



RV Aranda

## CRUISE PLAN

### COMBINE 1 leg 2, 1/2021 22. - 31.1.2021

#### Description of the cruise

The COMBINE 1 2nd leg winter cruise is based on the HELCOM COMBINE monitoring programme. Sampling and analysis on hydrography and water chemistry will be conducted. In addition, oil and toxic samples of sediments will also be taken. Further, SYKE hydrophones in order to monitor underwater noise will be moored. Maintenance of wave buoys of FMI in the Northern Baltic Proper and in the Bothnian Sea will be carried out. A thermistor chain of the FINMARI consortium will be installed outside Utö near the station IU7. Coverage, thickness and characteristics of ice will be studied in the Bothnian Bay,.

#### Scientific staff:

<b>Chief scientist:</b>	Kotilainen Pekka	SYKE	22.01.2021 - 31.01.2021
CTD chief:		FMI	22.01.2021 - 31.01.2021
Chief chemist:		SYKE	22.01.2021 - 31.01.2021
		SYKE	22.01.2021 - 31.01.2021
		FMI	22.01.2021 - 31.01.2021
		SYKE	22.01.2021 - 31.01.2021
		SYKE	22.01.2021 - 31.01.2021
		FMI	22.01.2021 - 31.01.2021
		FMI	22.01.2021 - 31.01.2021
		SYKE	22.01.2021 - 31.01.2021
		SYKE	22.01.2021 - 31.01.2021
		SYKE	22.01.2021 - 31.01.2021

Altogether 12 persons in scientific staff.

**Departure from:** HANKO  
**Departure time:** Friday 22.01.2021 at 13:15

Cruising speed: 10.0 knots  
Average station time: 3 h 0 min.

**Arrival to:** HELSINKI  
**Arrival time:** Sunday 31.01.2021 at 18:18

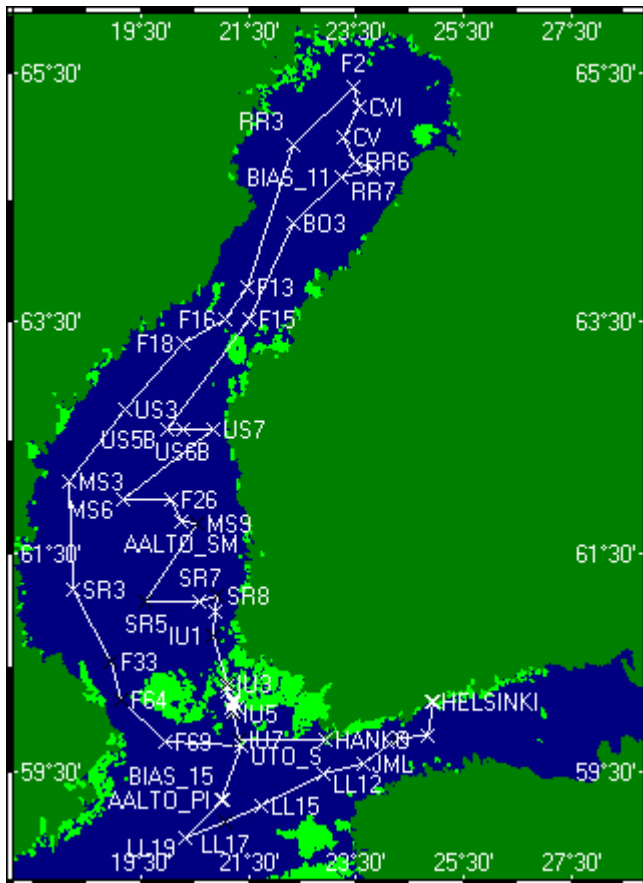
Duration of the cruise: 9 days 5 h 3 min  
Length of the cruise: 1260.13 nautical miles  
Number of stations 42. Points with name "P" are just route points without observations.

#### Route:

Nro	Station	Lat.	Long.	Depth [m]	Arrival		Durat. hh:mm	Speed knots	
					dy	dd.mm.yyyy			
0	HANKO	59°49.01'	22°56.81'	0	13:15	Fr	22.01.2021	0:00	S 10.0
1	IU7	59°48.91'	21°20.20'	92	18:06	Fr	22.01.2021	3:00	S 10.0

