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Cruise report no: 30.06.2025, 29.09.2025-24.10.2025, Jnr. 25/12880

This cruise report, numbered 30.06.2025, 29.09.2025-24.10.2025, Jnr. 25/12880, is part of the fulfilment of the conditions required to enter the Norwegian zone with the chartered vessels F/V Karlsö and F/V Kennedy, as outlined by permit "25/12880." The time-series data collected during the cruise will be combined with data from IBTS Q3 and the Swedish coastal survey for formal analysis. The findings will be reported to the Swedish Agency for Marine and Water Management in the spring of 2026.

Participants

F/V Karlsö, with skipper Tomas Larsson and crew, was accompanied by Jan-Erik Johansson and Anders Wernbo from SLU Aqua.
F/V Kennedy, with skipper Jonas Klingander and crew, was accompanied by Baldvin Thorvaldsen and Magnus Andersson from SLU Aqua.

The scientist in charge, Patrik Börjesson, did not participate at sea.

Objectives

The survey is an initiative to supplement the data collection carried out in the International Bottom Trawl Survey during the third quarter (IBTS Q3). By expanding the geographical area and sampling in the deeper parts of the Skagerrak, data on species not currently covered by the IBTS can also be collected. The survey is a so-called fishermen's survey, meaning that knowledge and experience from commercial fishing are used in its design and implementation. The data collected will be analysed together with data from IBTS Q3 and the Swedish coastal survey to generate distribution maps and biomass estimates for stock assessment and environmental evaluation at both national and international levels.

Itinerary

In 2025, two new vessels were chartered for the survey: F/V Karlsö (SBVO) and F/V Kennedy (SDLE). After some minor initial issues, the first week proceeded smoothly, with both vessels fishing mainly in the northern and western Skagerrak at depths down to 518 meters.

The second week began with F/V Kennedy temporarily losing the gear due to a worn-out sweep wire. Thanks to the efforts of the skipper and crew, the trawl was successfully retrieved, and a new sweep was promptly produced by Egersund Trawl and collected in Hirtshals, Denmark. Consequently, with only a partial day

lost, F/V Kennedy was able to resume the survey and complete operations by 7 October. F/V Karlsö skipped the second week after one of the SLU Aqua participants became ill and no replacement was available. The survey was therefore completed during the following week, on 14 October.

A total of 38 hauls were conducted during the 2025 expedition: 10 hauls in Danish waters, 20 hauls in Norwegian waters, and 8 hauls in Swedish waters. Figure 1 shows the distribution of trawl stations, while Table 1 presents additional haul information.

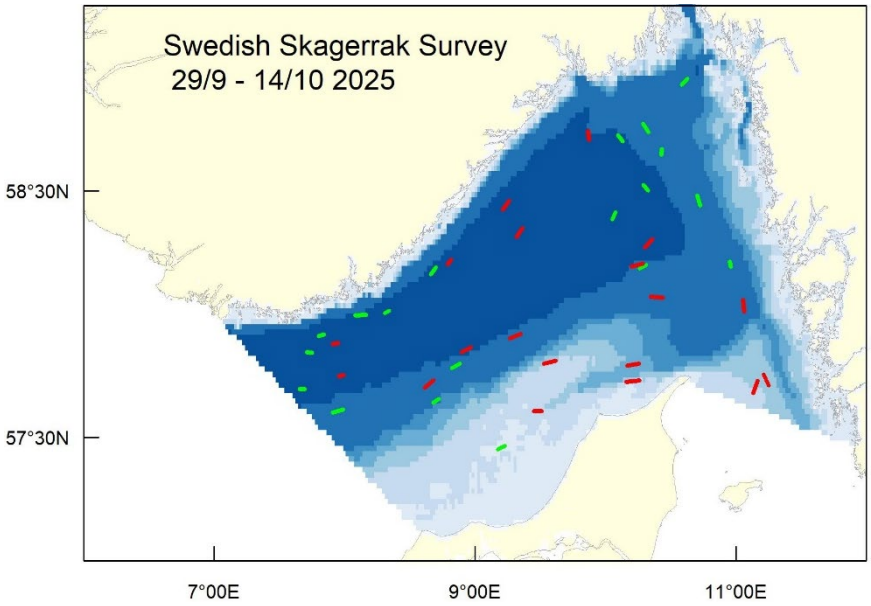

Figure 1. Map showing trawl stations in Skagerrak, 2025, fished by F/V Karlsö (green tracks) and F/V Kennedy (red tracks).

