



RV Aranda

## CRUISE PLAN

### COMBINE 2/2023, 2/2023 30.5. - 10.6.2023

#### Description of the cruise

The COMBINE 2 cruise contributes to the HELCOM Baltic Sea integrated physical, chemical and biological monitoring programme, focusing especially on long-term macrozoobenthos monitoring and near-bottom water oxygen levels in the open sea area. It also contributes to the long-term monitoring of zooplankton communities. Water and sediment samples are taken for the monitoring of radioactive substances (HELCOM MORS programme). In addition wave buoys and drifting floats will be deployed. The monitoring activities are part of the Finnish marine management plan.

#### Scientific staff:

<b>Chief scientist:</b>	Henrik Nygård	SYKE	30.05.2023 - 10.06.2023
		SYKE	30.05.2023 - 10.06.2023
		IL	30.05.2023 - 10.06.2023
		IL	30.05.2023 - 10.06.2023
		SYKE	30.05.2023 - 10.06.2023
		SYKE	30.05.2023 - 10.06.2023
		SYKE	30.05.2023 - 10.06.2023
		SYKE	30.05.2023 - 10.06.2023
		SYKE	30.05.2023 - 10.06.2023
		SYKE	30.05.2023 - 10.06.2023
		SYKE	30.05.2023 - 10.06.2023
		SYKE	30.05.2023 - 02.06.2023
		SYKE	02.06.2023 - 10.06.2023
		SYKE	30.05.2023 - 02.06.2023
		SYKE	30.05.2023 - 10.06.2023

Altogether 16 persons in scientific staff.

**Departure from:** HELSINKI  
**Departure time:** Tuesday 30.05.2023 at 10.00

Cruising speed: 9,0 knots  
Average station time: 1 h 30 min.

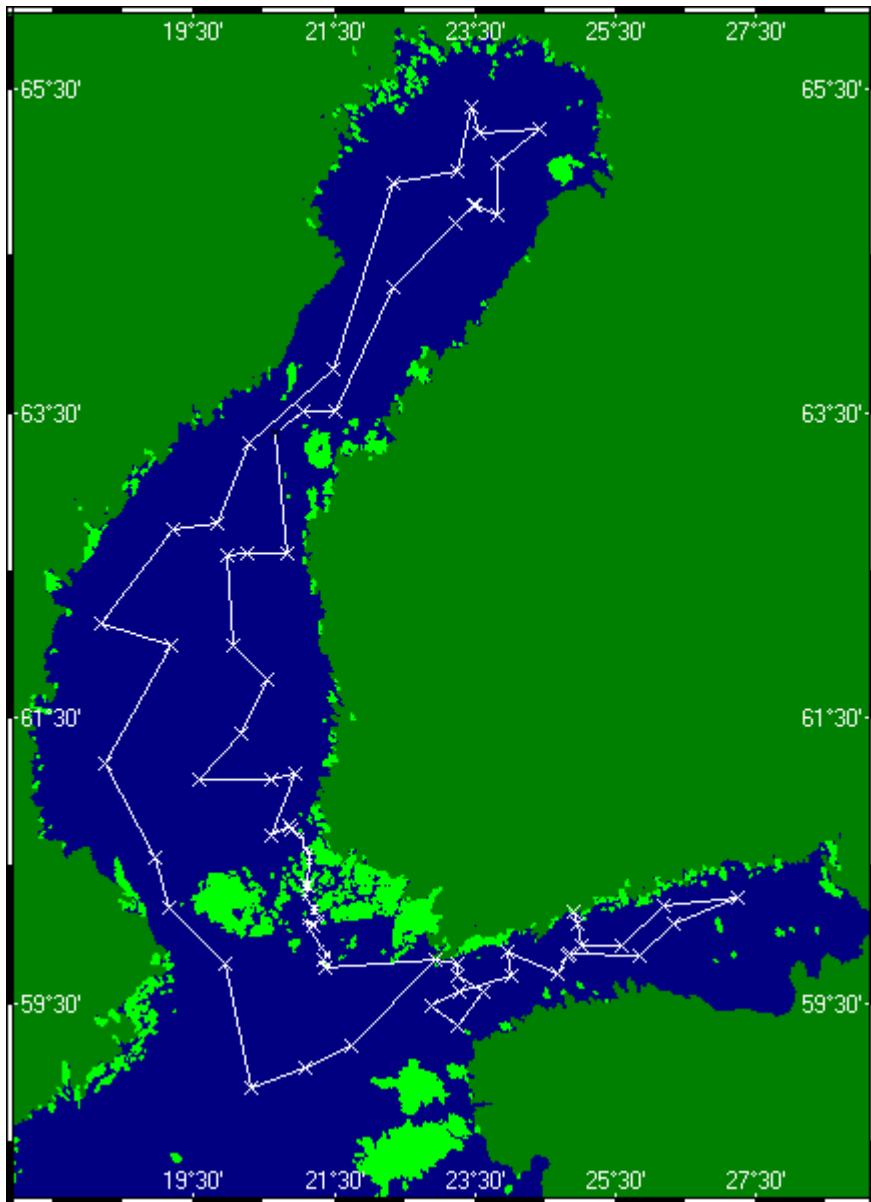
**Arrival to:** HANKO  
**Arrival time:** Saturday 10.06.2023 at 19.42

