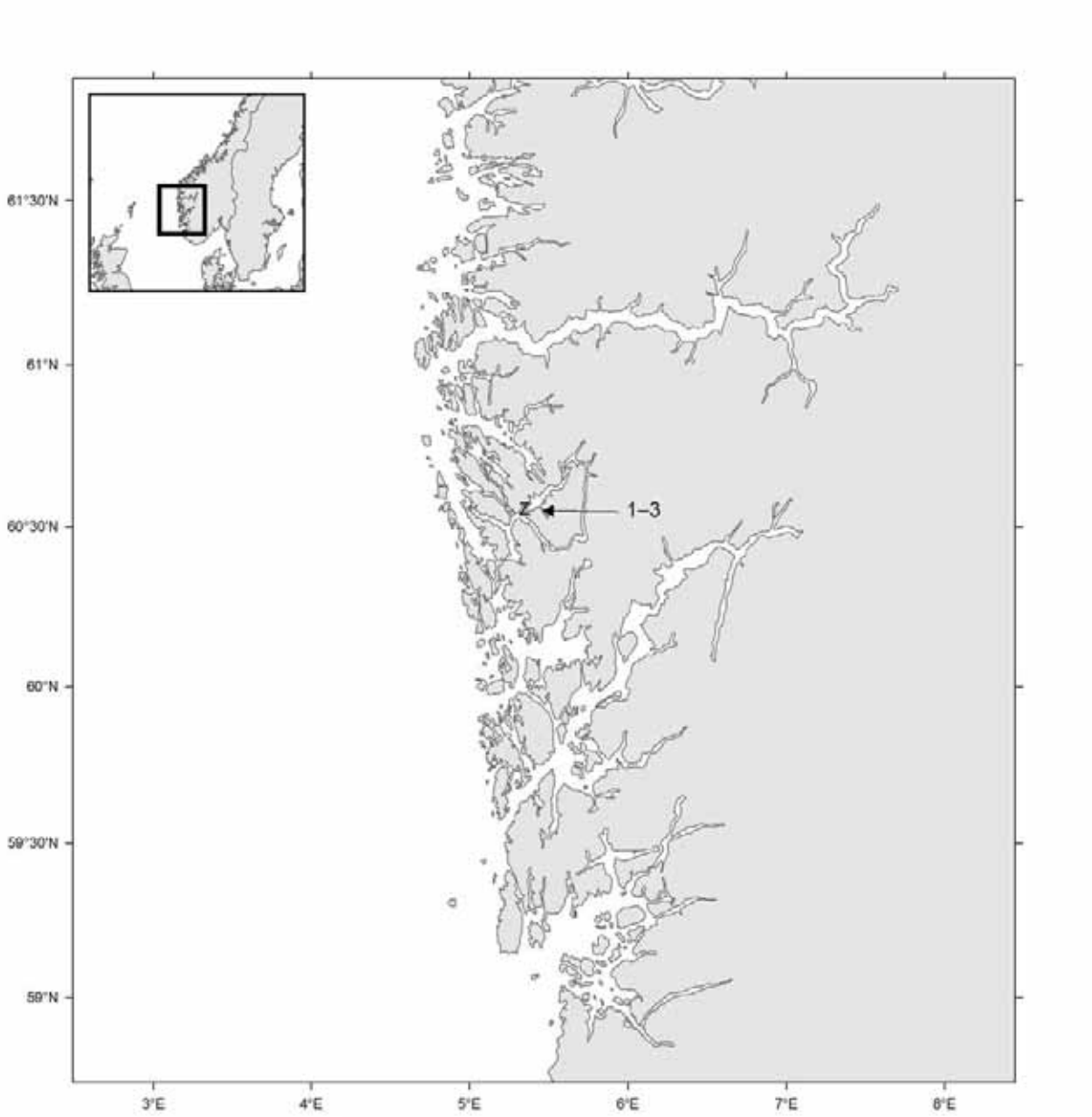
● Mik stations (at Utsira W section)

4.3 Håkon Mosby



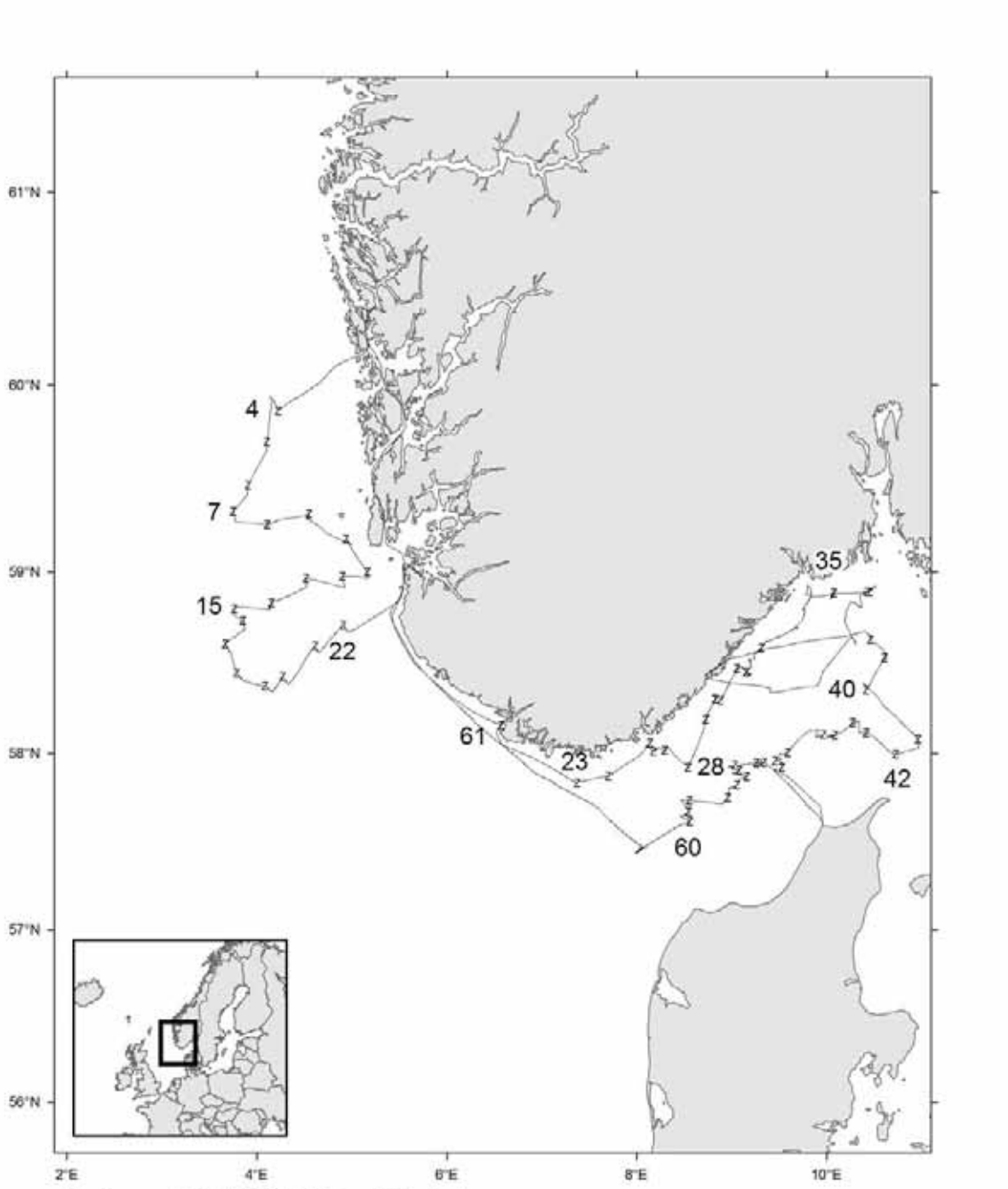
Cruise no 2014601 "Håkon Mosby"
3 January 2014

Cruise track. Sediment cores:
7 gravity cores and 4 multi cores



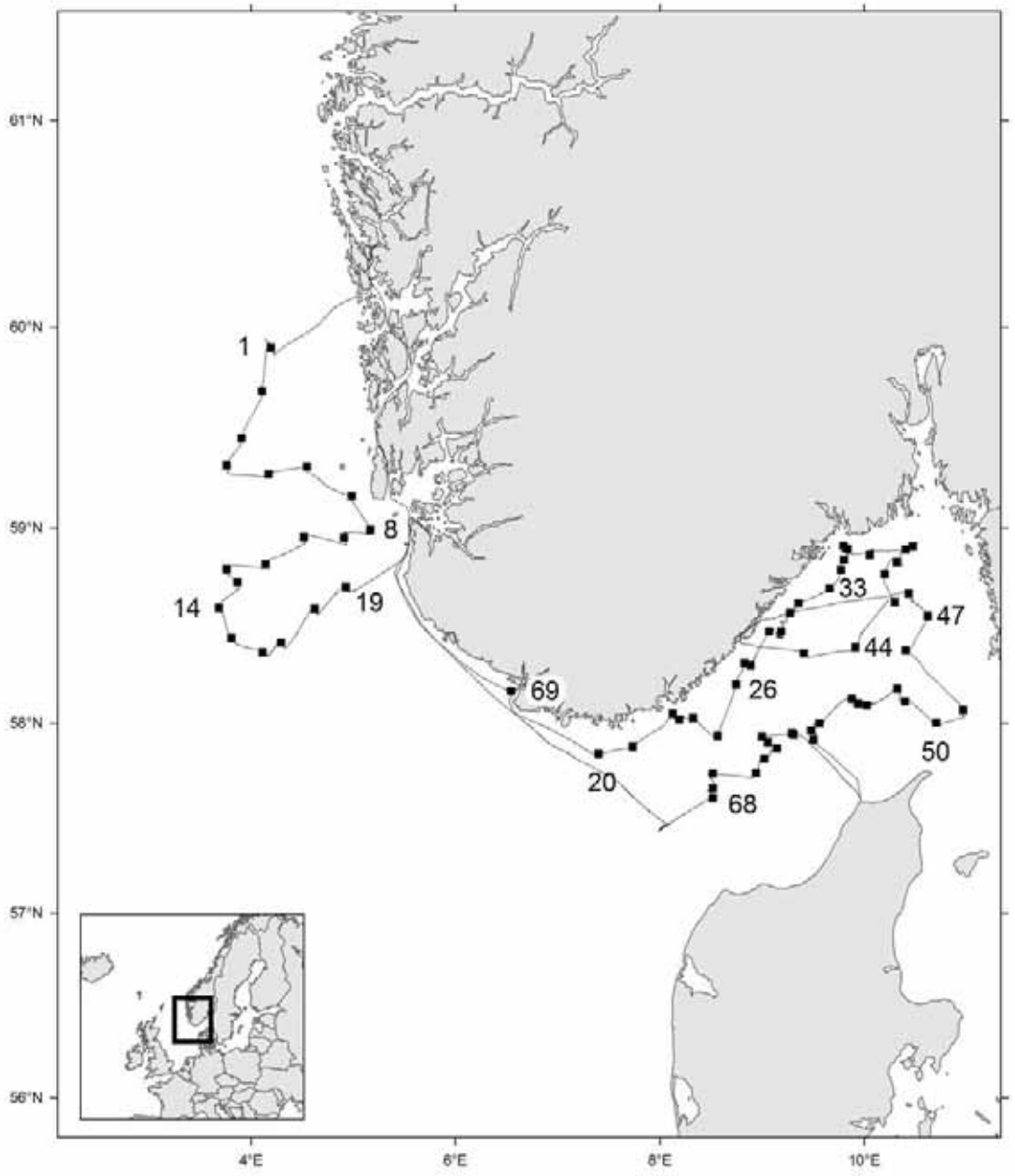
Cruise no 2014602 "Håkon Mosby"
7 January 2014

z CTD st.no 1–3



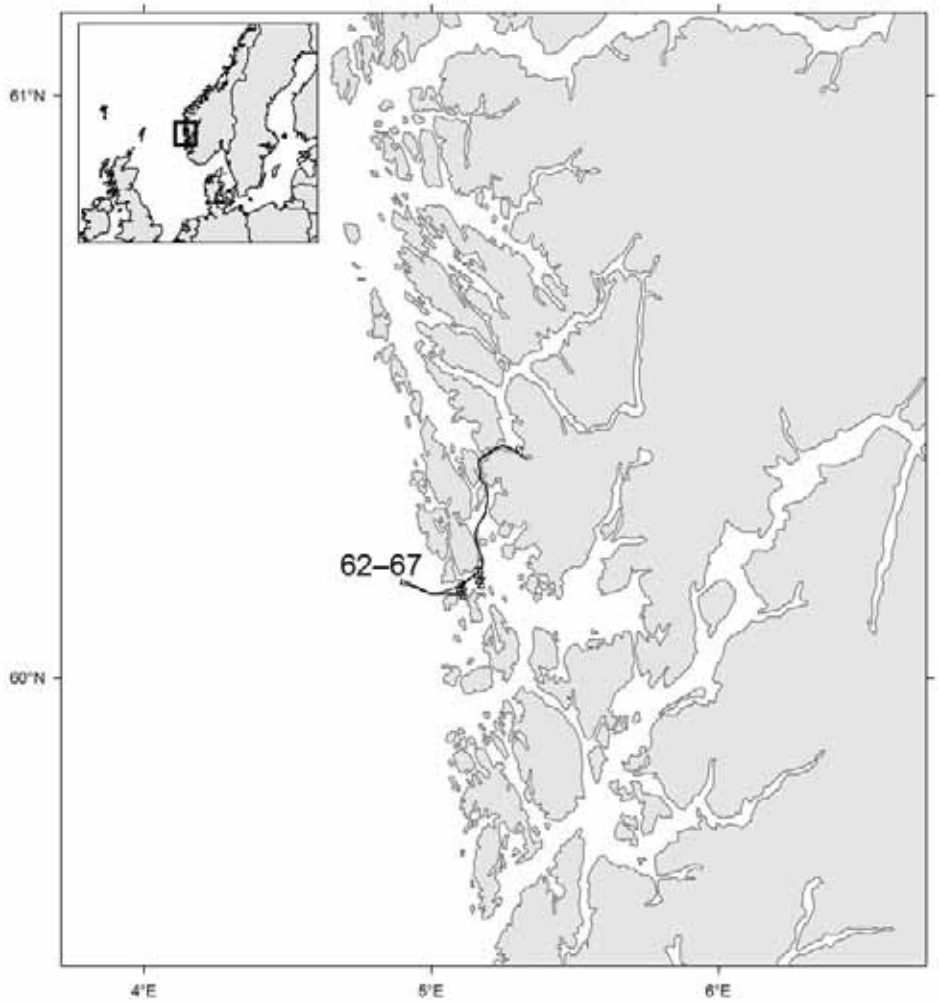
Cruise no 2014603 "Håkon Mosby"
9–27 January 2014

z CTD st.no 4–61



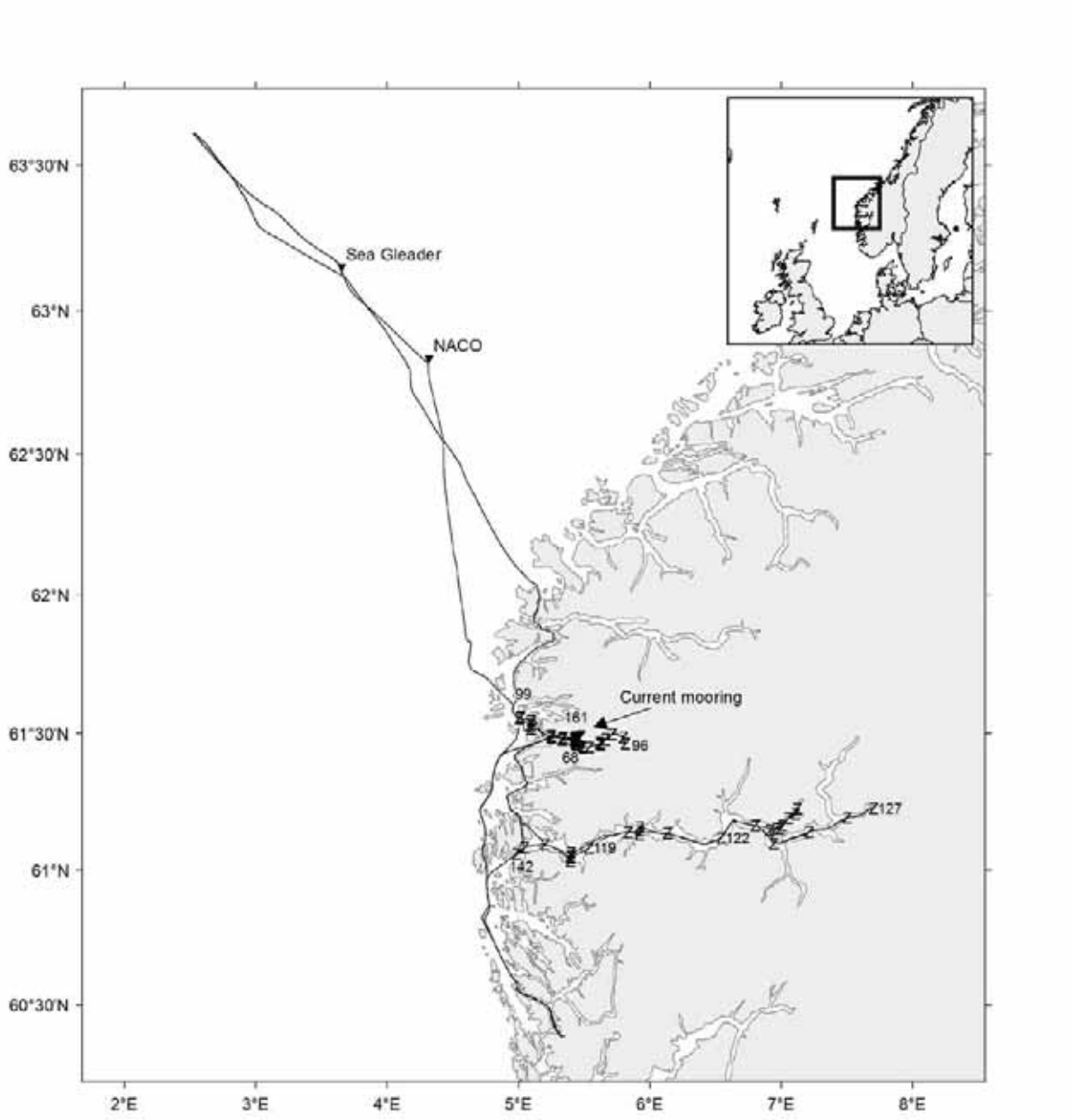
Cruise no 2014603 "Håkon Mosby"
9–27 January 2014

■ Bottom trawl st.no 1–69



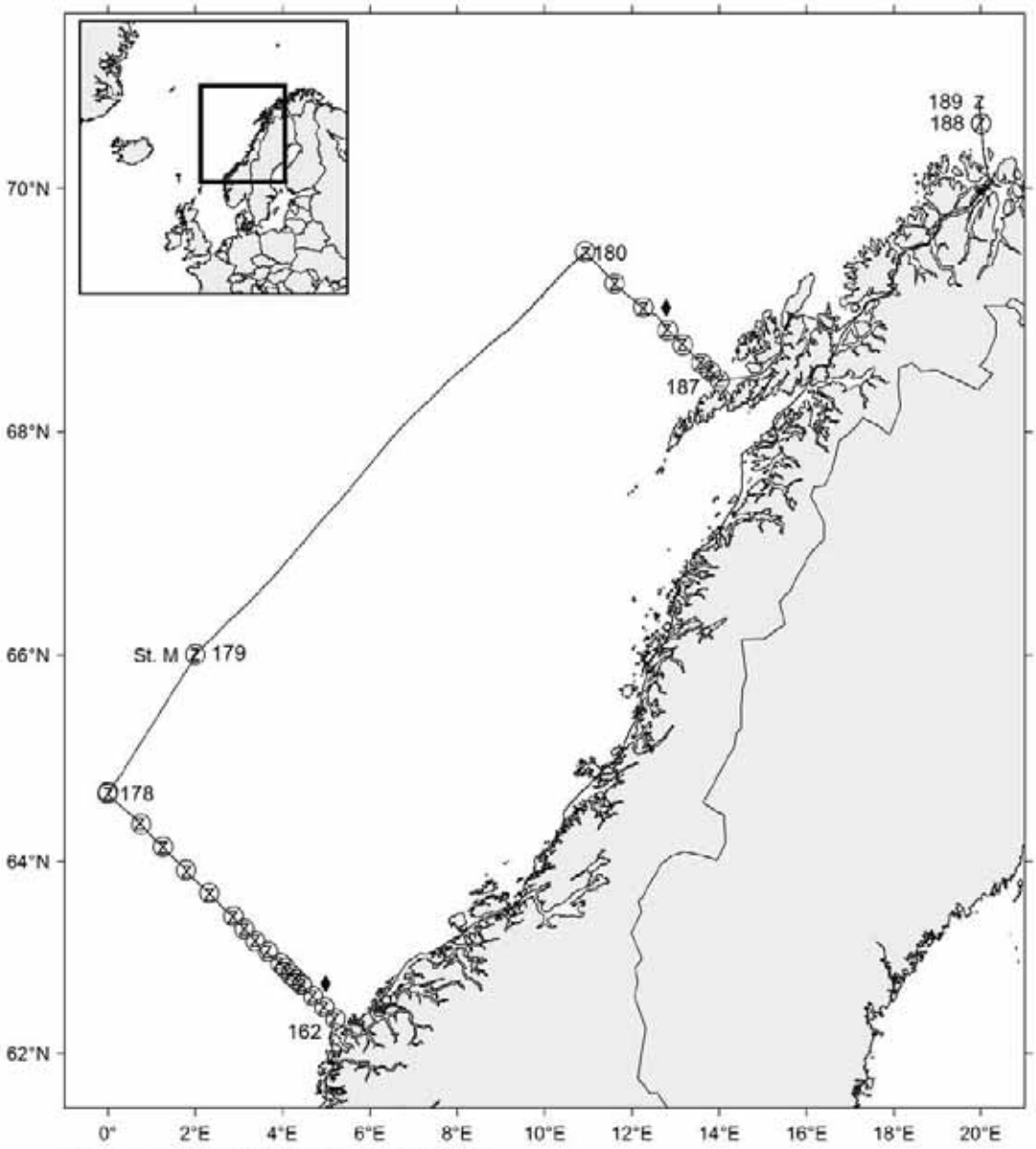
Cruise no 2014604 "Håkon Mosby"
30 January 2014

z CTD st.no 62–67,
mooring and Argo drifters



Cruise no 2014605 "Håkon Mosby"
31 January–10 February 2014

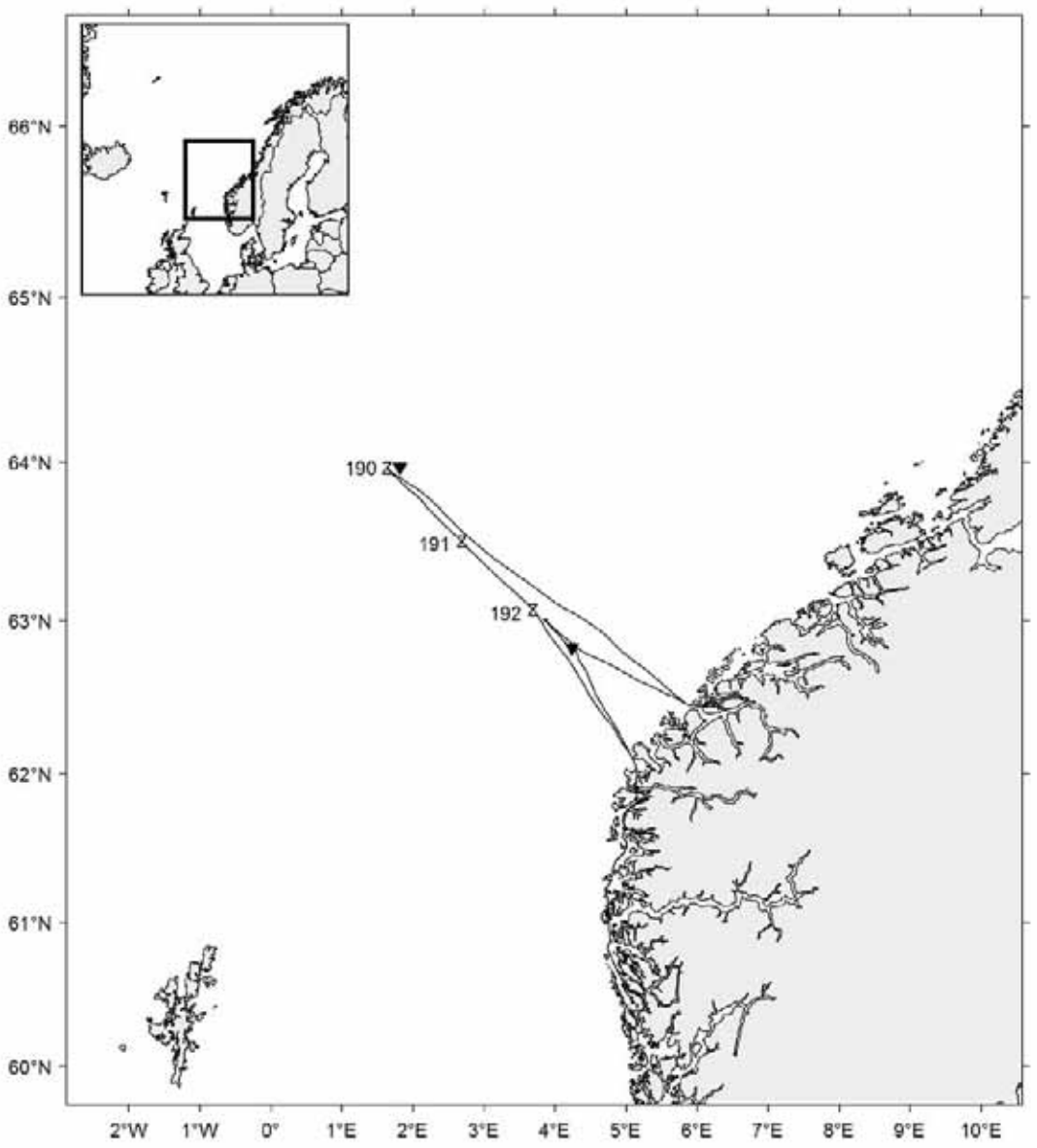
z CTD st.no 68–161
▾ Current meter mooring depl/recov
NACO Buoy Deployed
Sea Glider Recovered



Cruise no 2014606 "Håkon Mosby"
28 February–10 March 2014

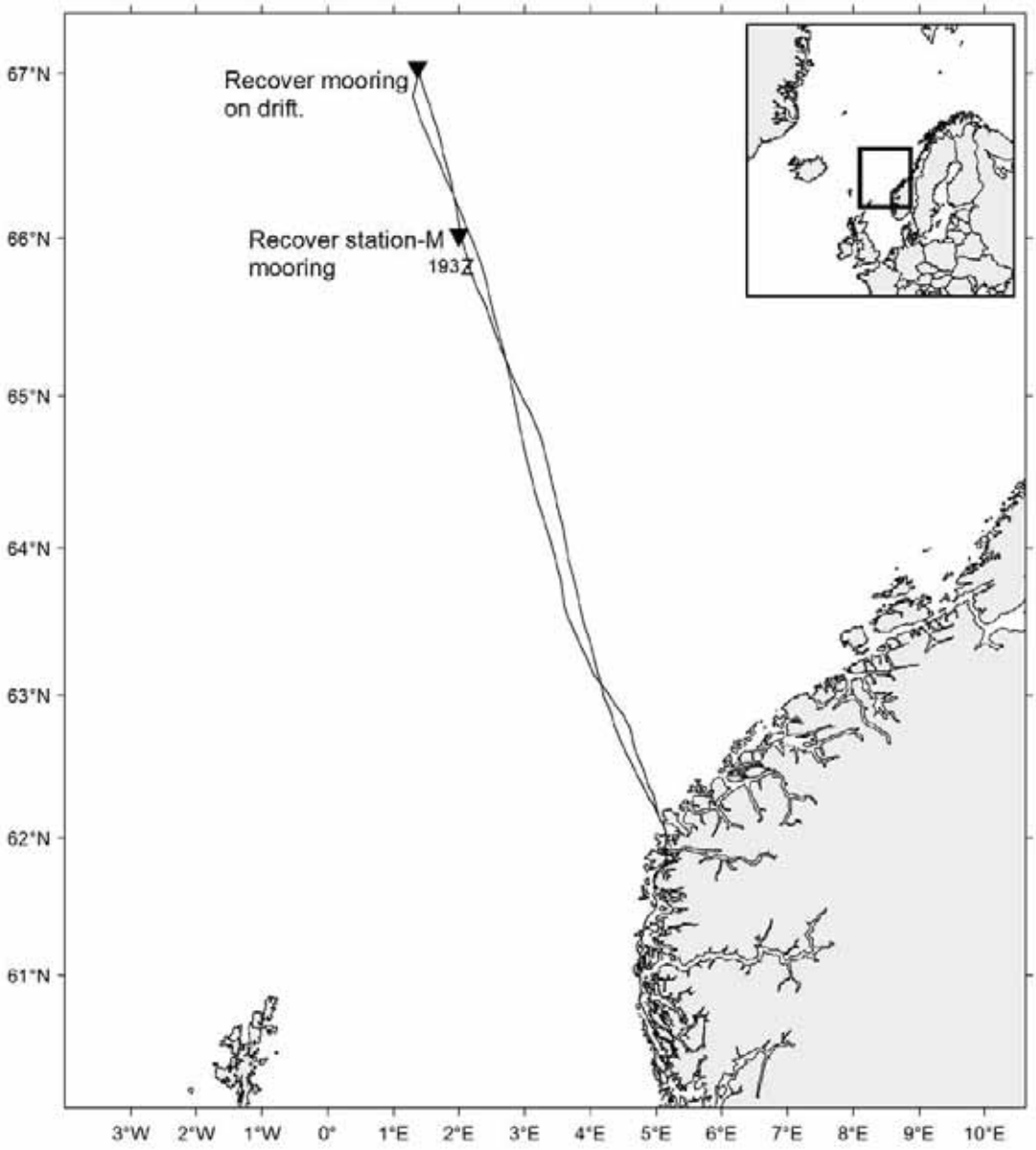
z CTD st.no 162–189
○ Plankton st. (WP-II-net)
♦ Plankton st. (Mocness)