Results

The total catch amounted to 22.5 tonnes and included 51 different fish species, of which eight were chondrichthyans (sharks, rays, and rabbitfish). The most common fish species, based on occurrence, was witch flounder, found in 31 out of 38 hauls. Monkfish, hake, and cod were caught in 26, 25, and 21 hauls, respectively, whereas cod were caught in 25 out of 41 hauls.

The largest catches by weight were greater silversmelt (13.3 t), roundnose grenadier (2.7 t), and plaice (1.5 t). The catch of cod was only half that of previous year, totaling 0.26 t (Table 2). The most frequently caught elasmobranchs during the cruise were velvet belly and starry ray, each recorded in 22 and 21 out of 38 hauls. The largest chondrichthyan catches by weight were rabbit fish (0.42 t) and velvet belly (0.12 t) (Table 3).

Age and individual weights were recorded for 298 cod specimens, but genetic sampling of cod was discontinued this year. Instead, a pilot study collecting genetic samples from roundnose grenadier and monkfish was initiated. A total of 225 genetic samples and otoliths were collected from roundnose grenadier, and 49 from monkfish. Nine samples of sail ray and two of round skate were also collected for

genetic analysis. Individual weights were measured for a small number of additional species (Tables 2 and 3).

The change of chartered fishing vessels in 2025 also came with a change in the type of otter boards used. The previous vessel used Injector otter boards with a surface area of 2.3 m² and a weight of 540 kg. In 2025, the survey vessels used Fotö 200/210 otter boards with surface areas of 3.0–3.3 m² and weights of 375–400 kg, with F/V Kennedy using the larger size to compensate for a larger-diameter warp.

The gear parameters did not differ substantially between the vessels used in 2025, but they did differ somewhat from earlier years. In particular, an increase in the warp–door spread relationship resulted in a slightly reduced net opening (Figure 2). These differences were small and are not expected to have any substatial influence on the swept-area estimates produced from the survey.

