



Baltic Marine Environment Protection Commission

Expert Group on Monitoring of Radioactive Substances
in the Baltic Sea

MORS EG 9-2019

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Document title	Results of Swedish data for 2017
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Background

This document presents the results of Sweden on biota, sea water and sediment data that has been reported to the database for HELCOM MORS 2018.

Action

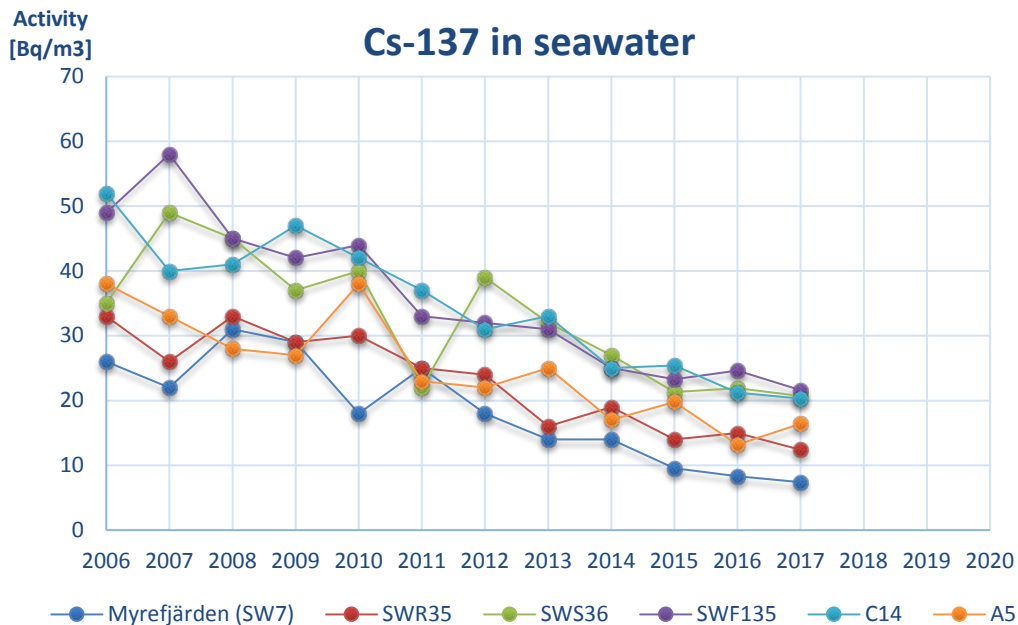
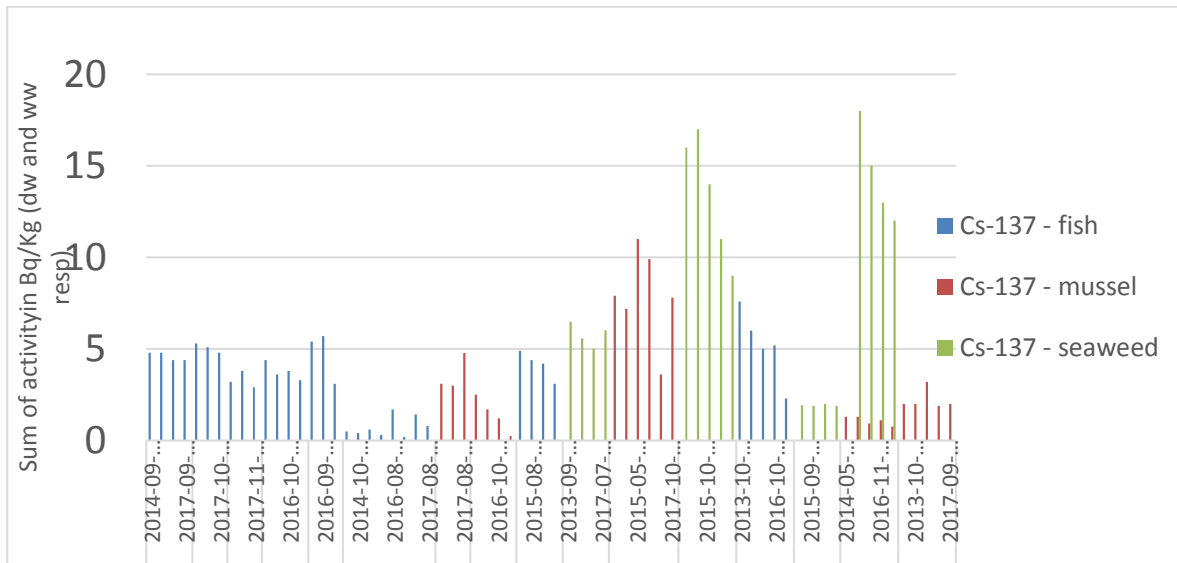
The Meeting is invited to take note of the information.