Standard sections:
Svinøy NW st.no 162–178
Gimsøy NW st.no 180–187
Fugløya–Bjørnøya st.no 188–189 (the 2 first stations)
St. M st.no 179



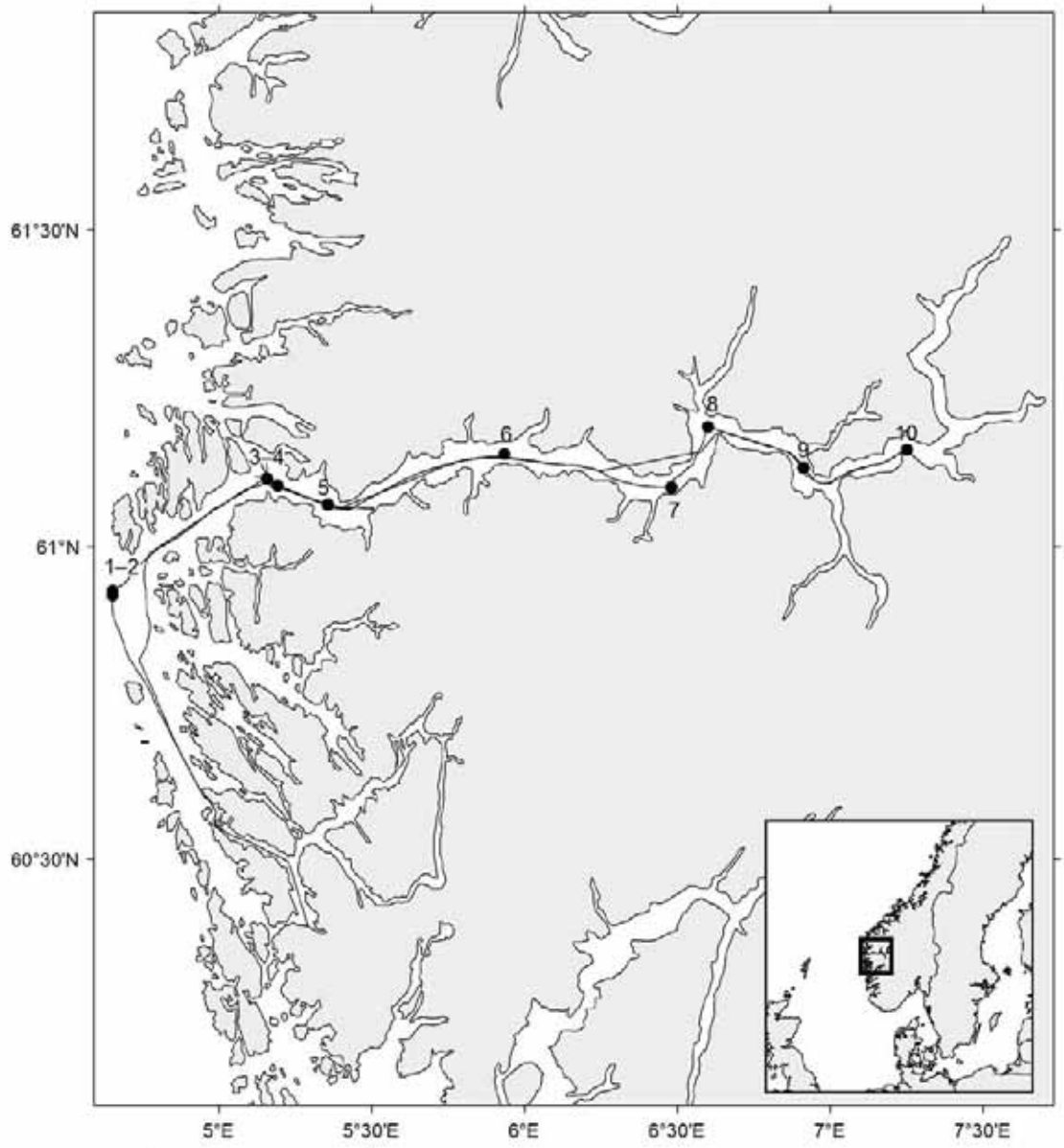
Cruise no 2014607 "Håkon Mosby"
15–19 March 2014

z CTD st.no 190–192
▼ Recovery and redeployment of RCM-mooring



Cruise no 2014608 "Håkon Mosby"
20–24 March 2014

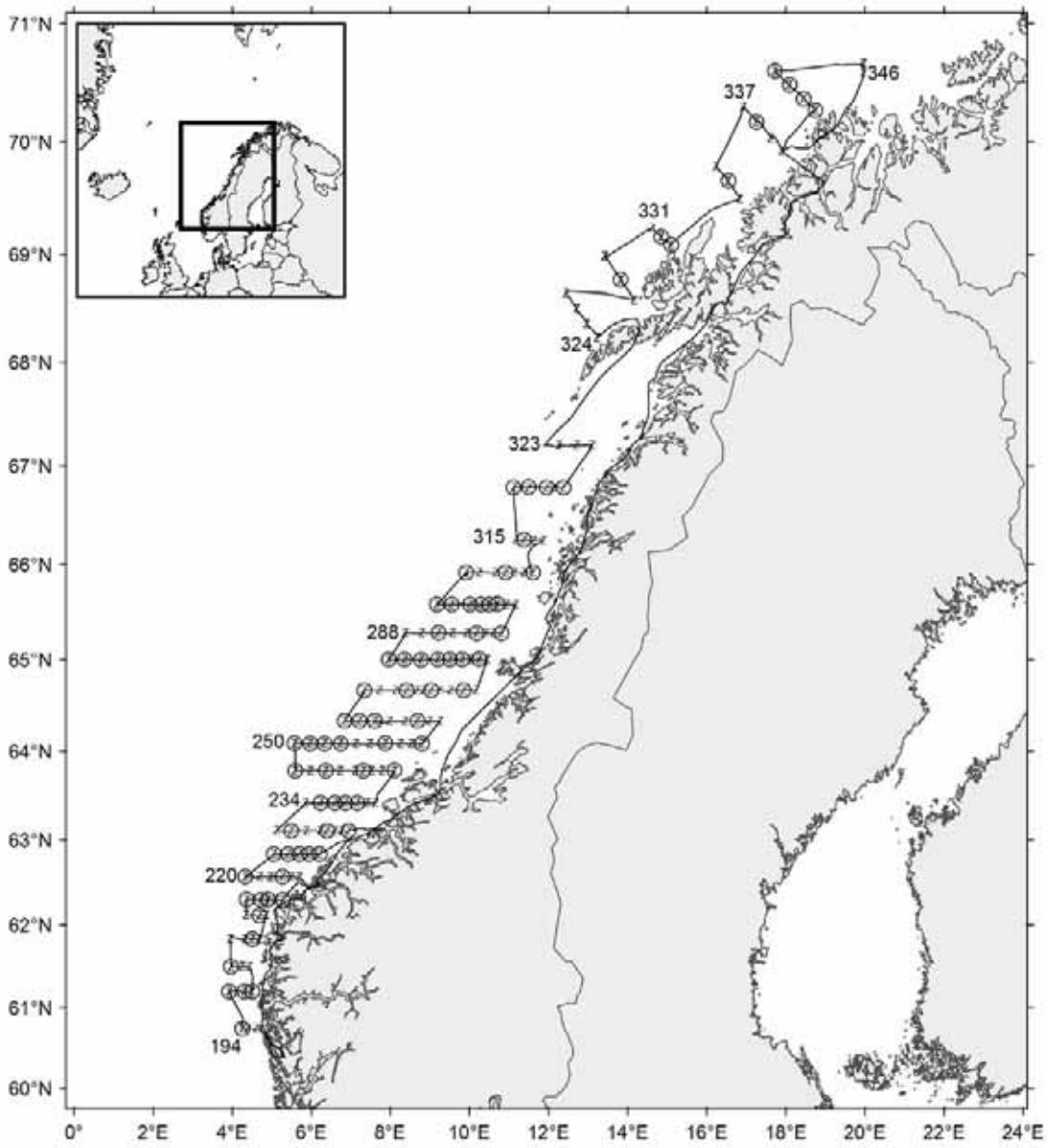
z CTD st.no 193
▼ Recover station-M mooring and mooring on drift



Cruise no 2014625 "Håkon Mosby"
27–30 March 2014

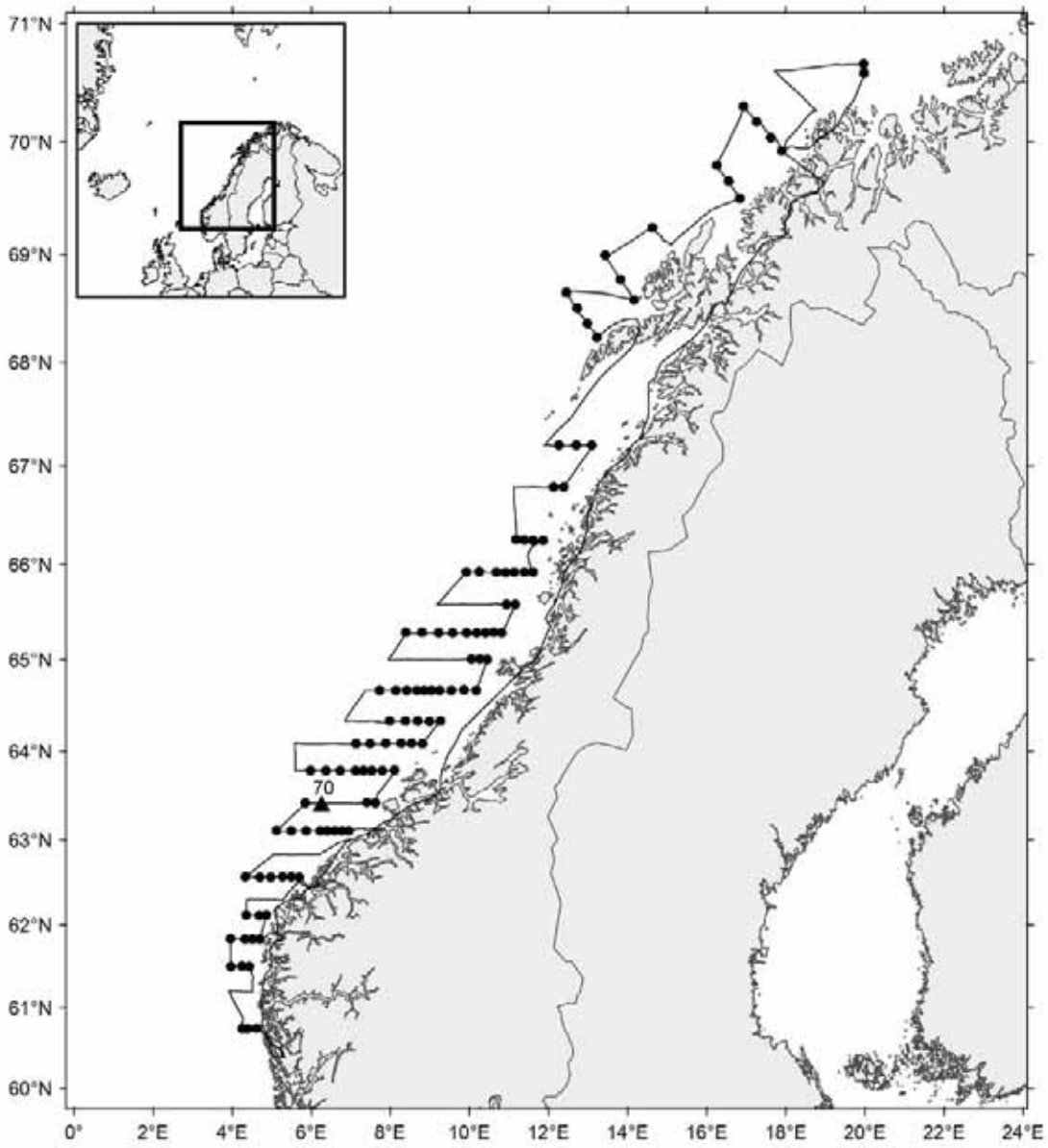
To document the fauna of the Sognefjord using video documentation.

● Video stations 1–10



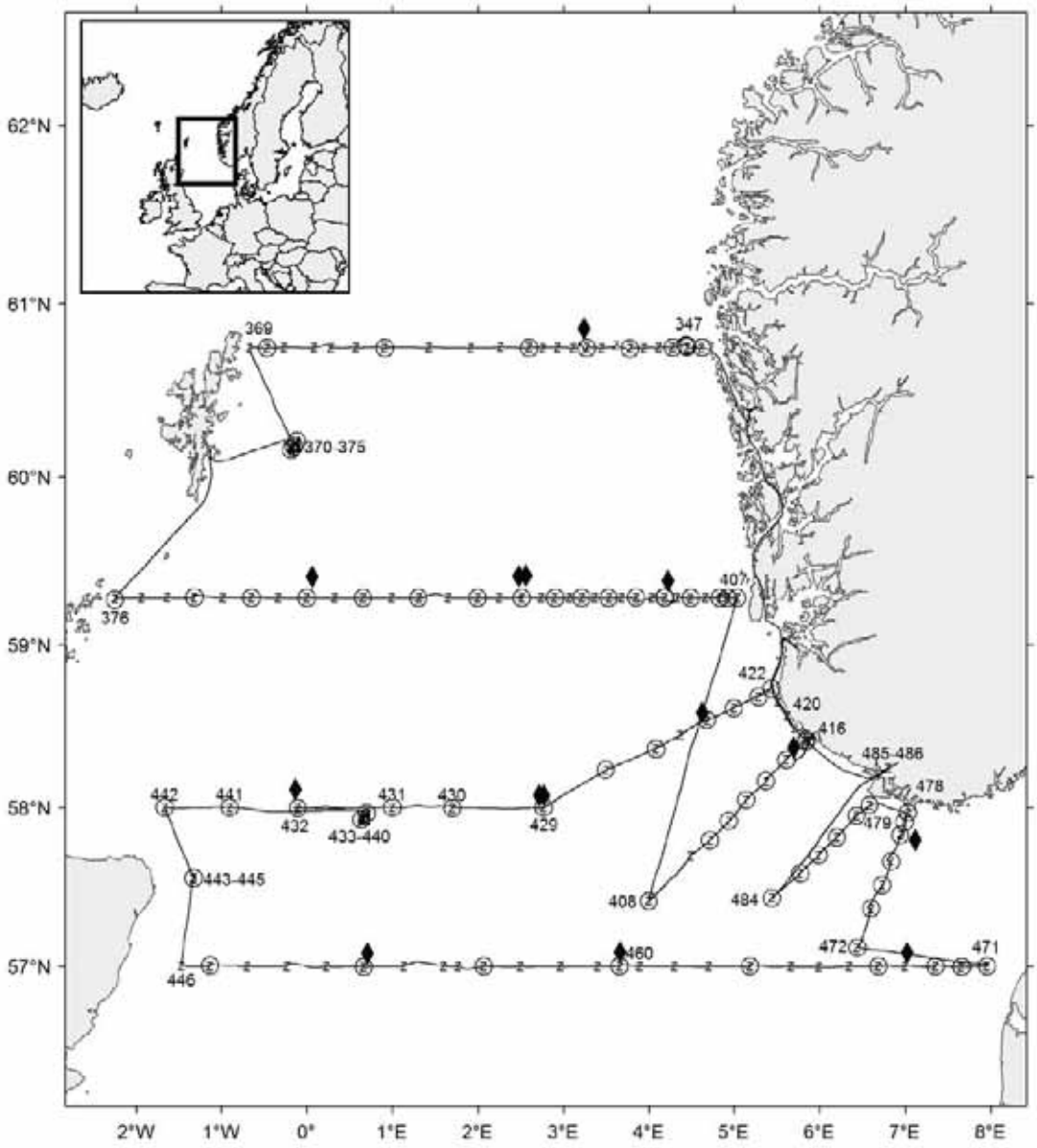
Cruise no 2014609 "Håkon Mosby"
31 March–14 April 2014

z CTD st.no 194–346
○ Plankton st. (WP-II-net)



Cruise no 2014609 "Håkon Mosby"
31 March14– April 2014

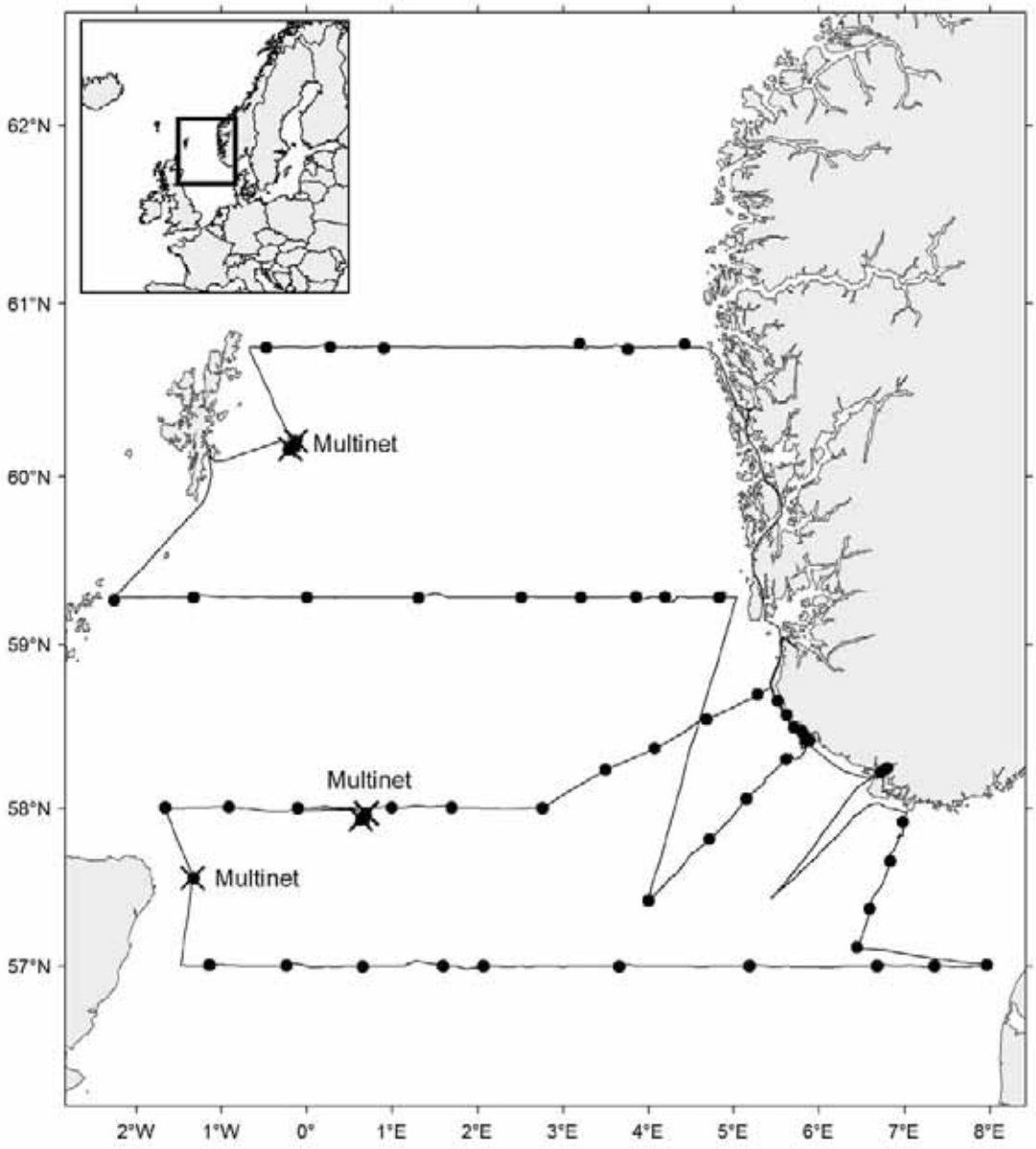
● Gulf III station
▲ Pelagic trawl st.no 70



Cruise no 2014610 "Håkon Mosby"
28 April–15 May 2014

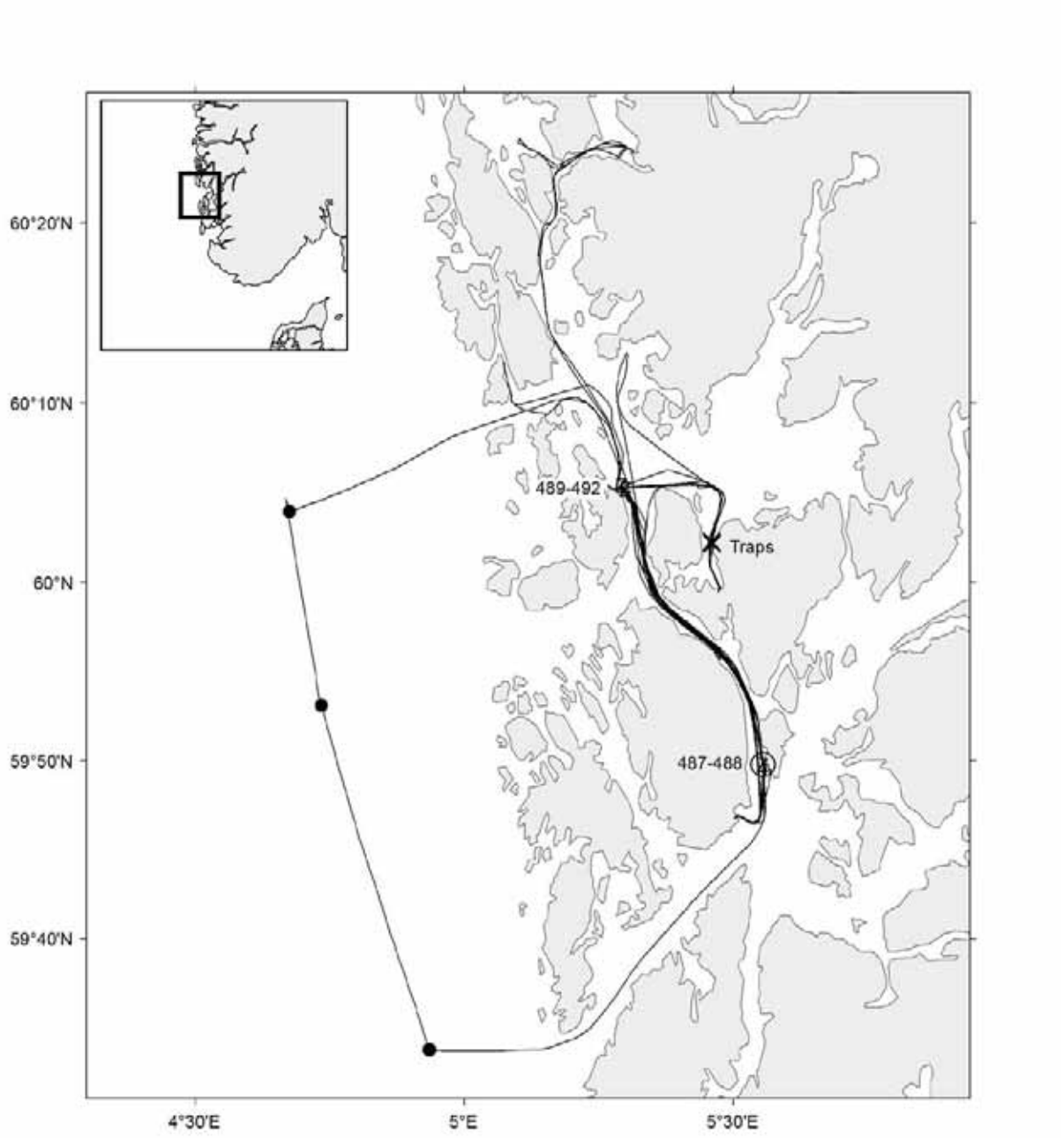
z CTD st.no 347-486
○ Plankton st. (WP-II-net)
♦ Plankton st. (Mocness)

Standard sections:
Fedje–Shetland st.no 347–369
Utsira W st.no 376–407
Egerøya SW st.no 408–416
Jærens Rev st.no 422–429
Lindesnes st.no 472–478
Lista st.no st.no 479–484



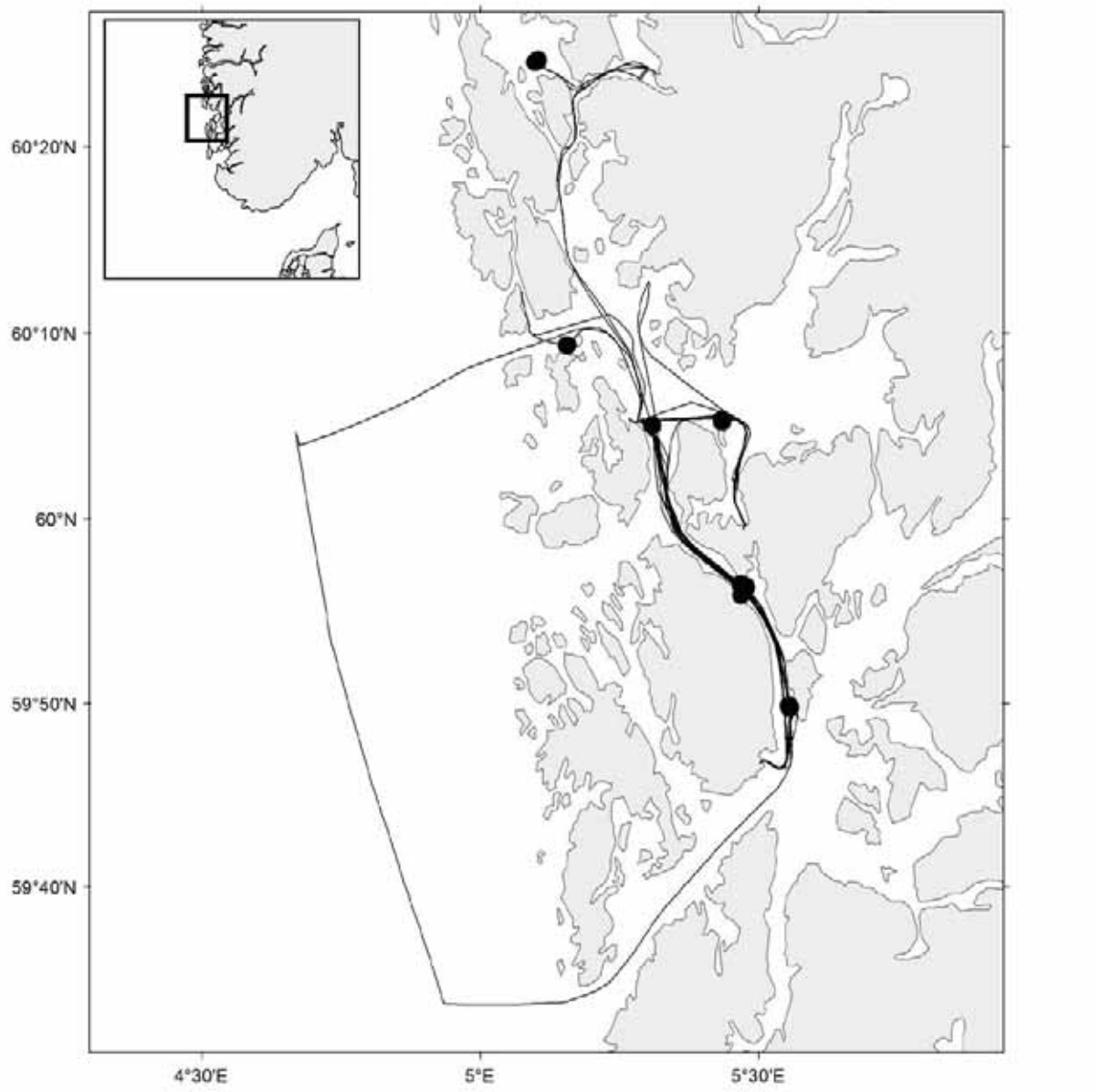
Cruise no 2014610 "Håkon Mosby"
28 April–15 May 2014

● Gulf VII st.
× Multinet st.