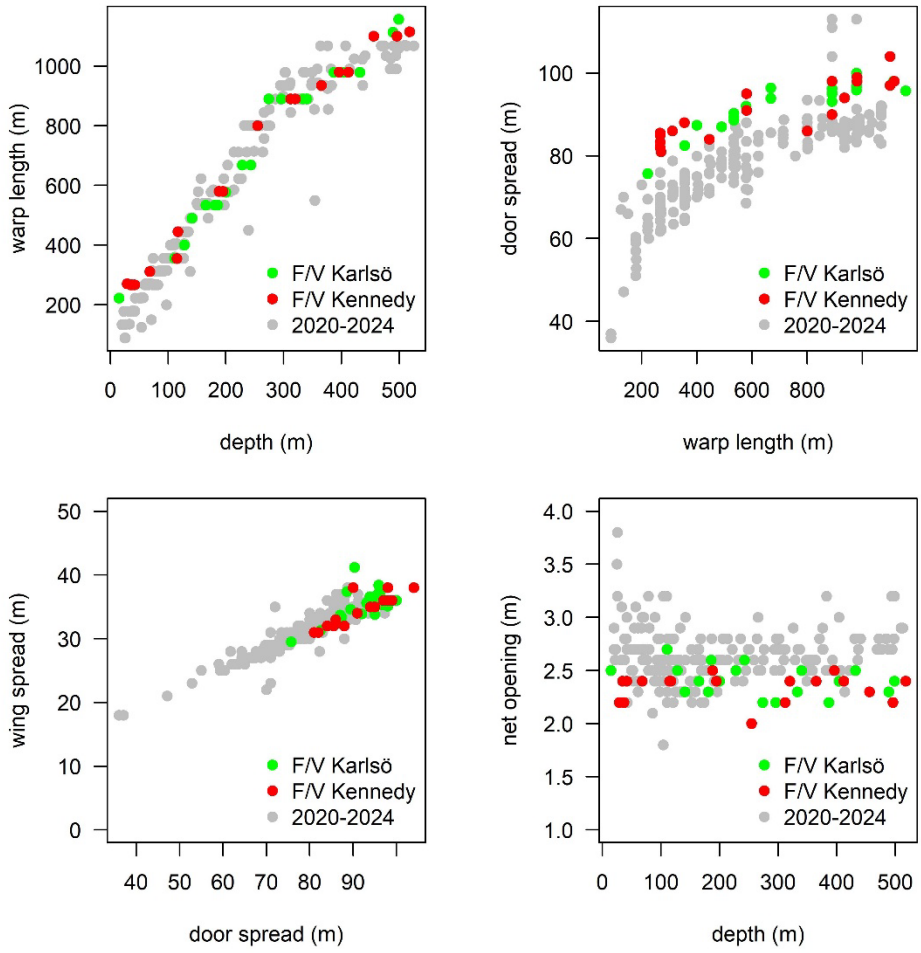

Figure 2. Gear parameters in the Skagerrak survey, 2020–2025. F/V Karlsö is shown in green, F/V Kennedy in red, and hauls from earlier years in grey.

Table 1. *Station list for the Swedish Skagerrak Survey September 29 – October 14, 2025.*

			Set position		Haul position					
Vessel	**Date**	**HaulNo**	**Latitude**	**Longitude**	**Latitude**	**Longitude**	**Depth**	**Duration (min)**	**Speed (knt)**	**Door spread (m)**
SBVO	29/09 2025	1	58°12.68N	10°57.13N	58°11.56E	10°57.65E	128	30	2.7	87.4
SBVO	29/09 2025	2	58°11.91N	10°18.69N	58°11.05E	10°15.87E	228	45	2.4	93.9
SBVO	29/09 2025	3	58°23.07N	10°03.22N	58°24.73E	10°04.48E	499	50	2.3	95.7
SBVO	30/09 2025	4	58°11.36N	08°41.92N	58°09.67E	08°39.75E	340	50	2.4	93.1
SBVO	30/09 2025	5	58°00.79N	08°20.43N	58°00.25E	08°18.54E	432	30	2.6	96.7
SBVO	30/09 2025	6	57°59.85N	08°09.85N	57°59.74E	08°04.89E	274	60	2.7	96.2
SBVO	1/10 2025	7	57°55.07N	07°50.31N	57°54.70E	07°48.17E	387	30	2.5	95.9
SBVO	1/10 2025	8	57°50.67N	07°44.84N	57°50.73E	07°42.60E	489	30	2.6	98.0
SBVO	1/10 2025	9	57°41.81N	07°39.44N	57°41.80E	07°41.56E	404	30	2.4	100.0
SBVO	1/10 2025	10	57°36.15N	07°54.62N	57°36.75E	07°59.12E	243	60	2.6	96.4
SBVO	2/10 2025	11	57°47.98N	08°52.91N	57°46.94E	08°49.49E	200	60	2.3	92.0
SBVO	2/10 2025	12	57°39.32N	08°43.19N	57°38.54E	08°40.77E	111	50	2.1	82.5
SBVO	2/10 2025	13	57°27.13N	09°10.58N	57°28.00E	09°13.69E	15	40	2.9	75.7
SBVO	13/10 2025	14	58°26.42N	10°43.52N	58°28.81E	10°42.13E	141	60	2.7	87.0
SBVO	13/10 2025	15	58°30.03N	10°19.48N	58°31.33E	10°17.43E	333	40	2.5	95.0
SBVO	13/10 2025	16	58°38.78N	10°25.60N	58°40.06E	10°25.92E	165	30	2.7	89.4
SBVO	13/10 2025	17	58°42.10N	10°07.90N	58°43.42E	10°05.90E	296	40	2.5	95.2
SBVO	14/10 2025	18	58°44.26N	10°19.85N	58°46.28E	10°17.31E	181	60	2.5	90.3
SBVO	14/10 2025	19	58°57.20N	10°37.65N	58°55.78E	10°35.21E	186	45	2.7	88.6
SDLE	29/09 2025	1	58°00.60N	11°03.90N	58°03.40E	11°03.25E	115	60	2.8	88.0
SDLE	29/09 2025	2	57°42.70N	11°14.97N	57°45.29E	11°12.92E	42	60	2.8	83.3
SDLE	29/09 2025	3	57°40.84N	11°07.97N	57°43.74E	11°09.98E	35	63	2.8	85.0
SDLE	30/09 2025	4	58°20.91N	09°21.78N	58°18.84E	09°19.15E	518	61	2.6	98.0
SDLE	30/09 2025	5	58°27.47N	09°15.60N	58°25.40E	09°12.88E	396	64	2.5	99.0
SDLE	30/09 2025	6	58°13.16N	08°48.96N	58°12.19E	08°47.42E	412	30	2.5	98.0
SDLE	1/10 2025	7	57°53.00N	07°57.07N	57°57.70E	07°54.52E	496	37	2.3	104.0