Duration of the cruise: 11 days 9 h 42 min  
Length of the cruise: 1487,76 nautical miles  
Number of stations 59.

## Route:

Nro	Station	Lat.	Long.	Depth [m]	Arrival		Durat. hh:mm	Speed knots	
					hh:mm	dy dd.mm.yyyy			
0	HELSINKI	60°09.55'	24°55.37'	0	10.00	Tu	30.05.2023	0:00	S 9,0
1	39A	60°04.01'	24°58.81'	41	10.38	Tu	30.05.2023	1:30	S 9,0
2	LL6A	59°55.01'	25°01.81'	75	13.09	Tu	30.05.2023	1:30	S 9,0
3	LL5	59°55.01'	25°35.82'	70	16.33	Tu	30.05.2023	2:45	S 9,0
4	XIV3	60°12.19'	26°11.57'	77	22.03	Tu	30.05.2023	1:00	S 9,0
5	XV1	60°15.00'	27°14.82'	64	02.33	We	31.05.2023	2:15	S 9,0
6	LL3A	60°04.03'	26°20.80'	68	08.02	We	31.05.2023	4:15	S 9,0
7	GF2	59°50.31'	25°51.41'	84	14.31	We	31.05.2023	1:30	S 9,0
8	LL7S	59°51.51'	24°50.30'	78	19.25	We	31.05.2023	3:45	S 9,0
9	LL7	59°50.79'	24°50.27'	100	23.15	We	31.05.2023	1:00	S 9,0
10	GF1	59°42.30'	24°40.93'	84	01.20	Th	01.06.2023	2:15	S 9,0
11	XII3	59°52.01'	23°58.81'	38	06.10	Th	01.06.2023	1:00	S 9,0
12	LL9	59°42.01'	24°01.81'	69	08.18	Th	01.06.2023	2:15	S 9,0
13	LL11	59°35.01'	23°17.81'	68	13.08	Th	01.06.2023	1:30	S 9,0
14	LL12	59°29.01'	22°53.81'	82	16.09	Th	01.06.2023	2:45	S 9,0
15	F62	59°20.01'	23°15.81'	95	20.29	Th	01.06.2023	1:00	S 9,0
16	JML	59°34.91'	23°37.61'	80	23.33	Th	01.06.2023	2:30	S 9,0
17	AMN	59°41.43'	23°15.43'	56	03.30	Fr	02.06.2023	1:30	S 9,0
18	LANGDEN	59°46.61'	23°15.77'	57	05.34	Fr	02.06.2023	2:15	S 9,0
19	HANKO	59°49.01'	22°56.81'	0	08.55	Fr	02.06.2023	2:00	S 9,0
20	UTO_ADCP	59°45.32'	21°21.45'	74	16.16	Fr	02.06.2023	1:30	S 9,0
21	IU7	59°48.91'	21°20.20'	92	18.10	Fr	02.06.2023	1:30	S 9,0
22	IU5	60°03.49'	21°11.90'	89	22.19	Fr	02.06.2023	1:30	S 9,0
23	IU3	60°20.00'	21°06.80'	48	02.13	Sa	03.06.2023	1:30	S 9,0
24	ISOKARI	60°43.63'	20°52.90'	40	06.44	Sa	03.06.2023	1:00	S 9,0
25	IU1	60°46.01'	20°50.80'	33	08.02	Sa	03.06.2023	1:00	S 9,0
26	SM_ETELA	60°41.75'	20°35.20'	52	10.00	Sa	03.06.2023	1:00	S 9,0
27	SR8	61°07.59'	20°55.80'	46	14.05	Sa	03.06.2023	1:00	S 10,0
28	SR7	61°05.01'	20°35.79'	78	16.05	Sa	03.06.2023	1:30	S 9,0
29	SR5	61°05.00'	19°34.78'	126	20.51	Sa	03.06.2023	5:30	S 10,0