Report from Sweden

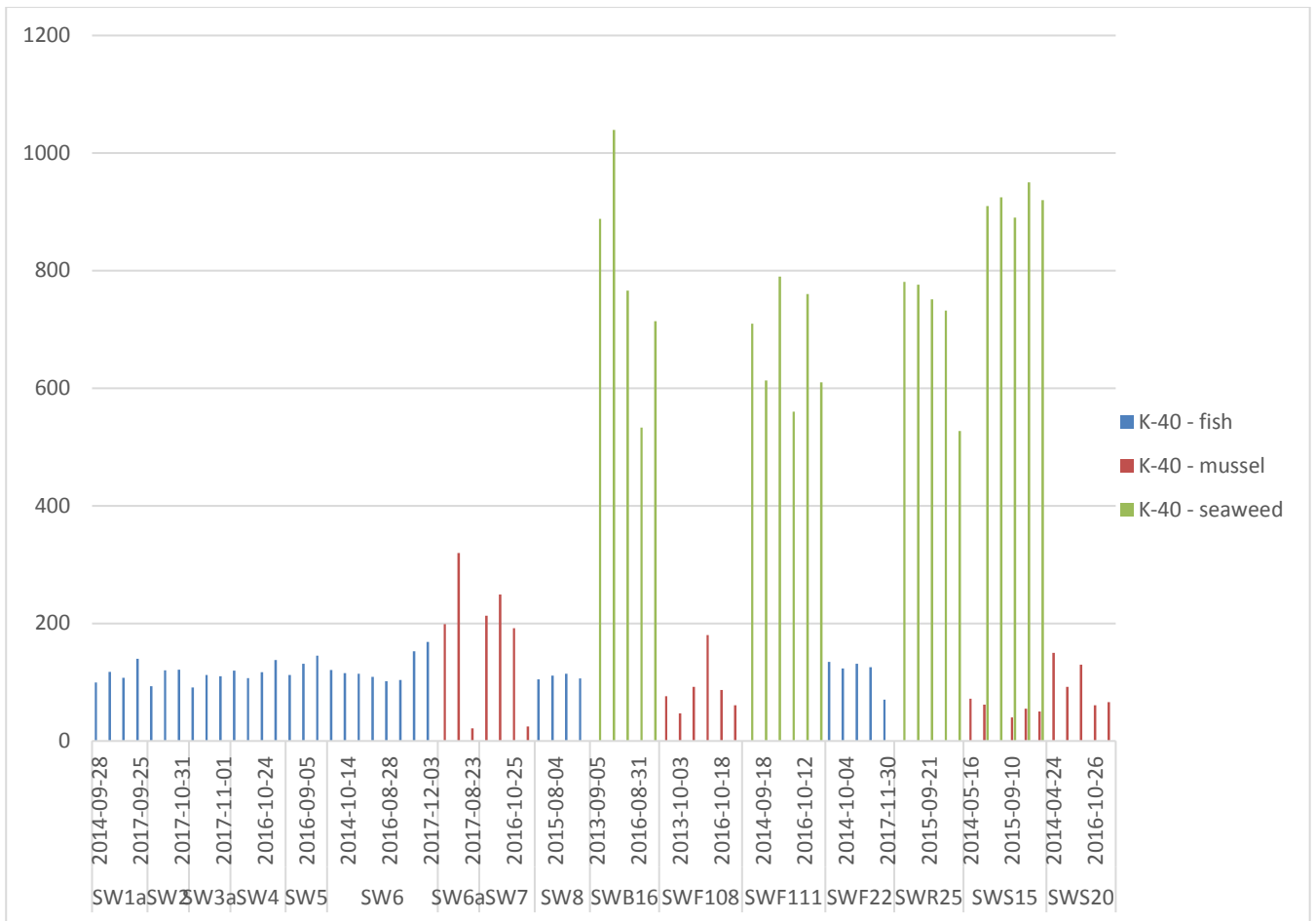
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The following paper presents results of biota, sea water and sediment data that has been reported to the database for HELCOM MORS 2018.