Table 1, *continued*

			Set position		Haul position					
Vessel	**Date**	**HaulNo**	**Latitude**	**Longitude**	**Latitude**	**Longitude**	**Depth**	**Duration (min)**	**Speed (knt)**	**Door spread (m)**
SDLE	1/10 2025	8	57°45.14N	07°59.50N	57°44.95E	07°57.35E	456	30	2.3	97.0
SDLE	1/10 2025	9	57°42.17N	08°36.86N	57°43.86E	08°40.77E	188	61	2.7	91.0
SDLE	1/10 2025	10	57°50.70N	08°53.80N	57°51.90E	08°58.00E	320	64	2.6	98.0
SDLE	2/10 2025	11	57°47.94N	09°31.70N	57°48.70E	09°37.00E	37	60	2.8	85.5
SDLE	2/10 2025	12	57°54.10N	09°16.00N	57°55.21E	09°20.84E	195	60	2.8	95.0
SDLE	2/10 2025	13	58°04.27N	10°20.84N	58°04.07E	10°26.43E	117	62	2.9	84.0
SDLE	3/10 2025	14	57°47.54N	10°10.02N	57°48.00E	10°15.25E	68	60	2.8	86.0
SDLE	3/10 2025	15	57°43.55N	10°09.70N	57°43.90E	10°15.50E	37	60	3.1	82.0
SDLE	6/10 2025	16	57°36.44N	09°27.08N	57°36.46E	09°30.61E	29	40	2.8	81.0
SDLE	7/10 2025	17	58°11.58N	10°11.97N	58°12.31E	10°17.00E	255	60	2.8	86.0
SDLE	7/10 2025	18	58°16.27N	10°18.30N	58°18.17E	10°21.42E	365	60	2.6	94.0
SDLE	7/10 2025	19	58°42.45N	09°52.32N	58°44.50E	09°52.04E	312	50	2.6	90.0

Table 2. *Total catch in kg and in numbers of all fish species during the Skagerrak trawl survey in 2025, sorted by occurrence (elasmobranchs are presented separately in table 3).*