30	ARGO_SM	61°24.00'	20°10.80'	50	04.56	Su	04.06.2023	1:00	S 10,0
31	MS9	61°46.01'	20°31.83'	101	08.21	Su	04.06.2023	1:30	S 10,0
32	F26	61°59.01'	20°03.78'	140	11.42	Su	04.06.2023	1:30	S 9,0
33	US5B	62°35.17'	19°58.13'	214	17.14	Su	04.06.2023	5:00	S 9,0
34	US6B	62°36.01'	20°15.78'	83	23.08	Su	04.06.2023	2:00	S 9,0
35	US7	62°36.01'	20°49.78'	23	02.52	Mo	05.06.2023	1:00	S 9,0
36	F16	63°31.01'	21°03.77'	45	10.27	Mo	05.06.2023	2:00	S 9,0
37	F15	63°31.01'	21°30.78'	49	13.47	Mo	05.06.2023	1:30	S 10,0
38	BO3	64°18.12'	22°20.59'	109	20.29	Mo	05.06.2023	3:30	S 10,0
39	AALTO_PM	64°41.05'	23°14.35'	80	03.14	Tu	06.06.2023	1:30	S 9,0
40	RR6	64°48.02'	23°28.77'	86	05.46	Tu	06.06.2023	1:30	S 9,0
41	ARGO_PM	64°48.00'	23°30.00'	50	07.20	Tu	06.06.2023	1:00	S 9,0
42	RR7	64°44.02'	23°48.77'	39	09.19	Tu	06.06.2023	1:00	S 9,0
43	HIEKKA2	65°03.00'	23°50.00'	20	12.26	Tu	06.06.2023	1:30	S 9,0
44	KIISLA	65°15.76'	24°25.89'	0	16.07	Tu	06.06.2023	2:00	S 9,0
45	CVI	65°14.02'	23°33.77'	71	20.33	Tu	06.06.2023	2:30	S 9,0
46	F2	65°23.02'	23°27.76'	91	00.06	We	07.06.2023	1:45	S 9,0
47	CV	65°00.02'	23°14.77'	89	04.28	We	07.06.2023	1:30	S 9,0
48	RR3	64°56.02'	22°20.76'	96	08.33	We	07.06.2023	1:30	S 10,0
49	F13	63°47.01'	21°28.77'	65	17.18	We	07.06.2023	1:00	S 10,0
50	F18	63°18.86'	20°16.36'	105	22.35	We	07.06.2023	2:00	S 9,0
51	ARGO_UP	62°47.58'	19°50.22'	50	04.18	Th	08.06.2023	1:30	S 10,0
52	US3	62°45.53'	19°11.74'	182	07.35	Th	08.06.2023	2:00	S 9,0
53	MS3	62°08.07'	18°09.78'	84	14.49	Th	08.06.2023	1:30	S 10,0
54	MS6	61°59.02'	19°09.81'	72	19.16	Th	08.06.2023	1:30	S 10,0
55	SR3	61°11.00'	18°13.80'	72	02.16	Fr	09.06.2023	1:30	S 10,0
56	F33	60°31.99'	18°56.26'	135	08.11	Fr	09.06.2023	1:30	S 10,0
57	F64	60°11.34'	19°08.55'	285	11.50	Fr	09.06.2023	4:30	S 9,0
58	F69	59°47.00'	19°55.80'	189	20.06	Fr	09.06.2023	2:00	S 10,0
59	LL19	58°52.84'	20°18.65'	169	03.38	Sa	10.06.2023	1:30	S 10,0
60	LL17	59°02.00'	21°04.77'	171	07.41	Sa	10.06.2023	3:00	S 10,0
61	LL15	59°11.00'	21°44.81'	126	12.56	Sa	10.06.2023	1:30	S 10,0
62	HANKO	59°49.01'	22°56.81'	0	19.42	Sa	10.06.2023	0:00	S 9,0

Route map:



Cruise plan is printed at 23.05.2023 aa 08.58.