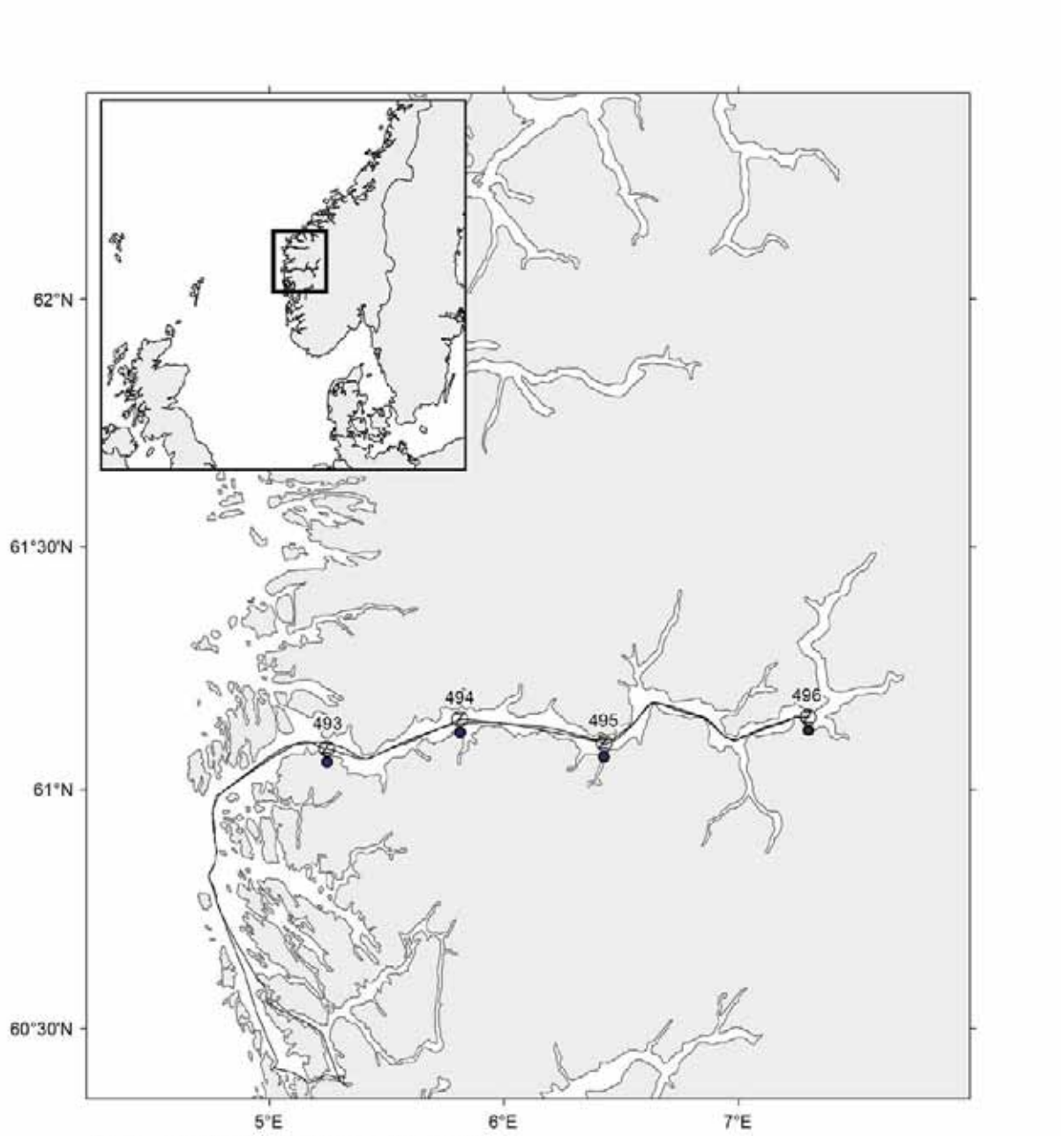
Cruise no 2014611 "Håkon Mosby"
24 May–4 June 2014

z CTD st.no 487-492
O Plankton st.
● Grab st.
× Traps



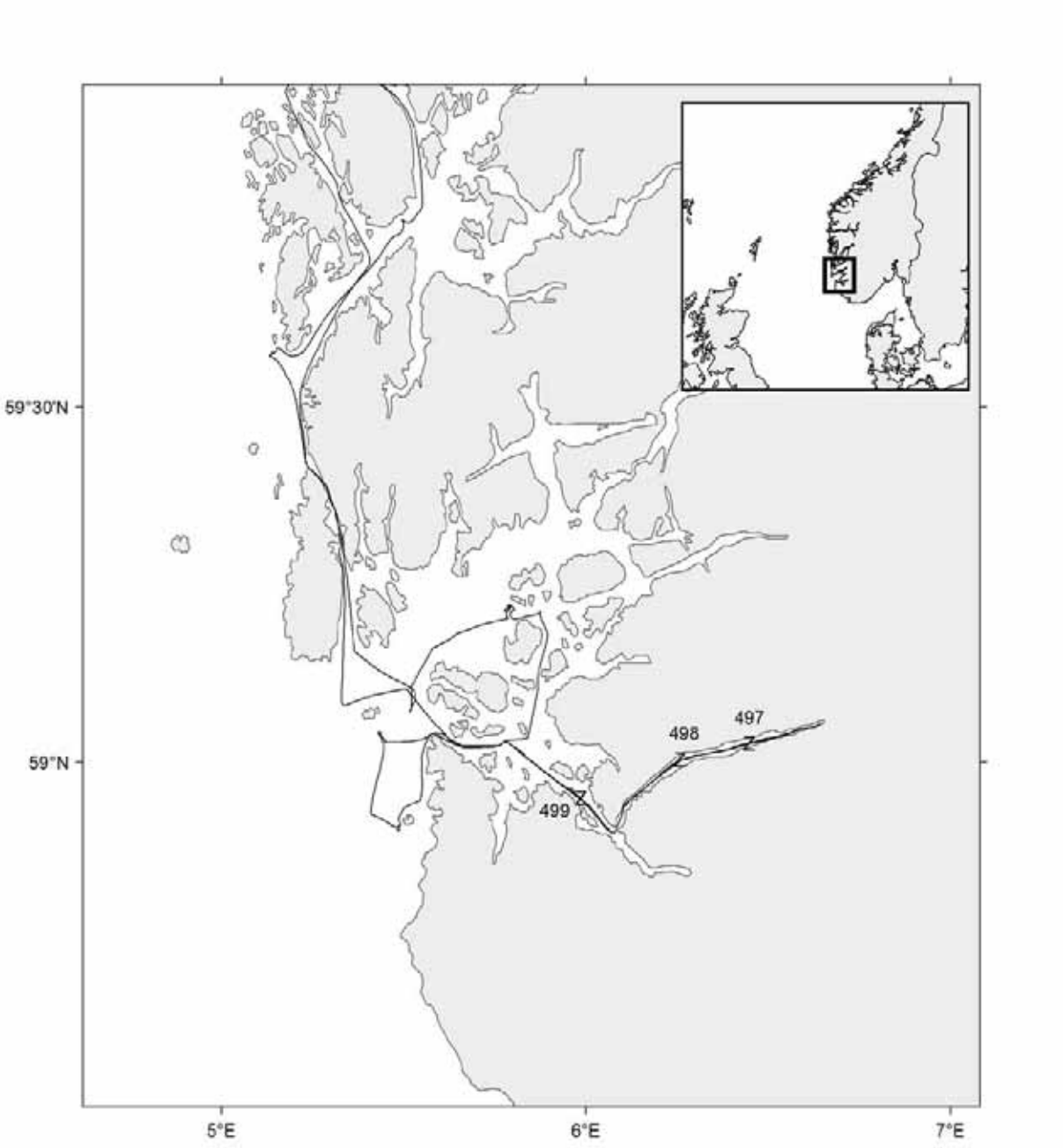
Cruise no 2014611 "Håkon Mosby"
24 May–4 June 2014

● Rov stations



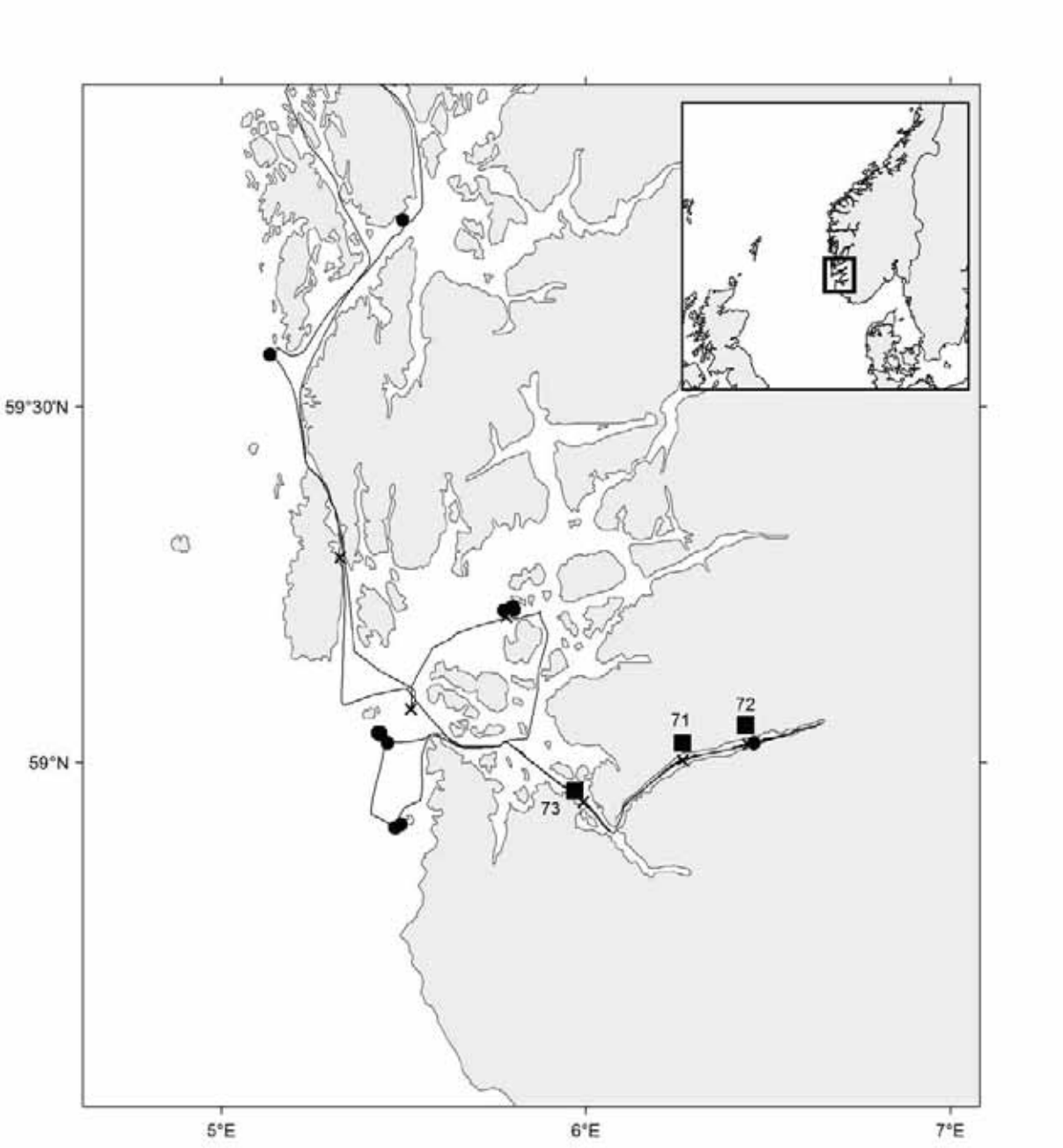
Cruise no 2014612 "Håkon Mosby"
5–7 June 2014

z CTD st.no 493–496
○ Plankton st. (WP-II-net)
● Grab st.



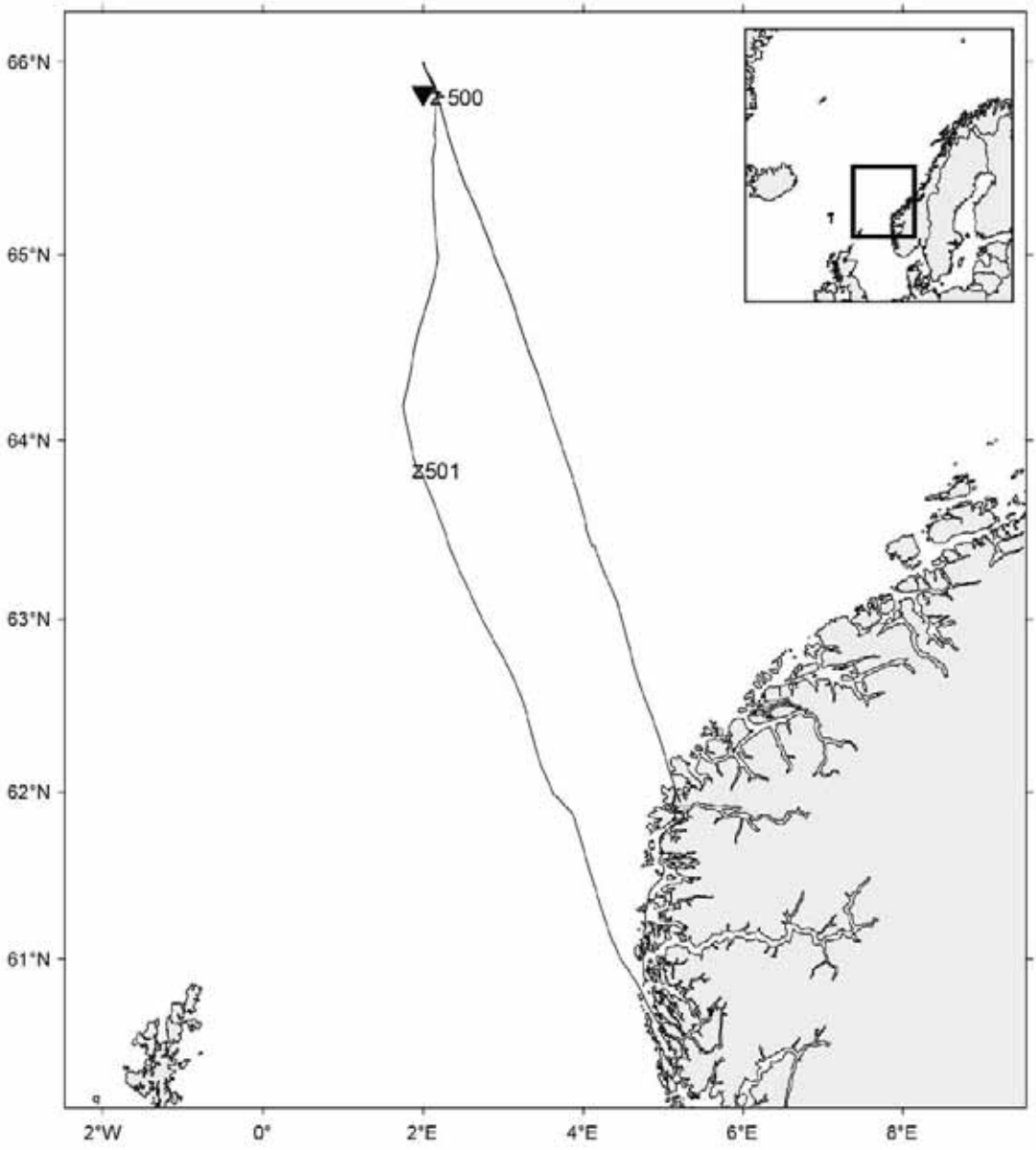
Cruise no 2014614 "Håkon Mosby"
8–10 June 2014

z CTD st.no 497–499



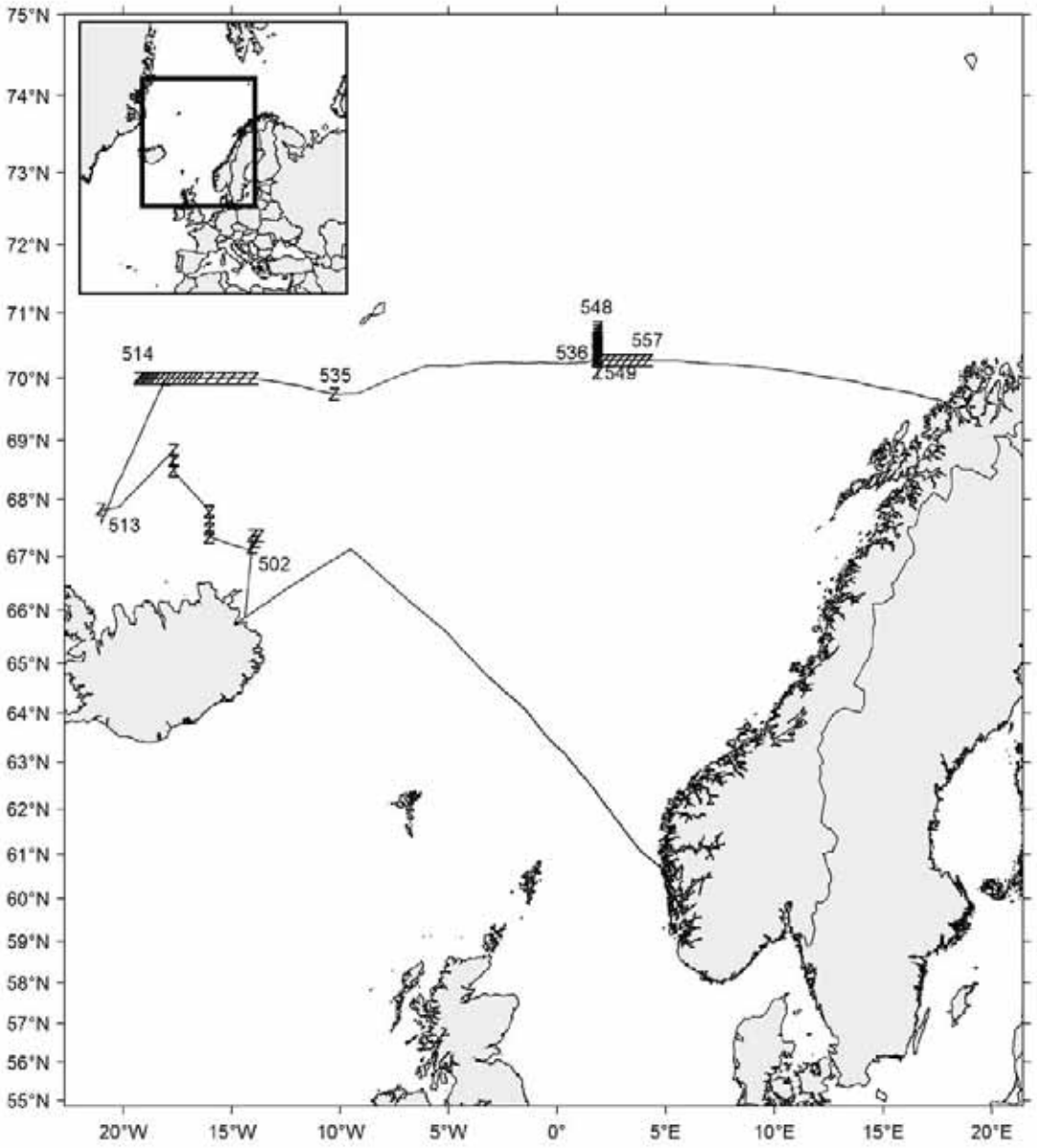
Cruise no 2014614 "Håkon Mosby"
8–10 June 2014

■ Bottom trawl st.no 71–73
● Grab station
× Sledge station



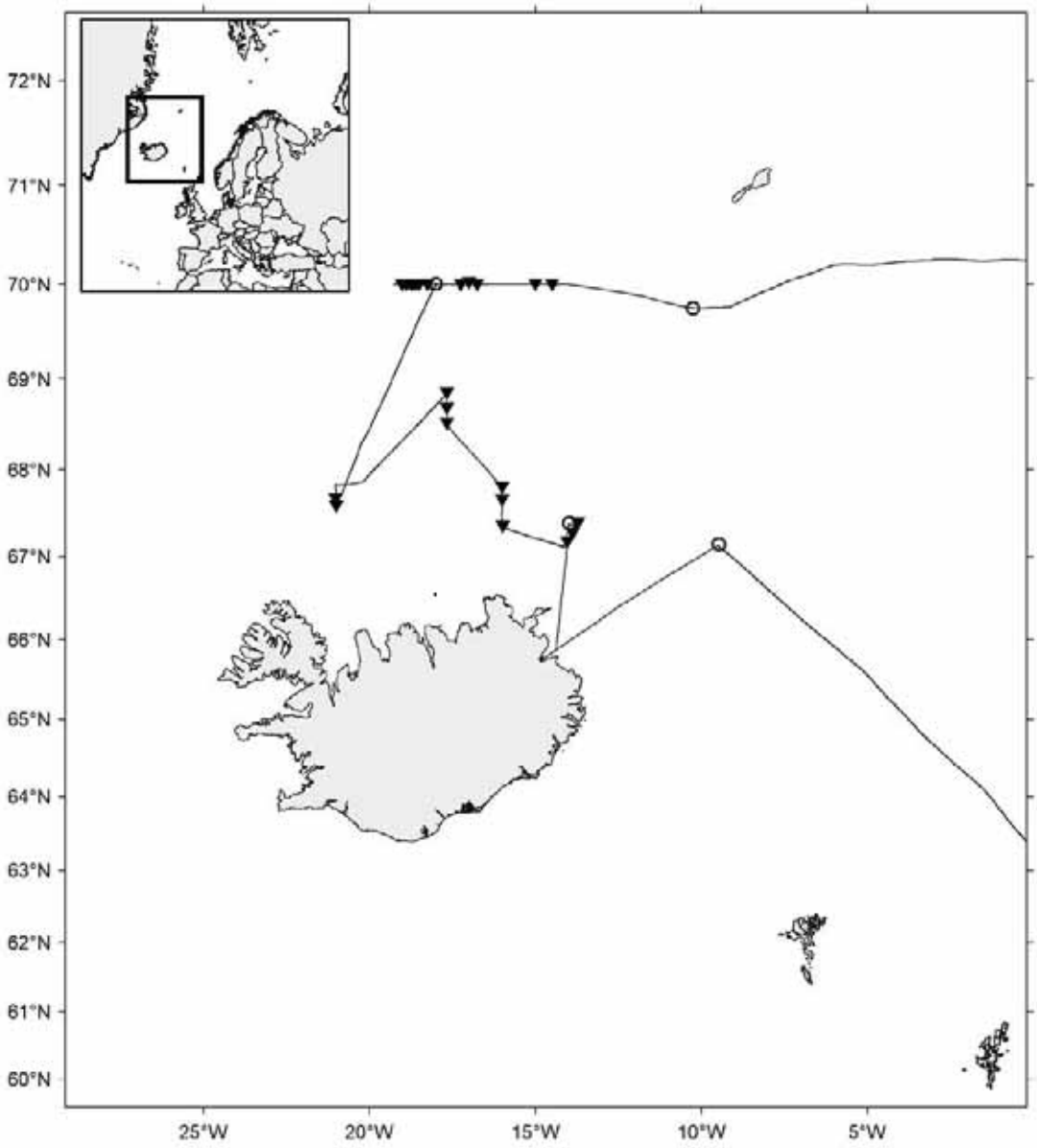
Cruise no 2014613 "Håkon Mosby"
12–15 June 2014

z CTD st.no 500–501
▼ Polar Buoy and Deep Water Mooring deployed



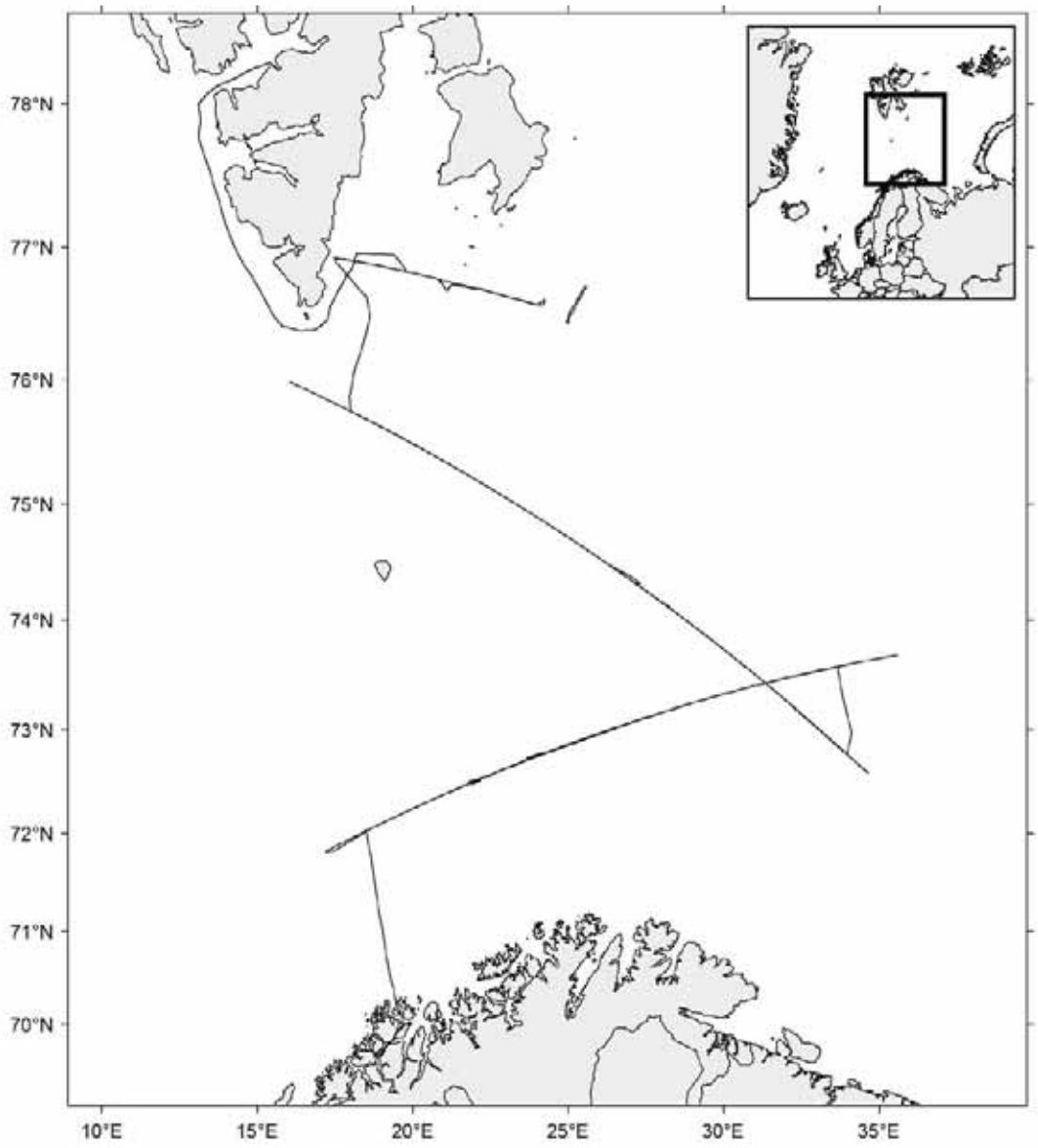
Cruise no 2014615 "Håkon Mosby"
6–18 July 2014

z CTD st.no 502–557



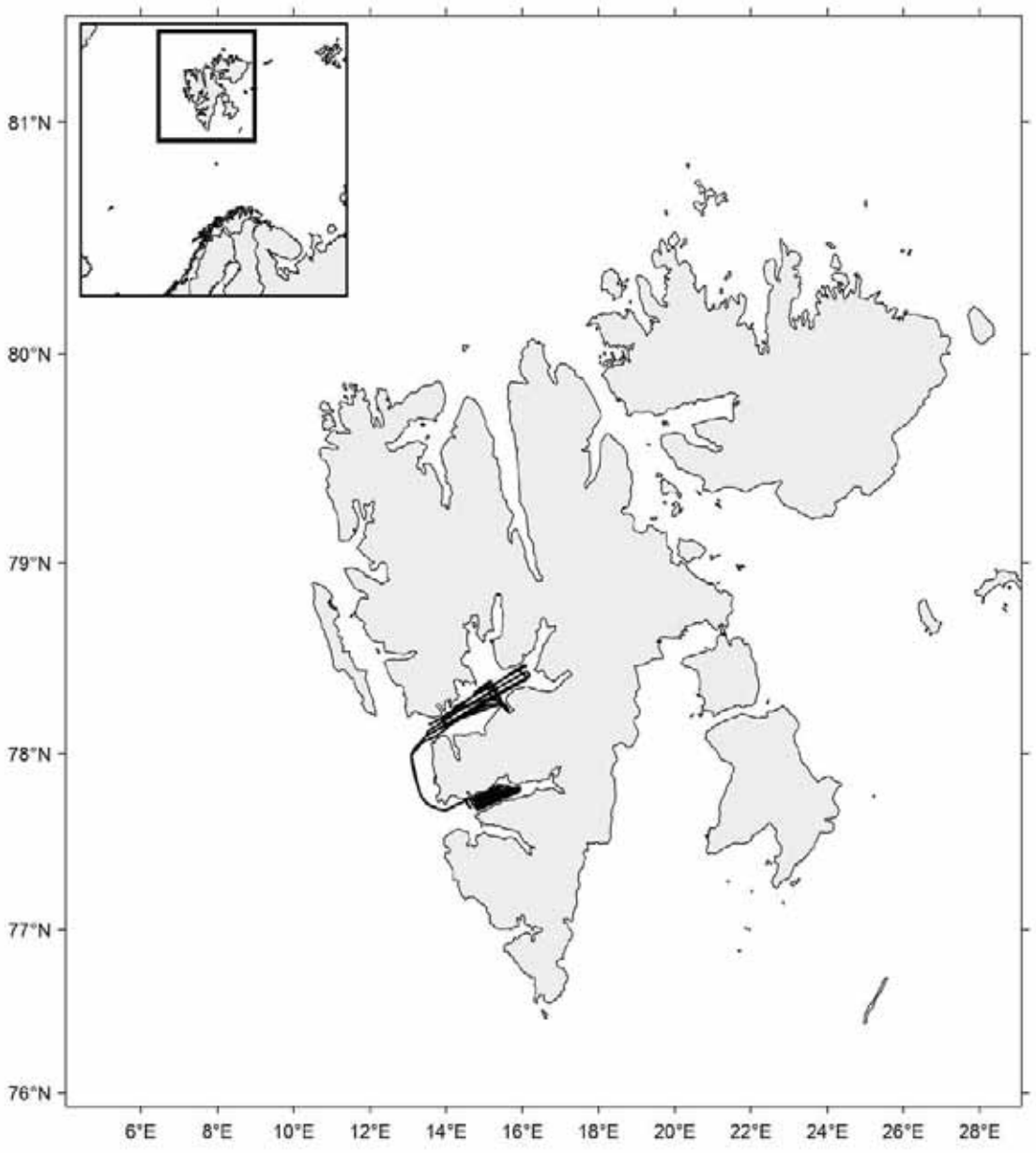
Cruise no 2014615 "Håkon Mosby"
6–18 July 2014

▼ RAFOS – Neutrally buoyant deployed.
○ RAFOS sound source mooring, one ARGO float. deployed/recovered.
2 current meters (Aanderaa RCM-7) at 600 and 1100 m.
1 Upward looking ADCP (Nortek Continental) at 200 m.
2 CTD (SBE37) at 52 m and 125 m.