Swedish name	English name	Scientific name	Frequency of occurrence	Total number	Total weight (kg)	No. of individual weights / DNA
Rödtunga	Witch flounder	*Glyptocephalus cynoglossus*	31	393	76.134	
Marulk	Monkfish	*Lophius piscatorius*	26	49	368.939	49
Kummel	Hake	*Merluccius merluccius*	25	309	132.553	
Torsk	Cod	*Gadus morhua*	21	532	261.693	298
Gråsej	Saithe	*Pollachius virens*	19	566	771.479	
Kolja	Haddock	*Melanogrammus aeglefinus*	18	2 080	1 035.130	
Guldlax	Greater silversmelt	*Argentina silus*	17	49 787	13 305.300	20[1]
Vitling	Whiting	*Merlangius merlangus*	17	1007	233.394	
Långa	Ling	*Molva molva*	17	39	133.656	
Rödspätta	Plaice	*Pleuronectes platessa*	15	14 730	1459.564	
Skoläst	Round-nose grenadier	*Coryphaenoides rupestris*	15	7 633	2714.750	225
Lerskädda	Long rough dab	*Hippoglossoides platessoides*	15	654	49.546	
Blåvitling / kolmule	Blue whiting	*Micromesistius poutassou*	14	83	16.124	
Bergtunga	Lemon sole	*Microstomus kitt*	12	466	63.253	
Taggmakrill	Horse mackerel	*Trachurus trachurus*	12	129	46.996	
Fjällbrosme	Greater forkbeard	*Phycis blennoides*	12	25	30.618	8[1]
Vitlinglyra	Norway pout	*Trisopterus esmarkii*	11	33	1.416	
Birkelånga / blålånga	Blue ling	*Molva dypterygia*	10	26	84.272	8[1]
Sandskädda	Dab	*Limanda limanda*	9	8 234	830.231	
Knot / knorrhane	Grey gurnard	*Eutrigla gurnardus*	9	1 008	75.937	
Makrill	Mackerel	*Scomber scombrus*	8	95	23.429	
Blåkäft	Blue mouth	*Helicolenus dactylopterus*	7	78	16.485	
Fjärsing	Greater weever	*Trachinus draco*	4	44	7.965	
Fenknot	Tub gurnard	*Chelidonichthys lucerna*	3	22	5.126	
Randig sjökock	Dragonet	*Callionymus lyra*	3	10	0.499	
Nordlig silvertorsk	Silvery pout	*Gadiculus argenteus*	3	3	0.064	

[1] Only length-weight

Table 2, *continued*

Swedish name	English name	Scientific name	Frequency of occurrence	Total number	Total weight (kg)	No. of individual weights / DNA
Nordlig silvertorsk	Silvery pout	*Gadiculus argenteus*	3	3	0.064	
Äkta tunga	Sole	*Solea solea*	2	52	15.563	
Sill / strömming	Herring	*Clupea harengus*	2	10	1.488	
Bleka / lyrtorsk	Pollack	*Pollachius pollachius*	2	2	2.536	
Piggvar	Turbot	*Scophthalmus maximus*	2	2	0.944	
Silverfisk	Silver smelt	*Argentina sphyraena*	2	2	0.101	
Skarpsill	Sprat	*Sprattus sprattus*	1	31	0.359	
Fyrtömmad skärlånga	Fourbearded rockling	*Enchelyopus cimbrius*	1	2	0.238	
Större kungsfisk	Redfish	*Sebastes norvegicus*	1	2	1.757	
Tungevar	Scaldfish	*Arnoglossus laterna*	1	2	0.064	
Glyskolja	Poor cod	*Trisopterus minutus*	1	1	0.064	
Havsaborre	Bass	*Dicentrarchus labrax*	1	1	0.624	
Mindre kungsfisk	Redfish	*Sebastes viviparus*	1	1	0.404	
Mullus	Red mullet	*Mullus surmuletus*	1	1	0.252	
Rötsimpa	Bull rout	*Myoxocephalus scorpius*	1	1	0.172	
Skrubbskädda	Flounder	*Platichthys flesus*	1	1	0.239	
Skäggsimpa	Pogge	*Agonus cataphractus*	1	1	0.014	
Slätvar	Brill	*Scophthalmus rhombus*	1	1	0.385	

Table 3. *Total catch in kg and in numbers of elasmobranch species caught during the Skagerrak trawl survey in 2025, sorted by occurrence.*

Swedish name	English name	Scientific name	Frequency of occurrence	Total number	Total weight (kg)	No. of individual weights / DNA
Blåkäxa	Velvet belly	*Etmopterus spinax*	23	383	118.047	
Klorocka	Starry ray	*Amblyraja radiata*	22	86	61.776	10
Havsmus	Rabbit fish	*Chimaera monstrosa*	19	545	422.033	26[1]
Hågäl	Blackmouth dogfish	*Galeus melastomus*	18	89	47.661	19[1]
Pigghaj	Spurdog	*Squalus acanthias*	12	52	61.946	
Vitrocka	Sailray	*Rajella lintea*	5	9	32.602	9
Rundrocka	Round skate	*Rajella fyllae*	2	2	0.353	2
Småfläckig rödhaj	Lesser spotted dogfish	*Scyliorhinus canicula*	1	1	0.581	

[1] Only length-weight