The results show that the concentration of the analysed nuclide Cs-137 in the samples taken for biota and seawater are decreasing. The following graphs illustrate this.



The corresponding results for concentrations of the analysed K-40 for biota are shown in the following graph.



In the following tables all data that Sweden has analysed for the year 2017 and sent to the database are presented.

1. Results for biota 2017

All data has been sent to the database.

1.1 Fish, all data are reported as activity for fresh weight according to the Recommendation 26/3.

Station/ date	Basin M/H	Species (Number)	K-40 Activity in Bq/kg	Uncertainty %	Cs-137 Activity in Bq/kg	Uncertainty %
			Wet weight		Wet weight	
SW1a 2017-09-25	7/7	Clupea (90)	1,40E+02	6	4,40	6
SW2 2017-10-31	1/8	Clupea (40)	1,21e+02	7	4,80	8
SW3a 2017-11-01	10/10	Clupea (30)	1,10e+02	7	2,90	9
SW4 2017-10-24	6/6	Clupea (30)	1,38e+02	6	3,30	6
SW5 2017-10-01	9/9	Gadus (35)	1,45e+02	6	3,10	6
SW6 2017-12-03	12/12	Gadus (10)	1,69e+02	7	<1,43	
SW6 2017-08-05	12/12	Clupea (36)	1,53e+02	7	0,80	27
SW8 2017-08-08	7/17	Clupea (50)	1,06e+02	9	3,10	13
SWF22 2017-11-30	1/8	Clupea (53)	7,05e+01	2	2,30	2

1.2 Benthic animals

Station/ date	Basin M/H	Species (Number)	K-40 Activity in Bq/kg	Uncertainty %	Cs-137 Activity in Bq/kg	Uncertainty %
			Dry weight		Dry weight	
SW6a 2017-08-23	12/12	Mytilus (24)	2,17e+01	12	<4,78	
SW7 2017-10-23	15/18	Mytilus (35)	2,45e+01	8	<0,25	
SWS15 2017-10-19	10/10	Mytilus (393)	5,00e+01	17	0,76	25
SWS20 2017-09-05	10/10	Macoma (417)	6,60e+01	25	2,00	22
SWF108 2017-10-11	1/8	Macoma (139)	6,10e+01	21	7,80	7

1.3 Aquatic plants

Station/ date	Basin M/H	Species (Number)	K-40 Activity in Bq/kg	Uncertainty %	Cs-137 Activity in Bq/kg	Uncertainty %
			Dry weight		Dry weight	
SWS15 2017-10-19	10/10	Fucus	9,20e+02	1	1,20e+01	2
SWB16 2017-07-06	13/13	Fucus	7,14e+02	2	6,02	5
SWR25 2017-09-06	12/12	Fucus	5,27e+02	1	1,89	9
SWF111 2017-09-22	1/8	Fucus	6,10e+02	2	9,00	2

* Results given in Bq/kg wet weight for fish samples, all others in Bq/kg dry weight