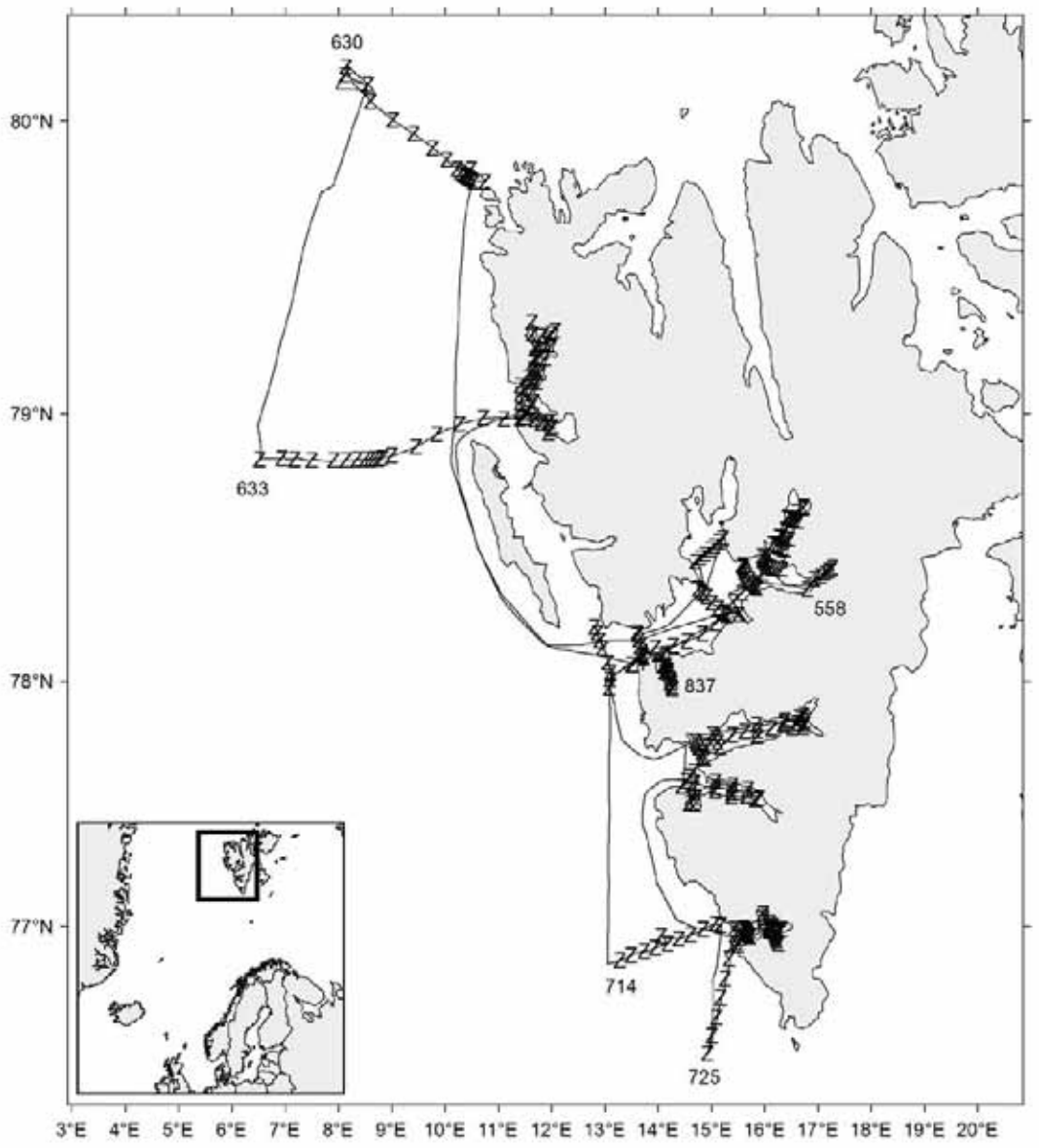
Cruise no 2014616 "Håkon Mosby"
20 July–12 August 2014
The ocean bottom seismometer survey
to study crustal structure in the western Barents Sea.

——— Cruise track



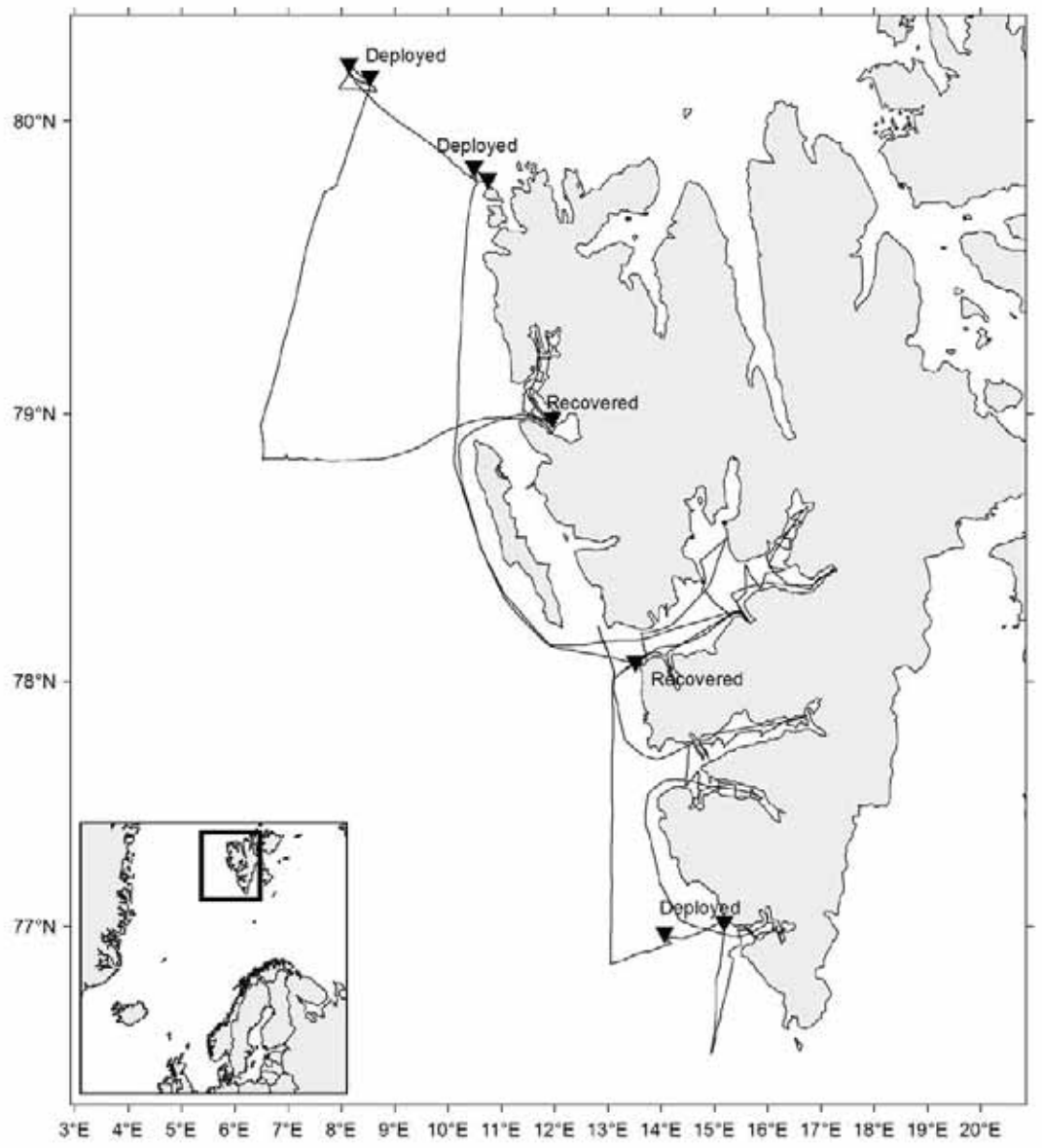
Cruise no 2014617 "Håkon Mosby"
14–24 August 2014

——— Cruise track



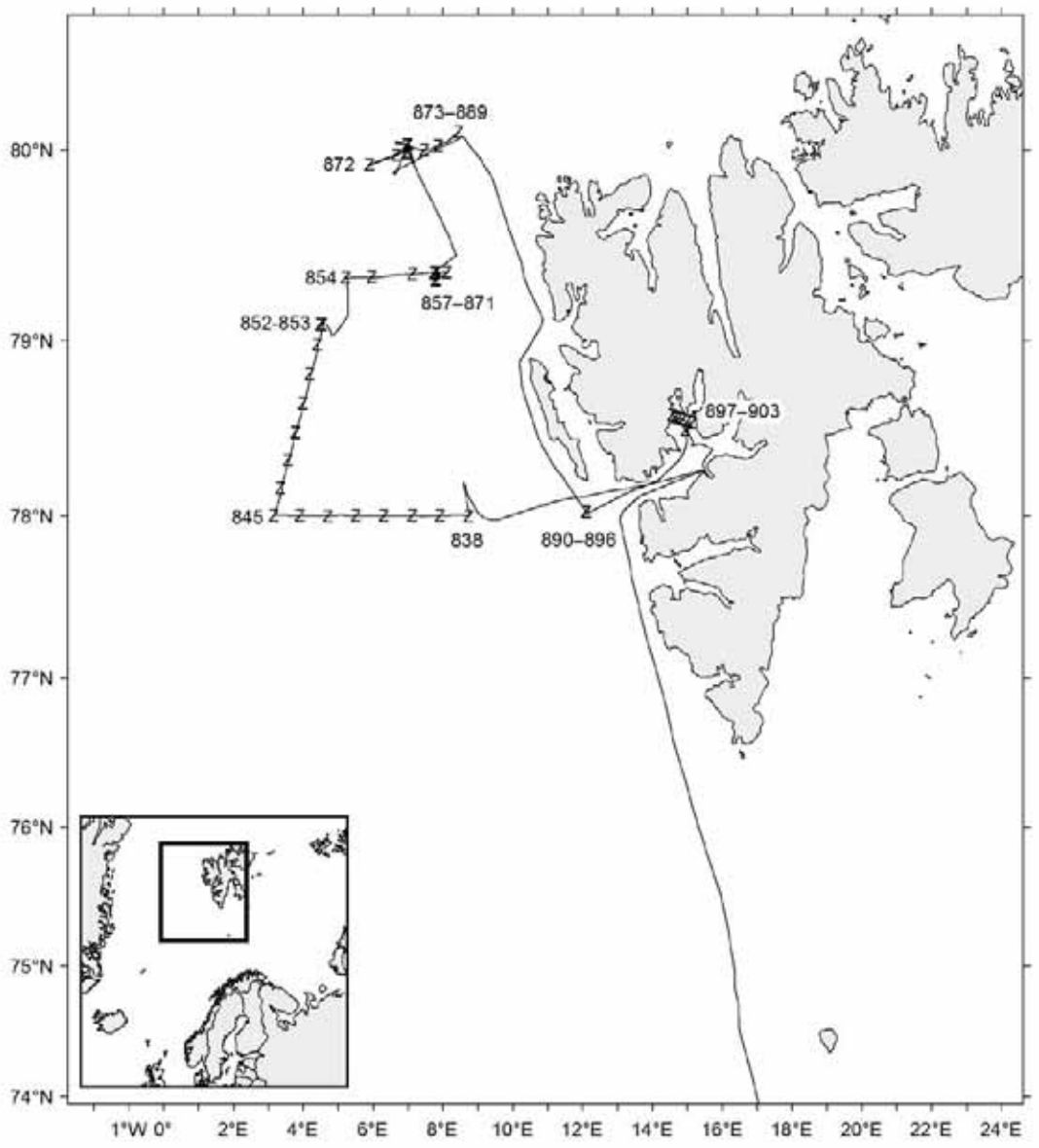
Cruise no 2014618 "Håkon Mosby"
25 August–5 September 2014

z CTD st.no 558–837



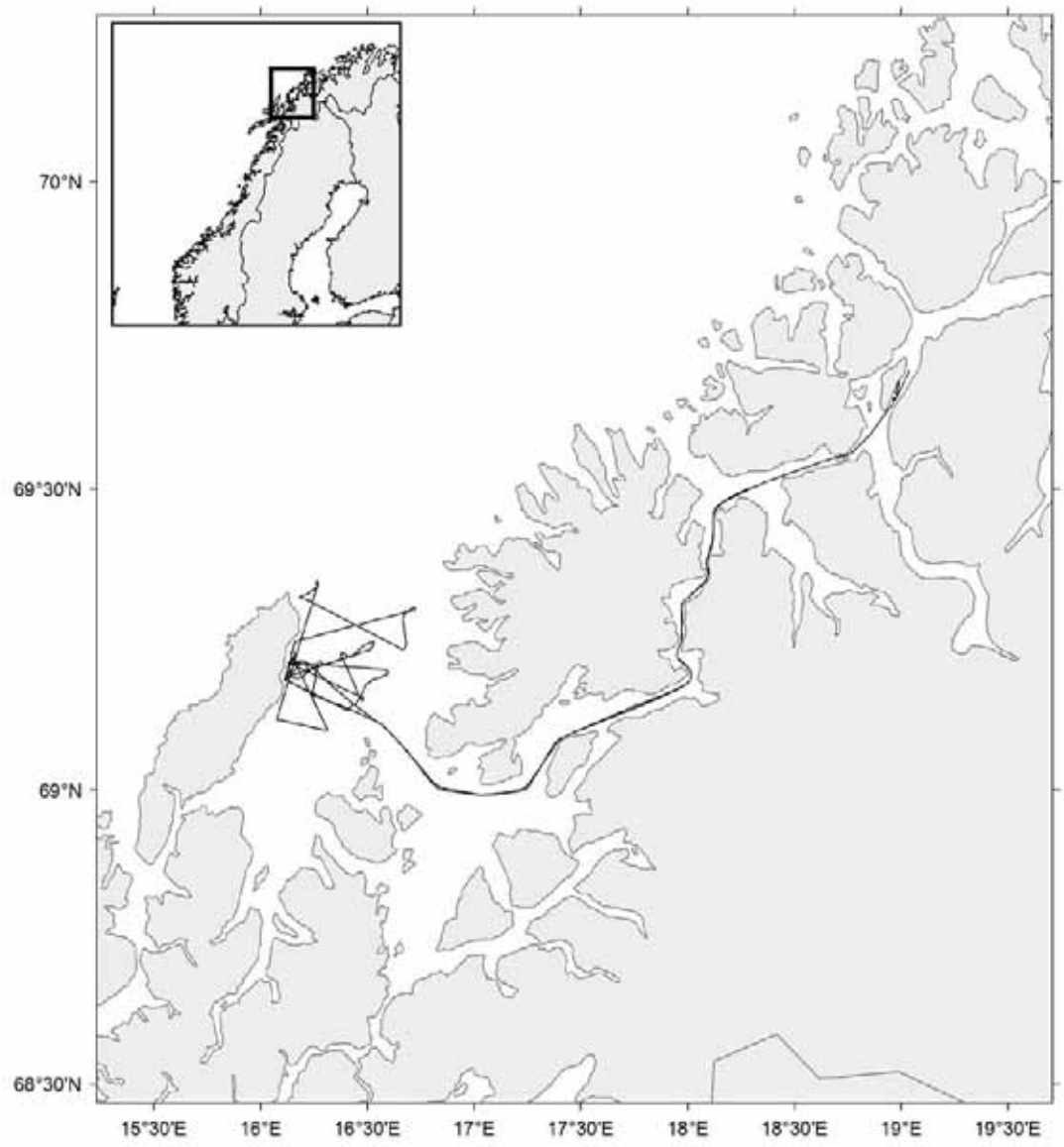
Cruise no 2014618 "Håkon Mosby"
25 August–5 September 2014

▼ Mooring recovered and deployed

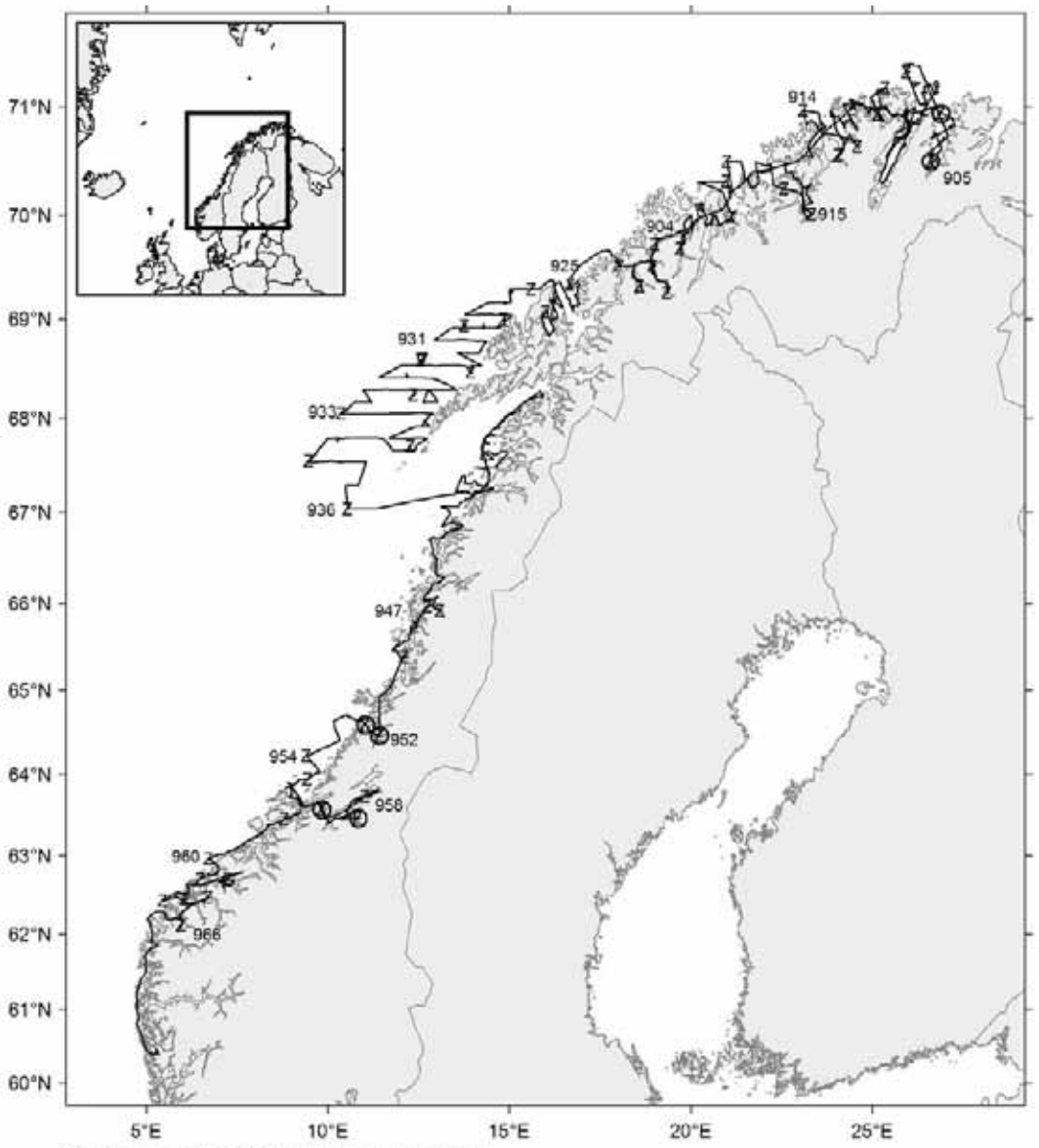


Cruise no 2014619 "H. Mosby"
6–15 September 2014

z CTD st.no 838–903

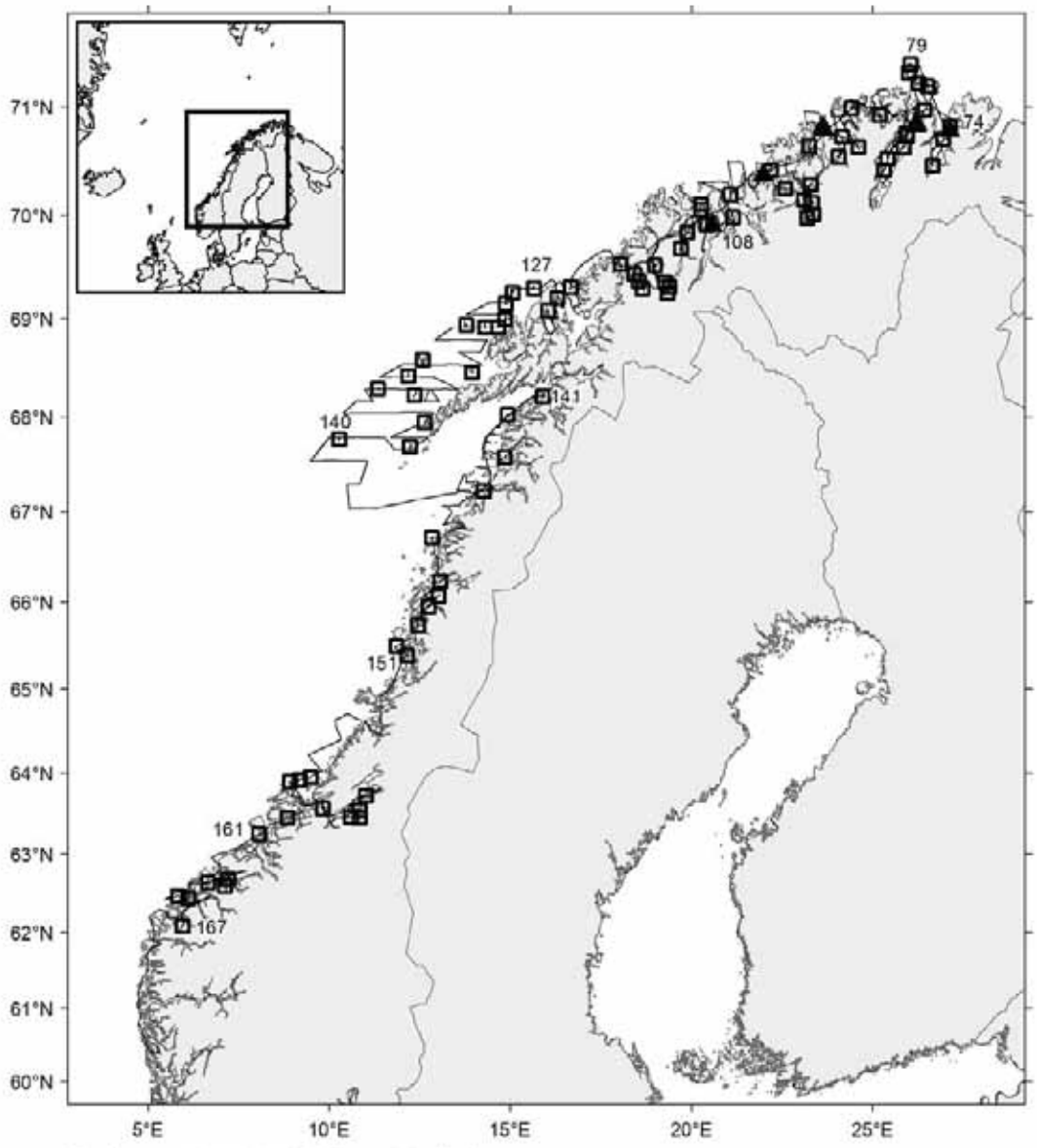


Cruise no 2014620 "Håkon Mosby"
19–21 September 2014
—— Cruise track
The cruise comprises seismic data in acquisition and gravity measurements in the Andfjorden.



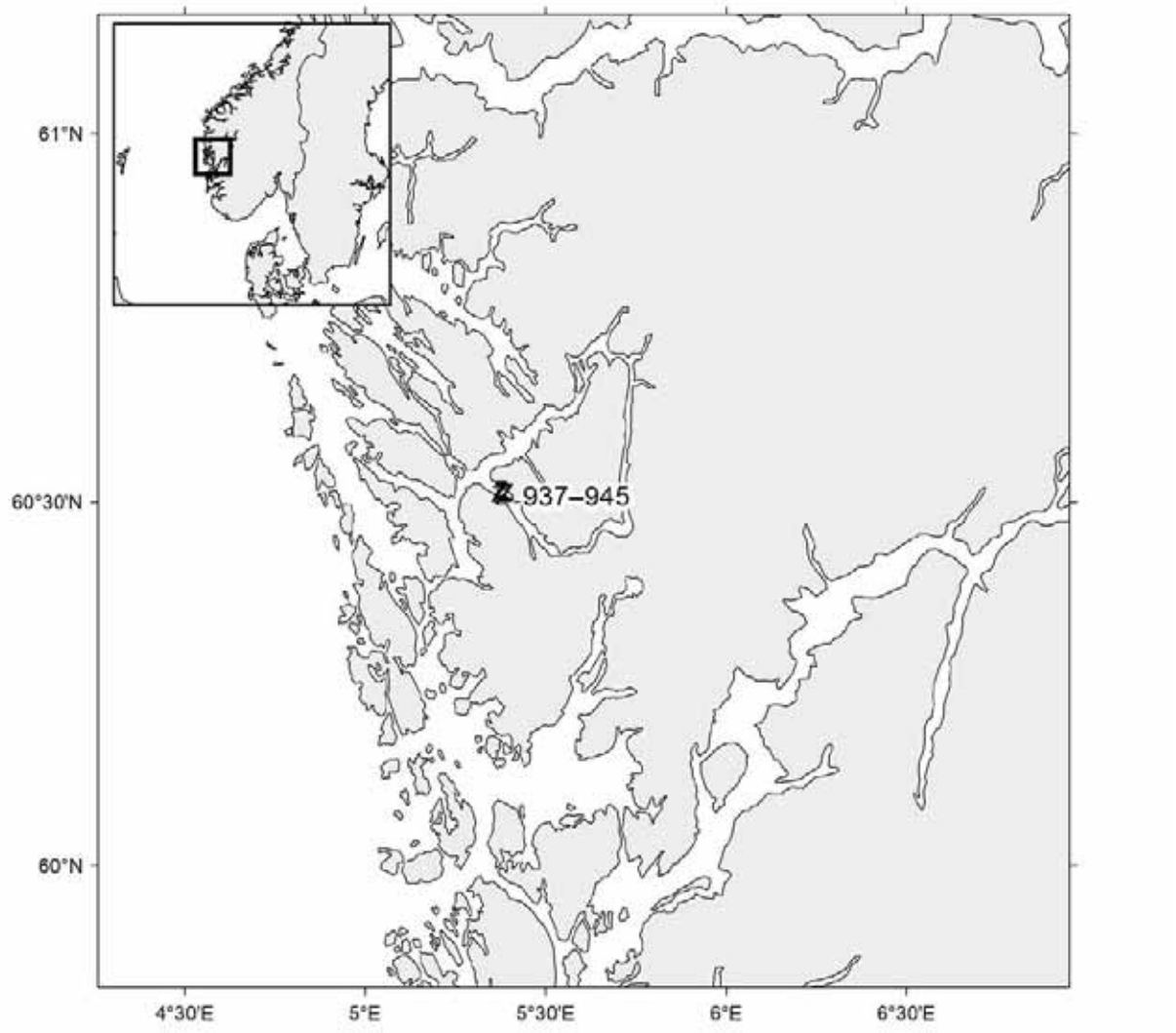
Cruise no 2014621 "Håkon Mosby"
26 September–23 October 2014

z CTD st.no 904–936 (Seabird CTD)
z CTD st.no 947–966 (Saiv CTD)
OGrab station
Due to problems with the Seabird CTD a reserve Saiv CTD was used for the 20 last stations.