2	IU5	60°03.49'	21°11.90'	89	22:37	Fr	22.01.2021	2:00	S	10.0
3	P	60°04.55'	21°12.80'	-	00:44	Sa	23.01.2021	0:00	S	10.0
4	P	60°06.25'	21°17.20'	-	01:00	Sa	23.01.2021	0:00	S	10.0
5	P	60°06.68'	21°09.68'	-	01:23	Sa	23.01.2021	0:00	S	10.0
6	P	60°07.00'	21°18.00'	-	01:48	Sa	23.01.2021	0:00	S	10.0
7	P	60°09.20'	21°12.75'	-	02:09	Sa	23.01.2021	0:00	S	10.0
8	P	60°09.40'	21°13.75'	-	02:12	Sa	23.01.2021	0:00	S	10.0
9	P	60°11.10'	21°13.80'	-	02:22	Sa	23.01.2021	0:00	S	10.0
10	P	60°11.30'	21°12.40'	-	02:26	Sa	23.01.2021	0:00	S	10.0
11	P	60°15.60'	21°05.50'	-	02:59	Sa	23.01.2021	0:00	S	10.0
12	P	60°15.60'	21°05.50'	-	02:59	Sa	23.01.2021	0:00	S	10.0
13	P	60°19.20'	21°06.25'	-	03:21	Sa	23.01.2021	0:00	S	10.0
14	P	60°19.40'	21°05.50'	-	03:24	Sa	23.01.2021	0:00	S	10.0
15	IU3	60°20.00'	21°06.80'	48	03:29	Sa	23.01.2021	1:00	S	10.0
16	IU1	60°46.01'	20°50.80'	33	07:12	Sa	23.01.2021	1:00	S	10.0
17	KAJAKULMAW	60°59.47'	20°52.05'	58	09:33	Sa	23.01.2021	1:00	S	10.0
18	SR8	61°07.59'	20°55.80'	46	11:23	Sa	23.01.2021	1:00	S	10.0
19	SR7	61°05.01'	20°35.79'	78	13:23	Sa	23.01.2021	2:00	S	10.0
20	SR5	61°05.00'	19°34.78'	126	18:20	Sa	23.01.2021	3:00	S	10.0
21	MS9	61°46.01'	20°31.83'	101	02:15	Su	24.01.2021	2:00	S	10.0
22	AALTO_SM	61°48.00'	20°14.00'	110	05:07	Su	24.01.2021	3:00	S	10.0
23	F26	61°59.01'	20°03.78'	140	09:19	Su	24.01.2021	2:30	S	10.0
24	MS6	61°59.02'	19°09.81'	72	14:21	Su	24.01.2021	2:00	S	10.0
25	US7	62°36.01'	20°49.78'	23	22:18	Su	24.01.2021	1:00	S	10.0
26	US6B	62°36.01'	20°15.78'	83	00:52	Mo	25.01.2021	1:00	S	10.0
27	US5B	62°35.17'	19°58.13'	214	02:41	Mo	25.01.2021	2:00	S	10.0
28	F15	63°31.01'	21°30.78'	49	11:40	Mo	25.01.2021	2:00	S	10.0
29	BO3	64°18.12'	22°20.59'	109	18:52	Mo	25.01.2021	2:00	S	10.0
30	BIAS_11	64°41.11'	23°14.33'	?	00:07	Tu	26.01.2021	1:00	S	10.0
31	RR7	64°44.02'	23°48.77'	39	02:37	Tu	26.01.2021	2:00	S	10.0
32	RR6	64°48.02'	23°28.77'	86	05:34	Tu	26.01.2021	2:00	S	10.0
33	CV	65°00.02'	23°14.77'	89	08:54	Tu	26.01.2021	2:00	S	10.0
34	CVI	65°14.02'	23°33.77'	71	12:31	Tu	26.01.2021	2:00	S	10.0
35	F2	65°23.02'	23°27.76'	91	15:27	Tu	26.01.2021	3:00	S	10.0
36	RR3	64°56.02'	22°20.76'	96	22:21	Tu	26.01.2021	2:00	S	10.0
37	F13	63°47.01'	21°28.77'	65	07:36	We	27.01.2021	2:00	S	10.0
38	F16	63°31.01'	21°03.77'	45	11:33	We	27.01.2021	2:00	S	10.0
39	F18	63°18.86'	20°16.36'	105	16:00	We	27.01.2021	2:00	S	10.0
40	US3	62°45.53'	19°11.74'	182	22:26	We	27.01.2021	2:00	S	10.0
41	MS3	62°08.07'	18°09.78'	84	05:09	Th	28.01.2021	2:00	S	10.0
42	SR3	61°11.00'	18°13.80'	72	12:52	Th	28.01.2021	2:00	S	10.0
43	F33	60°31.99'	18°56.26'	135	19:17	Th	28.01.2021	2:00	S	10.0
44	F64	60°11.34'	19°08.55'	285	23:26	Th	28.01.2021	3:30	S	10.0
45	F69	59°47.00'	19°55.80'	189	06:19	Fr	29.01.2021	2:00	S	10.0
46	UTO_S	59°45.29'	21°22.22'	70	12:41	Fr	29.01.2021	5:00	S	10.0
47	AALTO_PI	59°15.00'	20°59.81'	98	20:55	Fr	29.01.2021	3:00	S	10.0
48	BIAS_15	59°15.00'	21°00.98'	90	23:58	Fr	29.01.2021	2:00	S	10.0
49	LL19	58°52.84'	20°18.65'	169	05:05	Sa	30.01.2021	2:00	S	5.0
50	LL17	59°02.00'	21°04.77'	171	12:11	Sa	30.01.2021	8:00	S	10.0
51	LL15	59°11.00'	21°44.81'	126	22:25	Sa	30.01.2021	2:00	S	10.0
52	LL12	59°29.01'	22°53.81'	82	04:22	Su	31.01.2021	1:30	S	10.0
53	JML	59°34.91'	23°37.61'	80	08:10	Su	31.01.2021	3:00	S	10.0
54	P	59°48.69'	24°15.08'	-	13:31	Su	31.01.2021	0:00	S	10.0
55	P	59°50.05'	24°18.09'	-	13:43	Su	31.01.2021	0:00	S	10.0
56	LL7	59°50.79'	24°50.27'	100	15:20	Su	31.01.2021	1:00	S	10.0
57	P	60°09.87'	24°55.91'	-	18:16	Su	31.01.2021	0:00	S	10.0
58	HELSINKI	60°09.55'	24°55.37'	0	18:18	Su	31.01.2021	3:00	S	10.0

Route map:



Cruise plan is printed at 25.02.2021 aP 04:10.