2. Results for sea water

Station/ date	Basin M/H	H-3 Bq/m ³	Uncertainty % m ³	Cs-137 Activity in Bq/m ³	Uncertainty % m ³
SW7 Myrefjärden 2017-04-19	15/18	<1,80e+03		4,45	20
SW7 Myrefjärden 2017-09-18	15/18	1,65e+03	49	7,40	14
SWR35 2017-04-21	12/12	<2,20e+03		1,22e+01	11
SWR35 2017-09-29	12/12	<1,20e+03		1,24e+01	10
SWS36 2017-12-19	10/10	<1,30e+03		2,07e+01	8
SWF135 2017-09-25	7/8	<2,00e+03		2,16e+01	9
C14 2017-10-03	7/7	<2,60e+03		2,03e+01	8
A5 2017-10-03	7/7	<1,60e+03		1,64e+01	10

3. Results for sediment stations

Station/ date	Basin M/H	Sample slice cm	K-40 Activity in Bq/m ²	Uncertainty %	Cs-137 Activity in Bq/m ²	Uncertainty %
A5 2017-09-27	7/7	0-5	9,51e+3	6,57	3,10e+03	5,27
		5-10	1,31e+04	5,88	1,66e+03	5,48
		10-15	1,98e+04	5,61	2,11e+02	14,19
		15-20	1,96e+04	5,55	<2,55 Bq/kg	
		20-25	1,69e+04	5,65	<2,50 Bq/kg	
		0-5 pool	7,74e+3	5,92	2,32e+3	10,45
		5-10 pool	1,38e+4	5,67	1,88e+03	5,38

Station/ date	Basin M/H	Sample slice cm	K-40 Activity in Bq/m ²	Uncertainty %	Cs-137 Activity in Bq/m ²	Uncertainty %
A13 2017-09-28	7/7	0-5	7,00e+03	5,94	2,17e+03	5,22
		5-10	1,67e+04	5,61	4,21e+02	7,39
		10-15	1,71e+04	5,59	<2,92 Bq/kg	
		15-20	1,79e+04	4,00	<3,46 Bq/kg	
		20-25	1,89e+04	5,82	<3,60 Bq/kg	
		0-5 pool	1,25e+04	5,82	2,15e+03	5,29
		5-10 pool	1,78e+04	5,61	3,59e+02	8,28
C3 2017-09-26	8/8	0-5	1,04e+04	5,66	5,72e+03	5,17
		5-10	1,62e+04	5,55	1,21e+04	5,14
		10-15	1,79e+04	5,13	1,81e+04	5,53
		15-20	1,84e+04	5,45	1,11e+04	5,14
		20-25	2,11e+04	5,50	1,67e+03	5,46
		0-5 pool	1,13e+04	5,83	5,69e+03	5,18
		5-10 pool	1,74e+04	5,59	1,34e+04	5,15
C14 2017-09-26	8/8	0-5	1,92e+04	5,58	5,71e+03	5,20
		5-10	2,47e+04	5,43	4,59e+02	6,85
		10-15	2,96e+04	5,43	<1,67 Bq/kg	
		15-20	2,85e+04	5,42	<1,46 Bq/kg	
		20-23	2,39e+04	5,38	<1,59 Bq/kg	
		0-5 pool	1,50e+04	5,49	5,47e+03	5,17
		5-10 pool	2,22e+04	5,42	8,95e+02	5,73
SWF135 2017-09-22	1/8	0-2	4,78e+03	2,10	1,96e+02	1,70
SWR35 2017-09-20	13/13	0-2	4,04e+03	1,40	3,54e+01	5,60
SWB38 2017-07-07	12/12	0-2	3,34e+03	1,76	1,26e+02	2,10
		2-4	4,80e+03	1,71	2,10e+02	1,87
		4-6	5,71e+03	1,76	2,46e+02	1,96
		6-8	5,90e+03	1,78	2,12e+02	2,21
		8-10	6,95e+03	1,87	1,67e+02	2,88
SWS36 2017-12-19	10/10	0-2	9,07e+03	2,00	3,78e+02	1,00