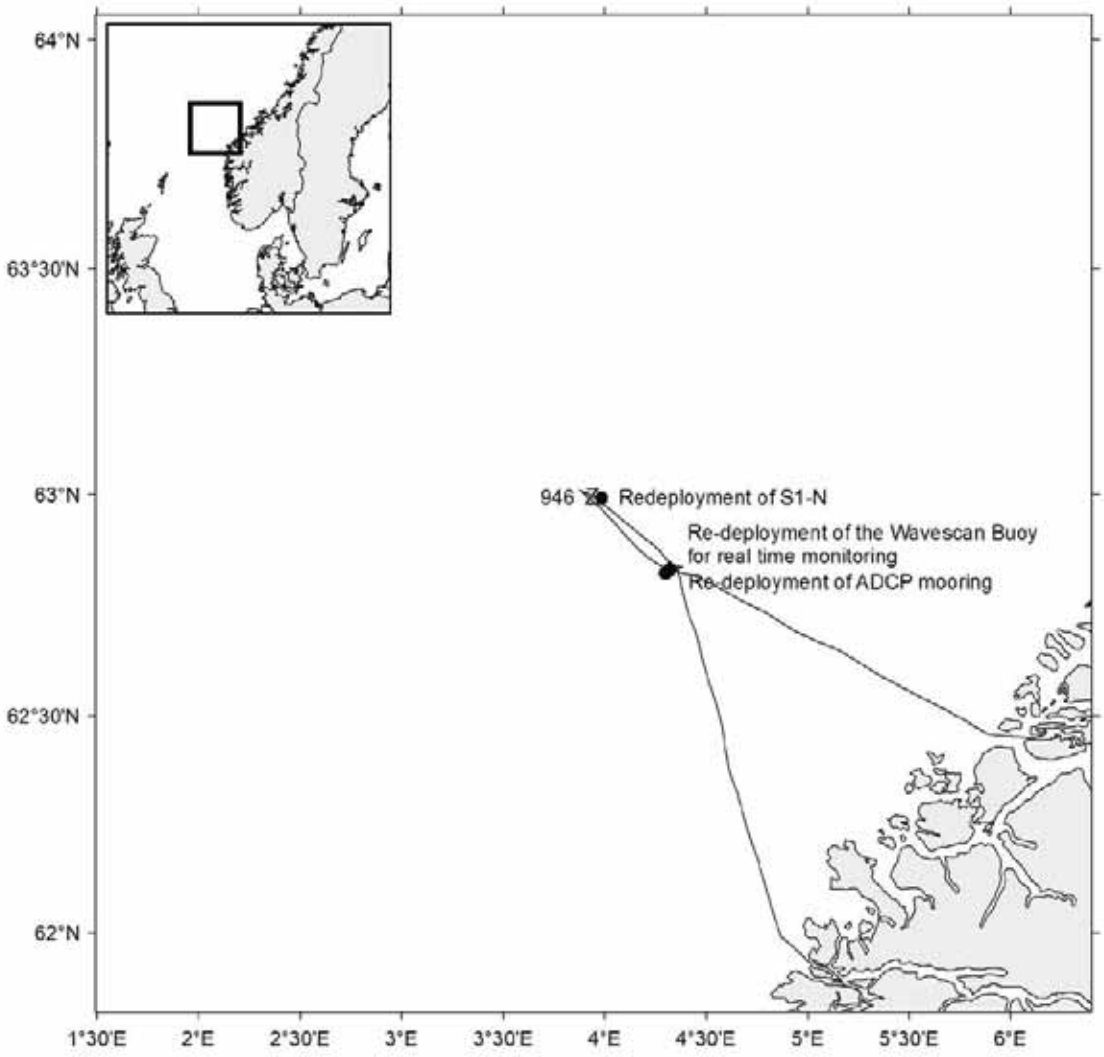
Cruise no 2014621 "Håkon Mosby"
26 September–23 October 2014

Trawl st.no 74–167
□ Bottom trawl
▲ Pelagic trawl



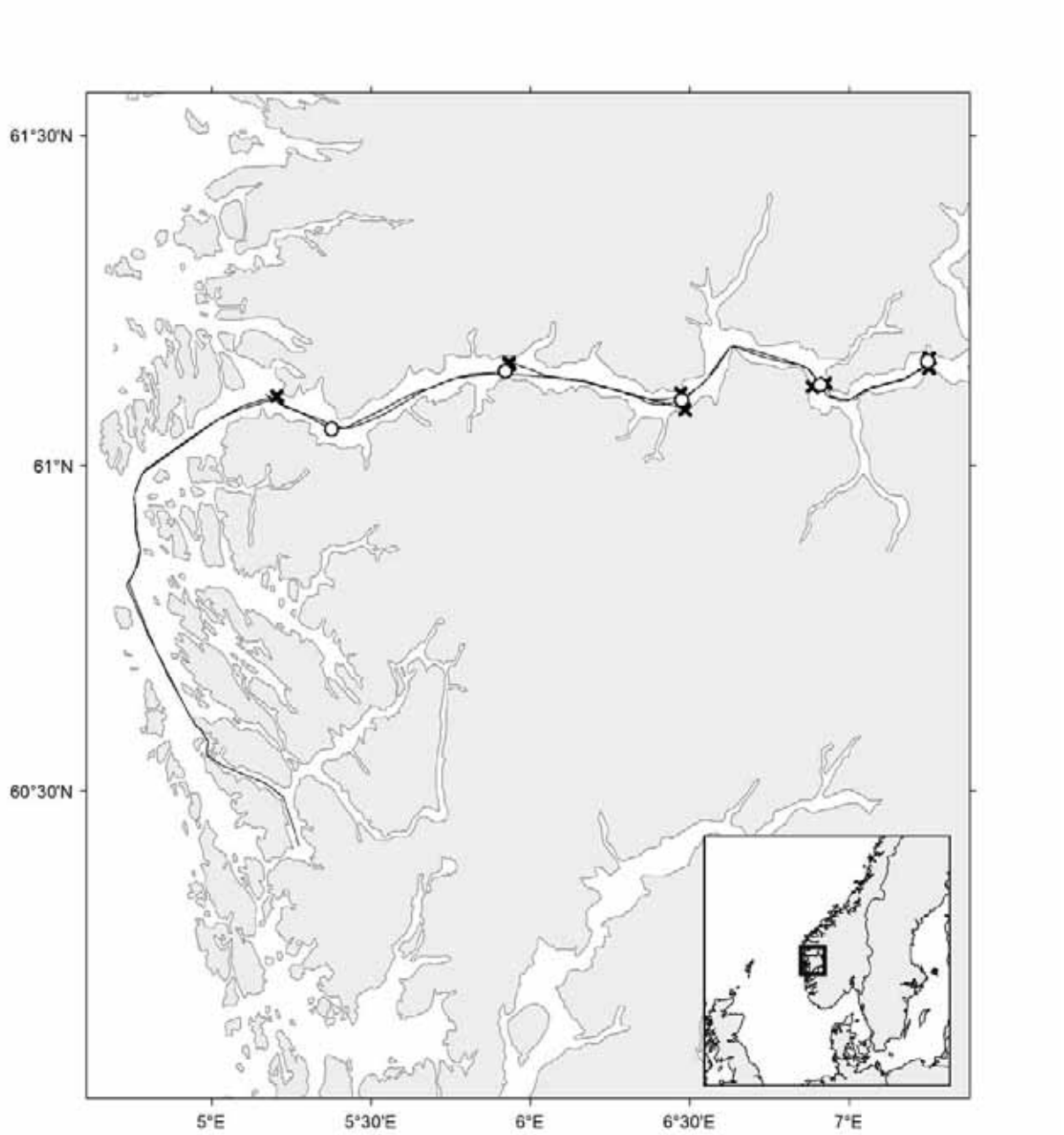
Cruise no 2014623 "Håkon Mosby"
27 October 2014

z CTD st.no 937–945



Cruise no 2014622 "Håkon Mosby"
28 October–2 November 2014

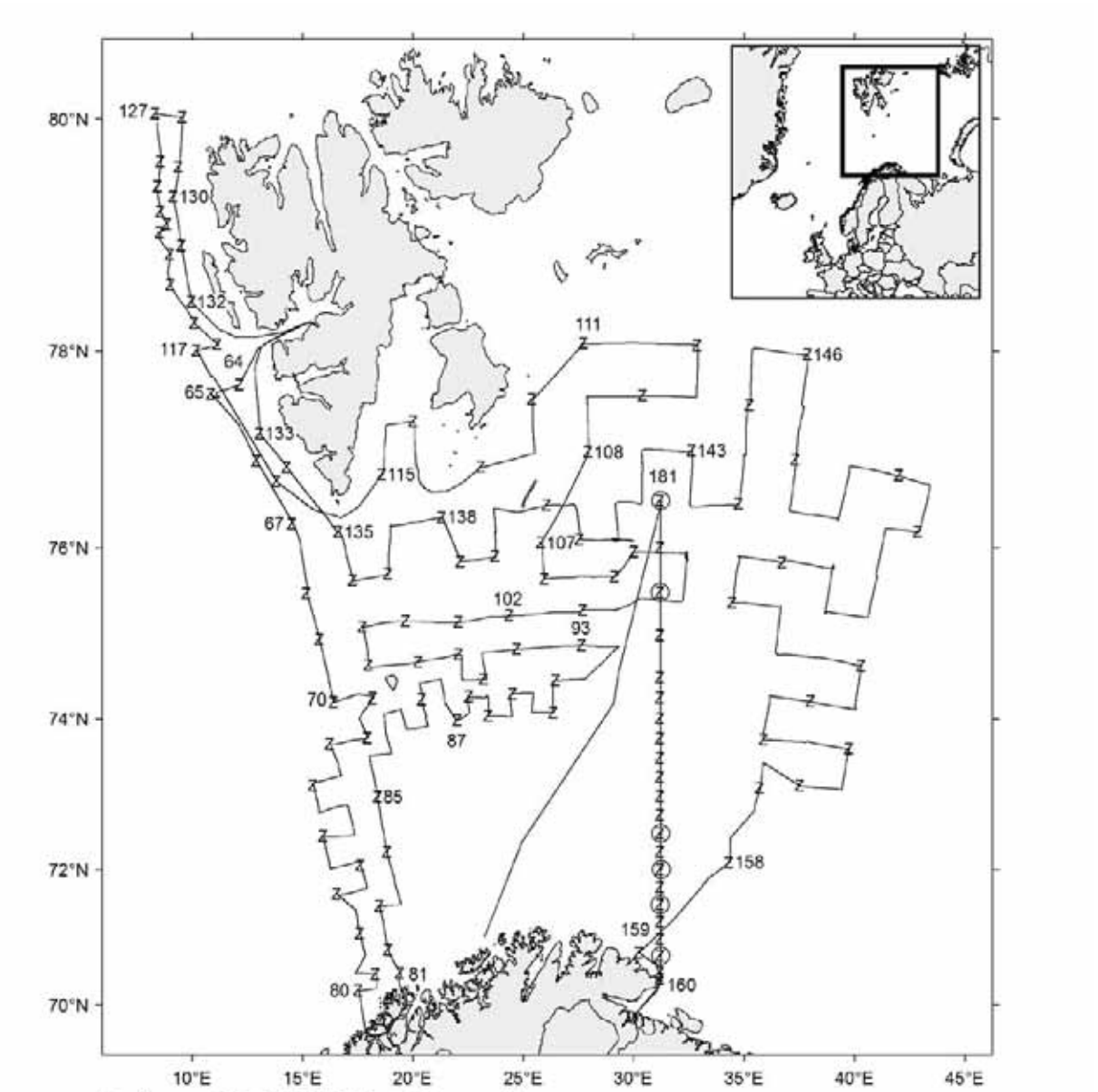
z CTD st.no 946
• Re-deployment of S1-N, Wavescan Buoy and ADCP mooring



Cruise no 2014624 "Håkon Mosby"
18–21 November 2014

✖ Rov station
○ Plankton-net station

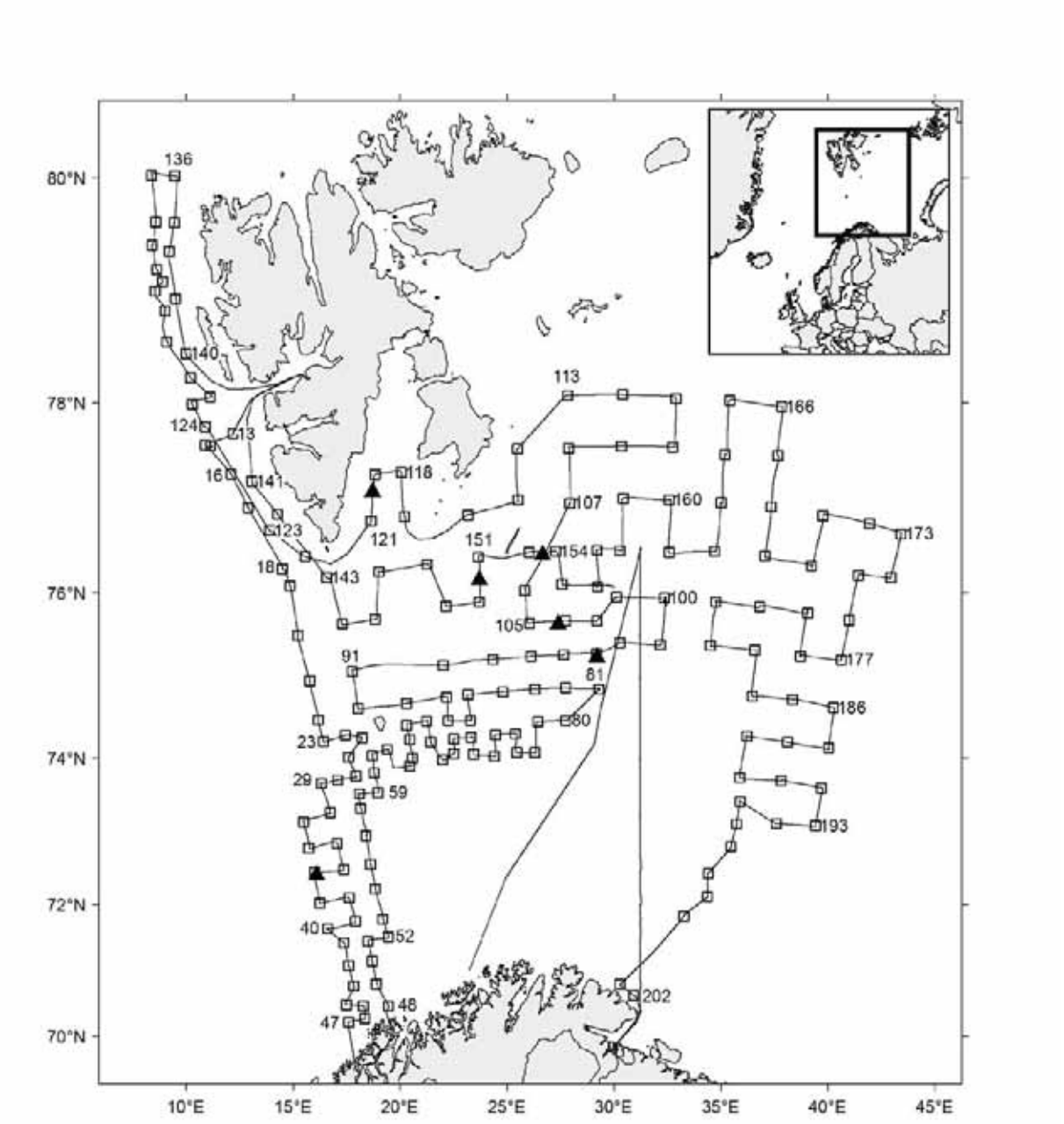
4.4 Helmer Hanssen



Cruise no 2014805 "Helmer Hanssen"
22 Jan–2 March 2014

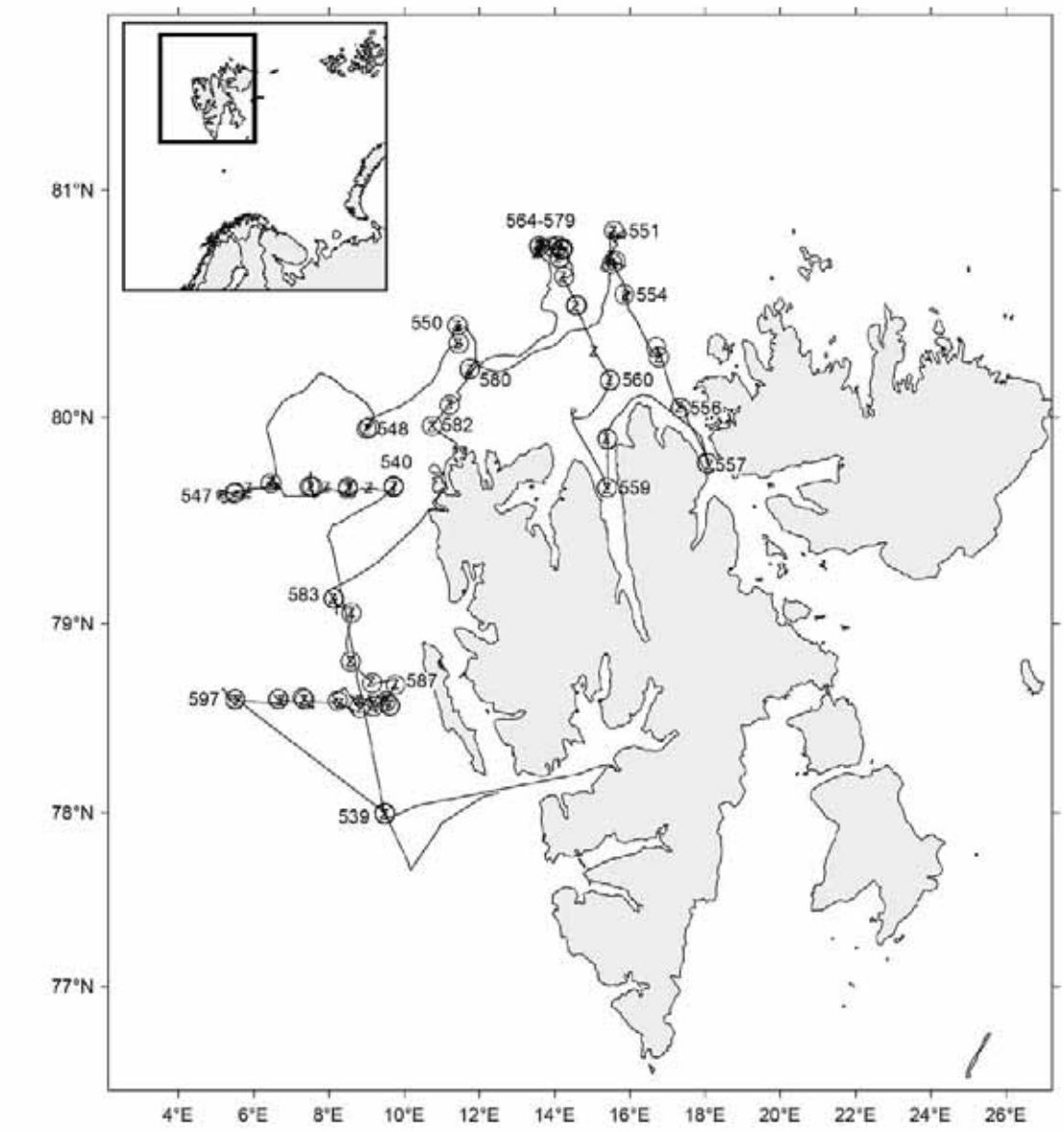
z CTD st.no 64–181
○ Plankton st. (WP-II-net)

Standard section Vardø N st.no 160–181



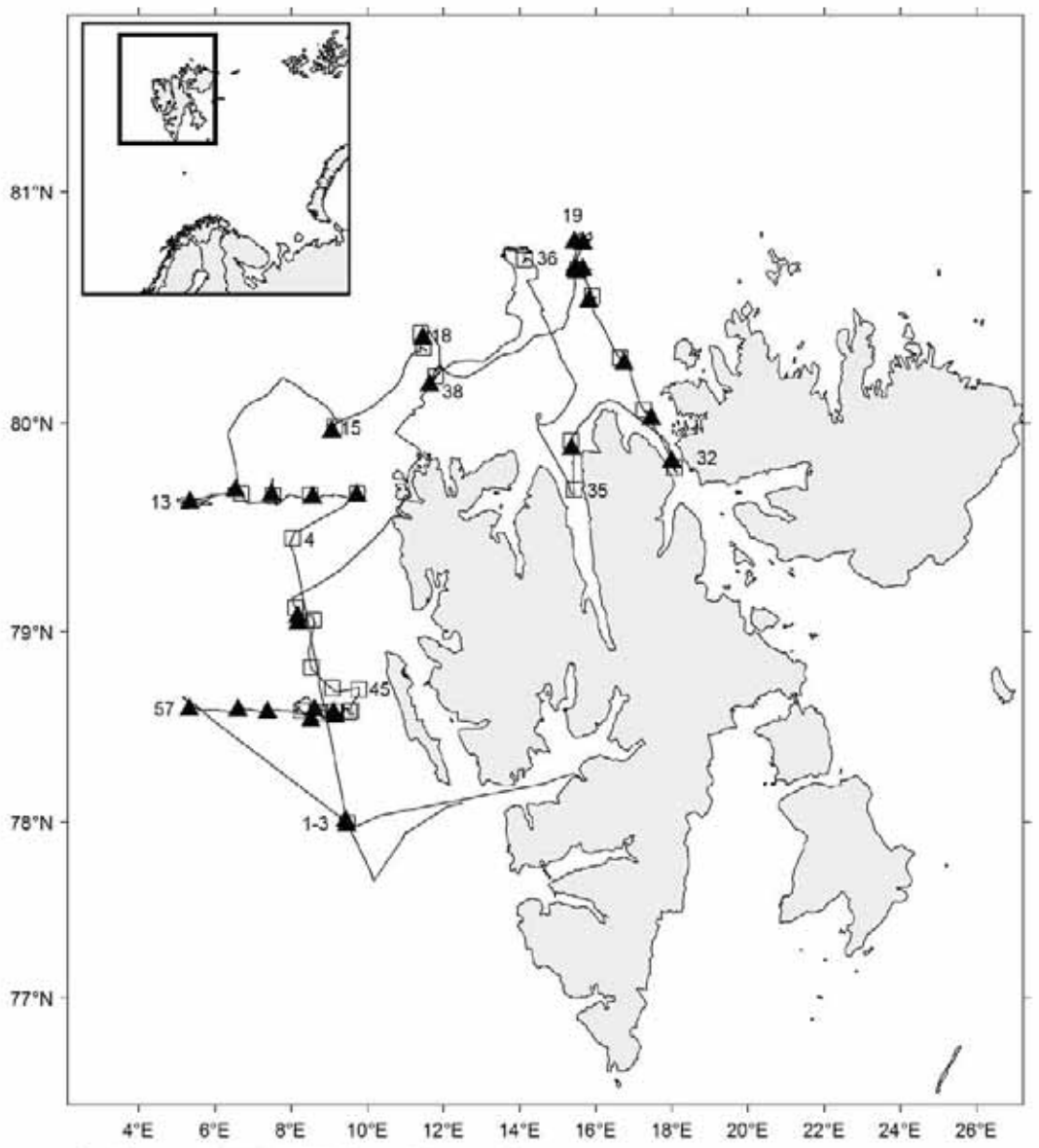
Cruise no 2014805 "Helmer Hanssen"
22 Jan–2 March 2014

Trawl st.no 13–202
□ Bottom trawl
▲ Pelagic trawl



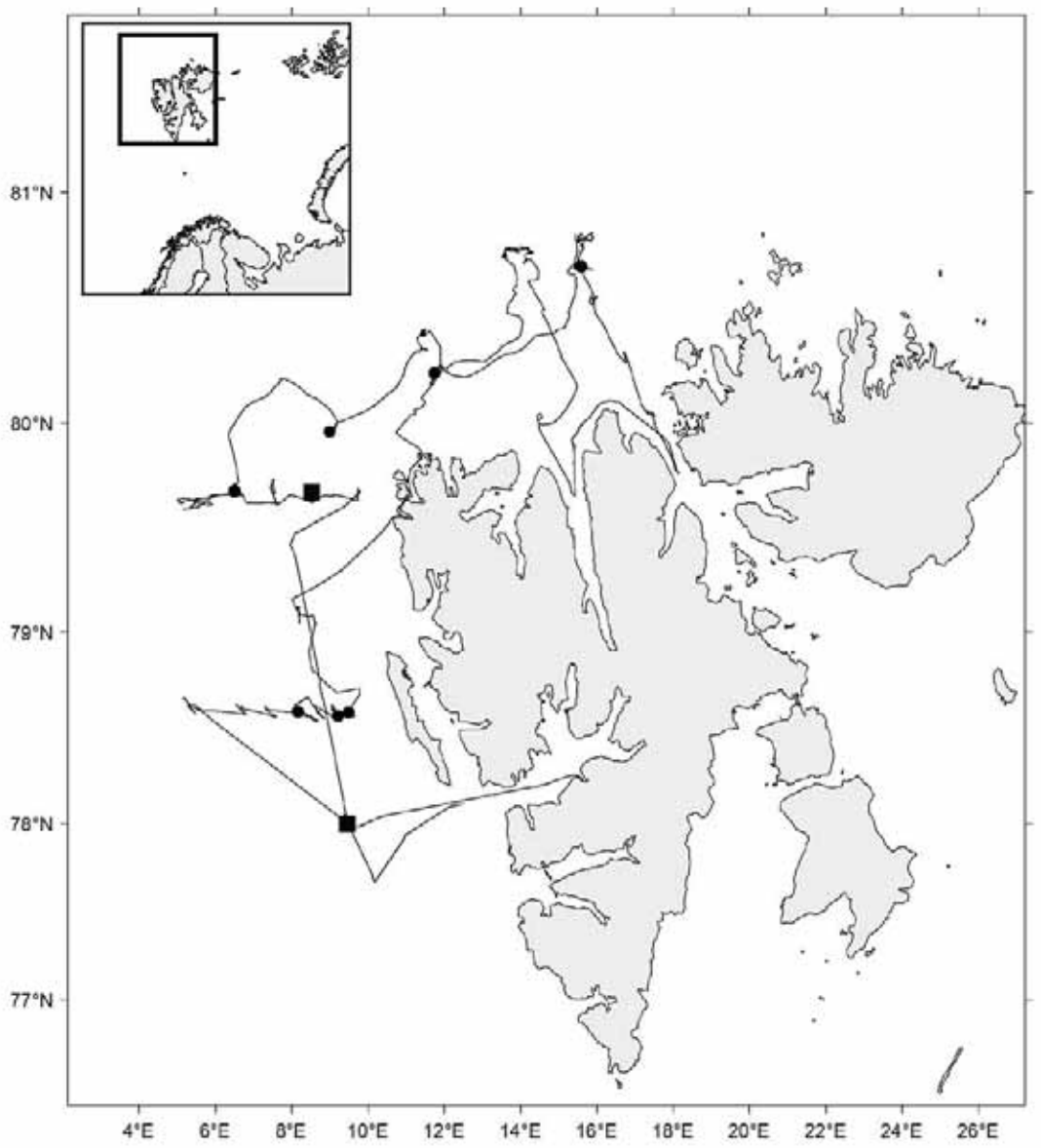
Cruise no 2014806 "Helmer Hanssen"
19 August–7 September 2014

z CTD st.no 539–597
○ Plankton st. (WP-II-net)



Cruise no 2014806 "Helmer Hanssen"
19 August–7 September 2014

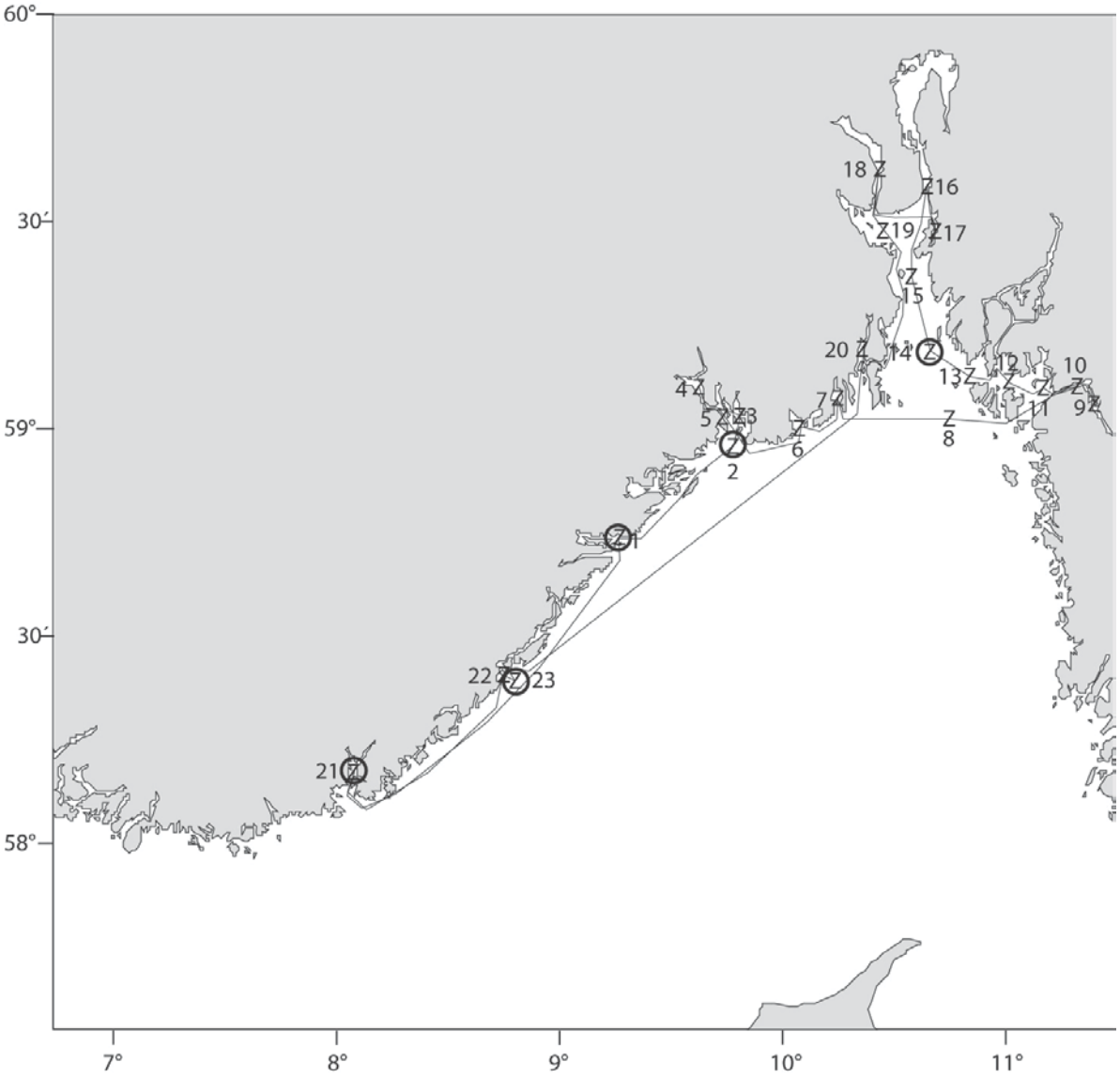
Trawl st.no 1–57
▲Pelagic tr.
□Bottom tr.



Cruise no 2014806 "Helmer Hanssen"
19 August–7 September 2014

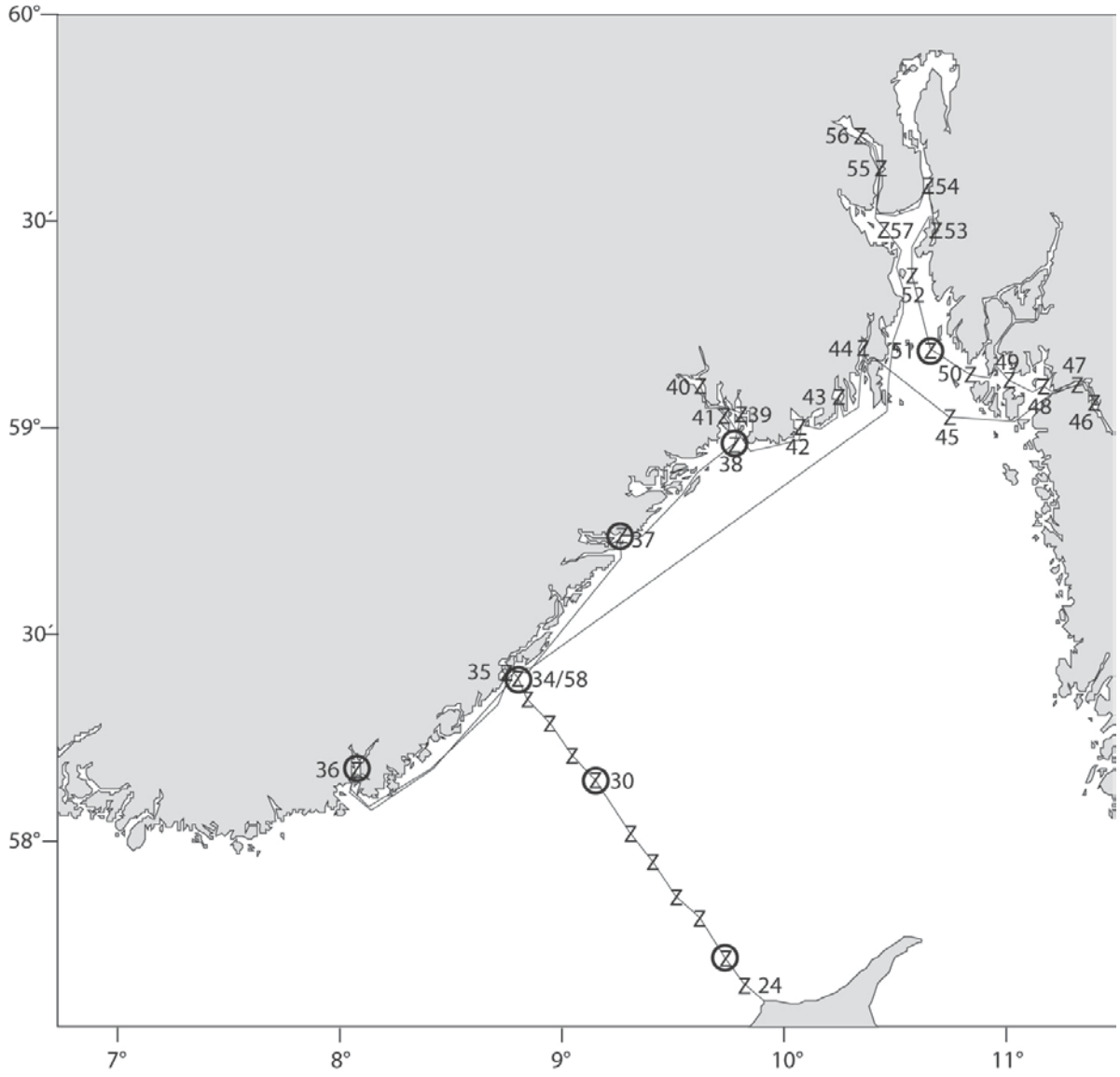
■ Beam trawl
● Grab station

4.5 G.M. Dannevig



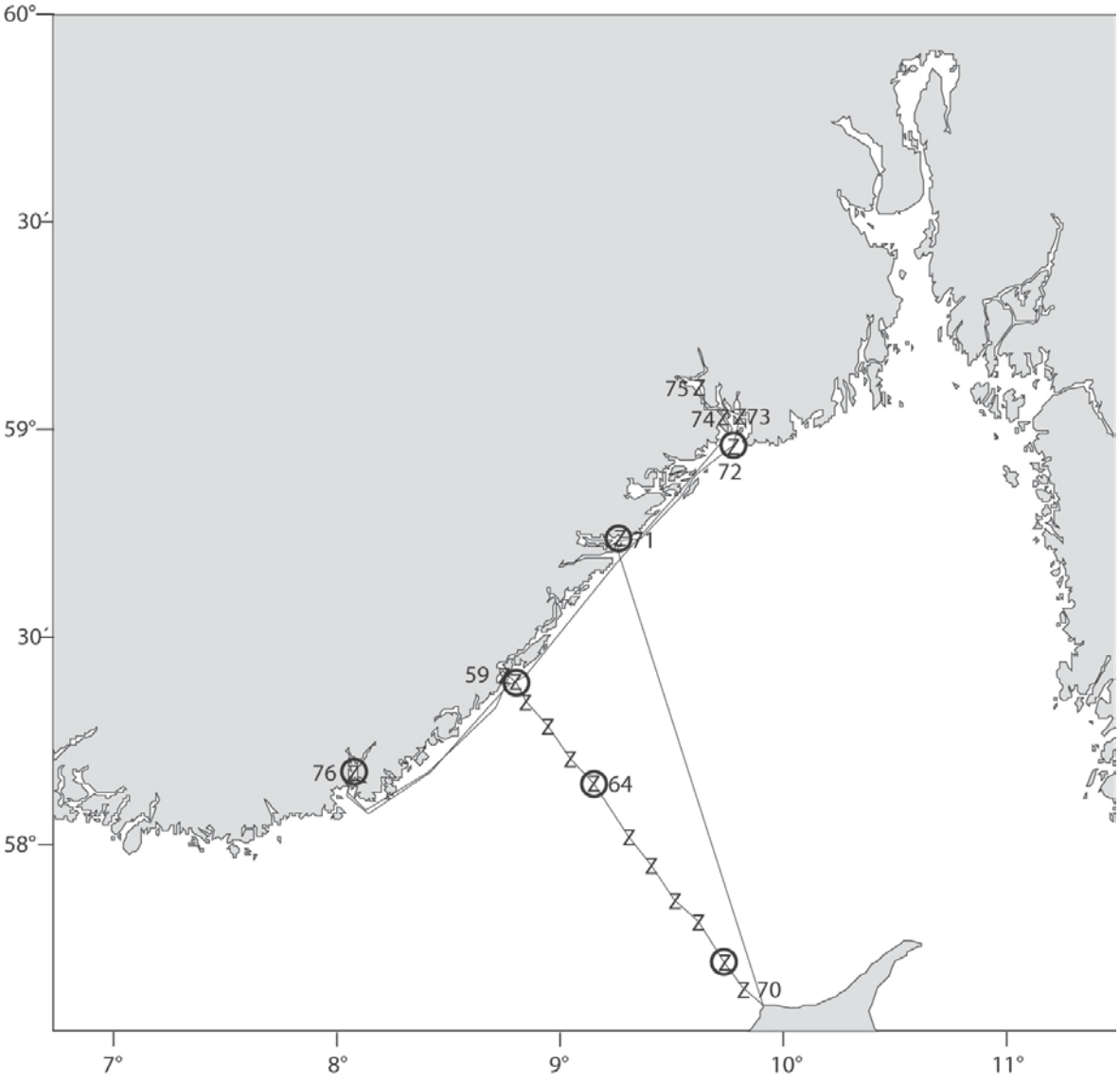
Cruise no 2014301/302/303
"G.M.Dannevig"
14 - 21 January 2014

z CTD st.no 1 - 23
O Plankton st. (WP-II-net)



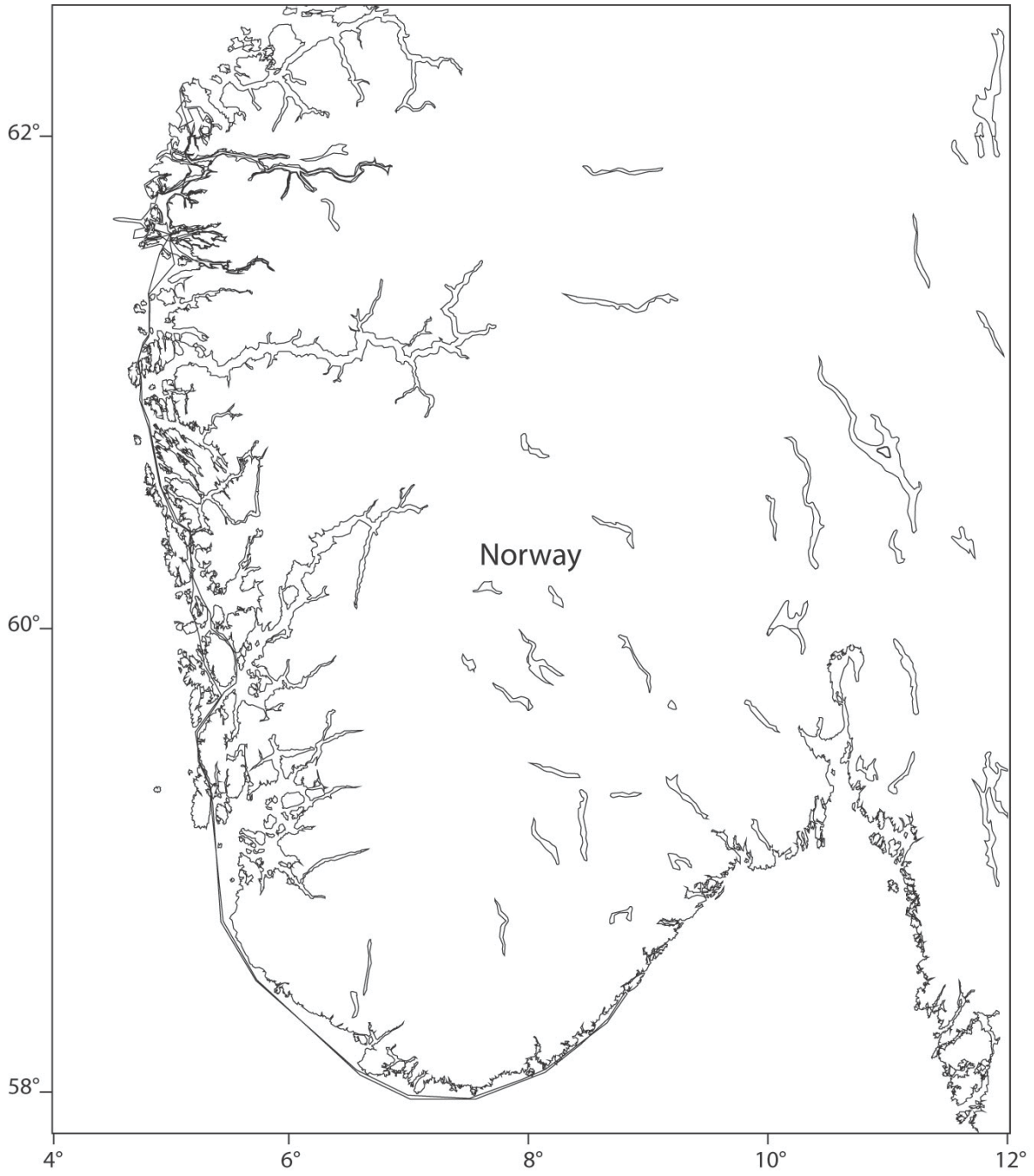
Cruise no 2014304/305/306
"G.M.Dannevig"
3 - 10 February 2014

z CTD st.no 24 - 58
O Plankton st. (WP-II-net)

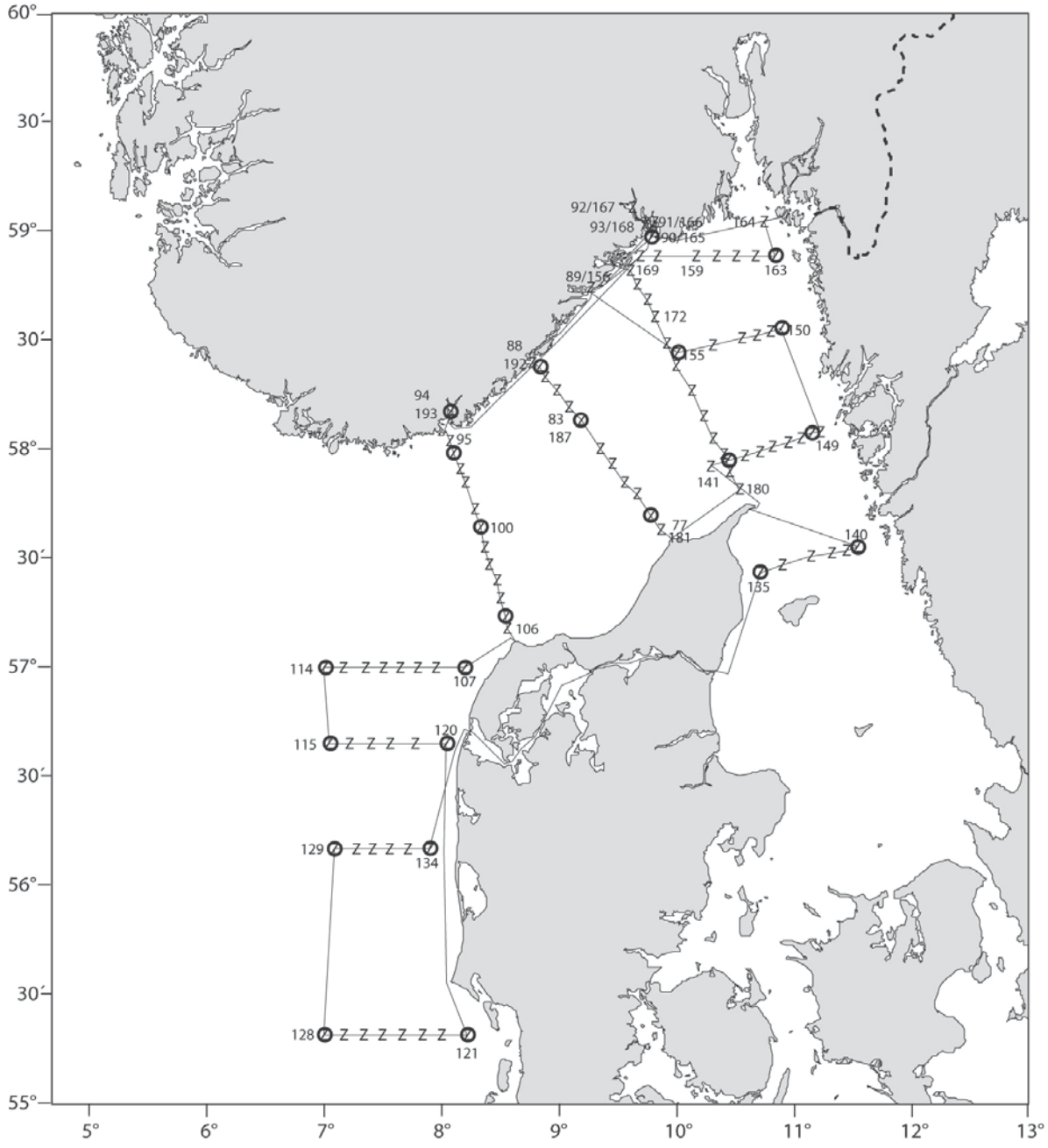


Cruise no 2014307/308
"G.M.Dannevig"
11 - 15 Mars 2014

z CTD st.no 59 - 76
O Plankton st. (WP-II-net)



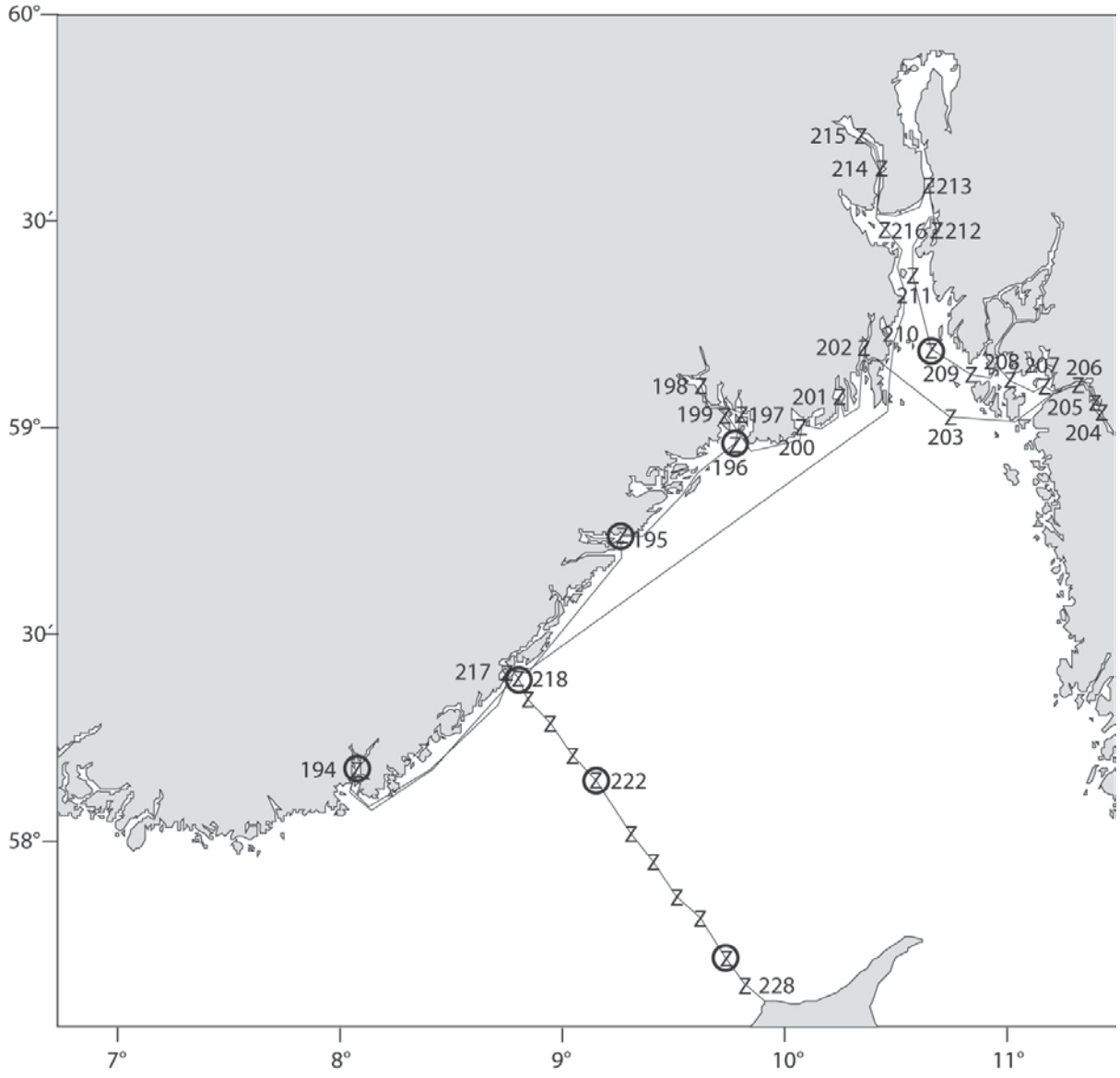
Cruise no 2014309
"G.M.Dannevig"
20 Mars - 1 April 2014
Cruiseline



Cruise no 2014310
"G.M.Dannevig"
22 April - 12 May 2014

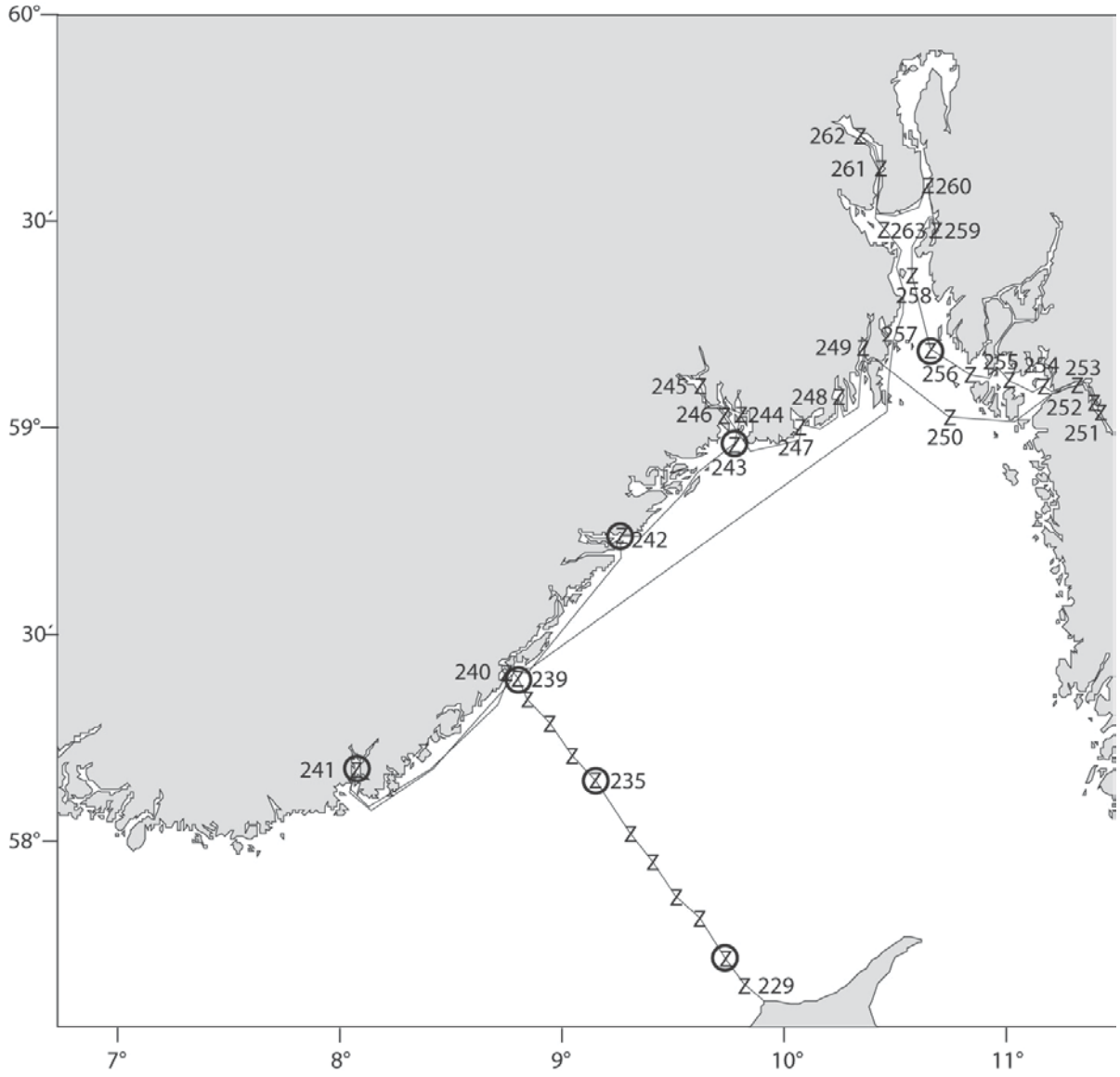
z CTD st.no 77–193
o Plankton st. (WP-II-net)

Standard sections:
Oksø–Hanstholmen st.no 95–106
Torungen–Hirtshals st.no 77–88,
Jomfruland–Skagen st.no 169–180 ,181–192
Jomfruland–Koster st.no 157–163
Torbjørnskjær st.no 164
Väderø st.no 150–155
Måseskjær st.no 141–149
Gøteborg–Fredrikshavn st.no 135–140



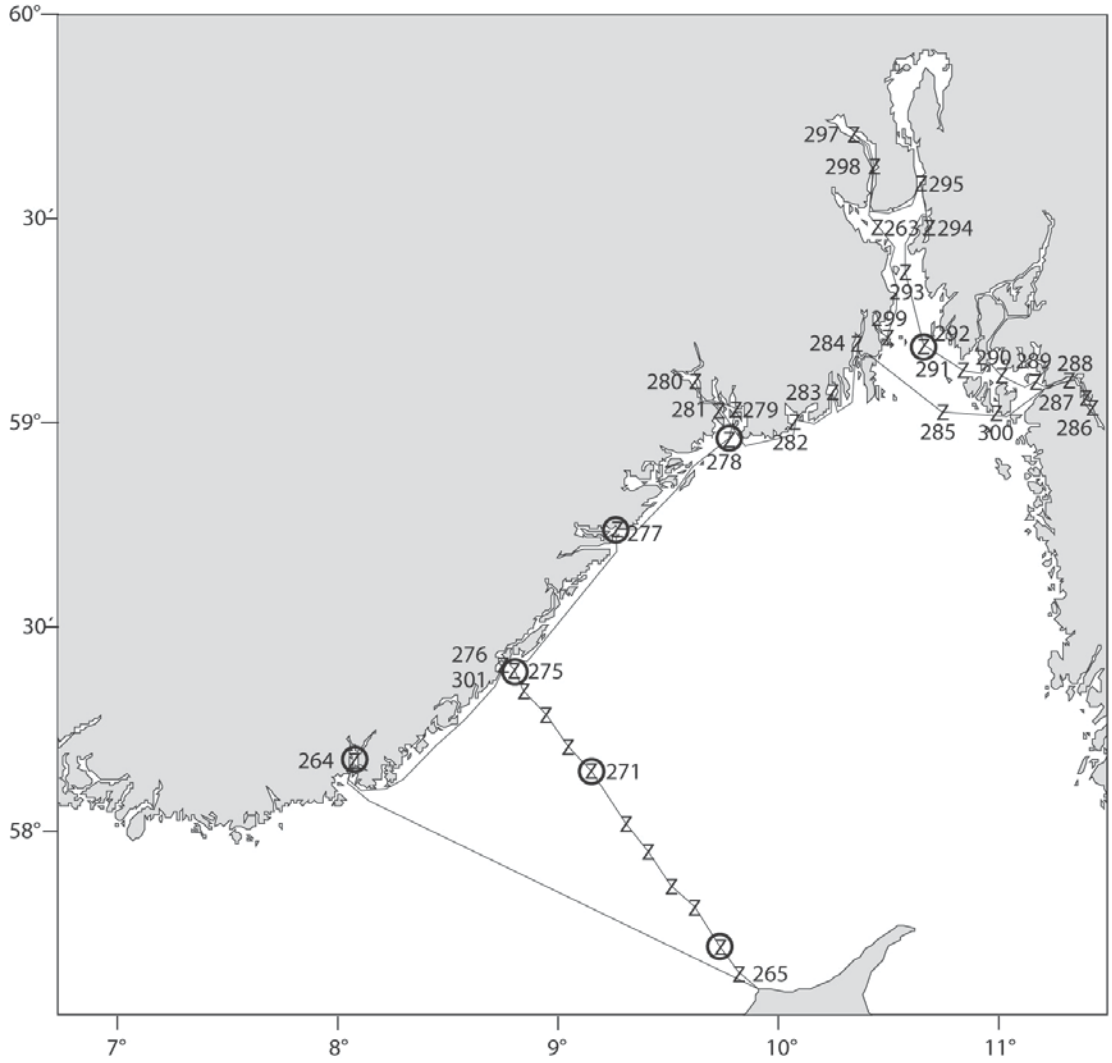
Cruise no 2014311/312/313/314
"G.M.Dannevig"
12 - 19 June 2014

z CTD st.no 194 - 228
O Plankton st. (WP-II-net)



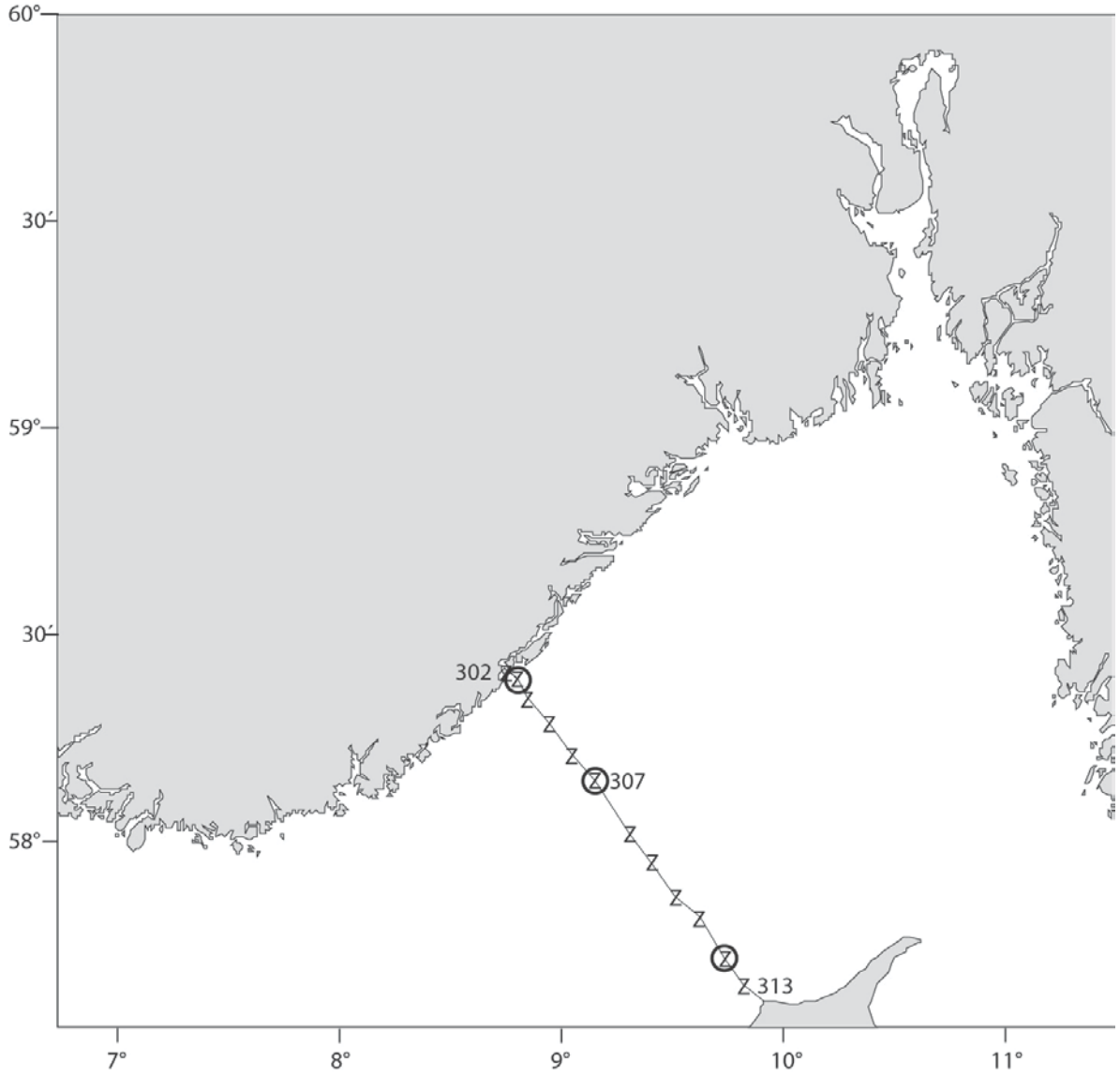
Cruise no 2014315/316/317
"G.M.Dannevig"
30 June - 6 July 2014

z CTD st.no 229 - 263
O Plankton st. (WP-II-net)



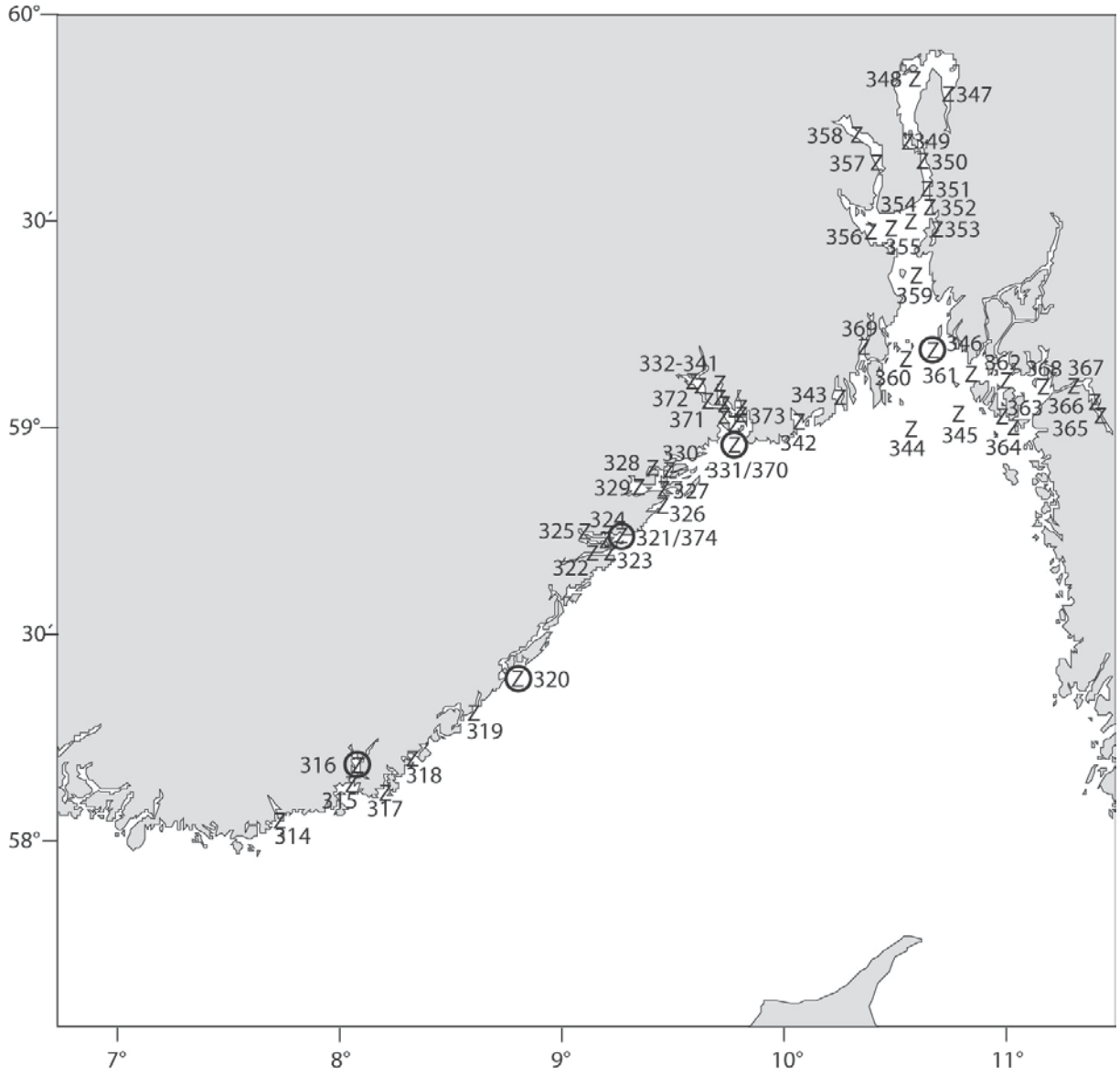
Cruise no 2014318/319/320/321
"G.M.Dannevig"
12 - 28 August 2014

z CTD st.no 264 - 301
O Plankton st. (WP-II-net)



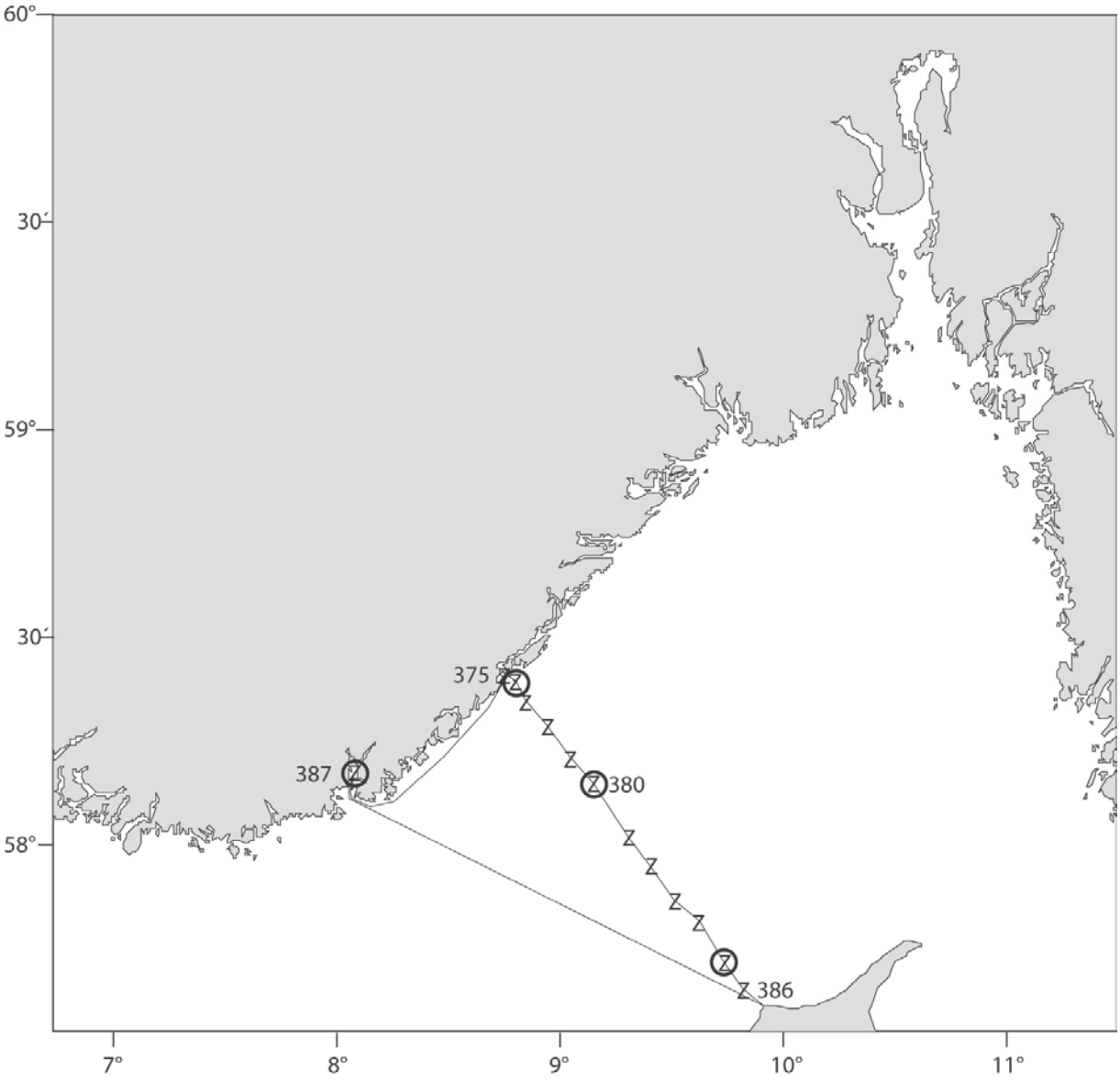
Cruise no 2014322
"G.M.Dannevig"
13 - 14 September 2014

z CTD st.no 302 - 313
O Plankton st. (WP-II-net)



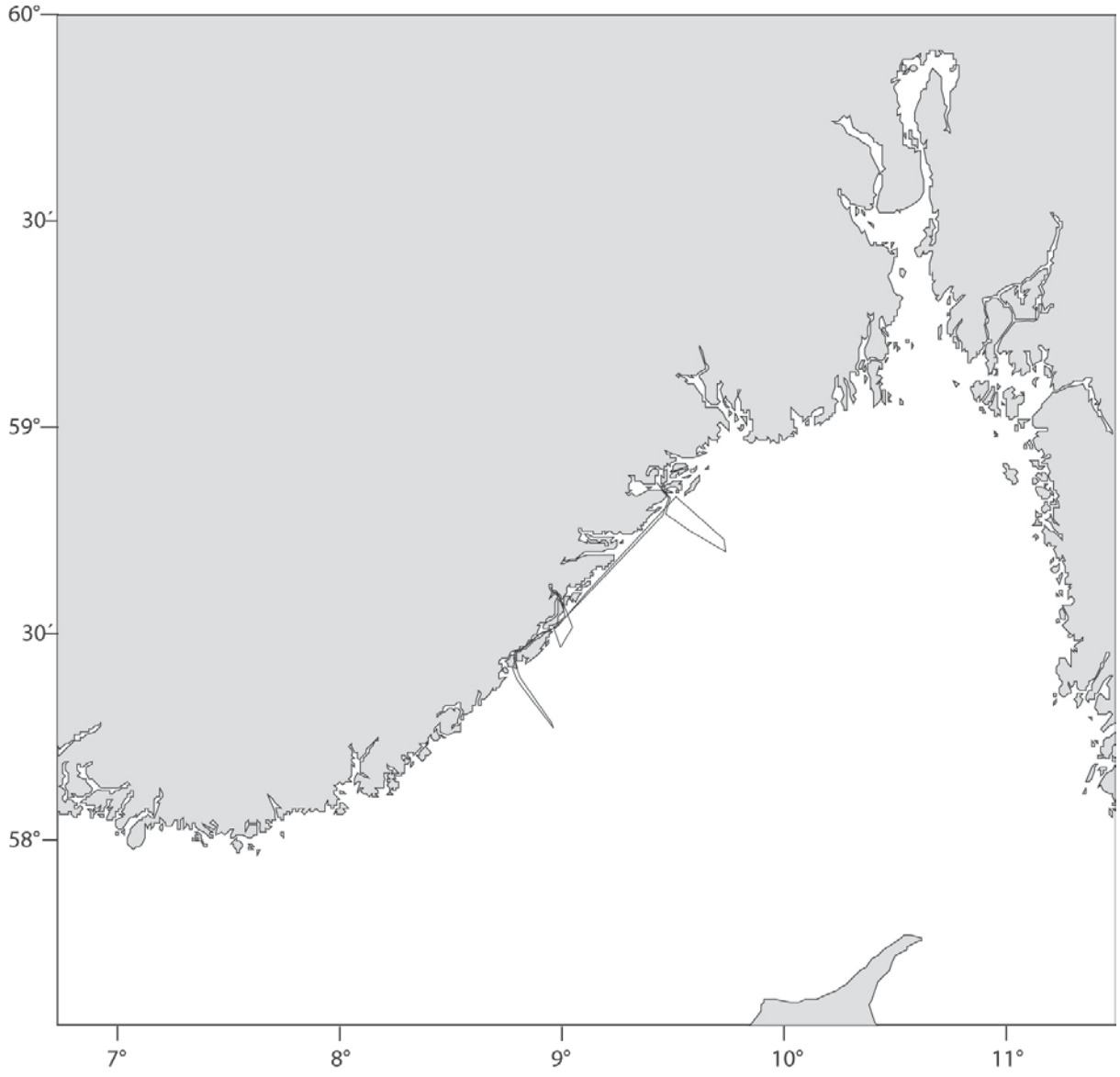
Cruise no 2014323
"G.M.Dannevig"
15 Sep - 3 Oct 2014

z CTD st.no 314 - 374
O Plankton st. (WP-II-net)

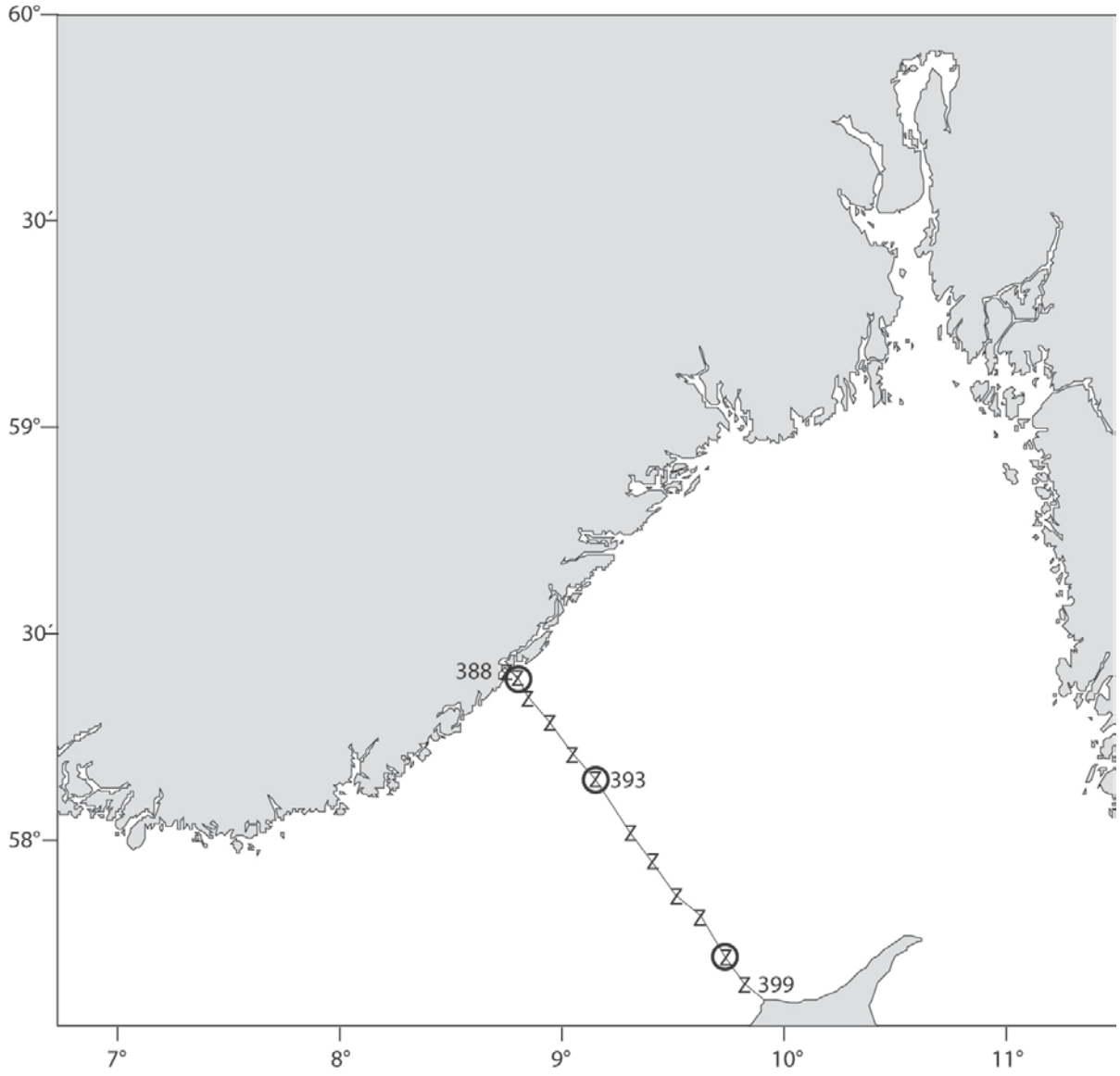


Cruise no 2014324
"G.M.Dannevig"
4 - 6 October 2014

z CTD st.no 375 - 387
O Plankton st. (WP-II-net)

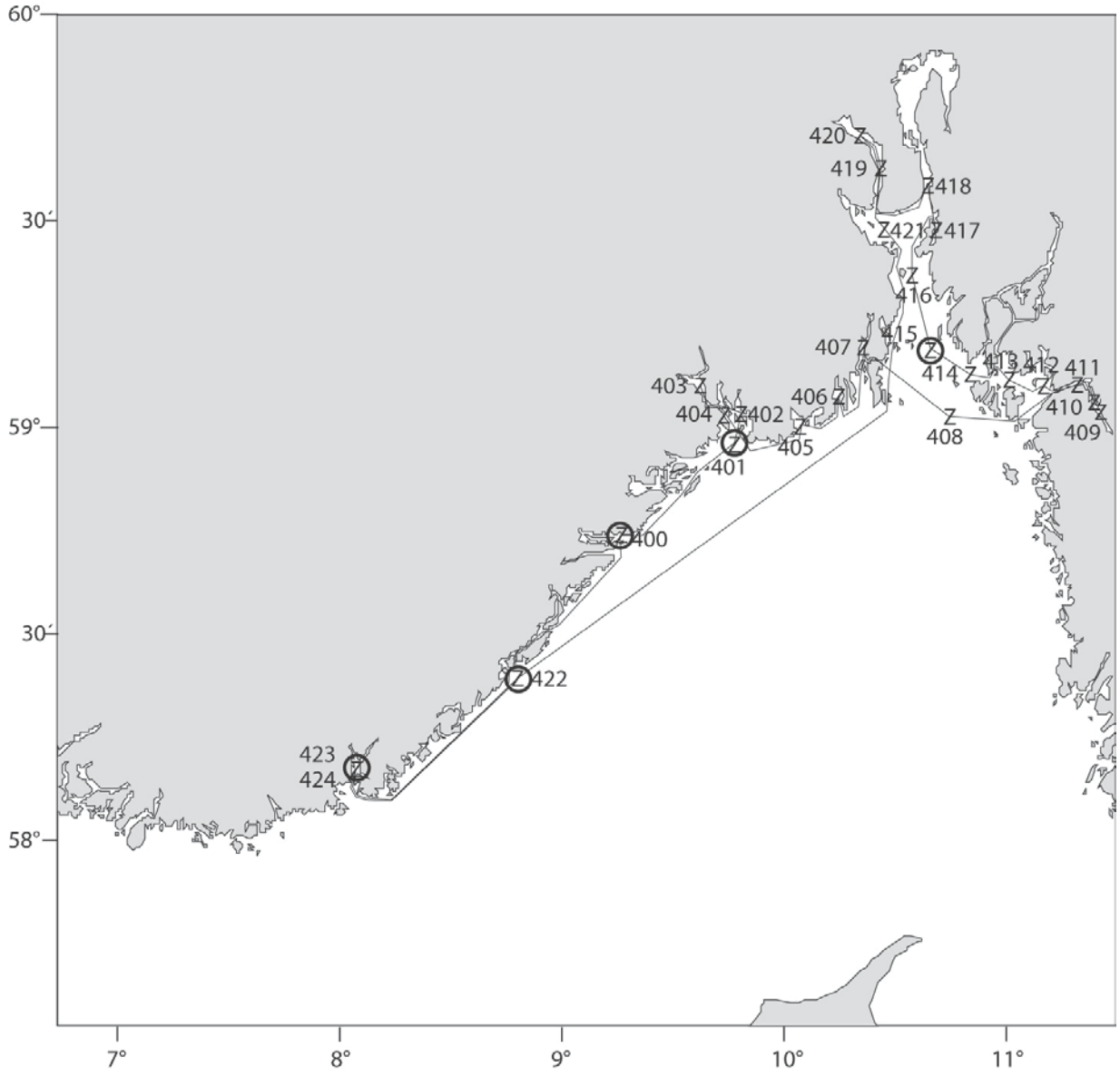


Cruise no 2014325
"G.M.Dannevig"
8 - 11 October 2014
Cruiseline



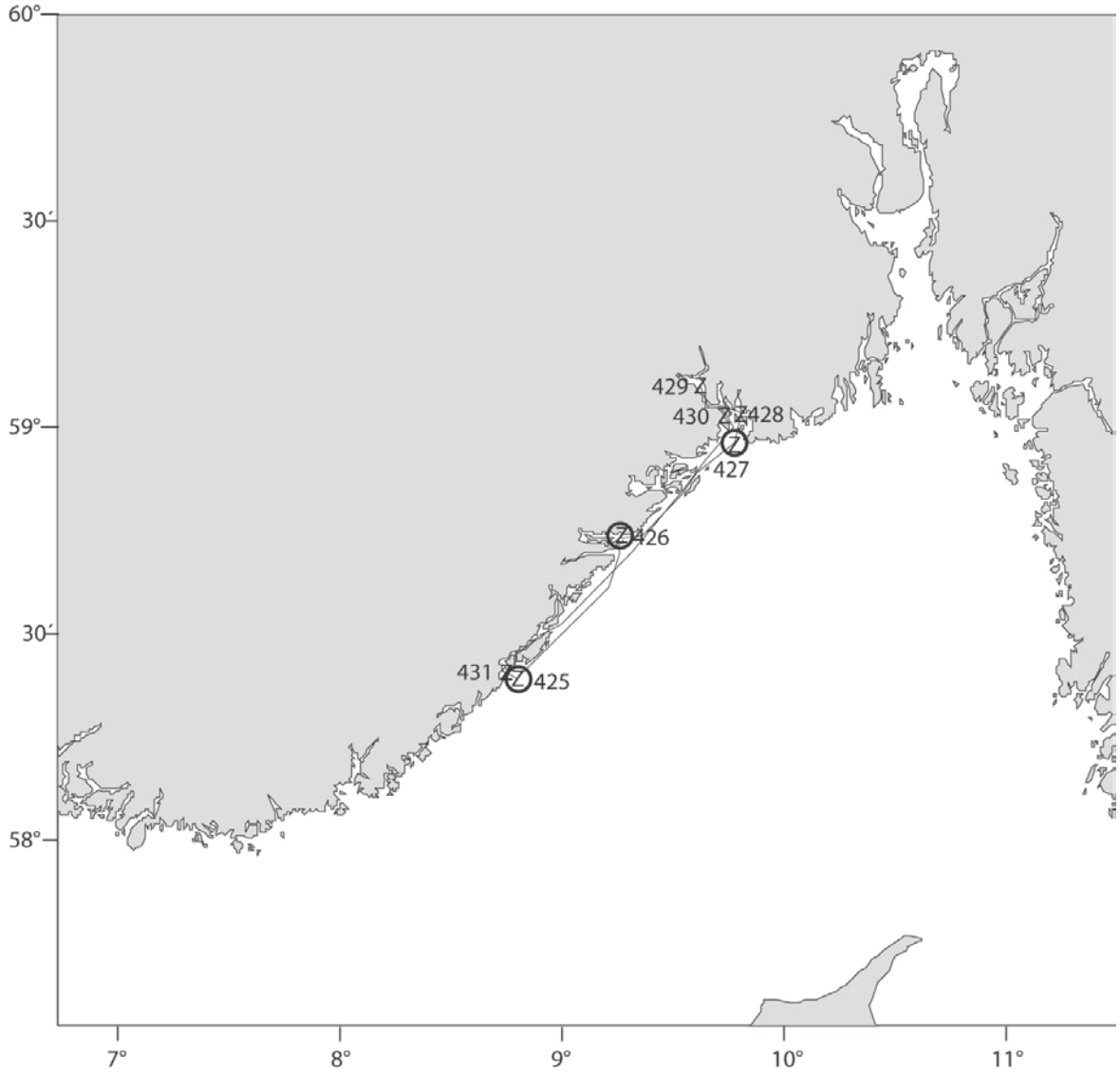
Cruise no 2014326
"G.M.Dannevig"
11 - 12 November 2014

z CTD st.no 388 - 399
O Plankton st. (WP-II-net)



Cruise no 2014327
"G.M.Dannevig"
12 Nov - 5 Dec 2014

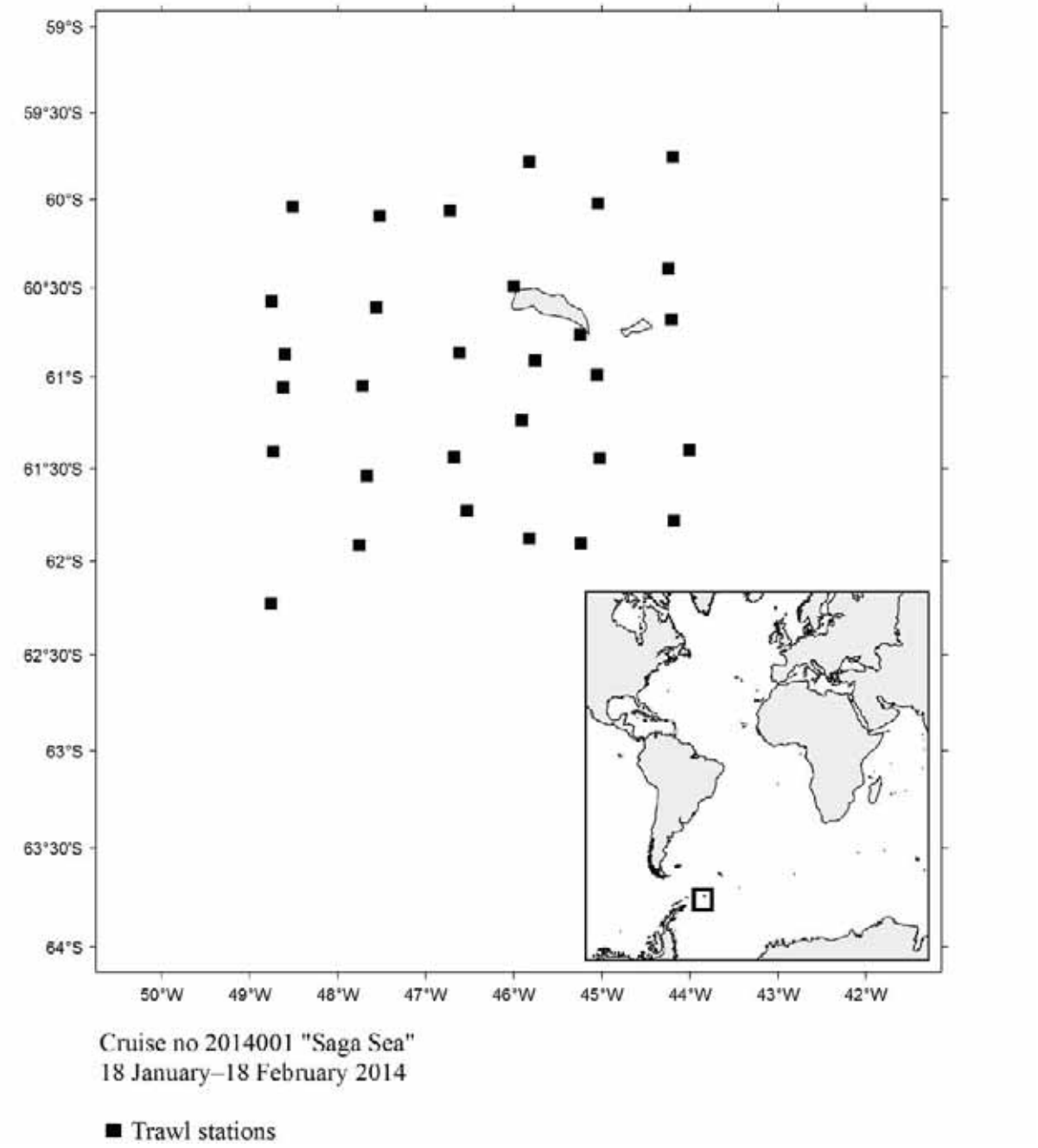
z CTD st.no 400 - 424
O Plankton st. (WP-II-net)

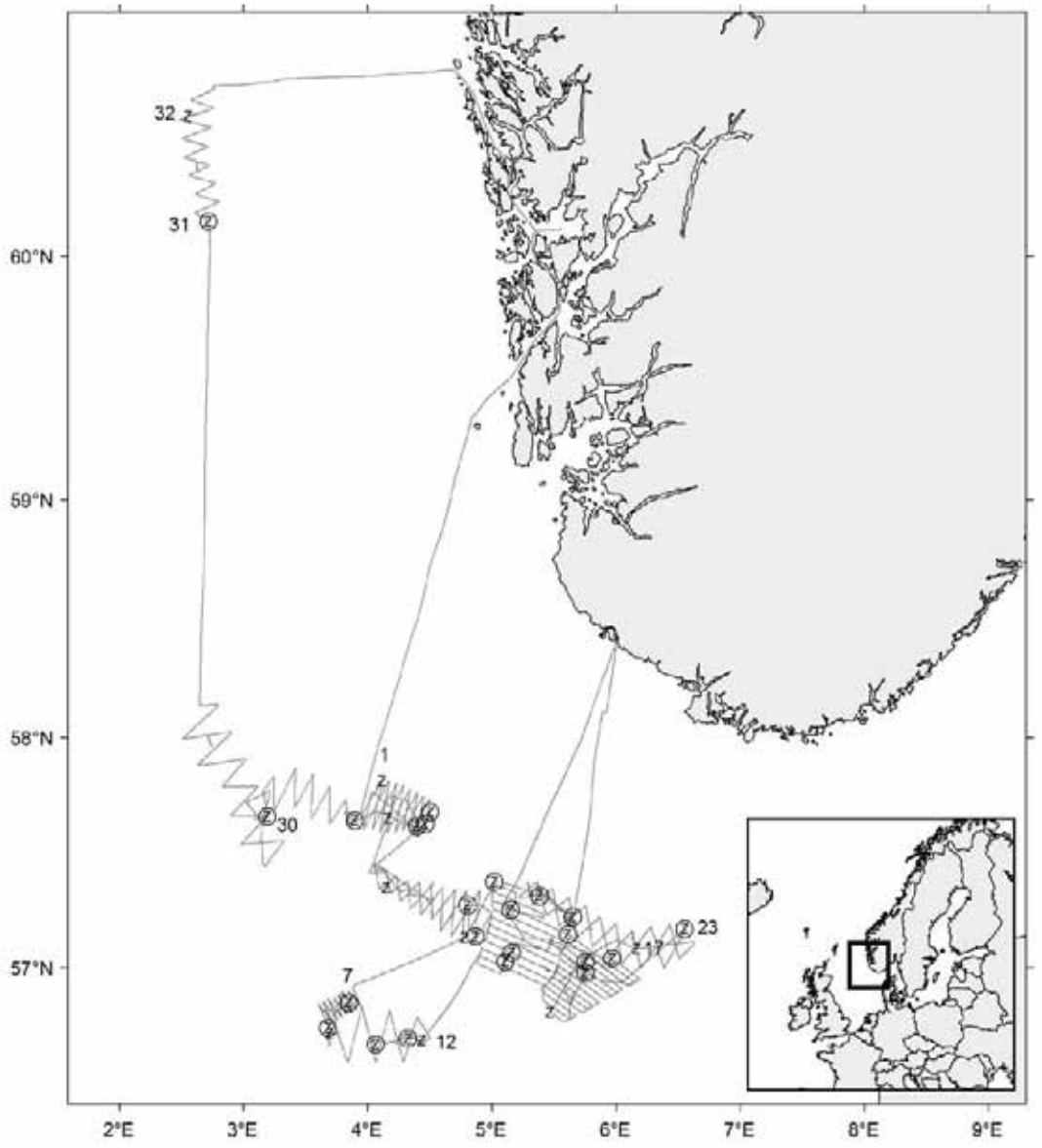


Cruise no 2014328
"G.M.Dannevig"
8 - 9 December 2014

z CTD st.no 425 - 431
O Plankton st. (WP-II-net)

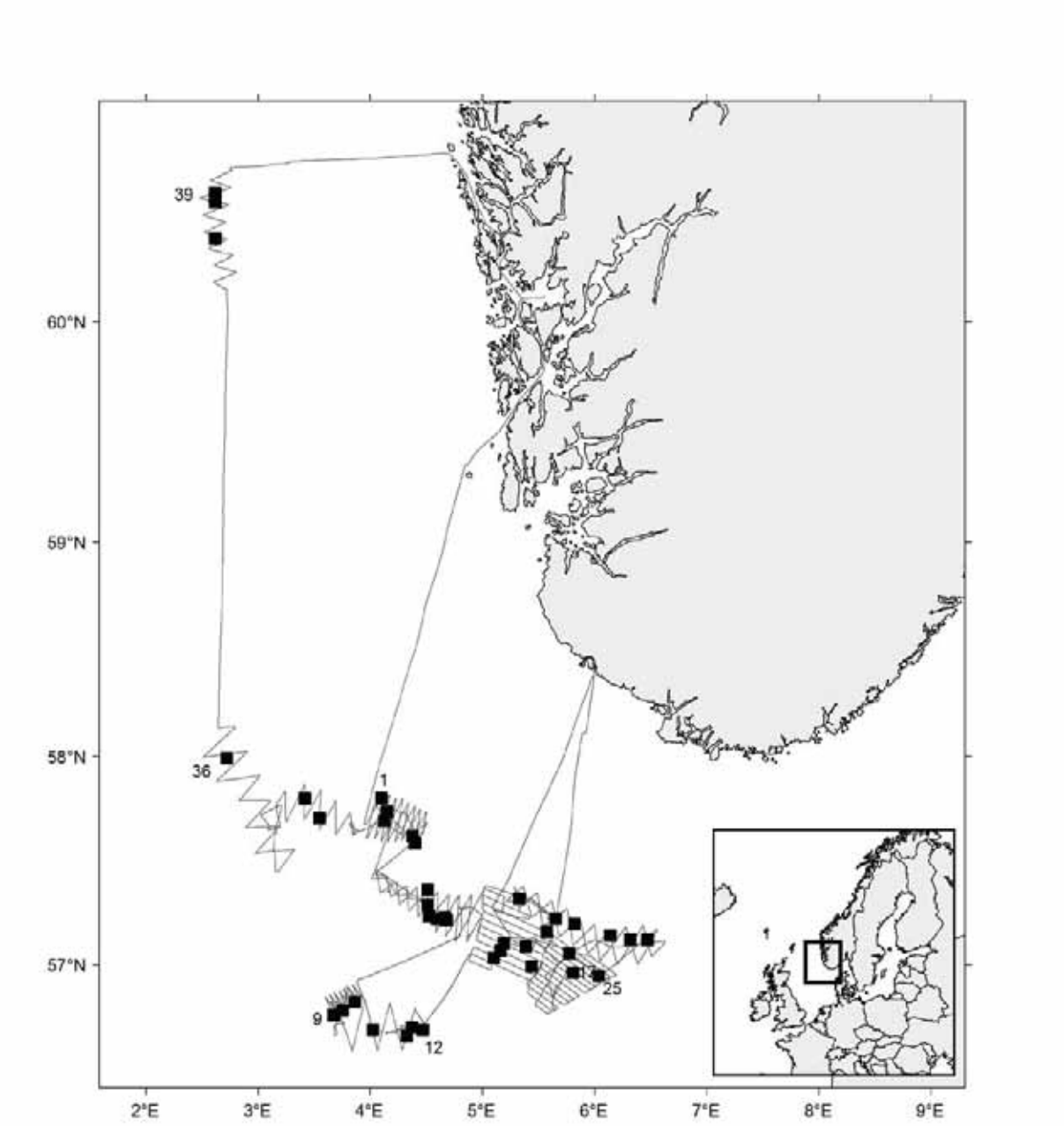
4.6 Selected cruises carried out by fishing vessels hired by IMR





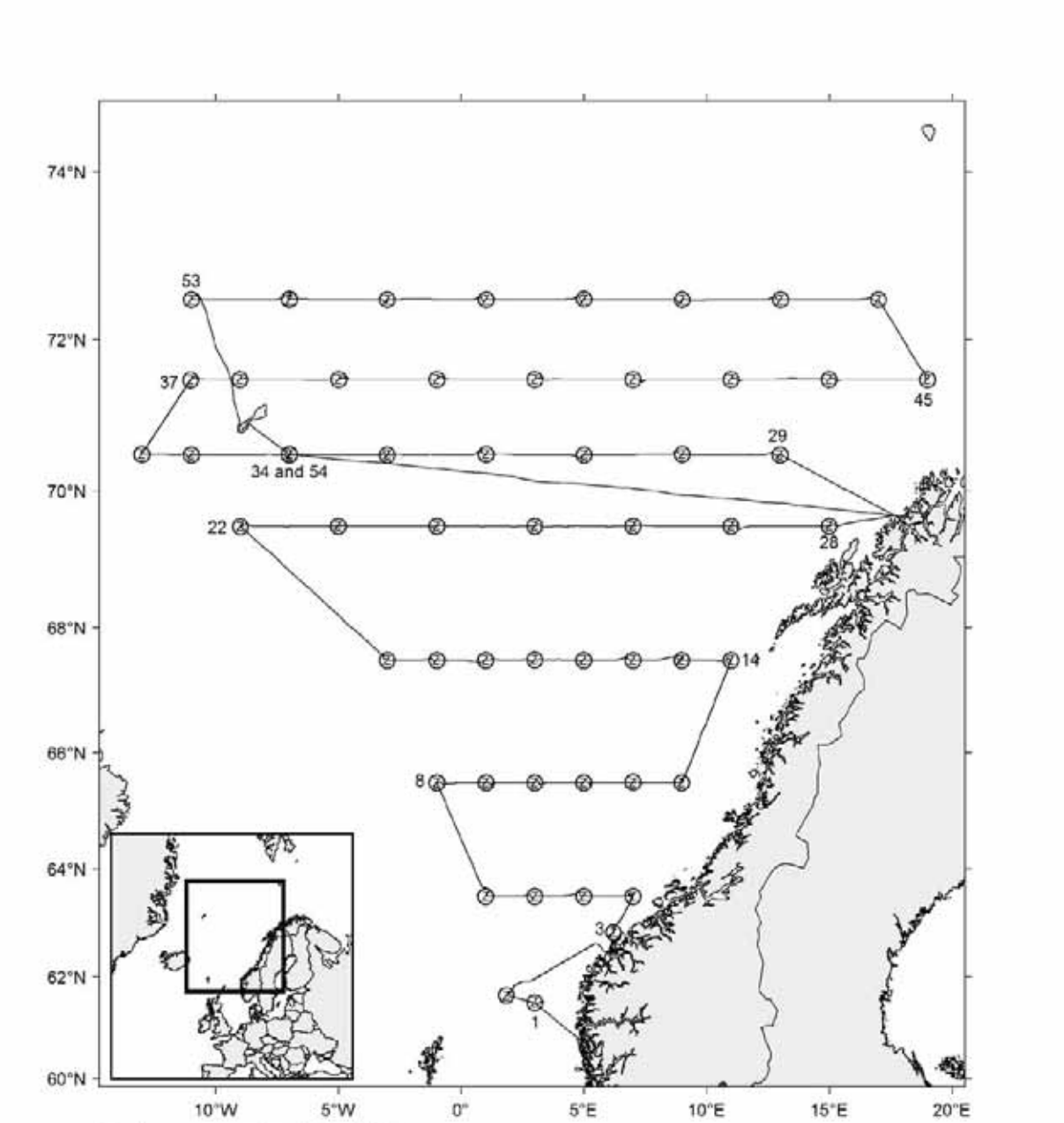
Cruise no 2014807 "Eros"
28 April–15 May 2014

z CTD st.no 1-32
○ Plankton st. (WP-II-net)



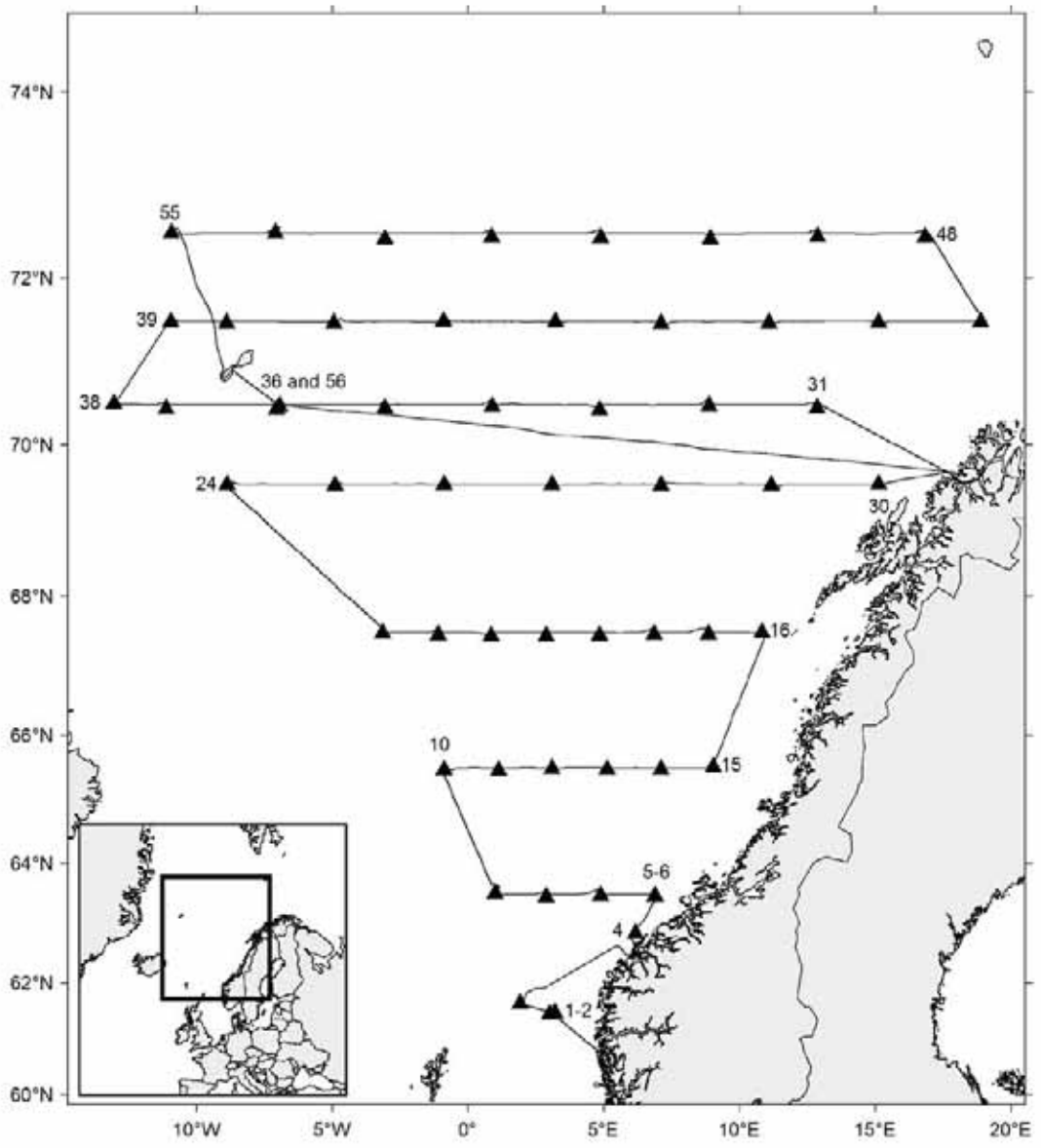
Cruise no 2014807 "Eros"
28 April–15 May 2014

■ Bottom trawl st.no 1–39



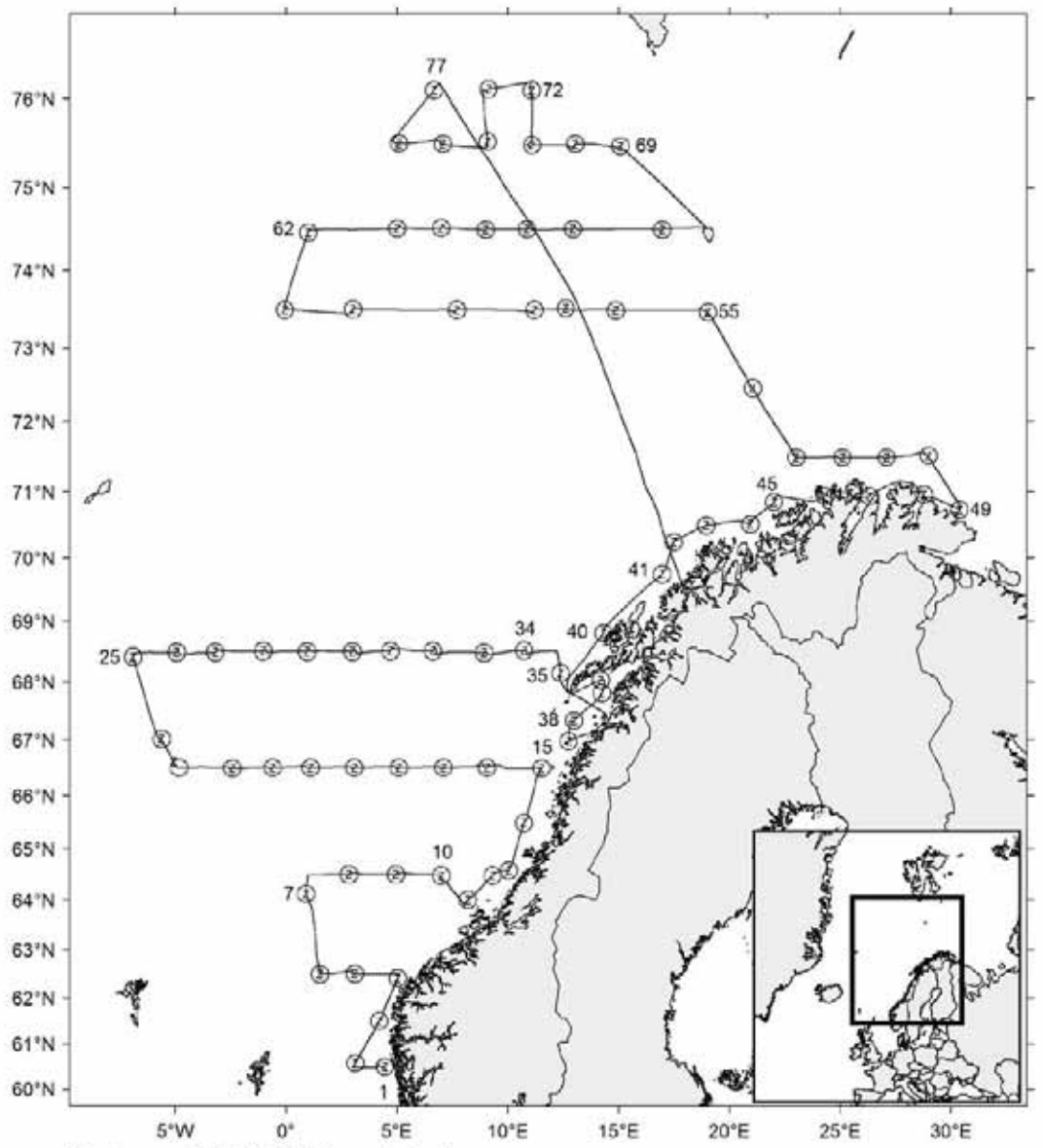
Cruise no 2014813 "Vendla"
1–28 July 2014

z CTD st.no 1–54
○ Planton st. (WP-II-net)



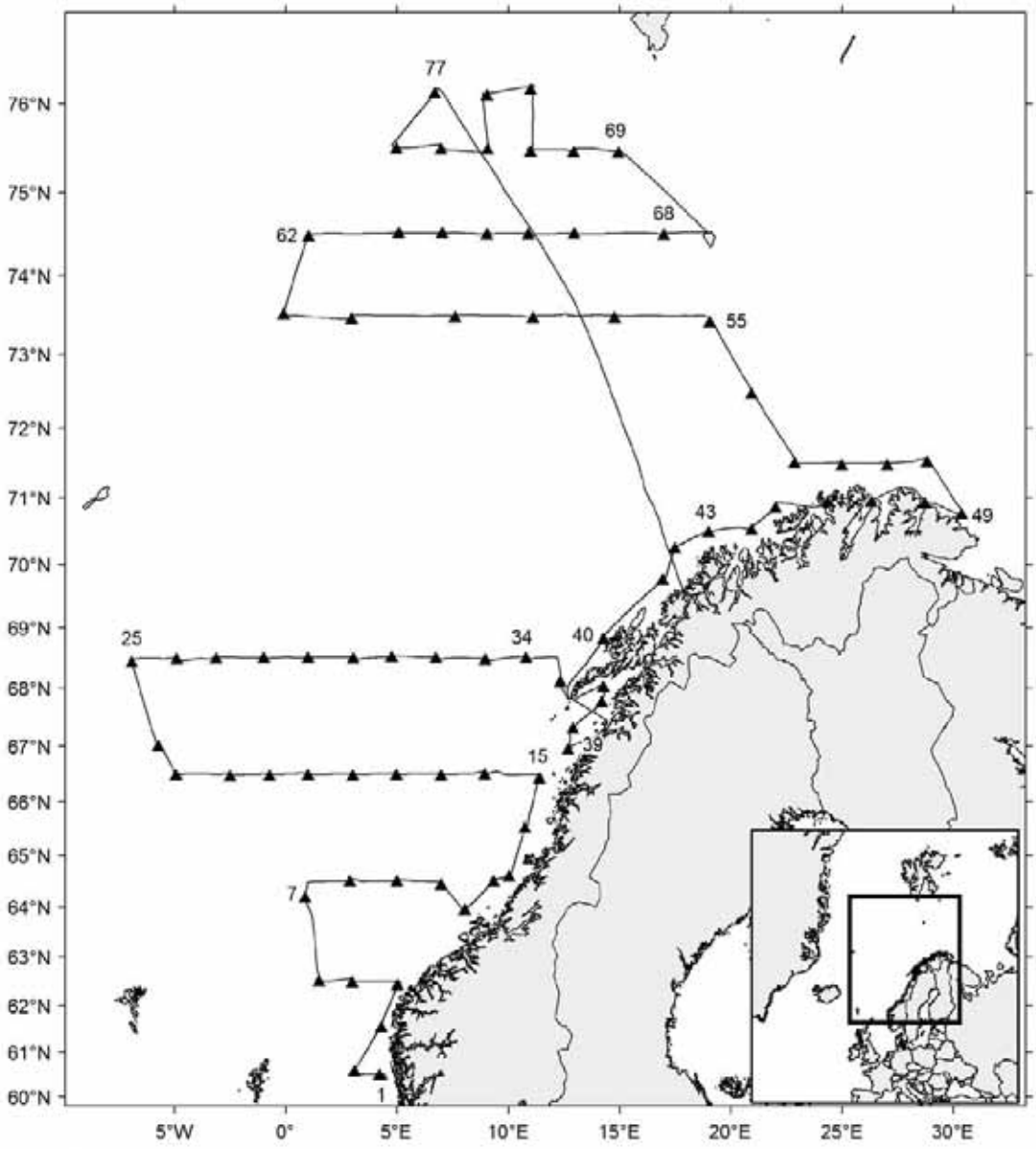
Cruise no 2014813 "Vendla"
1–28 July 2014

▲ Pelagic trawl st.no 1–56



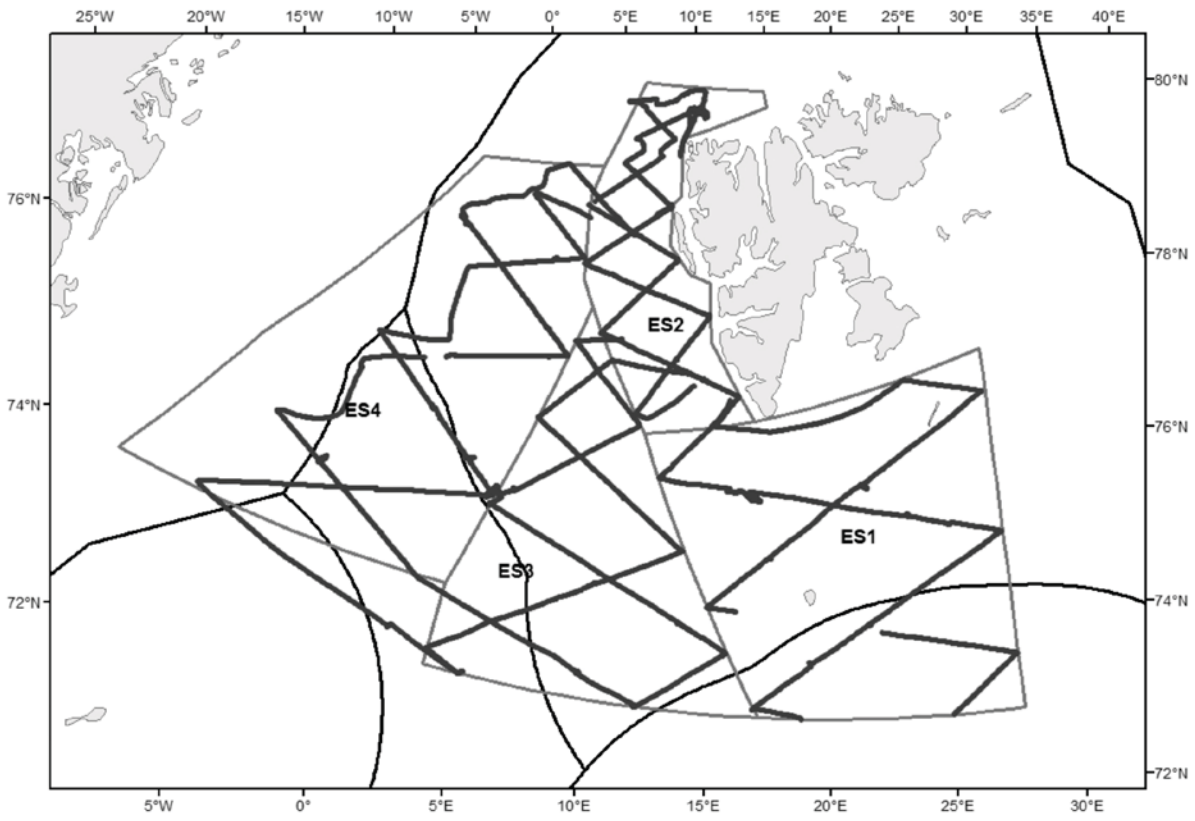
Cruise no 2014812 "Brennholm"
1–28 July 2014

z CTD st.no 1–77

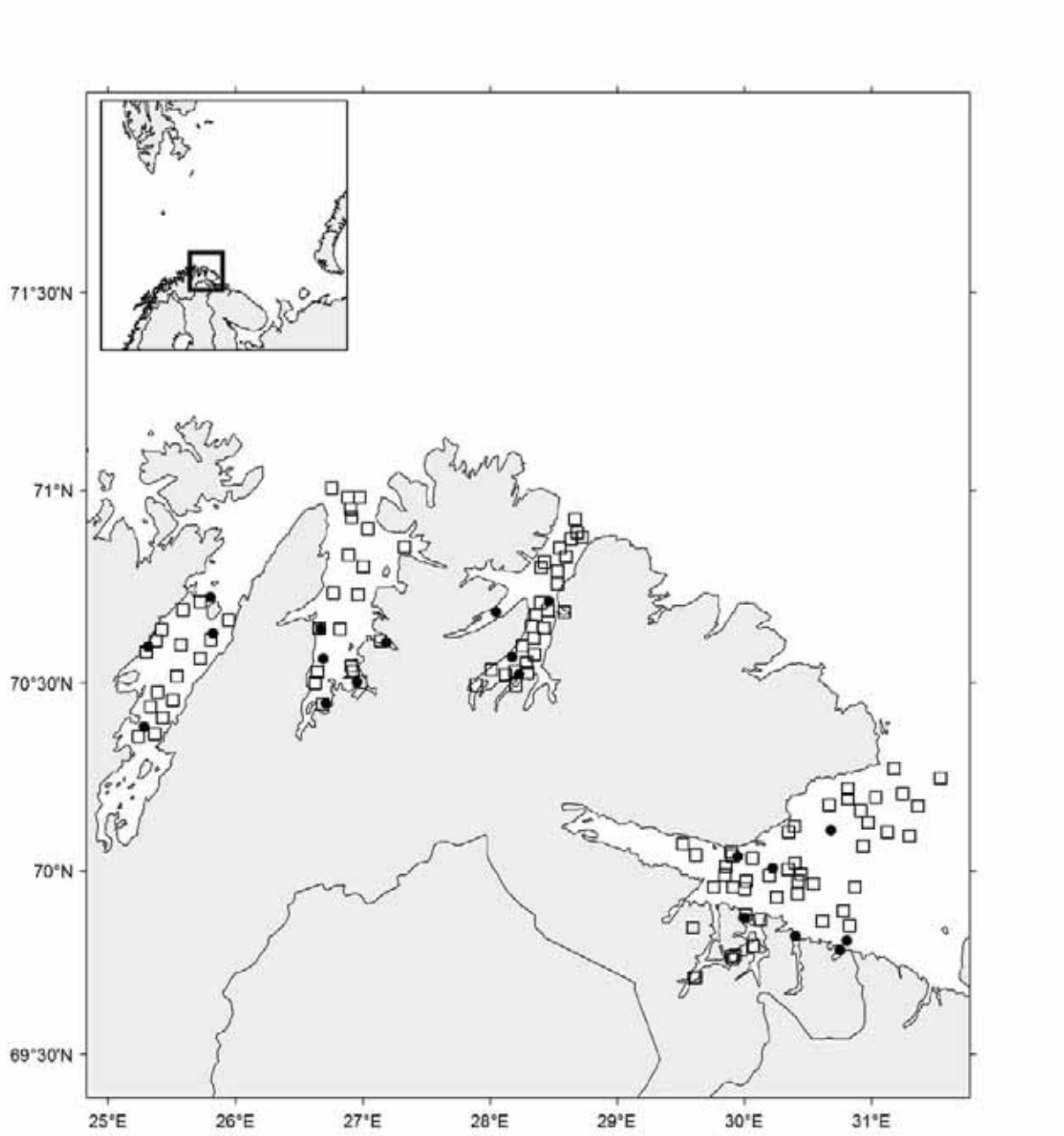


Cruise no 2014812 "Brennholm"
1–28 July 2014

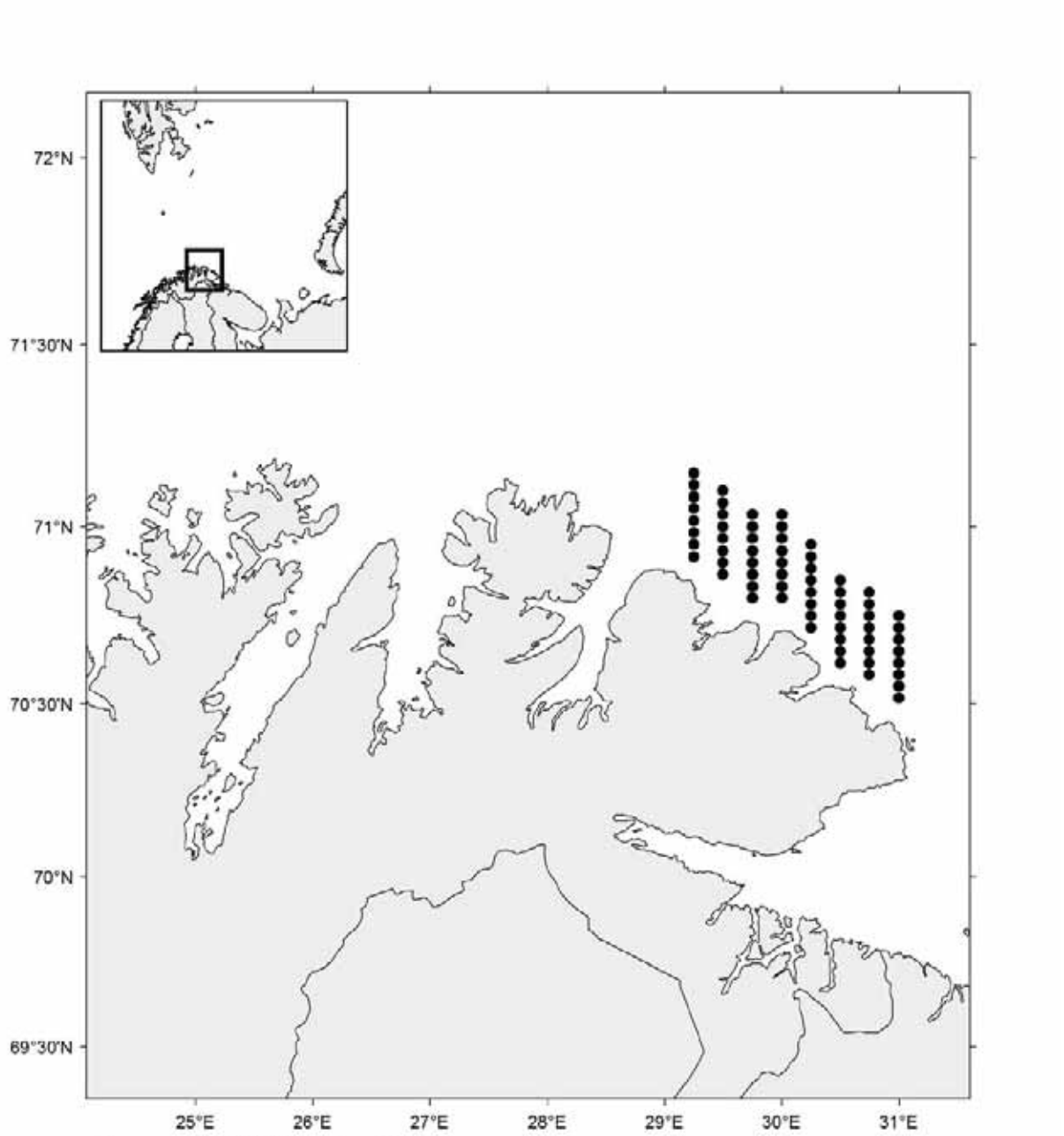
Pelagic trawl st.no 1–77



Cruise no 2014810 "Tromsøy"
16 June–24 August 2014
——— Cruise track
Estimating abundance of whales



Cruise no 2014820 "Johan Ruud"
1–12 September 2014
□ Trawl stations
● Crab pots stations


72°N
71°30'N
71°N
70°30'N
70°N
69°30'N
25°E
26°E
27°E
28°E
29°E
30°E
31°E
Cruise no 2014817 "Johan Ruud"
6–17 October 2014
● 2 crab pots at every station

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